

Wilkes University

2010 – 2011

UNDERGRADUATE BULLETIN

BACCALAUREATE STUDIES

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ARCHIVED BULLETINS

2008-2009 Undergraduate Bulletin

POLICY STATEMENT OF NONDISCRIMINATION

Wilkes University provides equal employment, admission and educational opportunities to all persons without regard to race, color, religion, gender, gender identification and expression, sexual orientation, national origin, age, disability, marital status, domestic partnership status or status as a veteran in accordance with applicable federal, state, and local laws. This policy applies to all terms and conditions of employment and admission to and educational experiences at the University. Inquiries about this policy statement may be directed to the Special Assistant to the President for Diversity and Global Education, the Director of Human Resources or designee(s).

FEDERAL AND STATE ACT COMPLIANCE

The Office of Public Safety at Wilkes University prepares and distributes the "For Your Safety" annual safety and security report. This document is prepared in compliance with Act 73 of 1988 of the Commonwealth of Pennsylvania and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, 20 USC §1092(f). This report is available in hard copy format upon request, during normal business hours, at the Office of Public Safety, 148 S. Main Street, UCOM Garage; the Office of Admissions, Chase Hall's Reception Area; and the Office of Student Affairs, Passan Hall, second floor. Additionally, an electronic copy of this report is available on the University website at: www.wilkes.edu/campuslife/safety/disclose.asp. In addition, daily logs and crime logs are available for review during normal business hours at the Office of Public Safety. Any questions regarding this report and the specific requirements of the Acts that govern its production can be addressed to Gerald C. Rebo, Manager of Public Safety, ext. 4984.

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INTRODUCTION

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MESSAGE FROM THE PROVOST

Wilkes University's faculty and staff are dedicated to the future success of our students. That dedication is reflected in the quality of mentorship, skillful advising, and excellent teaching of the University faculty and staff. It emerges in the challenging internships and undergraduate research experiences, exciting extracurricular activities, and interactive team-projects that support the Wilkes curriculum. Mostly that dedication is reflected in the integrated learning journey we have mapped for all students.

As an undergraduate at Wilkes University, you will develop your many gifts and refine them for a rich life engaged in profession, community, nation, and world. The Wilkes University undergraduate experience is a learning journey that integrates your intellectual, professional, cultural, social, and personal growth and infuses a commitment to and capacity for lifelong learning. The journey, which is grounded in high academic standards and guided by innovative teaching methodologies, links strong academic programs with abundant extracurricular activity and provides a variety of opportunities for experiential and collaborative learning. Community engagement, citizenship, ethics, leadership, and the development of effective communication skills are integral components of the Wilkes undergraduate experience. You will receive individualized advising and guidance that encourage you to both understand and broaden your individual learning styles. Your work ethic, passion for personal excellence, and a desire to contribute responsibly to society will lead you to success at Wilkes University and beyond.

The professional world you will enter after graduation is ever changing. Throughout your course of study at Wilkes, with the guidance of instructors and mentors in your major field, you will gain the depth of knowledge and skill to lead and excel in your chosen profession and to adapt to the changes in your professional world. Your general education in the liberal arts and sciences will afford you a great breadth of learning that will support the work in your chosen field of study and which you will find essential as you navigate and advance through your career. At graduation, you will have earned far more than a diploma; you will have acquired the capacity for self-knowledge and personal growth, an abiding understanding and respect for diverse perspectives, exceptional career preparation, and the passion to learn continually, well beyond your years with us.

C. Reynold Verret, Ph.D.
Provost
Wilkes University

WILKES UNIVERSITY

WILKES UNIVERSITY MISSION, VISION, AND VALUES

MISSION

To continue the Wilkes tradition of liberally educating our students for lifelong learning and success in a constantly evolving and multicultural world through a commitment to individualized attention, exceptional teaching, scholarship and academic excellence, while continuing the university's commitment to community engagement.

VISION

To be a nationally recognized independent university where intense personal engagement in exceptional academic and professional programs cultivates a lifelong commitment to learning, ethics, civic responsibility, and openness to cultural diversity.

VALUES

- Mentorship: Nurturing individuals to understand and act on their abilities while challenging them to achieve great things;
- Scholarship: Advancing knowledge through discovery and research to better educate our constituents;
- Diversity: Embracing differences and uniqueness through sincerity, awareness, inclusion and sensitivity;
- Innovation: Promoting creative scholarly activities, programs, ideas, and sustainable practices; and
- Community: Appreciating and collaborating with mutual respect to foster a sense of belonging.

Introduction

GUIDE TO LEARNING

Wilkes University is a dynamic community of learners that encourages students to take an active part in their education. Within the framework of a carefully considered and integrated curriculum, the University provides a broad variety of learning experiences designed to place individual learning at the center of academic life. Students will be challenged to think critically and creatively, invited to read and write extensively, and expected to become adept in quantitative reasoning and the use of contemporary technology as they prepare to become productive and responsible citizens. Mindful of the rapidly expanding body of knowledge and the wide variety of learning and teaching styles in this academic community, the University remains committed to the values articulated by Dr. Eugene S. Farley, Wilkes' founding President, and adopted by the Wilkes University faculty as a guide to learning.

An educated person:

- *seeks truth, for without truth there can be no understanding;*
- *possesses vision, for we know that vision precedes all great attainments;*
- *is aware of the diversity of ideas and beliefs that exists among all people;*
- *has faith in the power of ideals to shape the lives of each of us;*
- *knows that mankind's progress requires vigor, moral courage, and physical endurance;*
- *cultivates inner resources and spiritual strength, for they enrich our daily living and sustain us in times of crisis;*
- *has ethical standards by which to live;*
- *respects the religious convictions of all people;*
- *participates constructively in the social, cultural, and political life of the community;*
- *communicates ideas in a manner that assures understanding, for understanding unites us all in our search for truth.*

These values are supported by our University Mission, Vision, and Values, and are projected in the Institutional Student Learning Outcomes, which guide all learning opportunities and experiences at Wilkes University.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

(Adopted by faculty November 1, 2007)

The students will develop and demonstrate through course work, learning experiences, co-curricular, and extracurricular activities

- the knowledge, skills, and scholarship that are appropriate to their general and major field areas of study;
- effective written and oral communication skills and information literacy using an array of media and modalities;
- practical, critical, analytical, and quantitative reasoning skills;
- actions reflecting ethical reasoning, civic responsibility, environmental stewardship, and respect for diversity; and
- interpersonal skills and knowledge of self as a learner that contribute to effective teamwork, mentoring, and lifelong learning

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STUDENT LIFE AT WILKES: AN INCLUSIVE COMMUNITY

Creating and nurturing diversity of thought, culture, and belief are among the key values upon which Wilkes University was founded. These values are acknowledged in our motto, "Unity Amidst Diversity." Thus, Wilkes welcomes and supports a diverse campus community and invites students of all races, ethnicities, religions, and other diverse backgrounds to join our University family. The members of the Wilkes faculty and staff are committed to providing mentorship and support to all Wilkes students in order to empower them to meet their full potential and to ensure student academic and personal success.

In an effort to provide a welcoming and supportive environment for students of all backgrounds, we offer a range of programs, services, and activities as diverse as our campus community:

- an established and interconnected system of peer, faculty, and staff mentorship programs;
- a rich and varied schedule of extra-curricular activities and opportunities, including social events, multicultural activities for students, faculty, and staff, concerts, recitals, and lectures;
- specialized and individualized support for international and minority students;
- extensive list of opportunities for community service, internships, service-learning, and leadership;
- individualized academic advising;
- career advising and counseling;
- personal counseling and advising;
- academic support services;
- health and counseling services;
- a variety of housing options, including the Multicultural Residence Hall and First-Year Student Living-Learning Communities;
- accommodation for special dietary needs that includes attentiveness to religious and personal diet requirements;
- a comprehensive resources library; and
- a variety of merit- and need-based financial aid options.

Resources, services, and activities pertaining to Student Life are outlined in the following section of this Bulletin. Academic resources and support services are described in the "Academic Information" section of this Bulletin.

CAMPUS RESOURCES, SERVICES, AND PROGRAMS

Wilkes University is a community of learning in which co-curricular and extra-curricular activities complement academic life. Students, faculty, and staff work together to promote individual student development by means of a variety of activities, programs, organizations, and cultural opportunities. All campus organizations are open to all students, and all function in collaboration with faculty advisors and the Student Affairs staff.

THE OFFICE OF STUDENT AFFAIRS

The Student Affairs staff works with students in a holistic manner, providing guidance and support in students' pursuit of their educational goals and in their development as persons preparing to assume the responsibilities of maturely educated persons. The Office of Student Affairs works actively to coordinate the various aspects of student life and development at Wilkes. The Offices of Residence Life, Career Services, Student Development, Health and Wellness Services, Campus Counseling, Cooperative Education, University College, Upward Bound, ACT 101, Community Service, Athletics, and Campus Interfaith report to the Vice President for Student Affairs.

Wilkes takes seriously its commitment and responsibility to encourage students to discover their own abilities and potential and to assist them in making sound and independent decisions. Students are expected to consult regularly with academic instructors, faculty advisors, the Student Affairs Deans, department chairpersons, or academic deans regarding academic matters. Recognizing that students sometimes need additional guidance in resolving personal, social, or academic problems, however, the University has institutionalized within the Office of Student Affairs a variety of programs to assist and support students, individually and in groups. Staff members are specially trained and available to help students resolve problems, coordinate emergency situations, and handle referrals from members of the University community. The Vice President and Deans of Student Affairs, having familiarity with University resources, serve as ombudsmen, as well as "sounding boards," for student concerns.

Wilkes takes equally seriously its role in the development of the whole person and provides a wealth of programs for the social, cultural, and civic engagement of its students. Many of the programs offered or advised by units within the Office of Student Affairs contribute to the holistic nature of a Wilkes education.

The campus resources, services, and activities described in brief in this *Bulletin* are discussed more extensively in the online *Wilkes University Student Handbook*, which explains the University student governance system, outlines University regulations, and provides a directory of student activities.

RESIDENCE LIFE

The Residence Life Program at Wilkes is committed to providing a living environment that is supportive of academic pursuits while contributing significantly to personal growth.

The residence hall staff serves to help students enjoy and benefit from their on-campus living experience. Each residence hall is staffed by one or more Resident Assistants, each of whom has been selected on the basis of character, demonstrated qualities of leadership, and the ability to interact effectively with students. Throughout the year, the residence hall staff sponsors various educational and social programs for their residents. The Resident Assistants are also responsible for crisis management, discipline, maintenance requests, and ensuring that the University policies are upheld.

The Residence Life Program offers students a wide variety of residential options. Each residence hall has its own unique style, whether it is a traditional residence hall such as Evans, one of the older Victorian mansions such as Weiss, or an apartment-style residence hall like University Towers. Some residential spaces are reserved exclusively for students enrolled in the University Living-Learning Communities. Each residence hall has a full kitchen and laundry facilities. Single-sex or coed facilities are available. Rooms are equipped with cable television access, data ports, telephones, single beds, dressers, desks, desk chairs, and closet space.

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All resident students participate in the University Meal Plan. A variety of meal-plan and dining options are offered by the University and are described on the Dining Services Web site: <http://www.wilkesdining.com>.

STUDENT DEVELOPMENT

The Student Development Office enhances student life by offering leadership programs, experiential education opportunities, and a variety of extracurricular and social activities designed to complement students' classroom education. A few of the programs offered include the Cultural Series, Experiential Adventure Series, and the Weekend Entertainment Series. The Cultural Series introduces students to the world of art and performance by providing opportunities for students to experience visual art, music, theatre, and dance, both locally and in larger metropolitan areas such as New York City, Philadelphia, and Washington, D.C. The Experiential Adventure Series provides an alternative learning experience designed to challenge students to engage in physically demanding activities such as hiking, rock climbing, and white water rafting, which emphasize wellness and provide practical leadership tools and lessons on teamwork. The Weekend Entertainment Series gives students a variety of low-cost entertainment options to choose from each weekend.

An active Student Government, together with campus clubs and special-interest organizations, also provides an array of activities to enrich student life outside the classroom. More than 60 clubs and organizations are recognized by Student Government and the University. The University requires that all campus organizations be open to all students; consequently, groups that are exclusive do not exist on the Wilkes campus. Volunteer action and community service are a cornerstone of the Wilkes Mission and of the University's rich student life tradition, and, thus, eligibility for Student Government funding requires that all recognized clubs and organizations be involved actively in community service. Community Service activities are coordinated by the Office of Community Service, which maintains a current list of community partners.

An Inter-Residence Hall Council, an Off-Campus Council, and a Commuter Council organize activities for undergraduate students, and the Student Programming Board oversees a full schedule of social and cultural events at the University.

Student publications include the *Beacon*, a weekly student newspaper published during the academic year, the *Manuscript*, an annual journal of original student art, poetry, and fiction, and the *Ammicola*, the University student yearbook.

The University also maintains a television station and WCLH, an FM radio station that is operated by students; WCLH broadcasts daily at 90.7 MHz.

INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

Wilkes sponsors an active intramural sports program as well as intercollegiate competition in sixteen varsity sports. Varsity sports for women include basketball, cross-country, field hockey, lacrosse, soccer, softball, tennis, and volleyball. Men compete at the varsity level in baseball, basketball, cross country, football, golf, soccer, tennis, and wrestling. Varsity teams compete at the Division III level. Wilkes University is a member of the Middle Atlantic Conference (MAC), the Metropolitan Conference for Wrestling (MCW), the Eastern Collegiate Athletic Conference (ECAC), and the National Collegiate Athletic Association (NCAA).

The goal of the intramural program is to provide a comprehensive set of recreational and fitness activities throughout the academic year for the University community. Students, faculty, and staff participate in individual, dual, and team competitions in traditional sports as well as in innovative activities like plyometrics, free-throw competition, and aerobics. Events are organized in structured tournament competition and in one-day special events, using the indoor facilities of the Marts Center, the UCoM Recreation and Athletic Center, and the spacious grounds of the Ralston Field Complex.

Wilkes places the highest priority on the overall quality of the educational experience and on the successful completion of the student's academic program. The University, therefore, seeks to

establish and maintain an environment in which a student's athletic activities are conducted as an integral part of the entire educational experience. The varsity and intramural programs function, then, in an environment that provides for the health and welfare of the student-athletes and values cultural diversity, gender equity, principles of fair play, and amateur athletic competition throughout the University community.

CULTURAL AFFAIRS

A variety of programs, including lectures, exhibits, workshops, and performances, is provided to enhance life in the Wilkes community and to help individuals attain educational and career goals. The Sordoni Arts Gallery brings programming in the fine arts to both the campus and the Wilkes-Barre communities. The Center for Global Education and Diversity sponsors programming and activities that foster cross cultural and multicultural understand and provides space for people of different cultures to interact and learn from one another. Throughout the year, the Division of Performing Arts offers a regular schedule of dance performances, concerts and recitals, and dramatic and musical productions in the Dorothy Dickson Darte Center for the Performing Arts.

UNIVERSITY ACTIVITIES

In addition to the curricular and co-curricular activities sponsored by specific organizations and academic units, a number of all-campus and campus-community events is held each year. Family Visitation Day, Homecoming, Winter Weekend, and the Annual Block Party are typical of the social events that help to promote an active and involved study body. The University joins area cultural groups each year for the annual Cherry Blossom Festival and for the Fine Arts Fiesta, a four-day festival of music, drama, and the arts presented each spring on the Public Square in downtown Wilkes-Barre. A series of University sponsored concerts and lectures is presented throughout the academic year at the Dorothy Dickson Darte Center for the Performing Arts and in other venues on or close to campus. These University sponsored events are open to University students, faculty, and staff, and to members of the surrounding communities; admission for most events is free of charge. Consult the Events Calendar on the University Web site for schedules of events and admission information.

STUDENT SERVICES

Wilkes University provides a rich array of programs and services designed to support students, academically and personally, throughout their time at the University. Following are brief descriptions of these services and programs. Additional information about each program or service may be obtained from the Office of Student Affairs or by consulting the University Web site.

BOOKSTORE

Wilkes University and King's College, through Barnes & Noble College Booksellers, Inc., operate a joint bookstore facility on South Main Street, equidistant between the two campuses just off Public Square in downtown Wilkes-Barre. The "academic superstore" is designed to meet the specific needs of students at Wilkes and King's as well as those of the community at large. In addition to the standard Barnes & Noble bookstore stock, the Wilkes-King's Bookstore offers comprehensive textbook services, lounge chairs, tables, and a full service Starbucks Café, where students, faculty, staff, and community members regularly meet. The bookstore also houses a "spirit" shop that features logo merchandise for Wilkes University.

NEW STUDENT ORIENTATION PROGRAM

The transition from the directed work of the high school environment to the independent and more intensive work of the university environment is eased by introducing new students to the University and its services before classes formally begin. Two orientation periods—one during the summer and another in the days immediately preceding the start of the academic term—are set aside to assist new students in planning their academic programs and learning about the curriculum, available student activities, and about the campus and its many resources. Orientation sessions provide opportunities

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for each new student to meet with his or her academic advisor, to discuss personal and professional goals, and to begin to plan an academic course of study.

HEALTH AND WELLNESS SERVICES

The Office of University Health and Wellness Services maintains regular hours while the University is in session for the fall and spring semesters and is staffed by a Nurse Practitioner and a Registered Nurse. A physician is available at specified hours during the week. Appropriate referrals are made as necessary to community physicians and hospitals. The Office of University Health and Wellness Services does not provide clinic hours during the summer months.

In these times of escalating health care costs, all students enrolled at Wilkes University are required to have health insurance coverage and to provide proof of coverage.

CAMPUS COUNSELING

The Office of Campus Counseling assists students in resolving personal concerns or problems. Appointments are available throughout the day, and during the evenings and on weekends, if needed. Referrals to community agencies and other professionals are made as necessary. The Coordinator of Counseling works closely with student groups and the professional staff of the University to provide workshops and group sessions on areas of interest or concern. Testing services are also available to Wilkes students.

INTENSIVE ENGLISH PROGRAM

The mission of the Intensive English Program (IEP) at Wilkes University is to provide quality academic instruction in English as a second language (ESL) to both international and English-language learning students planning to pursue university studies in the United States. To this end, the IEP provides a curriculum, certified faculty, classroom materials, and teaching methods that are well grounded in both theory and practice and based on the latest research findings in the field of second language learning and teaching. This fully accredited program provides

- quality academic English language instruction for students whose native language is not English;
- preparation for further academic study in the U.S.;
- learner-centered instruction;
- advising for successful attainment of academic or professional goals;
- opportunities for intercultural experiences and cooperation;
- services relating to admission, counseling, academic life, and the general success of international students attending Wilkes University;
- English language instruction for personal growth; and
- instruction in accordance with Wilkes University's Writing Across the Curriculum (WAC) program.

All policies and governances found within this *Bulletin* apply to all students participating in the IEP at Wilkes University.

INTERNATIONAL STUDENT SERVICES

For international students, the Center provides immigration and visa information and assistance, as well as advice on academic, cultural, and personal issues. The Center also provides orientation to life in the United States and the American educational system, assists students in dealings with a variety of offices and constituencies, including U.S. and foreign government agencies, other campus offices and departments, and the community, and serves as advisor to the International Student Organization. These services are available to all international students, non-immigrants and immigrants alike.

ADVISING AND COUNSELING SERVICES FOR SPECIAL ACADEMIC AND STUDENT DEVELOPMENT PROGRAMS

Due to the intricacies of certain programs or requirements imposed by professional and graduate schools and external accrediting agencies, the University has identified advisors in a number of areas of interest. Specially trained Pre-Medical Advisors serve all students interested in professional or graduate school opportunities in medical or health-related fields. The Pre-Law Advisors work with students from any discipline who wish to go on to law school. The International Studies Advisors counsel students in matters pertaining to studying abroad and to career and professional opportunities in this field. The Office of Student Development counsels and advises students interested in a variety of internship possibilities. Information on any of these services is available in the Office of the Registrar, the Office of Student Affairs, and the Student Development Office.

UNIVERSITY COLLEGE

University College, housed in Conyngham Hall at 130 South River Street, is the point of entry and home for all undeclared students until they select their major field of study. The College provides academic support services and supplemental instruction for all enrolled and prospective students, administers the University's precollege enrichment programs, coordinates with the academic departments to provide an effective program of academic advisement for undeclared students, and houses the Disability Support Services of the University. The programs and services offered by University College are described in the following subsections.

Act 101 Program

A special program for students from Pennsylvania who need academic and financial support, the Act 101 Program allows educationally underprepared students to improve their skills in verbal and written communication, reading comprehension, mathematics, and problem solving, all in an effort to acquaint these students with and help them adjust to the many new experiences associated with a college education. The program provides for tutoring and counseling to enhance the student's potential for success in the college environment. Inquiries about Act 101 should be directed to the Act 101 Office in Conyngham Hall or to the Office of Admissions.

Career Services

The Office of Career Services is the liaison between the University and potential employers in business, industry, government, and educational institutions. Various services and workshops are offered to assist students at all stages of their career development. Students are encouraged to participate in the many programs offered by the Office of Career Services by registering at Conyngham Hall, located at 130 South River Street.

Day Care Service

The University provides partially subsidized day care service for children of full-time Wilkes students. The program offers regular day care services, which are provided by a specified group of approved local providers and available at a reduced fee to students enrolled full-time at Wilkes. Children must attend on a regular, scheduled basis in order to be eligible for the reduced fee. The Day Care Service Program is coordinated through University College.

Disability Support Services

If a student has a disability that qualifies under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act and requires accommodations, he or she should contact the Disability Support office in University College for information about applicable policies and procedures. The Disability Support office is located on the third floor of Conyngham Hall, Room 311.

Student Advisement

University College coordinates the Freshman Advising Program and regularly collaborates with and provides training for academic advisors throughout the academic year to ensure student success.

Specially selected faculty members and administrators have been designated as Freshman Advisors on the basis of their knowledge of curricular matters and, more generally, their knowledge of the

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University and its resources and services. Each freshman is assigned to a Freshman Advisor during the Summer Orientation period and will meet with this advisor regularly during the Orientation period and throughout the academic year to arrange schedules, discuss academic and career plans, and deal with problems or concerns as they arise. These faculty advisors add the special expertise of their disciplines to the advising process.

If the student has indicated a preferred major upon admission to the University, he or she will be assigned a Freshman Advisor from the relevant department or program at the beginning of his or her studies. Students who have not identified a major field of study at the time of admission to the University work with advisors from University College who have a special expertise in advising undeclared students. University College Advisors work with undeclared students until a major field of study has been selected; once a major field of study has been declared, the student is assigned to a departmental advisor in his or her chosen field of study.

Upward Bound Program

A federal program at Wilkes since 1967, the Upward Bound Program provides disadvantaged high school students with a college preparatory program of curricular and extracurricular activities designed to improve academic skills and self-confidence and to deepen curiosity and human understanding. Students attend weekly classes and tutoring and counseling sessions on campus. In the summer, the six-week residential program prepares students for fall classes and provides intensive career guidance.

UNDERGRADUATE ADMISSIONS

RECOMMENDED HIGH SCHOOL PREPARATION

In order to best prepare for the academic demands of collegiate study, undergraduate applicants to Wilkes University are strongly encouraged to follow a rigorous, college preparatory curriculum throughout their secondary educational experience. Such a curriculum generally includes four years of progressive course work in English, three years of mathematics, two years of science (including, at least, one laboratory component), three years of social studies, and an introduction to computing. While this schedule of progressive course work is not required, it is recommended strongly as a foundation for collegiate level study and for admission to the University. Many undergraduate degree programs at Wilkes University have additional college preparatory course requirements. General and special requirements for secondary course work are described more fully in the Admissions section of the Wilkes University Web site at

<http://www.wilkes.edu/pages/124.asp>.

Elective courses in the secondary educational experience should be drawn from academic subject areas and chosen with care to reflect individual interests and proposed college major areas of study. High school electives supportive of college academic majors include computer science, foreign language, communications, the fine and performing arts, and specialized technical courses.

Applicants whose collegiate preparation curriculum does not follow the pattern described may still qualify for admission to Wilkes University if there is other strong evidence of the student's readiness to engage in college-level work.

STANDARDIZED TESTS

The Scholastic Aptitude Test (SAT) of the College Entrance Examination Board or the Achievement College Test (ACT) is generally required of all applicants planning to enter Wilkes University directly from high school. Students should take one of these examinations before the second semester of the senior year in high school.

Wilkes is a member of the College Entrance Examination Board. Students communicating with the Educational Testing Center in Princeton, New Jersey, or in Los Angeles, California, should refer to the Wilkes University code number (CEEB): 2977.

APPLICATION FOR ADMISSION

Applications for admission to Wilkes University may be completed and submitted online or sent directly to the Wilkes University Office of Admissions. Information and instructions regarding secondary school transcripts and records, letters of recommendation (which are required for admittance to some programs), standardized test reports and entrance examinations may be obtained by contacting the Office of Admissions.

NOTE: Separate application must be made for the Pharmacy Program. Printed applications for the Pharmacy Program will be mailed to qualified applicants who are admitted to Wilkes University. Pre-Pharmacy applicants must also submit three letters of recommendation and successfully complete an interview with the School of Pharmacy's Admissions Committee to gain early admission to this program. A successful interview is also required for admission to Wilkes' nursing program. Qualified nursing applicants will receive an acceptance letter asking them to schedule an interview with the Nursing Admissions Committee. Applicants for the Pre-Medical Scholars programs as well as the Wilkes-Widener Ph.D. in Psychology and the Wilkes-Widener Doctor of Physical Therapy programs must note their interest on the application for admission and successfully complete an interview with the selection committee to qualify for acceptance into these programs. Applicants for the degree programs in Musical Theatre and Theatre must successfully complete an audition for the program and must complete an interview with the department faculty to gain admission into these programs. *In all cases, invitations to interview or audition are extended by the academic department(s) at their discretion.*

ACCEPTANCE FOR ADMISSION AND ADVANCED DEPOSIT

All applicants for admission to the University must submit 1) a completed and signed application for admission to the University, 2) an official copy of the most recent high school or college transcript or both, 3) SAT or ACT scores (either official copies or scores recorded on the official high school transcript), and 4) the \$35 application fee (\$15 for online applications).

After the application file is complete, the Office of Admissions will review the file, render a decision, and notify the applicant of that decision. Admissions decisions are made on a "rolling" basis, and notification is generally made within two to four weeks from the date the file is complete. A student may be required to complete an evaluative interview prior to the rendering of a final decision.

All students guarantee their place in the entering class by forwarding a \$300 tuition deposit to the Office of Admissions. May 1st is the priority deadline for receipt of deposits.

Wilkes University also accepts applications for the spring semester and summer session. Procedures are similar to those for students entering in the fall semester.

While Wilkes practices "rolling" admissions, the University reserves the right to close admission with a two-week notification.

ADMISSION OF TRANSFER STUDENTS

Wilkes University welcomes transfer students from other accredited colleges and universities for both the fall and spring semesters. Transfer students must submit an application for admission and a transcript from every post-secondary institution attended (even if no credits were earned). SAT or ACT scores may be required, and some transfer students may be asked to complete assessment tests prior to admission or registration for courses.

Admission of transfer students is conducted on a "rolling" basis. In addition to an admissions decision, transfer students will receive a free transcript evaluation

Applicants must be in good academic standing and must hold a minimum cumulative grade point average of 2.00 (C) at their current or most recently attended institution in order to be considered for admission to Wilkes University. All courses with a grade of 2.00 (C) or higher that are comparable to those in the curriculum at Wilkes and from recognized accredited institutions will be accepted for transfer. Enrollment in the life science majors (biology, chemistry, biochemistry, nursing, and pharmacy) is limited, and admission to programs in these areas is competitive. A successful interview is required for admission to Wilkes' nursing program. Qualified nursing transfer students will receive an acceptance letter asking them to schedule an interview with the Nursing Admissions Committee.

Introduction

Transfer students applying directly to the School of Pharmacy for entry into the professional school must additionally complete a School of Pharmacy application and forward three letters of recommendation to the School Admissions Committee. The applicant must also sit for the PCAT examination and submit official scores from the examination. After the file is complete, the School of Pharmacy may schedule a personal interview, as the School deems appropriate.

Transfer students from two-year institutions must complete a minimum of 60 credits at a baccalaureate degree-granting institution.

To graduate, all transfer students must complete a minimum of 30 credits (exclusive of advanced placement credit awarded by Wilkes) and a minimum of 50% of their major field (and any minor field) credits at Wilkes University.

All transfer students must satisfy the University's General Education Requirements. (See bulletin section entitled "General Education: The First Curricular Component" for an explanation of these requirements and associated student learning outcomes.) In order to accommodate the large number of incoming transfer students, the University makes every effort to recognize course work and apply credits that are transferred into the institution in satisfaction of the General Education Requirements or to make other accommodations to ease the transition from one institution to another. For example, students who transfer certain science courses or sequences of science courses into Wilkes may, with the approval of the appropriate Dean, be permitted to apply these courses or sequences to the requirements for Area II of the General Education Requirements. Approval of application of courses or sequences of courses to satisfy specific requirements in the General Education Curriculum is not automatic and is dependent upon a complete review and analysis of submitted transcripts (and other pertinent documentation, as requested). Transfer students and potential transfer students are, therefore, encouraged to consult with the Office of Admissions on these matters.

While course credits may be transferred to the University, grades earned in those courses accepted for transfer are not included in the computation of the cumulative grade point average earned at Wilkes University.

Transfer students should consult the section of this bulletin on Graduation Requirements for an explanation of institution-wide requirements for graduation.

University policy prohibits the Office of Admissions from knowingly admitting any Student who has been dismissed from any other college or university for any reason until a period of one year has elapsed from the time of dismissal. Students who have been placed on probation by another college or university will be considered on a case-by-case basis.

ADMISSION OF INTERNATIONAL STUDENTS

International students are defined as those who do not hold U.S. citizenship, who are not permanent residents of the U.S., or who do not hold resident alien status in the U.S.

International students must submit the following to be considered for admission to Wilkes University: 1) a completed application; 2) official results of the Test of English as a Foreign Language (TOEFL, STEP, Eiken, IELTS) or evidence of the successful completion of an accredited intensive English language program, or English must have been the language of instruction for the student; 3) Declaration of Finances Letter; 4) a letter of financial support; 5) official transcripts of all secondary or post-secondary work completed to date (all transcripts should also be accompanied with a translation if in a language other than English); and 6) and a copy of the secondary or post-secondary diploma or leaving certificate. International transfer students are encouraged to have a credit evaluation conducted by World Education Service (WES) or a similar agency.

Students should complete their application file by June 15 for admission in the fall semester and by November 15 for admission in the spring semester.

An I-20 form will only be issued after the application process is complete and the student has been admitted to the institution.

EARLY ADMISSION OF HIGH SCHOOL STUDENTS

Wilkes University will consider admission for exceptionally gifted and motivated students who wish to enter the University without completing the requirements for a high school diploma. In order to be considered for admission to the University, applicants must provide all the materials listed under the Acceptance for Admission and Deposit section of this bulletin and at least one letter from a high school official granting approval for early admission. Applicants must also successfully complete an interview with the Office of Admissions.

ADMISSION OF PART-TIME STUDENTS

Those who wish to enroll as part-time students must contact the Office of Admissions to discuss their plans and to obtain an Application for Admission. Students who have completed college-level work at another institution must submit an official transcript of their work as part of the admission process. Those who have completed no college work must submit an official high school transcript as evidence of high school graduation or GED. All documentation should be sent to the Admissions Office.

PART-TIME TO FULL-TIME STATUS

Part-time students who wish to enroll as full-time students must consult with the Director of Part-time Programs as the first step in this process. Students who have completed 30 or more credits and have maintained a cumulative grade point average of 2.00 (C) or higher will be accepted as full-time students. Students who have completed fewer than 30 credits will be required to provide high school transcripts and appropriate test scores in support of their petition to enroll full-time before a decision will be made. Requests for change of status must be made through the Office of Admissions.

READMISSION TO THE UNIVERSITY

Students who have been enrolled full-time at Wilkes University and have terminated their studies for one semester or more, and who wish to return as full-time students, must contact the Student Affairs Office and arrange an interview with one of the deans as the first step in the readmission process.

CAMPUS VISITS

A campus visit and an interview are strongly recommended for all students interested in studying at Wilkes University. Students and family members may schedule an interview by calling or writing the Office of Admissions. Campus visits may include an interview with an admissions professional, appointments with faculty members, sessions with coaches and co-curricular leaders, campus and residence hall tours, attendance in selected classes, and financial aid counseling.

In addition to individualized campus visits, the office of Admissions hosts a number of Open Houses throughout the academic year. These visitation days usually include a general meeting with the admissions staff, panel discussions with current students and administrators, academic departmental meetings, campus tours, financial aid sessions, and a complimentary meal. Specific information about the agenda and dates for these days is available from the Office Admissions and on the Wilkes university Web site: <http://www.wilkes.edu>.

FINANCIAL AID, TUITION, AND FEES

General Information

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Veterans' Assistance (VA Programs)

Financial Aid for Part-time Students

Financial Aid for Students Seeking a Second Degree

Financial Aid for Pharmacy Students in Years Five and Six

Summary of Financial Assistance Programs: Scholarships, Grants, Loans, Employment

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Renewal of Financial Aid

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Student Expenses

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Fall and Spring Full-time Tuition

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Intersession Tuition

Alternative Payment Options: Deferred (employer reimbursed) & Third-Party Payment
Policy; Installment Payment Plan

Tuition Exchange

Refunds

STUDENT EXPENSES

The following chart summarizes student expenses for the 2009-10 academic year, which officially begins with the Summer Session, 2010. Students are referred to the course descriptions in this *Bulletin* for laboratory and other fees associated with specific courses. Inquiries about particular charges should be addressed to the Controller's Office.

STUDENT EXPENSES FOR 2010-11

Full-time Undergraduate Tuition & Fees	Assessment	Per Semester	Annual Total
Tuition (12 - 18 credits)*	Per Semester	\$12,901	\$25,802
General University Fee	Per Semester	\$368	\$736
Technology Fee	Per Semester	\$141	\$282
Student Center Fee	Per Semester	\$26	\$52
Recreation Fee	Per Semester	\$31	\$62
Student Activity Fee	Per Semester	\$122	\$244
Total Full-time Undergraduate Tuition & Fees		\$13,589	\$27,168

School of Pharmacy First Professional Tuition & Fees	Assessment	Per Semester
Tuition (12-18 credits)*	Per Semester	\$13,711
General University Fee	Per Semester	\$355
Pharmacy Experiential Fee (Begins P-1)	Per Semester	\$480
Technology Fee	Per Semester	\$141
Student Center Fee	Per Semester	\$26
Recreation Fee	Per Semester	\$31
Student Activity Fee	Per Semester	\$122
Total School of Pharmacy First Professional Tuition & Fees		\$14,899

* Credits above 18 will be assessed at the rate of \$715 per credit hour.

Part-time Undergraduate Tuition & Fees	Assessment	Rate
Summer Study (all sessions)	Per Credit Hour	\$495 per credit
Fall & Spring Sessions (1 - 11 credit hours)	Per Credit Hour	\$715 per credit
Excess Credit Hours	Per Credit Hour	\$715 per credit
Accelerated BBA Degree	Per Credit Hour	\$350 per credit
General University Fee	Per Credit Hour	\$31 per credit
Technology Fee	Per Credit Hour	\$31 per credit
Tuition (Senior Citizens)	Per Credit Hour	\$357.50 per credit

Audit Fees (Undergraduate Courses):	Assessment	Rate
Full-time Undergraduate and Pharmacy Students	No charge	---
Part-time Undergraduate Students	Per Credit	\$357.50
Senior Citizens	Per Credit	\$20
Other Mandatory Fees		
Applied Music Fees @ \$330 per credit		

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1 credit (14 30-minute private lessons)	Per credit	\$330
2 credits (14 60-minute private lessons)	Per credit	\$660
Graduation Fee	One Time	\$160
Matriculation Fee	One Time	\$135
Undergraduate Application & Admission Fees	One Time	\$40
Application Undergraduate		
Online Application Undergraduate	One Time	\$20
Online International Undergraduate	One Time	\$40
Online Transfer Admission	One Time	\$20
Online Freshman Admission	One Time	\$20

Miscellaneous University Fees

	Assessment	Rate
Acceptance Tuition Deposit	One Time	\$300
Challenge Exams	Credit Hour	\$90
Field Masters Double	3 Weeks	\$1045
Field Masters Single	3 Weeks	\$1045
Liability Insurance	Annual	\$50
Medical Technology	Semester	\$1360
Medical Insurance (Student)	Insurance coverage required for both semesters; students must show proof of coverage.	
Nursing Testing (6 semesters; Soph-Sr)	Semester	\$70
Nursing Transfer of Credits	Credit Hour	\$90
Replace Lost ID Card	Each	\$30
Returned Check Charge	Each	\$50
Room Reservation Deposit	Annual	\$100
Study Abroad	Per Semester	\$75
Summer Room Rental	Per Week	\$200
Televideo Fee	Per Course	\$50
Transcript/Verification - Same Day	Each	\$20
Transcript Fee	Each	\$15
Transcript Surcharge - Fax	Each	\$20
John Hopkins (No Lab or University Fees Apply)	Credit Hour	\$70
Young Scholars (Dual Enrollment billing School Districts)	Credit Hour	\$210
Young Scholars	Credit Hour	\$70

Exceptions

Senior Citizen Audit, no attached fees	Per Credit	\$20
Senior Citizens Discount (62 and older)	Per Credit	\$357.50

Summer Co-op and Internship (all attached fees full price)	Per Credit	\$357.50	
Audit Courses	Per Credit	\$357.50	
Bais Uri Perlman - Bais Menachem School - plus fees	Per Credit	\$357.50	

Residence Hall Rates

Dorm Style	Per Semester	\$ 3,440	\$ 6,880
Single Room	Per Semester	\$ 3,615	\$ 7,230
Apartment Style	Per Semester	\$ 3,815	\$ 7,630

Meal Plans

Colonel Blue	Per Semester	\$ 1,955	\$ 3,910
Colonel Blue Plus	Per Semester	\$ 2,055	\$ 4,110
Colonel Gold	Per Semester	\$ 2,245	\$ 4,490
Medallion Gold Plus	Per Semester	\$ 2,295	\$ 4,590
Senior Plan	Per Semester	\$ 1,000	\$ 2,000
25 Meal Plan	Per semester only	\$160	
40 Meal Plan + \$100 Dining Dollars		\$360	
50 Meal Plan		\$310	
Summer Meal Plan (Creative Writing: 10- Meal Block and Residency Meals)	Per Week	\$140	
10 Block Summer Meal Plan	Per semester only	\$62.50	
25 Block Summer Meal Plan	Per semester only	\$150.00	

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PAYMENT OF CHARGES

Prior to the beginning of each semester, invoices listing all current semester charges and approved financial aid are mailed to all registered students. All payments may be mailed directly to

Wilkes University - Student
P.O. Box 8500-54693
Philadelphia, PA 19178-4693

Visa, Discover, and MasterCard payments can be made on the Wilkes University web site (www.wilkes.edu) or by calling the Student Services Center at (570) 408-2000. Any questions concerning charges or payments should be directed to (570) 408-2000 or onestop@wilkes.edu. Payments may also be made in person at the Student Services Center located on the first floor of University Center on Main (UCoM).

Students who fail to pay all indebtedness to the University shall not be permitted to receive any degree, certificate, or transcript of grades, nor shall they participate in Commencement activities.

Fall and Spring Full-time Tuition

The unfunded cost of full-time tuition and fees will be paid or satisfactory arrangements made with the Office of the Controller two weeks before the day on which classes begin. Unfunded costs are defined as the total of all appropriate charges for tuition, fees, room and board, etc., less the total of all approved financial aid awarded or credited to the student account for each semester or other instructional period. Satisfactory arrangements are defined as

- a. enrollment in the Installment Payment Plan (call the Office of the Controller at 570-408-4658 for more information);
- b. participation in the Deferred Employer Reimbursement plan;
- c. enrollment in one of the third-party, sponsored tuition coverage plans (ROTC Scholarship, Bureau of Vocational Rehabilitation, Office of the Blind, etc.).

If the payment in full or satisfactory arrangements are not made two weeks before the first day of class each semester, the registration for that semester may be cancelled and the student may not be allowed to attend classes. Also, a financial hold will be placed on any tuition account with an open balance. In order to be re-enrolled and re-registered, the student may be required to pay a late registration fee of \$50 in cash before registering.

Summer, Fall, and Spring Part-time Tuition

Charges for summer and part-time tuition and fees must be paid within full two weeks from the first day of classes unless covered by the Deferred Employer Reimbursement policy. The deferred payment policy is described on the next page.

Intersession Tuition

Tuition charges for intersession semesters must be paid in full two weeks before the first day of class. The deferred payment option does not apply to intersession charges.

Deferred Payment Policy (Employer Reimbursed) & Third Party Payment Policy

Deferred payments for employer reimbursement and third party payer arrangements will be permitted, provided the student makes application, receives approval, and delivers the completed documents two full weeks before classes begin. Graduating seniors are not eligible for the deferred payment option.

Monthly Payments

Wilkes has developed an interest-free, semester-based Installment Payment Plan to help ease the burden of financing an education. Arrangements may be made to finance the total unfunded cost of tuition and fees.

The following are some of the financial institutions that provide educational loans for parents and students:

Key Education Resource Group for information, call 1-800-key-lend
 PNC Bank Resource Loan for information, call 1-800-762-1001
 First Union Bank of Delaware for information, call 1-800-504-4097

VISA/MasterCard

Wilkes University accepts VISA and MasterCard for tuition and fee payments at our web site, www.wilkes.edu.

Tuition Exchange

Wilkes University is a member of The Tuition Exchange and CIC tuition-exchange plans, which provide limited opportunities for children of employees from one college or university to enjoy tuition remission benefits at another institution. Students who are dependents of employees of other colleges and universities should consult the Tuition Exchange Liaison Officer at their home institutions to determine if they qualify for this program.

Refunds

Students who officially withdraw from courses may be eligible for a partial refund of tuition charges (see section in this *Bulletin* on Official Withdrawal). Resident students who withdraw from the University may also qualify for a prorated refund of room and board charges. Refunds are based on the official date of withdrawal as noted by Student Services and the Registrar.

Financial aid received by students who withdraw may also be adjusted. See the section in this *Bulletin* on Financial Aid regarding adjustment to financial aid based on withdrawals.

Students suspended from the University for disciplinary reasons will forfeit all refunds.

Students who withdraw from the University or from specific classes during the semester will be entitled to an adjustment of tuition, fees, and room and board charges according to the following refund schedule.

Refund Schedule*

Circumstance	Time of Withdrawal	Refund
Cancellation of Enrollment	The University will cancel 100% of the tuition charges, less a deposit of \$300, if written notice of cancellation is received by Student Services and the Office of the Registrar on or before the first day of classes. Failure to submit proper written notification will result in the assessment of full charges.	
Total Withdrawal	Policy guidelines for refunds processed after the first day of classes are as follows: Beginning with the 2008-2009 academic year, students who withdraw from Wilkes will be entitled to an adjustment of tuition, fee, and room and board charges according to the following refund schedule:	
	First week	100%
	Second week	85%
	Third week	80%
	Fourth week	75%
	Fifth week	70%
	Sixth week	60%
	Seventh week	55%
	Eighth week	50%
	Ninth week	40%
	After ninth week	no adjustment
Summer Sessions	First week of first or second sessions and first two weeks of evening session	50%
	After stated period	No refund
Weekend College	Through second weekend	50%

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	After second weekend	No refund
Change from Full-time to Part-time Status and Reduction of Part-time Load	Above time-schedule applies for courses dropped	Charges based on the number of credits after the withdrawal

Room and Board:

Room

The institution will refund housing rental charges, less a deposit of \$100, so long as written notification of cancellation is made to the Director, Residence Life Office, on or before the first day of classes each semester. After the first day of classes, charges will be adjusted in accordance with the above schedule.

Board

The institution will refund board charges in full if written notification of cancellation is made to the Director, Residence Life Office, on or before the first day of classes each semester. After the first day of classes, charges will be adjusted in accordance with the above schedule.

** Deposits are non-refundable. Refunds for special sessions (i.e. sessions that do not correspond to the calendar outlined above) will be calculated by the Office of the Controller upon student request.*

FINANCIAL AID

Wilkes University subscribes to the belief that the primary responsibility for financing the cost of higher education rests with the student and his or her family, and Wilkes is committed to providing resources to make that cost affordable. Toward that end, the University maintains an extensive program of need-based and merit-based financial assistance in the form of scholarships, grants, loans, and part-time employment to assist qualified students. This program is made possible by substantial annual gifts from generous friends and alumni of the University, which are combined with a variety of funding types provided by the federal and state governments.

Financial assistance for qualified students is awarded in the form of financial aid packages consisting of a combination of grants, scholarships, loans, and employment opportunities. All students are encouraged to apply for both need-based and merit-based financial assistance.

Students with questions about financial aid or students seeking applications for financial aid should contact the Student Services Center or Admissions Office. More detailed information regarding the financial aid programs and requirements is included in the Consumer's Guide to Financial Aid available on the Wilkes University Web Site at

<http://www.wilkes.edu/Include/admissions/20102011CONSGUIDFA.pdf>

Types of Financial Aid

Financial aid packages are developed for students on an individual basis and usually consist of one or more of the following types of aid. The financial aid options described in this section are available to qualified full-time students who are identified as "making progress toward degree completion" (i.e., students who successfully complete a minimum of 24 credits within a calendar year and who are declared "in good standing" at the University). For information about financial aid for part-time students, see the section "Financial Aid for Part-time Students."

Scholarships: Outright gift assistance that is not repayable by the recipient and is usually based on factors other than demonstrated financial need, although some scholarships are a combination of need and merit. Several academic areas at the University, including Biology, English, Music, Nursing, Sociology, and Theatre, have scholarships available for qualified students.

Grants: Outright gift assistance that is not repayable by the recipient and based on demonstrated financial need of the applicant and the family. Many states in addition to Pennsylvania provide financial assistance in the form of grants for residents of their states. Residents of states other than Pennsylvania should contact their high school guidance office for information pertaining to an individual state's aid program. These states include Connecticut, Delaware, Maryland, Massachusetts, Ohio, Rhode Island, Vermont, and West Virginia.

Loans: Financial Assistance for which the recipient assumes the obligation to repay the amount of the funds received. Most education loans provide for payment of principal and interest to begin sometime after the student graduates or stops attending an approved institution on at least a half-time basis. Repayment of the Federal Direct PLUS Loan may be deferred or will begin within a short time after the funds are disbursed. Loan amounts vary and are determined according to class standing, which is defined by Wilkes University as follows:

	Freshman	any student in good academic standing who has completed 0 - 29 credits
	Sophomore	any student in good academic standing who has completed 30 - 59 credits
	Junior	any student in good academic standing who has completed 60 - 89 credits
	Senior	any student in good academic standing who has completed 90 credits or more.

See "Academic Standing, Probation, and Ineligibility" in this bulletin for a definition of academic standing.

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Employment: Financial assistance that a student may earn by working on campus in part-time or full-time positions and for which the student is paid in the form of a monthly check. On campus jobs are listed on line at <http://www.wilkes.edu/pages/1672.asp>. Eligibility for participation in the Wilkes University work-study program is not a guarantee of employment; employment and job placement will depend upon the type and number of jobs available.

The Office of Career Services also operates a Job Location Development (JLD) program to help students obtain employment opportunities off-campus. Students participating in the JLD program are paid by the employer for whom they work.

Financial Aid Application Procedures

NOTE: Students applying for financial aid must be currently enrolled or accepted for admission to Wilkes University before their application for financial aid will be considered.

All applicants for financial aid must

1. complete the Free Application for Federal Student Aid (FAFSA): <http://www.fafsa.ed.gov/index.htm>;
2. complete the appropriate state application for financial aid;
3. if applying for University administered aid, complete applications for Federal Pell Grant and a State Grant or Scholarship (if available); and
4. if applying for the Federal Direct Stafford Loan, or the Federal Direct PLUS Program, or both, complete the appropriate promissory note application.

Renewal of Financial Aid

Need-based financial aid is awarded on an annual basis. The renewal of need-based financial aid is not automatic and failure to submit renewal applications may result in the loss of financial aid. Students must, therefore, reapply for financial assistance each year, and renewal of awards is based on the timely completion of all required documents and on the student's continued eligibility for assistance.

The deadline for requests for renewal of financial aid is May 1. In addition to demonstrating continued financial need, students must also meet specific academic progress requirements to qualify for renewal. These requirements are explained in detail in the *Consumer's Guide to Financial Aid*.

Merit-based scholarships are renewable for four years, provided that all terms and conditions are met.

Types of Financial Aid

Financial aid packages are developed for students on an individual basis and usually consist of one or more of the following types of aid. The financial aid options described in this section are available to qualified full-time students who are identified as "making progress toward degree completion" (i.e., students who successfully complete a minimum of 24 credits within a calendar year and who are declared "in good standing" at the University). For information about financial aid for part-time students, see the section "Financial Aid for Part-time Students."

Scholarships: Outright gift assistance that is not repayable by the recipient and is usually based on factors other than demonstrated financial need, although some scholarships are a combination of need and merit. Several academic areas at the University, including Biology, English, Music, Nursing, Sociology, and Theatre, have scholarships available to qualified students.

Grants: Outright gift assistance that is not repayable by the recipient and based on demonstrated financial need of the applicant and the family. Many states in addition to Pennsylvania provide financial assistance in the form of grants for residents of their states. Residents of states other than Pennsylvania should contact their high school guidance office for information pertaining to that particular state's aid program. These states include Connecticut, Delaware, Maryland, Massachusetts, Ohio, Rhode Island, Vermont, and West Virginia.

Loans: Financial assistance for which the recipient assumes the obligation to repay the amount of the funds received. Most educational loans provide for payment of principal and interest to begin sometime after the student graduates or stops attending an approved institution on at least a half-time basis. Repayment of the Federal Direct PLUS Loan may be deferred or will begin within a short time after funds are disbursed. Loan amounts vary and are determined according to *class standing*, which is defined by Wilkes University as follows:

- Freshman any student in good standing who has completed 0-29 credits
- Sophomore any student in good standing who has completed 30-59 credits
- Junior any student in good standing who has completed 60-89 credits
- Senior any student in good standing who has completed 90 credits or more

See "Academic Standing, Probation, and Ineligibility" section of this *Bulletin* for an explanation of academic standing.

Employment: Financial assistance that a student may earn by working on campus in part-time or full-time positions and for which the student is paid in the form of a monthly check. On campus jobs are listed on line at <http://www.wilkes.edu/pages/1672.asp>. Eligibility for participation in the Wilkes University work-study program is not a guarantee of employment; employment and job placement will depend upon the type and number of jobs available.

The Office of Career Services also operates a Job Location Development (JLD) program to help students obtain employment opportunities off-campus. Students participating in the JLD program are paid by the employer for whom they work.

Withdrawal - Return of Financial Aid Funds

In accordance with federal regulations, those students who receive federal financial aid and who withdraw from the University during the first 60% of a semester will have their federal financial aid (Pell Grants, Supplemental Educational Opportunity Grants, Academic Competiveness Grant, SMART Grant, Perkins Loans, Nursing Loans, Stafford Loans and PLUS Loans) adjusted based on the percentage of the semester completed prior to the withdrawal. That is, students will be entitled to retain the same percentage of the federal financial aid received as the percentage of the semester completed. This percentage is calculated by dividing the number of days in the semester (excluding breaks of five days or longer) into the number of days completed prior to the withdrawal (excluding breaks of five days or longer). The date of withdrawal will be the date the student begins the withdrawal process at the Registrar's Office unless attendance in class is documented after that date; in that case, the last date of documented attendance will be the official date of withdrawal. (See section on Withdrawals in this Bulletin.)

Students who do not follow the official withdrawal procedure but who stop attending classes for all of their courses will be considered to have withdrawn at the 50% point of the semester unless attendance is documented after that time. There will be no adjustment to federal financial aid after the completion of at least 60% of the semester.

Once the amount of the federal fund to be returned has been calculated, the funds will be returned in the following order:

- Unsubsidized Stafford Loans
- Subsidized Stafford Loans
- PLUS Loans
- Perkins Loans
- Pell Grant
- Supplemental Educational Opportunity Grants (S.E.O.G.)
- Academic Competitiveness Grant (ACG)
- SMART Grant
- Nursing Loans

Pennsylvania and other state grants will be adjusted in accordance with the agency's stated guidelines. It is expected that PHEAA Grant funds will be reduced by the same percent reduction in tuition received by a student when withdrawing from a course or courses.

Wilkes University grant and scholarship funds will be adjusted based on the percentage of reduction of tuition received by a student when withdrawing from the University.

Introduction

Please note that students who receive a refund of financial aid prior to withdrawing from the University may owe a repayment of federal financial aid funds received. Students will be contacted by the Student Services Center in such situations and will be given 30 days to repay the funds to the University. Students who fail to return the unearned portion of federal financial aid funds given to them will become ineligible for continued receipt of financial aid until such time as the repayment is made.

Veterans' Assistance Programs (VA)

This special program provides a wide range of benefits to those who have served in the armed forces and, in some cases, to the dependent children of veterans. Interested persons should contact their local VA Office to obtain information concerning GI Education Assistance, Veterans Education Programs, Veterans Rehabilitation, Veteran Educational Loans, the Veteran Work-Study Program, and other sources of Veterans Assistance. All questions pertaining to the VA Assistance Program at Wilkes University should be directed to the Student Services Center.

Financial Aid for Part-time Students

The Pell Grant, Supplemental Educational Opportunity Grants (S.E.O.G.), Academic Competitiveness Grants (ACG), SMART Grant, PHEAA Grant, College Work-Study, Nursing Loan, Federal Direct Stafford Loan, and the Federal Direct Parent Loan for Undergraduate Students (Direct PLUS Loan) are available to part-time students. Interested students must complete the Free Application for Federal Student Aid (FAFSA) and the appropriate loan applications in order to apply for these programs. In addition to financial need, eligibility is based on enrollment status. Limited funds from the S.E.O.G. Program are available to part-time students who demonstrate exceptional financial need. Except for the Pell Grant program, students must be enrolled at least half-time to qualify for financial aid. In addition, there are various private educational loans available to part-time students. Contact the Student Services Center for more information.

Financial Aid for Students Seeking a Second Degree

Only the Federal Direct Stafford Loan is available to students seeking a second degree. The Free Application for Federal Student Aid (FAFSA) and the appropriate promissory notes must be completed to determine eligibility for these programs. In addition, there are various private educational loans available to students who are seeking a second degree. Information is available on the Wilkes Web site.

Financial Aid for Pharmacy Students in Years Five and Six

Years five and six of the pharmacy program entail course work that is considered to be at the post-baccalaureate level; this means that, for financial aid purposes, years five and six of the program are identified as "professional or graduate level." Therefore, students enrolled at this level of study in the Pharmacy Program are considered "independent" for financial aid purposes and qualify only for financial aid available to graduate and professional students. This financial aid includes the subsidized and unsubsidized Direct Stafford Loans (with an annual loan maximum of \$20,500), Graduate Direct PLUS Loans, and private loans only. Fifth- and sixth-year Pharmacy students do not qualify for any federal, state, or institutional grants or scholarships.

Financial Assistance Programs - Summary*

SCHOLARSHIPS		
Scholarship	Criteria, Qualifications, Requirements, Application(s), & Information	Filing
Wilkes University Scholarship Wilkes Presidential Scholarship Wilkes Deans' Scholarship Wilkes Commitment Award	Admission to the University SAT or ACT scores Class rank for incoming freshmen Continued eligibility for undergraduate upperclassmen Questions? Contact Wilkes Office of Admissions or Wilkes Student Services Center	Inco

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Wilkes University Transfer Student Scholarship	Admission to the University Transfer credit evaluation Continued eligibility for undergraduate upperclassmen Questions: Contact Wilkes Office of Admissions or Wilkes Student Services Center	
Wilkes Leadership Scholarship	Based on appointment to or achievement of leadership roles in student organizations Contact specific student organizations regarding application for leadership roles	
Wilkes Named Scholarships	Awarded by various academic and administrative departments based on criteria set by scholarship donor For a complete listing of Named Scholarships contact the Development Office Incoming students contact Wilkes Office of Admissions	
Performance Award	Determination of merit eligibility and audition required Limited to Theatre Arts or Musical Theatre majors and participants in music ensembles Questions? Contact Wilkes Office of Admissions.	
Room & Board Scholarship	Awarded to Residence Assistants. For Resident Assistant Application, contact Residence Life Office.	
ROTC Scholarship	Apply for ROTC through the Wilkes ROTC Office Questions? Contact the Wilkes ROTC Office.	
<p>GRANTS</p> <p>All students applying for Federal, State, and Wilkes grants must first complete an Free Application for Federal Student Aid (FAFSA) The FAFSA must be filed prior to application for all grants For information and a copy of the application form, go to: http://www.fafsa.ed.g</p>		
Grant	Criteria, Qualifications, Requirements, Application(s), & Information	
Federal Academic Competitiveness Grant (ACG)	FAFSA http://www.fafsa.ed.gov/index.htm Pell eligible freshmen and sophomores who meet grant criteria Questions? Contact Wilkes Student Services Center.	
Federal Pell Grant	FAFSA http://www.fafsa.ed.gov/index.htm Questions? Contact Wilkes Student Services Center.	
PHEAA Grant	FAFSA http://www.fafsa.ed.gov/index.htm Application and Information available at http://www.pheaa.org/ Questions? Contact PHEAA.org or Wilkes Student Services Center	
Federal Supplemental Education Opportunity Grant (SEOG)	FAFSA http://www.fafsa.ed.gov/index.htm Questions? Contact Wilkes Student Services Center	
Federal SMART Grant	FAFSA http://www.fafsa.ed.gov/index.htm	

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	<p>Pell eligible juniors and seniors who meet criteria</p> <p>Questions? Contact Wilkes Student Services Center</p>	
Wilkes Need-Based Grant	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>For information, contact Wilkes Student Service Center</p>	Upp Inco 1
Office of Vocational Rehabilitation Grant	<p>FAFSA http://www.fafsa.edu.gov/index.htm</p> <p>Application required through Office of Vocational Rehabilitation</p> <p>Questions? Contact the Office of Vocational Rehabilitation</p>	Prio
<p>LOANS</p> <p>All students applying for loans <i>must first complete and file the</i> Free Application for Federal Student Aid (FAFSA) <i>The FAFSA must be filed prior to application for Federal loans</i> For information and a copy of the application form, go to: http://www.fafsa.ed.gov/</p>		
LOAN	Criteria, Qualifications, Requirements, Application(s), & Information	Filin
Federal Nursing Student loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>No additional application required.</p> <p>Based on major and extreme financial need.</p> <p>Limited funds available.</p> <p>Questions? Contact Wilkes Student Services Center</p>	Upp Inco 1
Gulf Oil Loan	<p>FAFSA http://www/fafsa.ed.gov/index.htm</p> <p>No additional application required.</p> <p>Based on extreme financial need.</p> <p>Limited funds available.</p> <p>The Gulf Oil Loan is offered at the discretion of the Financial Aid Director.</p> <p>Contact Wilkes Student Service Center</p>	Upp Inco 1
Rullison Evans Loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>No additional application required.</p> <p>Based on extreme financial need.</p> <p>Limited funds available.</p> <p>The Rullison Evans Loan is offered at the discretion of the Financial Aid Director.</p> <p>Contact Wilkes Student Service Center</p>	Upp Inco 1
Federal Direct Stafford Loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Online Student Loan Entrance Counseling: First time borrowers must complete Federal Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action</p> <p>First time borrowers must complete the loan application process and Master Promissory Note (MPN) through the Federal Direct Loan Program. The MPN is good for ten years as long as lender participates in the program and student remains enrolled.</p> <p>Online Student Loan Entrance Counseling</p>	Six t proc

	<p>Contact Wilkes Student Services Center</p>	
Federal Direct Unsubsidized Stafford Loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Online Student Loan Entrance Counseling: First time borrowers must complete Federal Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action</p> <p>First time borrowers must complete the loan application process and Master Promissory Note (MPN) through the Federal Direct Loan Program. The MPN is good for ten years as long as lender participates in the program and student remains enrolled.</p> <p>Contact Wilkes Student Service Center</p>	
Federal Direct Parent Loan for Undergraduate Students (PLUS)	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Federal Direct PLUS Loan Application to be completed annually.</p> <p>Online Student Loan Entrance Counseling - First-time borrowers must complete Federal Direct Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action</p> <p>First time borrowers must complete a Master Promissory Note the Federal Direct Loan Program.</p> <p>For information and loan application go to http://www.aesuccess.org/find_aid_for_school/parent_plus/index.shtml</p> <p>Contact Wilkes Student Service Center</p>	
Federal Direct Graduate PLUS Loan (Graduate level loan for independent students)	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Online Student Loan Entrance Counseling - First-time borrowers of Graduate PLUS must complete Federal Student Loan Entrance Counseling at https://www.studentloans.gov/myDirectLoan/index.action</p> <p>Federal Direct Graduate PLUS Loan application must be completed annually. First-time borrowers must complete a Master Promissory Note (MPN) through the Federal Direct Loan Program.</p> <p>For information and loan application go to http://www.aesuccess.org/fin_aid_for_school/graduate_plus/index/shtml</p> <p>Contact the Wilkes Student Services Center.</p>	
<p>STUDENT EMPLOYMENT</p> <p>All students applying for Federal or State College Work-Study Programs <i>must first</i> Free Application for Federal Student Aid (FAFSA)</p> <p>The FAFSA must be filed <i>prior to</i> application for Federal or State Work-Stu</p> <p>For information and a copy of the application form, go to http://www.fafsa.ed.</p>		
PROGRAM	CRITERIA, QUALIFICATIONS, REQUIREMENTS, APPLICATION(S), & INFORMATION	

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Federal College Work-Study Program	FAFSA http://www.fafsa.ed.gov/index.htm Wilkes Position Hiring Form to be completed during the hiring process Verified Employment documents: I9, W4 forms Questions? Contact the Wilkes Student Services Center	Prio
State College Work-Study Program	FAFSA http://www.fafsa.edu.gov/index State Work-Study Program Application Verified Employment documents: I-9; W-4 forms Questions? Contact the Wilkes Student Services Center	Prio
Institutional Employment Program	Limited positions available based on funding for those students who do not qualify for Federal Work-Study funds Wilkes Position Hiring Form to be completed during the hiring process Verified Employment documents: I-9; W-4 forms Questions? Contact the Wilkes Student Services Center	Prio

ACADEMIC INFORMATION

GENERAL INFORMATION

Wilkes' commitment to developing and nurturing a passion for lifelong learning in students of all ages is reflected throughout the academic undergraduate degree programs of the University and in the flexible scheduling and enrollment options and robust roster of special cultural and educational programs that serve both full-time undergraduate students and degree- and non-degree-seeking non-traditional students.

ACCREDITATION

Wilkes University offers degrees and programs approved by the Department of Education of the Commonwealth of Pennsylvania and accredited by the Commission on Higher Education of the Middle States Association of Colleges and Secondary Schools (3624 Market Street/Philadelphia, PA 19104-2680).

Certain academic programs are also individually accredited by the respective professional organizations. The Chemistry curriculum is approved by the American Chemical Society. The baccalaureate program in Nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by the Commission on Collegiate Nursing Education (Commission on Collegiate Nursing Education/One Dupont Circle, N.W., Suite 530/Washington, DC 20036-1120). Programs in Electrical Engineering, Environmental Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board of Engineering and Technology (ABET). The Bachelor of Science in Accounting and the Bachelor of Business Administration degree programs are accredited by the Association of Collegiate Business Schools and Programs. The School of Pharmacy was fully reaccredited to grant the Doctor of Pharmacy degree (Pharm.D.) by the Accreditation Council for Pharmacy Education in January 2006. For further information on the School of Pharmacy, please see the discussion under School of Pharmacy elsewhere in this bulletin.

UNIVERSITY CALENDAR

The academic year consists of two fifteen-week semesters, each of which includes a final examination period. The fall semester normally begins in late August and concludes with final examinations in December. The spring semester begins in mid-January and closes with a final examination period in May. An optional Intersession is offered in January.

The University also provides a broad range of courses, workshops, mini-courses, and programs with outdoor activities during the summer months. The summer schedule includes a three-week Pre-Session, two five-week Day Sessions, and a nine-week Evening Session, plus special mini-sessions. The first regular summer Day Session begins in early June and concludes in mid-July; the second regular summer Day Session begins in mid-July and ends in late August. The nine-week Evening Session, which begins in early June and ends in early August, complements these two day-school summer sessions. Students interested in the summer programs should contact the College of Graduate and Professional Studies for specific course and scheduling information. Please request special summer discount information through the College of Graduate and Professional Studies at (570) 408-4235

Commencement exercises are held at the close of the spring semester as well as at the close of the Summer Sessions.

[Click here for 2010-2011 Academic Calendar](#)

COURSE NUMBERING

Courses are designated by a course number code comprising two or letters and three digits. The letter codes identify specific fields of study (e.g., ACC = Accounting, BIO = Biology, IM = Integrative Media, and THE = Theatre). The three-digit numeric codes identify the course level (first digit: 1, 2, 3, 4, or 5), subfields within a specific discipline, as defined by each department or program (second

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digit), and, when appropriate, the course sequencing or time of year when the course is offered (third digit). Course levels are denoted as follows:

1xx	Introductory courses
2xx	Intermediate courses
3xx	Advanced undergraduate courses
4xx	Advanced undergraduate courses and courses for graduate students
5xx	Courses for graduate students only (except with special permission)

COURSE SCHEDULING AND ENROLLMENT

A full schedule of day classes is offered during the regular fall and spring semesters. Evening, summer, intersession, and accelerated classes accommodate schedules of traditional and non-traditional full- and part-time students who cannot attend day classes or classes offered during the regular semester periods. A number of online courses and hybrid courses, which combine online learning with periodic classroom meetings and discussions, provide additional scheduling flexibility for traditional and non-traditional students.

Wilkes University welcomes part-time undergraduate students into all of its regular sessions and has established the Evening schedule to maximize scheduling possibilities for students who are not able to attend day classes. Evening courses generally meet one or two nights per week during the academic year and two nights per week during the nine-week summer Evening Session. Evening course work is available in Accounting, Art, Business Administration, Communication Studies, Computer Science, Economics, Education, Electrical Engineering, Environmental Engineering, History, Mathematics, Nursing, Political Science, Psychology, and Sociology.

If seating is available, non-degree students may be admitted to classes for which they are qualified by reason of their maturity, educational background, or work experience. Secondary school training is desirable, but not required, provided the student is qualified to meet the requirements for enrollment and the rigors of the academic course work involved. Inquiries pertaining to continued learning opportunities should be directed to the College of Graduate and Professional Studies at (570) 408-4235.

These flexible campus classroom and online offerings in a variety of disciplines provide the greatest possible flexibility of scheduling for full-time undergraduate students and enable graduates of accredited two-year institutions and returning non-traditional students to complete baccalaureate degrees in certain majors by taking courses beyond the regular daytime class meeting hours.

Full- and part-time undergraduate students should consult with their academic advisors concerning the various course formats and scheduling options and review the Schedule of Courses published each semester by the Office of the Registrar. Returning, non-degree seeking, and non-traditional students should direct inquiries to the College of Graduate and Professional Studies at (570) 408-4235. Complete information about graduate, professional, post-baccalaureate, and continued learning opportunities is available on the Wilkes University Web site at <http://www.wilkes.edu/graduatestudies>.

ACADEMIC POLICIES AND PROCEDURES

REGISTRATION

Incoming freshman and transfer students register during the orientation sessions that precede each semester. All continuing students are expected to preregister with their advisors and to register on the dates specified in the University Calendar; a late registration fee may be assessed for failure to register during the official registration period (see "Student Expenses" in this *Bulletin*.) Additional information on registration procedures and the exact dates of the orientation sessions can be found online or obtained from the Office of Admissions or from the Student Services Center.

ATTENDANCE

Attendance at all scheduled classes is expected and required. Repeated absences are a sufficient cause for failure.

Instructors are expected to 1) inform students in writing of their attendance policy at the beginning of the semester; 2) take attendance and report excessive absences to the Dean of Student Affairs; and 3) discourage absence from classes prior to the beginning of a holiday period.

After five consecutive instructional hours of unexcused absences from a class, students may be readmitted to the class only by action of the Office of Student Affairs and the department chairperson concerned.

Any absence beyond that permitted in the course is a matter between the student and the instructor. Absences due to illness, religious holidays, or participation in athletic or University sponsored activities are usually considered to be acceptable reasons for absences, but notification of such absences and arrangements to make up missed work should be made with the instructor by the student.

In the unfortunate event of a death in the family, students are asked to contact the Office of Student Affairs so that notification can be sent to faculty members and arrangements can be made with them to assist students with make-up work.

If students are ill and will be missing a test, examination, or presentation, it is their responsibility to contact the instructor by phone the day of the test.

When students are going to be absent for a period of two days or more, if they notify the Office of Student Affairs, written notification of their absence will be sent to the students' instructors.

It should be understood, however, that the Student Affairs Office is not responsible for granting excuses for class absence.

STUDENT LOAD

Full-time students may register for 12-18 credits in a semester. No student shall be allowed to carry more than 18 credits without the written approval of his or her advisor and the Dean of Students. Students who register for, attempt, or complete fewer than 12 credits in any one semester shall be considered "part-time" students. Students should be aware that student load status (full- or part-time) affects eligibility for financial aid.

WILKES-MISERICORDIA-KING'S CROSS-REGISTRATION

Wilkes University, Misericordia University, and King's College offer their students an opportunity to cross-register for courses at the other institutions. Students register through the Office of the Registrar of the institution at which they are enrolled as degree candidates. Interested Wilkes students should confer with the University Registrar for further details.

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AUDITING COURSES

Auditing courses is a practice designed primarily to allow students to expand their educational opportunities. Courses may be taken on an audit basis only if formal registration is completed prior to the end of the first week of the semester. Permission of the course instructor will be required. Students who withdraw from a course but who wish to attend additional class sessions in that course may do so with the permission of the instructor; in all cases, however, these students will receive a grade of "W" (withdrawal).

Students auditing courses will comply with all stated course policies and meet all stated course standards, and requirements, including attendance. Students who fail to comply with course standards, requirements, and policies will not be awarded "Audit" recognition. All relevant fees will be charged.

CHANGE OF MAJOR

Students who wish to change their majors must obtain the approval of the academic advisor and of the chairperson of the department of current enrollment and of the chairperson of the department in which the proposed major resides. The student shall satisfy the curricular requirements of the bulletin in force at the time of the change. Change-of-major forms are available in the Student Services Center.

TRANSFER OF CREDITS

Wilkes students who wish to enroll in courses at another accredited institution (except Misericordia University and King's College; see "Wilkes-Misericordia-King's Cross-Registration") must complete the "Request for Transfer of Credit" form prior to enrolling for course work at the other institution. "Request for Transfer of Credit" forms are available at the Student Services Center.

Students should consult the "Admission of Transfer Students" section of this Bulletin for policies and rules governing transfer credits and transfer students.

The student must earn a grade of 2.00 or higher for the work to be credited toward graduation. All students must complete at least 30 credits and a minimum of 50% of their major field credits (and minor field credits, if applicable) in residence at Wilkes University.

NOTE: Grades earned for transfer credits are not included in the calculation of grade point averages.

WITHDRAWAL FROM COURSES

It is presumed that a student will complete the courses for which he or she has registered. *Students must pay careful attention to the official withdrawal policy approved by the faculty.* A grade of "W" is given for approved withdrawal; unofficial withdrawal will result in a grade of "0.000".

A student who wishes to withdraw from a course should first discuss the matter with the instructor. During the first three weeks of the semester the student may withdraw from a course by informing the instructor and his or her advisor and returning the completed and signed withdrawal form to the Student Services Center. After this initial three-week period, withdrawal is allowed through the tenth week of the semester and requires the approval of both the instructor and the advisor. Thereafter, the student may withdraw only for medical reasons, supported by a written excuse from a physician, or other extremely serious circumstances.

Poor academic progress, in and of itself, will not be considered sufficient reason for permission to withdraw from a course following the allowed withdrawal period. Withdrawals after the tenth week must be approved by both the course instructor and the Unit Dean in which the course is being taught. The Dean of Students will provide consultation regarding this decision as deemed appropriate by the course instructor, the Unit Dean in which the course is being taught, or both.

It is the student's responsibility to initiate withdrawal from a course by obtaining the withdrawal form from the Student Services Center, gathering all required signatures, and returning the completed form to the Registrar within the ten-week period. A grade of "0.000" is assigned by the instructor and recorded for all courses in which no official withdrawal, as specified above, has been completed by the student.

Students who are considering withdrawal from a course should be reminded that state and federal regulations for financial aid mandate that a student must earn 24 credits within the period of August to August or January to January and maintain the appropriate grade point average for his or her class standing. Such students should also be mindful of the University Refund Schedule, which allows for adjustments to tuition, fee, and room and board charges through the ninth week of the semester, but affords no adjustments to these charges after the ninth week.

Guidelines for Implementation

1. If a student is permitted to withdraw from a course after the ten-week period, the signatures and approval of the Unit Dean in which the course is being taught and the course instructor are required. It is the student's responsibility to initiate withdrawal by obtaining the official form designed for this purpose from the Student Services Office, having it signed by the instructor and submitting it to the Unit Dean in which the course is being taught. A student may seek assistance from the Dean of Students in facilitating this process, including such cases in which the instructor cannot be reached. Written notification of the signed form designed for this purpose will be sent by the Unit Dean to the Registrar for processing, who will in turn, notify the student, the course instructor, the student's advisor, and the Unit Dean immediately. If both the course instructor and the Unit Dean agree with the withdrawal, a grade of "W" will be assigned by the instructor and posted by the Registrar. If the course instructor and the Unit Dean disagree with the withdrawal, then the student will be assigned a grade as determined by the course instructor.

2. Disagreements between course instructor and the Unit Dean on course withdrawal cases will be automatically forwarded by the Registrar to the Academic Standards Committee of the University. A subcommittee consisting of at least two faculty and one member from the Office of Student Affairs will review the withdrawal and reasons for disagreement within one academic week. The decision of this subcommittee will be recorded by the Registrar and forwarded to the student, the course instructor, and the Unit Dean.

3. If an official withdrawal, including proper paperwork, has not been initiated and completed by the student, the instructor will assign and record the grade of "0.000" for the course.

4. It should be noted that from the fourth through the tenth week of the semester a student must request and receive permission from the course instructor and the advisor in order to withdraw from a course.

5. Appeals will follow the Academic Grievance Procedure.

THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974

In accordance with the provisions of "The Family Educational Rights and Privacy Act of 1974" (FERPA), students, upon request, will be given access to all of their evaluative records that have been established by Wilkes University, with at least one day's advance notice to the office responsible for the records to which the student seeks access.

ACADEMIC REQUIREMENTS AND REGULATIONS

ACADEMIC HONESTY

Academic honesty requires that students refrain from all forms of cheating and provide clear and accurate citations for assertions of fact, as well as for the language, ideas, and interpretations of others that have contributed to the student's written work. Failure to acknowledge indebtedness to the work of others constitutes plagiarism, a serious academic offense that cannot be tolerated in a

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community of scholars. All instances of academic fraud will be addressed in accordance with the policies of the faculty and student handbooks of the University.

Statement on Intellectual Responsibility and Plagiarism (adapted from the *Wilkes University Student Handbook*)

At Wilkes the faculty and the entire University community share a deep commitment to academic honesty and integrity. The following are considered to be serious violations and will not be tolerated:

1. **Plagiarism:** the use of another's ideas, programs, or words without proper acknowledgment

Students assume responsibility for submitting original work in their courses and for refraining from all acts of plagiarism. The University considers the following to be three separate forms of plagiarism:

Deliberate plagiarism centers on the issue of intentionality. If students deliberately claim as their own another's language, ideas, or other intellectual or creative work, they are engaged in a form of intellectual theft. Similarly, submitting the work of another person, in whole or in part, or submitting a paper purchased from another person or agency is a clear case of intentional plagiarism for which students will be subject to the severest penalties. Acts of intellectual theft are not tolerated in academic, business, and professional communities, and confirmed instances of plagiarism usually result in serious consequences.

Unintentional plagiarism often results from a misunderstanding of proper and conventional forms of documentation, oversight, or inattentive scholarship. Unintentional plagiarism includes, but is not limited to, forgetting to give authors credit for their ideas, transcription from inaccurate and poorly crafted notes, failure to use appropriate forms of citation, and omission of relevant punctuation.

Self-plagiarism occurs when students submit papers prepared and presented for another course, whether for the English department or another department or school. Students may submit the same paper for more than one course *only if all instructors involved grant permission for such simultaneous or "recycled" submissions.*

Penalties for plagiarism may range from failure for the specific assignment involved to failure for the course. In accordance with the academic grievance procedures of Wilkes University, cases of plagiarism will be addressed first by the instructor. Any appeal by the student of sanctions imposed by the instructor should be directed to the department chairperson.

2. **Collusion:** improper collaboration with another in the preparation of assignments, projects, papers, and computer programs, or in the completion of quizzes, tests, and examinations.

3. **Cheating:** giving improper or unauthorized aid to another in the completion of academic tasks or receiving such aid from another person or other source.

(For further information, consult the *Wilkes University Student Handbook*)

Instructors are expected to report violations to both the Dean of Students and the Provost. Penalties for violations may range from failure in the particular assignment, program, or test, to failure for the course. The instructor may also refer the case for disposition to the Student Affairs Cabinet. The academic sanctions imposed are the purview of the Faculty; the Student Affairs Cabinet determines disciplinary sanctions. The appeal of a failing grade for academic dishonesty will follow the academic grievance policy. The appeal of a disciplinary sanction will follow the disciplinary action policy.

The University "Statement on Intellectual Responsibility and Plagiarism" may be found in full in the *Wilkes University Student Handbook*. Students are responsible for being fully cognizant of the content of this statement. Questions pertaining to Intellectual Responsibility and Plagiarism or any facet of Academic Honesty should be directed to the student's professors, academic advisor, the Dean of Students, and the University Writing Center.

GRADES

The primary purpose of any grading system is to inform the student of his or her academic progress in a specific course and within a specific academic program. Final grade reports are posted online on the Wilkes Student Portal at the end of each term. Mid-term grades reflecting attendance and academic performance are recorded by course instructors at the end of the seventh week of the semester and prior to pre-registration advising for the following term. Mid-term grades of "unsatisfactory" in attendance or performance or both are sent electronically to students and to their academic advisors.

Wilkes recognizes eight numerical grades for academic achievement as follows:

Grade	Interpretation
4.00	Academic achievement of outstanding quality
3.50	Academic achievement above high quality
3.00	Academic achievement of high quality
2.50	Academic achievement above acceptable quality in meeting requirements for graduation
2.00	Academic achievement of acceptable quality in meeting requirements for graduation
1.50	Academic achievement above the minimum quality required for course credit
1.00	Academic achievement of minimum quality for course credit

The following letter grades may be assigned, as appropriate:

P	Passing, no credit
W	Withdrawal
N	Audit, no credit
X	Incomplete

A grade of "X" indicates that the student has not completed the course requirements as specified by the course instructor. Grades of incomplete ("X") will be granted to students who, because of illness or reasons beyond their control, have been unable to satisfy all course requirements, including the final examination, by the end of the term. When such a grade is recorded, all work must be completed and all course requirements satisfied by or before the end of the fourth week following the last day of the examination period; failure to complete course work and meet course requirements within this four-week period, will result in a grade of "0.00" for the course, unless a special extension has been filed by the course instructor and approved by the Registrar.

COURSE CREDIT AND GRADE POINT AVERAGES**Course Credit**

Each course at the University is assigned a specific number of credits. For example, History (HST) 101 is a three-credit course, and Mathematics (MTH) 111 is a four-credit course. In most cases, credits assigned to a particular course are determined according to the number of hours per week that the class meets; credits may also be defined by the number of hours that the class meets per semester. During the course of the semester, a credit hour is equivalent to

- 15 hours of classroom contact, plus appropriate outside preparation; OR
- 30 hours of supervised laboratory work, plus appropriate outside preparation; OR
- 45 hours of internship or clinical experience; OR
- a combination of the foregoing.

Grade Point Averages

The grade point average (gpa) is calculated according to a formula by which the total number of quality points (qp) earned is divided by the total number of credit hours attempted. Quality points are calculated by multiplying the course credit by the grade earned in the course. Below is an example illustrating the method used to compute grade point averages:

Course	Credit Hours Attempted	Grade	Quality Points Earned	Credit Hours Passed
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COM	101	3.0	x	4.00	=	12.0	3.0
FR	101	3.0	x	3.00	=	9.0	3.0
HST	101	3.0	x	1.50	=	4.5	3.0
MUS	101	3.0	x	2.50	=	7.5	3.0
PSY	101	3.0	x	0.00	=	0.0	0.0
		15.0		---		33.0	12.0
		Total credit hours attempted		15.0			
		Total credit hours passed				12.0	
		Total quality points earned				33.0	
		GPA (33qp/15 hrs. attempted)				2.20	

Note that the student has accumulated 12 credits toward graduation. The "0.00" grade in Psychology (PSY) means that the student must repeat that course in order to earn credit for the course. The student may repeat the course at Wilkes University or at another accredited institution.

IMPORTANT: Transfer credits are not included in the calculation of grade point averages at Wilkes University. If a course is repeated and successfully completed at an accredited institution other than Wilkes University, the credit for that course may transfer to Wilkes in fulfillment of graduation requirements; the course grade earned at another institution, however, will not transfer, and the "0.00" earned at Wilkes in PSY 101 shown in the sample grade report will remain in effect for the calculation of the student's gpa. *Grades earned at another institution will not be included as factors in the calculation of a student's grade point average, even in the event that the course credit is transferred to Wilkes.* In order to exclude a low grade (1.0 or 1.5) or a failing grade (0.0) and substitute a higher earned grade to be used in the calculation of the grade point average, the student must repeat and successfully complete the course at Wilkes University. Degree seeking students enrolled at Wilkes University who wish to take or repeat courses at another accredited institution must complete a "Request for Transfer of Credit" form and submit this form to the University Registrar for approval *before enrolling in the course.* "Request for Transfer of Credit" forms are available at the Student Services Center.

Grade point averages are cumulative; the work of each semester is added to the total. In order to graduate from Wilkes University, a student must have achieved, at the end of the senior year, a minimum overall grade point average of 2.00 and a minimum major field grade point average (mfa) of 2.00.

IMPORTANT: Some degree programs including, but not limited to, Nursing and Education require grade point averages and major field averages of greater than 2.00. See the grade point average requirements for specific degree programs described in this *Bulletin*, and consult with your academic advisor concerning grade point average requirements for your specific degree program.

ACADEMIC HONORS AND AWARDS

The Deans' List

The faculty of Wilkes University grants recognition for work of the highest quality. Students who earn a semester gpa of 3.40 or higher for all courses taken are accorded special recognition by being named to the Dean's List in the college of their major degree program. The Dean's List is published at the end of each fall and spring term. Students who attempt fewer than 12 credit hours in any semester are not eligible for nomination to the Dean's List.

Honor Societies

Chapters of many national and international honor societies have been established at Wilkes University. Students are invited to join these societies on the basis of their academic achievement, service to the University, service to the community, or a combination of such activities. Honor societies at Wilkes University include

ALPHA CHI (Upper Division Students)
ALPHA KAPPA DELTA (Sociology)
ALPHA SIGMA LAMBDA (Part-time Students)

BETA BETA BETA (Biology)
CHI ALPHA EPSILON (Act 101 Students)
DELTA MU DELTA (Business and Accounting)
ETA KAPPA NU (Electrical Engineering)
KAPPA DELTA PI (Education)
LAMBDA PI ETA (Communications)
OMICRON DELTA EPSILON (Economics)
PI KAPPA DELTA (Forensics)
PI SIGMA ALPHA (Political Science)
PHI ALPHA THETA (History)
PSI CHI (Psychology)
RHO CHI (Pharmacy)
SIGMA PI SIGMA (Physics)
SIGMA TAU DELTA (English)
SIGMA THETA TAU (Nursing)
SIGMA XI (Scientific Research)

ACADEMIC STANDING, PROBATION, AND INELIGIBILITY

It is expected that students at Wilkes University will work to their full capacity and potential in all courses. Academic standing reflects progress toward degree completion and is determined according to minimum semester grade point averages achieved.

For the purposes of determining academic standing, *freshmen* are defined as students who have attempted up to 36 credits; *freshmen* must maintain a minimum cumulative grade point average of 1.70 in order to be considered "in good standing" at the University. *Sophomores*, *juniors*, and *seniors* must maintain a minimum cumulative grade point average of 2.00 overall and a minimum grade point average in their major course work to be considered "in good standing" at the University. (Sophomores are defined as students who have completed 30 - 59 credits, juniors as students who have completed 60- 89 credits, and as students who have completed 90 credits or more.)

A student who fails to achieve the required minimum grade point average(s) will automatically be placed on academic probation or declared "academically ineligible." Academic probation serves as a warning to the student that he or she is not making satisfactory progress toward degree completion. Students placed on academic probation may, based upon the recommendation of the student's academic advisor and action by the Academic Standards Committee, be restricted in the number of credits that they may attempt in the following semester. The Academic Standards Committee may impose additional restrictions and requirements in individual cases, if it is determined that such restrictions and requirements are in the best interest of the student. Such restrictions may affect the student's participation in extra-curricular and co-curricular activities.

Students who remain on academic probation for two consecutive semesters are subject to declaration as "academically ineligible" to continue at the University. Students who are declared academically ineligible are not permitted to enroll in any course work at Wilkes for a period of one semester and must, following the semester of mandated leave, apply in writing to the Academic Standards Committee for readmission to the University. The application for readmission must include evidence of the student's prospects for academic success in subsequent semesters. If readmission to the University is approved by the Academic Standards Committee, the student will be readmitted on a probationary basis.

A decision of the Academic Standards Committee may be appealed by the student at the designated meeting for appeals at the conclusion of the fall and spring semesters. Appeals must be presented to the Committee, either in person or by letter, at the appropriate appeals meeting and should include good and sufficient reasons for the appeal.

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ACADEMIC CREDIT FOR DEMONSTRATED COMPETENCY

Wilkes University encourages students to work to their full capacity and to advance in their academic work as rapidly as is appropriate. A number of opportunities to demonstrate competencies beyond those normally associated with graduation from high school are open to qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience. Academic credit may be granted for such demonstrated competencies through a variety of channels including Advanced Placement tests, military educational and training programs, challenge examinations, the College-Level Examination Program (CLEP), Excelsior Exams, DANTES Subject Standardized Tests, and experiential learning portfolios. Each of these opportunities to earn academic credit for demonstrated competencies is described in detail in the sections that follow. (Nursing students are referred to the Nursing section of this Bulletin for detailed information on accelerated programs for LPN and RN students.)

Advanced Placement Program

Students who have passed one or more of the Advanced Placement (AP) Tests administered by the College Entrance Examination Board may request advanced placement in the University, the awarding of academic credit for course work, or both. Advanced Placement means that the student may enroll in a course at a level more advanced than the introductory level; a decision regarding advanced placement is made after review by the academic department concerned of the examination and applicant's scores. The awarding of credit by virtue of qualifying AP test scores means that the student receives academic credit toward the hours required for graduation. Generally, academic credit will be granted for scores of 3, 4, or 5 on the Advanced Placement examination. Occasionally, a personal interview may be required before advanced placement or academic credit is awarded. No grades are assigned to the courses for which the student receives advanced placement credit. Information about specific course examinations and credit may be found by going to www.wilkes.edu and searching on "Advanced Placement."

Credit for Military Experience

Students who have completed the special educational and training programs offered by branches of the American armed services may be awarded academic credit for these programs. Students requesting academic credit for completion of such special programs should submit an official transcript of their work as part of the admissions process. Transcripts will be evaluated according to the guidelines provided by the American Council on Education (ACE), and credits awarded will be applied to the degree program as appropriate. For more information about the awarding of credit for military experience, contact the Admissions Office at (570) 408-4400.

Challenge Examinations

After admission to Wilkes University, a student may request permission to take an examination demonstrating competence in a particular course. The interested student should apply to the appropriate department chairperson for permission to take a challenge examination. The chairperson will approve the student's application in writing only if there is clear evidence that the student has adequate background in the field to attempt the examination. If denied a challenge examination, the student may appeal to the appropriate academic dean. The student may not challenge a course that he or she has previously failed.

A fee of \$90 per credit will be assessed by the Financial Management Office for each approved challenge examination (see "Student Expenses"). The student must present a receipt from the Financial Management Office to the chairperson of the department in which the examination is to be administered; the receipt must be presented at least thirty days prior to the examination date. If the student successfully completes the challenge examination, credit for the course is awarded and posted to the student's transcript. No grade or credit is recorded if the student does not pass the examination.

College-Level Examination Program (CLEP)

Wilkes University awards academic credit on the basis of satisfactory performance on the Subject Examinations, not the General Examinations, of the College-Level Examination Program (CLEP) administered by the College Entrance Examination Board. CLEP scores are evaluated according to the guidelines provided by the American Council on Education (ACE), and credits awarded will be applied to the degree program as appropriate. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek academic credit through the College-Level Examination Program. Inquiries about CLEP should be directed to the Office of Admissions by calling (570) 408-4400. Official scores on CLEP Subject Examination scores should be forwarded directly to the Office of Admissions.

Experiential Learning

Credit for life experience may be granted for documented college-level learning that a student acquired by way of non-collegiate experiences. *Credit is awarded for the learning derived from life experiences, not for the experiences themselves.* Experiential learning is evaluated and credit awarded by the Academic Standards Committee of Wilkes University, based upon the recommendation(s) of the unit dean(s) in which the experiential learning most clearly belongs.

Soon after admission to the University, students who plan to petition for experiential learning credit must inform their academic advisor of their intent. *All other means of securing credit for demonstrated competencies must have been exhausted before applying for experiential learning credit.*

Credit awarded for experiential learning is based exclusively on Wilkes' evaluation of the demonstrated knowledge, which is presented in the student's petition to the Academic Standards Committee. The Academic Standards Committee of the Faculty maintains the guidelines and procedures of the Policy on Experiential Learning and renders the final decision on the awarding of credit. Specific guidelines and procedures for the petitioning and awarding of experiential learning credits are available to interested students in the Office of the Registrar.

GRADUATION REQUIREMENTS

It is the student's responsibility to meet all graduation requirements. Students are expected to be fully familiar with all academic requirements published in the Wilkes University *Undergraduate Bulletin* and to ensure that they are meeting the degree requirements of the University (as specified in the General Education Requirements) and of their major program. Students may elect to follow the degree requirements as stated in the *Undergraduate Bulletin* published when they entered the University, or they may elect to follow the degree requirements published in any subsequent *Bulletin*.

The Faculty of Wilkes University has approved the following requirements that all students must satisfy in order to earn a baccalaureate degree and be eligible for graduation. All students must

- complete a minimum of 120 credit hours;
- satisfy all requirements in the major(s); (requirements for graduation vary among degree programs; see the appropriate section(s) of this Bulletin for the number of credit hours and other requirements for specific majors);
- complete all subjects required for the degree as stated in the *Bulletin* in force at the time of admission to the program or in any subsequent *Bulletin*;
- achieve a minimum cumulative grade point average of 2.00 for all courses;*
- achieve a minimum cumulative grade point average of 2.00 for all subjects in the major(s);*
- achieve a minimum cumulative grade point average of 2.00 for all subjects within the chosen minor(s);*
- demonstrate competence in written and spoken English; and
- satisfy mathematics and computer literacy and other curricular skills and knowledge requirements by participation in assessment procedures.

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*NOTE: Some degree programs require minimum cumulative grade point averages above 2.00 in general course work and in course work in the major. See the appropriate sections of this Bulletin for specific grade point average requirements for each degree.

No student shall be graduated until financial obligations to the University have been fulfilled.

No student shall be allowed to participate in a Commencement ceremony unless all of the above-mentioned graduation requirements have been met.

All candidates for degrees are expected to be present at Commencement. If circumstances prevent their attendance, students must apply to the Vice President for Student Affairs for permission to take the degree or certificate *in absentia*.

DEGREE HONORS

The granting of honors at Commencement is based upon the entire academic record achieved by the student at Wilkes University. Transfer students must have completed a minimum of 60 credits at Wilkes in order to be eligible to be considered for honors.

The minimum requirements for Degree Honors are

<i>Summa cum laude</i> (with highest honors)	3.800
<i>Magna cum laude</i> (with high honors)	3.600
<i>Cum laude</i> (with honors)	3.400

Grade point averages are not rounded for Degree Honors.

ACADEMIC RESOURCES AND SUPPORT SERVICES

CENTER FOR GLOBAL EDUCATION AND DIVERSITY

The Center for Global Education and Diversity was created in 2008 to better prepare students for success in a multicultural world. The Center provides institutional and regional leadership and programming in global education and diversity issues. Most importantly, the Center houses essential services for underrepresented and international students, faculty and staff, and for those seeking an international experience as part of the Wilkes education. Services provided include:

- support for students from underrepresented groups such as women, ethnic and religious minorities, gay/lesbian/transsexual/transgender, and individuals with disabilities;
- support for international students, faculty and staff;
- Study Abroad experiences for students and faculty;
- support for faculty and students interested in the globalization of higher education;
- the Intensive English Program (IEP) for individuals wishing to improve their English language skills;
- multicultural programming; and
- booking of the Multicultural Lounge in the Henry Student Center.

The Center is located in the Max Roth Center at the corner of South Franklin and West South Streets. The Center's staff may be reached by calling (570) 408-7854 (or ext. 7854 from a campus phone).

INTERNATIONAL STUDENT SERVICES

For international students, the Center provides immigration and visa information and assistance, as well as advice on academic, cultural, and personal issues. The Center also provides orientation to life in the United States and the American educational system, assists students in dealings with a variety of offices and constituencies, including U.S. and foreign government agencies, other campus offices and departments, and the community, and serves as advisor to the International Student Organization. These services are available to all international students, non-immigrants and immigrants alike.

INTENSIVE ENGLISH PROGRAM

The mission of the Intensive English Program (IEP) at Wilkes University is to provide quality academic instruction in English as a second language (ESL) to both international and English-language learning students planning to pursue university studies in the United States. To this end, the IEP provides a curriculum, certified faculty, classroom materials, and teaching methods that are well grounded in both theory and practice and based on the latest research findings in the field of second language learning and teaching. This fully accredited program provides

- quality academic English language instruction for students whose native language is not English;
- preparation for further academic study in the U.S.;
- learner-centered instruction;
- advising for successful attainment of academic or professional goals;
- opportunities for intercultural experiences and cooperation;
- services relating to admission, counseling, academic life, and the general success of international students attending Wilkes University;
- English language instruction for personal growth; and
- instruction in accordance with Wilkes University's Writing Across the Curriculum (WAC) program.

All policies and governances found within this *Bulletin* apply to all students participating in the IEP at Wilkes University.

LIBRARY SERVICES

Eugene S. Farley Library

The Eugene S. Farley Library, named in honor of the first president of Wilkes University, is located on the corner of South Franklin and West South Streets. It is one of the largest resource libraries in the region, with more than 200,000 volumes of books and bound journals, over 430 journals and newspaper subscriptions, 10,000 full text online journals, microforms, instructional audio-video materials, and a growing collection of classic films on DVD. The library has fine collections in English and American literature, history, the sciences, mathematics, and sizable collections in other academic disciplines reflected in the University curriculum.

Also housed in the library are the University Archives, four special collections rooms, and a SMART classroom. Students have access to 68 desktop computers and fourteen wireless laptops that can be used anywhere within the library's wireless environment. Farley Library is home to the newly constructed Alden Learning Commons, a technology rich learning environment that has four enclosed group study rooms, twenty open group study areas that can accommodate groups of one to six students, the University Writing Center, and the University Teaching Commons.

Library hours during the academic year are from 8:00 am to 12:00 midnight, Monday through Thursday, 8:00 am to 5:00 pm on Friday, 11:00 am to 6:00 pm on Saturday, and 11:00 am to 12:00 midnight on Sunday. Summer sessions and holiday hours, as well as any changes to the regular library schedule, are posted at the library entrance and on the library Web site. Library services are available online 24/7 at www.wilkes.edu/library.

Telephone: (570) 408-4250.

Farley Library Regulations:

1. Use your valid Wilkes University I.D> card to obtain library privileges.
2. You are responsible for all materials charged out on your identification card. A valid Wilkes I.D. enables Wilkes University students to borrow books year-round at Misericordia University, Keystone College, King's College, Luzerne County Community College, Marywood University, and the University of Scranton.
3. Books circulate for one month. Renewals may be made in person, by telephone, or online from the patron access area of the Farley Library catalog. A book may be renewed once. DVDs circulate for three days (no renewal). Charges are levied for all overdue and damaged materials.

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Failure to pay fines or to return borrowed materials will result in denial of transcripts until fines are paid and materials returned.

4. Periodicals, journals, reference materials, and microform materials do not circulate. Reference materials, periodicals, and journal articles in print and microfilm format may be photocopied in accordance with the provisions of the U.S. copyright law.
5. To provide an optimum environment for study, all cellular phones and pagers must be kept on silent alert (vibration or visible flash) while in the library.
6. The University reserves the right to refer for disciplinary action patrons who have violated Library policy.

Farley Library Services

1. Reference Assistance: Professional staff is available for assisting students in their research endeavors.
2. Library Orientation: Group library orientation can be arranged for students upon request.
3. Bibliographic Instruction: Specific instruction in the use of library collections and reference tools is available for students upon request of the instructor.
4. Interlibrary Loan: This service is provided for students, faculty, and staff to supplement research needs. Inquire at the Reference Department for details.
5. Media Services: Media staff will have audiovisual equipment needed for classroom usage delivered to sites on campus. At least a 24-hour notice is required. Videos and DVDs may be reserved one week in advance of the expected need. The Library Media Room (Room 002) is also available, on a first-come, first-served basis, for classes or events.
6. Reserve Materials: Collateral course reading materials placed on reserve by faculty are maintained at the Circulation Desk.
7. Photocopying facilities for printed materials and micro materials are available in the library. A color copier is located on the first floor. Users are reminded to observe the restrictions placed on photocopying by the U.S. copyright law. The law and interpretative documents are available at the Circulation Desk.
8. Online searching of auxiliary databases is available by appointment through the Reference Department to support faculty research.

Music Collection

Darte Hall, on the corner of South River and West South Streets, houses a separate collection of music scores and recordings. For information about accessing materials housed in the music collection, call (570) 408-4420.

Pharmacy Information Center (PIC)

The Pharmacy Information Center provides resources and services for student and faculty of the Nesbitt School of Pharmacy. It houses an up-to-date collection of drug information materials in print and electronic forms and provides a means for pharmacy students to become more proficient in the selection, evaluation, and use of drug information. The collection in the PIC is non-circulating; however, many additional books that support the pharmacy curriculum are housed in the Farley Library and non-reference titles may be borrowed from there. All School of Pharmacy journals are housed in the PIC. In addition to these print sources, students have access to a number of computerized resources, both on and off campus.

The PIC is generally open Monday - Thursday from 8:00 am to 5:30 pm and Friday from 8:00 am to 4:00 pm. The PIC follows the University holiday schedule. The library is available only until 4:00 pm.

Telephone: (570) 408-4286

PIC Regulations:

1. Books, periodicals, and reserve materials may not be taken from the center.
2. Smoking and food and beverages other than water are prohibited in the PIC.

3. Students will respect others' need for quiet and refrain from behavior that can be regarded as disruptive or a detriment to a positive learning environment.
4. Cell phones must be turned off or set to vibrate while in the PIC. Calls must be answered outside.

PIC Services:

1. Reference Assistance: The librarian will assist students in locating materials and using library resources.
2. Bibliographic Instruction: The librarian will give individual or group instruction in the use of specific reference tools.
3. Interlibrary Loan: Needed books or journal articles that are not owned by Wilkes University may be obtained through Interlibrary Loan at no charge. Most article requests are filled within a few days.
4. Photocopying: A card-operated photocopier is available in the PIC. Please see the librarian to purchase or add money to a debit card.

WRITING CENTER

The University Writing Center, located in the Learning Commons (lower level of the Farley Library), is available to all Wilkes students who seek personal assistance with writing. Instructors may refer students to the Center for help in honing their writing skills.

Introduction

DEGREE PROGRAMS & CURRICULA

Wilkes offers undergraduate programs leading to the Bachelor of Arts, Bachelor of Business Administration, and Bachelor of Science degrees. It also offers a first professional degree program leading to the Doctor of Pharmacy degree. All programs have been carefully designed to prepare graduates to meet the rigorous entrance requirements of graduate and professional schools and to ensure that all Wilkes undergraduates acquire a broad general education essential for responsible contribution to human affairs. Each degree program assures multiple and varied opportunities for students to achieve educational objectives particular to that field of study. All baccalaureate programs also share a set of distinctive goals and Institutional Student Learning Outcomes that derive from the Wilkes University Mission and define the Wilkes baccalaureate educational experience.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

(Adopted by the faculty November 1, 2007)

The students will develop and demonstrate through course work, learning experiences, co-curricular and extracurricular activities

- the knowledge, skills, and scholarship that are appropriate to their general and major field areas of study.
- effective written and oral communication skills and information literacy using an array of media and modalities.
- practical, critical, analytical, and quantitative reasoning skills.
- actions reflecting ethical reasoning, civic responsibility, environmental stewardship, and respect for diversity.
- interpersonal skills and knowledge of self as a learner that contribute to effective team work, mentoring, and life-long learning.

THE CURRICULUM

The Institutional Student Learning Outcomes are addressed and assessed in the academic courses of study by way of a University curriculum comprising three components: the General Education Curriculum; the major area of study; and the elective area or areas of study. These curricular components are interconnected and interdependent and provide meaningful opportunities for each student to meet the requirements of the Institutional Student Learning Outcomes and develop the knowledge, skills, sensibilities, and qualities that, in the words of the founding President of Wilkes University, Dr. Eugene S. Farley, distinguish an educated person.

The *General Education Curriculum* is the central component of all degree programs at Wilkes University. It lies at the heart of every Wilkes baccalaureate degree and defines for all students, regardless of major, a common liberal education experience in the arts and sciences. The General Education Curriculum serves as the foundation for specialized study in a specific academic area or professional field.

The *major degree area* requires in-depth and extended course work and learning experiences in a specialized field of study. Major degree programs prepare students to pursue a chosen career, or meet the entrance requirements for graduate and professional schools, or both. Requirements for each major area of study offered at Wilkes are listed in the appropriate departmental descriptions in this bulletin.

The *elective area of study* enables each student to pursue topics of personal interest, explore new areas of learning, or complete a minor degree or a second major degree.

It is the responsibility of each student to ensure that all degree requirements, including the General Education requirements, are satisfied.

GENERAL EDUCATION: THE FIRST CURRICULAR COMPONENT

The General Education Curriculum is an affirmation of the strong belief of the Wilkes faculty in the value of study in the arts and sciences for all students and includes a broad spectrum of courses designed to stimulate the intellectual, personal, and social development of our students. The requirements of this curriculum are intended to serve as the foundation upon which all degree programs are based.

The General Education Curriculum requirements for all programs follow. Students are urged to use this outline of the requirements as an explanation of the "Recommended Course Sequence" provided for each major degree program described in this bulletin. With the exception of English (ENG) 101, English (ENG) 120, History (HST) 101, and First-Year Foundations (FYF) 101, which are required of all undergraduate students at Wilkes University, the designated "Distribution Requirements" in the "Recommended Course Sequence" for each major is a reference to the following statement of the General Education Curriculum requirements.

General Education Curriculum Requirements

The University faculty has approved the following set of requirements for the General Education Curriculum, which comprises four components: Skill Requirements (0 - 13 credits); First-Year Foundations (3 credits); Distribution Areas (24 credits); and Senior Capstone (variable credit). All undergraduate students must satisfy these requirements in order to be eligible for graduation.

SKILL	REQUIREMENTS
0 - 13 credit hours	

All students pursuing the baccalaureate degree at Wilkes University must develop and demonstrate proficiency in five identified Skill Areas-Written Communication, Oral Communication, Quantitative Reasoning, Critical Thinking, and Computer Literacy-as follows:

**WILKES UNIVERSITY GENERAL EDUCATION CURRICULUM
STUDENT LEARNING OUTCOMES**

Written Communication: Students will use written communication to

- create both simple and complex verbal constructs in written formats and multiple genres that conform to the grammatical and syntactical rules and principles of standard American English;
- synthesize and evaluate learned and acquired information and give proper attribution for sources;
- communicate thoughts, ideas, and acquired information clearly, effectively, and purposefully, with diverse audiences.

Oral Communication: Students will use oral communication skills to

- conform to the grammatical and syntactical rules of standard American English;
- convey information, thoughts, and ideas clearly, clearly, effectively, and purposefully, with diverse audiences;
- argue a point persuasively.

Quantitative Reasoning: Students will use quantitative reasoning to

- create, construct, and present data graphically (simply stated, to make a graph)
- solve problems using algebraic methods;
- summarize and evaluate data using simple statistics;
- analyze non-numerical problems to develop numerical solutions.

Critical Thinking: Students will use critical thinking to

- recall relevant information accurately;
- paraphrase relevant information to explain concepts;
- apply information to new contexts;

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- analyze information;
- synthesize new information from multiple sources;
- evaluate information to formulate and support a position.

Computer Literacy: Students will use computer technology in a responsible manner to

- create a document;
- solve a numerical problem;
- query information;
- present information;
- communicate effectively.

Four of these Skill Areas—Computer Literacy, Written Communication, Oral Communication, and Quantitative Reasoning—are addressed and assessed within the context of specific academic experiences as described below. The development and assessment of Critical Thinking is embedded throughout all components and academic learning experiences of the Wilkes University curriculum.

All students will be tested in skills areas and placed at the appropriate proficiency level. Students may opt or test out of each skill requirement by demonstrating competency through means designated by the department responsible for each skill area. Departments also will offer diagnostic test(s) for each skill area as well as offer guidelines for practice courses in each skill area. Please see your academic advisor for more information on program designated courses that will satisfy these requirements.

Students will develop and demonstrate mastery of the outcomes for Computer Literacy, Written Communication, Oral Communication, and Quantitative Reasoning by means of the following academic experiences:

- I. Computer Literacy
Completion of CS 115 (Computers and Applications) or higher
OR
Completion of 2 "Computer Intensive" courses
minimum 3 credit hours

Students who do not complete CS 115 or test out of this skill area can satisfy the computer literacy requirement by completing courses that appear on the "Computer Intensive (CI) List. The list of computer-literacy skills, as well as a list of available CI courses, is available from the Office of the Registrar.

- II. Written Communication
ENG 101 (English Composition)
4 credit hours

Writing Across the Curriculum: Each undergraduate degree program and the First-Year Foundations Program incorporates writing and the progressive development of written communication skills into its program curriculum. Courses throughout each degree program emphasize writing techniques and styles that are specific to that program of study. Most senior capstone courses have a significant writing component that requires proficiency in writing in order to complete the course.

- III. Oral Communication
Completion of COM 101 (Fundamentals of Public Speaking)
OR
Completion of 2 Oral Presentation Option (OPO) Courses
minimum 3 credit hours

The Registrar's Office maintains a list of OPO courses. OPO courses enable a specified number of students (or all students) in an approved course to complete the requirements for an

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OPO course. Satisfaction of the OPO requirement will not add credits to most students' programs.

- IV. Quantitative Reasoning
Completion of MTH 101 (Solving Problems Using Mathematics)
or higher
minimum 3 credit hours

First-Year
0/3 credit hours*

Foundations

Completion of a First-Year Foundations (FYF) course
3 credit hours

*NOTE: Students who have completed twenty-three (23) or fewer credit hours earned in a college classroom when they matriculate at the University are required to complete an FYF course during their first semester. All students who have completed more than twenty-three (23) credit hours earned in a college classroom when they matriculate at the University are eligible, but not required to take a FYF course. A student may obtain academic credit toward graduation for only one (1) FYF course.

Distribution
24 credit hours

Areas

Area I. The Humanities
minimum 9 credit hours

Student Learning Outcomes in the Humanities:
Students will

- apply practical and critical reasoning skills when solving problems by identifying key issues and demonstrating consideration of and sensitivity to diverse perspectives before rendering a decision (critical judgment);
- analyze problems by considering diverse and varying forms of evidence and multiple perspectives within historical and sociological contexts (historical perspective);
- identify their own ethical codes and those of others with differing perspectives (ethical awareness);
- demonstrate the ability to frame analyses with sound ethical reasoning and defend their position using persuasive argument (ethical awareness);
- exhibit an awareness of the diversity and complexity of human cultural expression (aesthetic expression);
- demonstrate the ability to speak and write effectively in languages including, but not restricted to, standard American English (linguistic awareness); and
- exhibit critical and analytical thinking in their writing (skills).

Students must complete three (3) of the courses listed below.

ENG 120 Introduction to Literature
HST 101 Historical Foundations of the Modern World
Foreign Language at level of competence *OR*

PHL 101 Introduction to Philosophy

Students may request, through their academic advisors, a course substitution within this Area. For more details on course substitution policies for Area I, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

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Area II. The Scientific World

minimum 6 credit hours

Student Learning Outcomes in the Scientific World:

Students will

- identify and describe how science affects current issues and the environment;
- locate and evaluate scientific literature;
- apply scientific facts in an ethical manner;
- present scientific concepts effectively;
- use data analysis to evaluate physical and natural systems; and
- distinguish between data and speculation and explain how scientific ideas evolve as new data accumulates.

Students must complete two (2) of the courses listed below, from two different sub-areas of study. At least one (1) of the two (2) selected courses must include a laboratory component; credit hours vary according to incorporation of the laboratory component.

Sub-Areas	Course Options
Biology	BIO 105 or BIO 121
Chemistry	CHM 105 or CHM 115
Earth and Environmental Sciences	EES 105, EES 211, EES 230, EES 240, EES 251, or EES 271
Physics	PHY 105, PHY 174, or PHY 201

A number of degree programs satisfy the General Education Curriculum requirements in Area II on the basis of successful completion of the science requirements of the individual degree program. The following programs meet the aforementioned criteria by virtue of the degree curriculum: Applied and Engineering Sciences; Biochemistry; Biology; Chemistry; Computer Science (B.S. degree program only); Earth and Environmental Sciences; Electrical, Environmental, and Mechanical Engineering; Engineering Management; Health Sciences; Mathematics (B.S. degree program only); Nursing; Pre-Pharmacy; and Physics.

Students not enrolled in any of the programs listed above may request, through their academic advisors, a course substitution within this Area. For more details on course substitution policies for Area II, contact the Office of the Dean of the College of Science and Engineering. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Area III. The Social Sciences

minimum 6 credit hours

Student Learning Outcomes in the Social Sciences:

Students will

- explain the relative merits of differing social science theories;
- compare and contrast methods of the social sciences with those of other fields, focusing on how quantitative and qualitative analyses inform these fields;
- identify factors that shape human behavior, how society influences the individual and how the individual influences society; and
- explain the relationship of economic and political institutions in shaping individuals and society.

Students must complete two (2) of the five (5) courses listed below.

ANT 101	Introduction to Anthropology
EC 102	Principles of Economics II
PS 111	Introduction to American Politics
PSY 101	General Psychology

Students may request, through their academic advisors, a course substitution within this Area. For more details on course substitution policies for Area III, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Area IV. The Visual and Performing Arts
minimum 3 credits

Student Learning Outcomes in the Visual and Performing Arts:
 Students will

- create, recreate, or interpret works of art;
- analyze, critique, and evaluate archetypal works of art from a sampling of representative world cultures in written and oral formats, using methodologies and vocabularies appropriate to the specific artistic discipline studied;
- explain, in written and oral formats, the rich and diverse legacy of human thought and creativity in the arts and articulate the role and value of the arts in society and in one's own life.

Students will achieve at least two of the three identified outcomes.

Students must complete one (1) of the four (4) courses listed below.

ART 101	Experiencing Art
DAN 100	Dance Appreciation: Comprehensive Dance Forms
MUS 101	Introduction to Music I
THE 100	Approach to Theatre

By means of a successful presentation (performance audition or artwork portfolio review) and written permission of the Chair of the Division of Performing Arts or the Integrative Media Arts Department, students may substitute three (3) credit hours of performance or studio experience for the above requirement. For more details on course substitution policies for Area IV, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Senior
credits vary

Capstone

Each student is required to complete a Senior Capstone course or experience in his or her major field of study as specified in the requirements for each degree program. For details about the capstone course or experience, see the degree requirements for the selected academic program. Satisfaction of this General Education Curriculum requirement will not add credit hours to most students' programs of study.

THE MAJOR: THE SECOND CURRICULAR COMPONENT

In addition to satisfying the requirements of the General Education Curriculum, each student must complete a major in an academic discipline or area of concentration in order to graduate from the University. Specific requirements for each major are described in detail in the departmental listings in this *Bulletin*. The major area of study must be declared prior to the first semester of the student's junior year.

Wilkes University offers three baccalaureate degrees—the Bachelor of Arts Degree; the Bachelor of Science Degree; and the Bachelor of Business Administration Degree—and Secondary Education

Introduction

Certification. See each degree listing for a list of subject areas for each degree.

Bachelor of Arts Degree — Majors

Majors in the Bachelor of Arts degree program may be selected from the following subject areas:

Biochemistry	Elementary Education	Musical
Biology	English	Philoso
Chemistry	History	Politica
Communication Studies	Individualized Studies	Psychol
Computer Science	Integrative Media	Sociolo
Criminology	International Studies	Spanish
Earth and Environmental Sciences	Mathematics	Theatre

Bachelor of Science Degree — Majors

Majors in the Bachelor of Science degree program may be selected from the following subject areas:

Accounting	Computer Science	Individualized Stu
Applied and Engineering Sciences	Earth and Environmental Sciences	Mathematics
Biochemistry	Electrical Engineering	Mechanical Engir
Biology	Engineering Management	Medical Technol
Chemistry	Environmental Engineering	Nursing
Computer Information Systems		Pharmaceutical S

Bachelor of Business Administration Degree

Majors in the *Bachelor of Business Administration degree* program may be selected from the following subject areas:

Business Administration
Entrepreneurship

Teacher Education

Students who wish to prepare for a teaching career in secondary schools select an appropriate disciplinary major and use their elective credits to meet teacher certification requirements. Students who wish to prepare for a teaching career in elementary education major in Elementary Education. A list of the courses needed for certification is provided in the departmental description of the Department of Education and in this *Bulletin*. Students planning a teaching career must seek counseling in the Department of Education early in their first semester.

ELECTIVE COURSES: THE THIRD CURRICULAR COMPONENT

The third component of the Wilkes University Curriculum, after the General Education Requirements and the Major, is composed of Elective Courses. Students choose elective courses for a variety of reasons: to complete a minor area of study, a second major, or a second degree; to pursue a special area of interest; to meet requirements for admission to graduate or professional schools; or to enhance, refine, and further develop specific skills.

Minors

Students frequently select elective courses in order to complete a minor in a field other than the major field of study. Although not required for graduation, minor degree study is formally recognized on the student's transcript and may enhance a student's credentials. Students are ineligible for formal recognition of a minor in the same discipline as the major field of study. Students should consult the departmental listing in this bulletin to review the requirements for formal recognition of a minor field in specific disciplines. A minimum of one-half of all minor field credits must be completed at Wilkes. Formal application for an academic minor must be made to the University Registrar; application forms are available in the Student Services Center.

Double Major

Students may choose to use their elective credits to complete a second major. The student must declare intent to graduate with a double major by completing the appropriate form available at the Student Services Center. It is the student's responsibility to secure the approval of the chairpersons of both departments to ensure that all requirements of the two majors are fulfilled.

Second Baccalaureate Degree

Students who hold a bachelor's degree with a major in one discipline from Wilkes University or another accredited institution may earn a second baccalaureate degree at Wilkes by completing a major in another discipline, provided the following conditions are met.

- Candidates for the second degree must earn at least thirty (30) credits at Wilkes beyond those required for the first degree.
- Candidates for the second degree must meet all of the Wilkes requirements for a degree.
- Wilkes students may graduate with two bachelor's degrees simultaneously, but they must complete thirty (30) credits beyond the requirements for the first degree to be eligible for the second degree at the time of graduation.

If students choose to return to the University to earn a second degree, they must complete the requirements for the additional major beyond any majors earned during the pursuit of the first degree.

COLLEGE OF GRADUATE AND PROFESSIONAL STUDIES

The following programs are offered or coordinated through the College of Graduate and Professional Studies. Complete information about the College can be found on the Wilkes University Web site: <http://www.wilkes.edu/graduatestudies> or by phone at (570) 408-4235.

Part-time Studies

The University welcomes part-time undergraduate students into all of its regular sessions. Wilkes has established the Evening schedule to maximize opportunities for students who cannot attend day classes. Evening classes are offered in a variety of disciplines, and students may use this option, in addition to the regular day class offerings, as their commitments and interests permit. Many students complete their degree requirements in one or more of the special formats and scheduling options available through the College of Graduate and Professional Studies.

Non-degree seeking students may be admitted to classes that they are qualified to take by reason of their maturity, previous education, and work experience. Secondary school training is desirable, but not necessary, provided the student is qualified to follow such special courses of instruction. Inquiries about all of these programs should be directed to the Office of Graduate and Professional Studies.

Evening Opportunities

This program is designed to meet the needs of students who cannot attend daytime classes but wish to pursue or complete a degree. Evening courses generally meet one or two nights per week during the academic year and two nights per week during the nine-week evening summer session. Course work is available in Accounting, Art, Business Administration, Communication Studies, Computer Science, Economics, Education, Electrical Engineering, Environmental Engineering, History, Mathematics, Nursing, Political Science, Psychology, and Sociology. These flexible classroom offerings provide upper-division courses on campus and enable graduates of accredited two-year institutions to complete bachelor's degrees in certain majors by taking courses beyond the traditional daytime hours. Many of the above-listed subjects lead to degree completion. Inquiries about these programs should be directed to the College of Graduate and Professional Studies.

Summer Courses

Wilkes offers a variety of summer courses, workshops, mini-courses, and programs with outdoor activities during the summer months. The summer schedule includes a three-week Pre-Session, two five-week Day Sessions, and a nine-week Evening Session, plus special sessions. Students interested in the summer programs should contact the College of Graduate and Professional Studies for

Introduction

specific course and scheduling information. Please request special summer discount information through the College of Graduate and Professional Studies at (570) 408-4235.

Graduate, Post-Baccalaureate and Certificate Programs

Wilkes University continues to expand its role in post-baccalaureate offerings. Please call the College of Graduate and Professional Studies to inquire about certificate and post-baccalaureate programs. The University offers doctoral degrees in Educational Leadership (Ed.D.), Nursing (DNP), and Pharmacy Practice (PharmD.). Master's degrees are available in the fields of Business Administration (MBA), Creative Writing (MA and MFA), Education (MS Ed, with various concentrations), Electrical Engineering (MSEE), Engineering Operations and Strategy (MS), Mathematics (MS) and Nursing (MS). A separate Graduate Bulletin, which describes graduate programs in detail, is available upon request from the College of Graduate and Professional Studies.

Advanced Placement Summer Institute

Wilkes University, in cooperation with the College Board, annually hosts the Advanced Placement Summer Institute. This program is designed for people who teach, or wish to teach, AP-Biology, Calculus AB, Chemistry, Computer Science, English, Environmental Science, Physics, Statistics, or US History. Each course will review the latest changes and shifts in emphasis in the AP syllabus. Advanced Placement Summer Institute is a one-week program taken for three (3) graduate credits or audited. Specific questions about the Institute may be directed to the College of Graduate and Professional Studies.

Non-Credit Continuing Education

Wilkes University is committed to providing innovative, lifelong learning opportunities by extending the University's resources to a diverse audience whose educational interests require flexibility and creative delivery. We offer programs for many professionals including Accountants, Engineers, Nurses, Pharmacists, Counselors, AP Teachers, Social Workers, and Psychologists. Learning experiences take the form of non-credit, certificate programs, non-credit courses, conferences, and institutes. To meet the needs of the community, we offer courses on the Wilkes University campus, at various off-site locations and at business locations. Inquiries about offerings should be directed to the College of Graduate and Professional Studies.

COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

INTEGRATIVE MEDIA

DIVISION OF BEHAVIORAL AND SOCIAL SCIENCES

DEPARTMENT OF COMMUNICATION STUDIES

DIVISION OF HUMANITIES

DEPARTMENT OF VISUAL AND PERFORMING ARTS

COLLEGE OF ARTS,
HUMANITIES, AND SOCIAL
SCIENCES

DEAN: DR. LINDA A. WINKLER

MISSION STATEMENT

The College of Arts, Humanities, and Social Sciences prepares students for life and work in a diverse and changing world. In fulfilling its responsibility to the general education core experience for all undergraduate students, the faculty of the College conveys an understanding of the interconnections of human experience through the foundational study of art, expression, culture, and society. Within the college's programs of study, students discover challenging academic preparation for successful professional lives. They benefit from close faculty interaction and attention throughout their learning journey toward becoming intellectually resourceful, civically responsible citizens of the world.

In the College of Arts, Humanities, and Social Sciences students pursue degrees that develop critical and analytical skills to become creative problem solvers and acquire the necessary attitudes, knowledge, and skills to remain lifelong learners in their personal and professional lives. The College fosters pre-professional experiences leading to postgraduate study, and many undergraduate majors offer valuable professional opportunities through field experience and internships. The College is enriched culturally, academically, and professionally through strong connections to the local and regional communities. The Wilkes Community Conservatory, the Sordani Art Gallery, and the Allan Hamilton Dickson Endowment enhance the arts and humanities on campus and in the community.

In addition, the College has many special programs, resources, and state-of-the-art facilities that incorporate professional and practical experiences into the student's learning journey. The Dorothy Dickson Dart Center for the Performing Arts showcases campus performances in music, theatre, and dance. Students may gain professional experience in a variety of media at the radio station, WCLH, the campus newspaper, *The Beacon*, the literary magazine, *Manuscript*, the student-run public relations firm, Zebra Communications, at Studio 20, the student-run design firm, and the professional television studio at the Shelburne Telecommunications Center. In the Writing Center, specially trained student writing

consultants provide assistance in writing to the entire University, engage in research, and present papers at national conferences.

The College includes the following academic departments and divisions:

Behavioral and Social Sciences
Communication Studies
Humanities
Integrative Media Arts
Performing Arts

Bachelor's Degrees—Majors and Minors

Art (minor only)
Communication Studies
Criminology
Dance (minor only)
English
History
Integrative Media
Economics (minor only)
Music (minor only)
Musical Theatre
Neuroscience (minor only)
International Studies
Philosophy
Policy Studies (minor only)
Political Science
Psychology
Sociology
Spanish
Theatre Arts
Women's Studies (minor only)

DIVISION OF BEHAVIORAL & SOCIAL SCIENCES

CHAIRPERSON: DR. ROBERT C. TUTTLE

Faculty: Professors: Baldino, Bohlander, Charnetski, Garr, Merryman

Associate Professors: Kreider, Schicatanano, Seeley, Tindell, Tuttle

Assistant Professors: Cunningham-Stringer, Miller, Selden, J. Thomas

Faculty Emeriti: DeYoung, Farrar, Natzke, Stetten, Tuhy

CRIMINOLOGY MAJOR

COORDINATOR: DR. TUTTLE

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CRIMINOLOGY LEADING TO THE B.A. DEGREE – 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR – 18.

The Division of Social Sciences offers an interdisciplinary major in Criminology. Designed for flexibility and appeal to both the practicing professional and the student seeking admission to graduate school, the program incorporates a variety of carefully chosen courses in sociology, psychology, political science and economics, such as Criminology, Juvenile Delinquency, Psychopathology, Forensic Psychology, Criminal Law, and the Economics of Crime, leading to the Bachelor of Arts degree in Criminology. Internships in the areas of corrections, law enforcement and the administration of justice are readily available to eligible students. Credit hours in internships may not be applied to the 45 hours required in the major.

Information about the program and about career opportunities in the field may be obtained from the advisor to this program.

CRIMINOLOGY MAJOR

A major in Criminology consists of 45 hours, including introductory courses (12 hours), criminology core courses (21 hours), major electives (9 hours), and a capstone course (3 hours):

Introductory Courses (12 hours) credits

PS 233	Law & Society	3
EC 102	Microeconomics	3
PSY 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3

Criminology Core Courses (21 hours)

EC 320	Economics of Crime	3
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PS 232	Criminal Law	3
PSY 242	Personality	3
PSY 352 or PSY 355	Psychopathology or Forensic Psychology	3
SOC 222	Criminology	3
PS 261 or SOC 371	Concepts and Methods in Political Science or Methods of Social Research	3
PS 265 or SOC 373	Quantitative Reasoning in the Social Sciences	3

Major Electives (9 hours)

PS 332	Civil Rights and Liberty	3
PSY 352 or PSY 355	Psychopathology or Forensic Psychology	3
SOC 215	Family Violence	3
SOC 223	Drugs and Alcohol in American Society	3
SOC 225	Juvenile Delinquency	3
SOC 226	Corrections, Probation and Parole	3
SOC 228	Deviance and Social Control	3
SOC 235	Corrections Counseling	3

Capstone (3 hours)

SOC 390	Senior Capstone in Sociology	3
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CRIMINOLOGY MINOR

A minor in Criminology consists of 18 hours, including SOC 222: Criminology, a course that all students must complete. In addition, the Criminology minor must complete at least 1 course from each of the content areas listed below:

Content area I: Economics – 3 Hours

EC 320 Economics of Crime*

Content area II: Political Science – 3 Hours

PS 232 Criminal Law
PS 233 Law & Society
PS 332 Civil Rights & Liberty*

Content area III: Psychology – 3 Hours

PSY 352 Psychopathology*
PSY 355 Forensic Psychology*

Content area IV: Sociology – 3 Hours

SOC 215 Family Violence*
SOC 223 Drugs & Alcohol in American Society*
SOC 224 Corrections, Probation, and Parole
SOC 225 Juvenile Delinquency
SOC 228 Deviance & Social Control

College of Arts, Humanities, and Social Sciences

SOC 235	Corrections Counseling		15
* Students must complete all course prerequisites.			
CRIMINOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE			
First Semester			
Eng 101	Composition or	4	
	Distribution Requirement	3	
Soc 101	Introduction to Sociology	3	
Psy 101	Introduction to Psychology	3	
	Distribution Requirement	3	
FYF 101	First-Year Foundations	3	
		<hr/>	15-16
Second Semester			
Eng 101	Composition or	4	
	Distribution Requirement	3	
	Major Elective	3	
	Distribution Requirements	6	
	Free Elective	3	
		<hr/>	15-16
Third Semester			
Soc 222	Criminology	3	
Psy 242	Personality	3	
	Distribution Requirement	3	
	Free Elective	6	
		<hr/>	15
Fourth Semester			
	Major Elective	3	
	Free Electives	3	
EC 102	Microeconomics	3	
PS 233	Law and Society	3	
	Distribution Requirement	3	
		<hr/>	15
Fifth Semester			
EC 320	Economics of Crime	3	
PS 232	Criminal Law	3	
	Free Elective	3	
	Distribution Requirements	6	
		<hr/>	15
Sixth Semester			
	Major Electives	3	
	Distribution Requirement	3	
	Free Electives	3	
Psy 352	Psychopathology or	3	
Psy 355	Forensic Psychology	3	
SOC 371	Methods of Social Research or	3	
PS 261	Concepts & Methods in PS		
		<hr/>	

Seventh Semester		
SOC 373/PS 265	Quantitative Reasoning for the Social Sciences	3
Free Electives		<hr/>
		15
Eighth Semester		
SOC 390/PS 390	Senior Capstone	3
Free Electives		<hr/>
		11
		<hr/>
		14

ECONOMICS MINOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The Social Sciences Division offers a minor program in Economics. For students who have chosen other majors, a minor in Economics often is a valuable complement. Its ability to bring into sharp focus the economic issues and problems subsumed in such areas as business administration, political science, sociology, history, pre-law, music or engineering make it a valuable career asset. The minor program in Economics requires the completion of EC 101 and EC 102 and at least 12 additional credits in economics courses, chosen in consultation with an academic advisor in the Division of Social Sciences.

INTERNATIONAL STUDIES MAJOR

COORDINATOR: DR. ANDREW MILLER

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN INTERNATIONAL STUDIES LEADING TO THE B.A. DEGREE — 120.

The interdisciplinary major in International Studies (I.S.) provides an excellent liberal arts preparation for a variety of careers and professions. The major is structured to permit concentration in fields leading to specific careers in business, government, international organizations, the military, or any technical or arts field. It is also structured to permit a period of study abroad with easy transfer of credits to the major.

The total number of hours required for graduation with an International Studies major is 120, of which 45 are within the major. For the International Studies major, the following courses at the introductory level are required: History 101; Economics 101-102; Political Science 141, 151, 261; Anthropology 102; Earth and Environmental Sciences 105*; International Studies 380; and Foreign Language at 203-204 competency or equivalent.

Students are also required to take 15 content hours. Students will select three content areas and take a minimum of 6 hours within any two content areas. 9 credits from the content areas must be at the 300 level or above. Specific courses contributing to one of these concentrations and the I.S. requirements will be worked out with the I.S. coordinator and may include courses taken while studying abroad at another institution.

* Only EES 105, "The Global Environment," will count towards the I.S. major.

**INTERNATIONAL STUDIES MAJOR:
CONTENT AREAS AND MAJOR ELECTIVES:**

Content Area I: Political Science

- PS 242 International Law and Organizations
- PS 251 European Politics
- PS 350 Comparative Politics

Content Area II: History

- HST 341-342 History of Great Britain
- HST 345 History of Northeastern Europe
- HST 346 History of the Balkans
- HST 348 History of Russia
- HST 356 Europe, 1900-1960
- HST 357 The World Since 1945
- HST 367 History of Modern India

Content Area III: International Business and Economics

- BA 358 International Business
- EC 340 International Trade and Finance

Content Area IV: Anthropology

- ANT 212 Peoples and Cultures of the World

Content Area V: Languages

Foreign Language above 204 level.

Content Area VI: Global Environmental Policy

- EES 210 Global Climatic Change
- EES 218 Environmental Ethics
- EES 242 Environmental Health
- EES 261 Regional Geography
- EES 341 Freshwater Ecosystems
- EES 343 Marine Ecology
- EES 344 Ecology

Classes not listed above, but which are applicable to International Studies, may be approved by the International Studies Coordinator. Additional language classes may be available through the Wilkes-Misericordia-King's Cross-Registration program.

INTERNATIONAL STUDIES MINOR

A minor in International Studies consists of 18 hours, including ANT 102, HST 101, PS 151, which all students must complete.

In addition, the International Studies minor must complete 9 hours from the classes listed below from at least 2 different Content Areas.

Content Area I: Political Science

- PS 141 Introduction to International Politics
- PS 242 International Law and Organizations
- PS 251 European Politics
- PS 350 Comparative Politics

Content Area II: History

- HST 345 History of Northeastern Europe
- HST 346 History of the Balkans
- HST 348 History of Russia
- HST 356 Europe, 1900-1960

Content Area III: International Business and Economics

- BA 358 International Business
- BA 398 International Business Experience
- EC 102 Principles of Economics II
- EC 340 International Trade and Finance

Content Area IV: Anthropology

- ANT 212 Peoples and Cultures of the World

Content Area V: Languages

Foreign Language at or above the 101-102 level.

Content Area VI: Global Environmental Policy

- EES 105 Planet Earth
- EES 210 Global Climatic Change
- EES 261 Regional Geography

Classes not listed above, but which are applicable to International Studies, may be approved by the International Studies Coordinator. Additional language classes may be available through the Language Institute.

INTERNATIONAL STUDIES MAJOR-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Eng 101 Composition or	4
Distribution Requirement	3
Ec 101 Principles of Economics I	3
PS 151 Governments of the World	3
Distribution Requirements	3
FYF 101 First-Year Foundations	3
	15-16
Second Semester	
Eng 101 Composition or	4

College of Arts, Humanities, and Social Sciences

Distribution Requirement	3
Hst 101 Modern World	3
Ec 102 Principles of Economics II	3
PS 141 Introduction to International Politics	3
COM 101 Public Speaking	3
	<hr/>
	15-16
Third Semester	
EES 105 Planet Earth	3
Ant 102 Cultural Anthropology	3
CS 115 Computers and Applications	3
Foreign Language*	3
Distribution Requirement	3
	<hr/>
	15
Fourth Semester	
Foreign Language*	3
ENG 120 Literature	3
Distribution Requirements	6
Content Hours	3
	<hr/>
	15
Fifth Semester	
Study Abroad or Free Electives**	15
	<hr/>
	15
Sixth Semester	
Study Abroad or Free Electives**	15
	<hr/>
	15
Seventh Semester	
PS 261 Concepts and Methods	3
Content Hours	9
MTH 101 Solving Problems	3
	<hr/>
	15
Eighth Semester	
IS 380 Senior Capstone	3
Content Hours	3
Free Electives	8
	<hr/>
	14

*These courses are required for all International Studies Majors.

**Students may elect to spend their junior year on campus. Courses will be selected in consultation with the International Studies Advisor.

POLITICAL SCIENCE MAJOR

TOTAL MINIMUM NUMBER OF CREDITS FOR A MAJOR IN POLITICAL SCIENCE LEADING TO A B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN POLITICAL SCIENCE — 18.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN POLICY STUDIES — 18.

A major in Political Science requires 120 hours. These include 43 hours in the University's General Education Requirements and 42 hours in political science. All majors must take the following courses that comprise the Core in political science: PS 111, 141, 151, 260, 261, 265, 380, a total of 21 credit hours. Students must then choose an additional 21 credits in political science of which at least 9 credits come from courses at the 300-level or higher.

Students majoring in Political Science may receive a Pennsylvania Teaching Certificate for teaching Social Studies in grades 7-12.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 180, ED 190, ED 191, ED 220, ED 380, ED 381, ED 390, EDSP 210, EDSP 225, and EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses, a cumulative 3.0 to remain in the Teacher Education Program, and pass the appropriate PRAXIS tests in order to be certified.

As a traditional liberal arts discipline, students who choose to major in Political Science are broadly trained and so have a wide variety of career options available. Among the most common fields of employment are government, law, education, social services, media, business, and foreign/international service.

See the Pre-Law section for information on law school advising and admissions.

POLITICAL SCIENCE MINOR

A minor in Political Science requires 18 credits and that the student take PS 111, 141, 151, 260 and an additional 6 credits at least 3 of which must be at the 300 level.

POLICY STUDIES MINOR

A minor in Policy Studies requires that the student take the following 4 Political Science courses and an additional 6 credits in policy courses. These courses may include an offering from outside of the Political Science Department, but it must be approved by an advisor in the Department before the course is taken.

Policy Studies Minor requirements:

PS 111 Introduction to American Politics	3
PS 141 Introduction to International Politics	3
PS 221 Introduction to Public Administration	3
PS 224 Public Policy Analysis	3
PS 298/PS 398 Special Topics (in any policy area)	6

POLITICAL SCIENCE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ENG 101 Composition or Distribution Requirement	4
PS 111 Intro. to American Politics	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/>
	15-16

Second Semester

Eng 101 Composition or Distribution Requirement	4
PS 141 Intro. to International Politics	3
Distribution Requirements	9
	<hr/>
	15-16

Third Semester

PS 151 Governments of the World	3
PS 261 Concepts and Methods in PS	3
Distribution Requirements	9
	<hr/>
	15

Fourth Semester

PS 260 Intro. to Political Thinking	3
PS 265 Quantitative Reasoning	3
PS 200-Level Elective	3
Distribution Requirements	3
Free Elective	3
	<hr/>
	15

Fifth Semester

PS 200-Level Elective	3
PS 200- or 300-Level Elective	3
PS 300-Level Elective	3
Free Electives	6
	<hr/>
	15

Sixth Semester

PS 200-Level Elective	3
PS 200- or 300-Level Elective	3
PS 300-Level Elective	3
Free Electives	6
	<hr/>
	15

Seventh Semester

PS 380 Senior Research/Capstone*	3
Free Electives	12 or 15
	<hr/>
	15

Eighth Semester

PS 380 Senior Research/Capstone*	3
Free Electives	11 or 14
	<hr/>
	14

* Seniors must complete only one PS 380 course.

PSYCHOLOGY MAJOR

COORDINATOR: DR. TINDELL

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN PSYCHOLOGY LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN PSYCHOLOGY — 18.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN NEUROSCIENCE — 28.

The Psychology major at Wilkes University emphasizes a scientific approach to the content, methods, and theories of human and nonhuman behavior. Wilkes students are prepared to pursue professional careers in psychology or related fields such as medicine or law, obtain employment immediately upon graduation, or attend graduate school in psychology.

The Psychology major must complete a minimum of 120 credit hours. In addition to satisfying the University's General Education requirements, the student majoring in Psychology completes a minimum of 39 credits in psychology. All students must take PSY 101 (General Psychology), PSY 200 (Research Design & Statistics I), PSY 300 (Research Design & Statistics II), and PSY 400 (Senior Capstone). PSY 101 is a prerequisite to all other psychology courses. PSY 200 should be completed prior to the junior year, PSY 300 prior to the senior year, and PSY 400 during the senior year. Students in PSY 400 will run projects proposed in PSY 300. Students will not be allowed to take PSY 400 until they have successfully completed PSY 300, and have proposed an acceptable capstone project. Departmental approval of the project is required prior to enrollment in PSY 400. The student majoring in Psychology must take at least one course each from Content Areas I, II, III, and IV, and at least two courses from Content Area V. The Psychology major must take either BIO 105 (Human Biology) or another biology course approved by the

College of Arts, Humanities, and Social Sciences

department. It is strongly recommended that the student take a foreign language. Students are strongly urged to take CAR 198 during their junior year. Taking this course will waive a career component of the capstone course.

Students are encouraged to consult the *Undergraduate Bulletin* for all information regarding degree requirements. Each student should also meet frequently and work closely with the faculty advisor in order to make the optimal course selections based upon the student's interests and career goals. With numerous free elective credits many Psychology majors choose to major or minor in a second discipline.

The Tracking Program within the major assists students in focusing on more specific career and graduate school goals. Tracks exist in Liberal Arts, Professional, Educational Psychology, and Neuroscience/Behavioral Medicine. Students will select a track, in consultation with the advisor, and complete the course requirements of the track in addition to the general requirements of the Psychology major. Majors are also encouraged to consider the many credit-bearing cooperative education (internship) and independent study opportunities that are available. These experiences enhance the student's employment potential and graduate school opportunities.

The Content Areas with their corresponding courses are as follows:

Content Area I – Biological Foundations

- Psy 311 Behavioral Neuroscience (4 credits)
Psy 312 Sensory and Perceptual Processes (4 credits)

Content Area II – Human Development

- Psy 221 Developmental Psychology (3 credits)
Psy 222 Adolescent Psychology (3 credits)

Content Area III – Cognition/Critical Thinking

- Psy 331 Cognition (3 credits)
Psy 333 Critical Thinking in Psychological Science (3 credits)

Content Area IV – Social/Personality

- Psy 242 Personality (3 credits)
Psy 341 Social Psychology (3 credits)

Content Area V – Applied

- Psy 351 Behavioral Medicine (3 credits)
Psy 352 Psychopathology (3 credits)
Psy 353 Clinical Methods in Psychology (3 credits)
Psy 354 The Exceptional Individual (3 credits)
Psy 355 Forensic Psychology (3 credits)

- Psy 356 Industrial/Organizational (3 credits)
Psy 357 Neuropsychology (3 credits)
Psy 358 Psychological Tests and Measurements (3 credits)
Psy 359 Psycho-pharmacology (3 credits)

All students majoring in Psychology complete a common set of courses in the major.

These courses are as follows:

Course number	Course title	Credits
Psy 101	General Psychology	3
Psy 200	Statistics in Psychology	4
Psy 300	Experimental Psychology	4
Psy 400	Senior Capstone	3

Students majoring in Psychology must also select and complete a Track, a specific area of concentration, within the major. The four Tracks, and the course requirements within each Track, are as follows:

I. Liberal Arts Track

At least one course from each of the following Areas: I, II, III, IV
At least two courses from Area V
Any two psychology elective courses

II. Professional

At least one course from following Areas: I, II, III, IV
At least two courses from Area V
PSY 395-396 Individualized
PSY 399 Cooperative

III. Educational Psychology Track

Course number	Course title	Credit
PSY 312	Sensory & Perceptual Processes	4
PSY 221	Developmental Psychology	3
PSY 222	Adolescent Psychology	3
PSY 242	Personality	3
PSY 331	Cognition	3
PSY 352	Psychopathology	3
PSY 354	The Exceptional Individual	3
PSY 358	Psychological Tests & Measurements	3
PSY 399	Cooperative Education**	3

**Waived through student teaching

IV. Neuroscience/Behavioral Medicine Track

Course number	Course title
PSY 311	Behavioral Neuroscience
PSY 312	Sensory & Perceptual Processes
PSY 221	Developmental Psychology
PSY 242	Personality
PSY 331	Cognition
PSY 351	Behavioral Medicine
PSY 352	Psychopathology
PSY 353	Clinical Methods in Psychology
PSY 354	The Exceptional Individual
PSY 357	Neuropsychology
PSY 359	Psychopharmacology
PSY 395-396	Independent Research
PSY 399	Cooperative Education

PSYCHOLOGY MINOR

Students who elect to minor in Psychology must complete 18 credits. This includes PSY 101 and PSY 200 and at least 12 additional credits in psychology.

NEUROSCIENCE MINOR

COORDINATOR: DR. SCHICATANO

The Departments of Psychology and Biology offer an interdisciplinary minor in Neuroscience. The Neuroscience minor provides students with a basic science background, emphasizing a broadly based, yet integrated approach to understanding the neural mechanisms controlling human or animal behavior. The program is designed to prepare students who are interested in studying neuroscience, pharmacology, and/or medicine. To earn a minor, students must complete 28 credits in the courses listed below:

List of required courses for the minor

Psy 101 General Psychology

Psy 200 Psychology Statistics (3 credits) or Mth 150 Elementary Statistics (3 credits)
 Psy 311 Behavioral Neuroscience (4 credits)
 Psy 357 Neuropsychology (3 credits)
 Psy 359 Psychopharmacology (3 credits) or Pha 450 Neuropharmacology of Drugs of Abuse (3 credits)
 Bio 121 Principles of Modern Biology I (4 credits)
 Bio 226 Molecular and Cellular Biology (4 credits)
 Bio 116 Human Anatomy & Physiology or Bio 321 Mammalian Physiology (4 credits) or
 Pha 331 and 332 Medical Anatomy & Physiology I & II

PSYCHOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Psy 101 General Psychology	3
Eng 101 Composition or Distribution Requirement	3-4
Bio 105 Human Biology or Distribution Requirement	3
FYF 101 First-Year Foundations	3
3	15-16
Second Semester	
Major Elective	3
Eng 101 Composition or Distribution Requirement	3-4
Distribution Requirements	9
	15-16
Third Semester	
Major Elective or Psy 200 Research Design and Statistics I	3-4
Major Elective	3
Distribution Requirements	6
Free Elective	3
	15-16
Fourth Semester	
Major Elective or Psy 200 Research Design and Statistics I	3-4
Major Elective	3
Distribution Requirements	6
Free Elective	3
	15-16
Fifth Semester	
Psy 300 Research Design & Statistics II or Area I Major Requirement	4
Major Electives	6
Free Elective	3
CAR 198 (Strongly Recommended)	1

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Sixth Semester	
PSY 300 Research Design & Statistics II or Area I Major Requirement	4
Major Elective	3
Free Electives	9
	<hr/> 16
Seventh Semester	
Psy 400 Senior Capstone or Free Elective	3
Free Electives	12
	<hr/> 15
Eighth Semester	
Psy 400 Senior Capstone or Free Elective	3
Free Electives	10
	<hr/> 13

SOCIOLOGY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN SOCIOLOGY LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

A major in Sociology prepares students for a variety of careers. Students who graduate with a major in Sociology find jobs in social services, criminal justice, business, and education. Students who decide to pursue a graduate education can do so in a variety of fields including sociology, law, social work, business and psychology among others.

A unique feature of the program in Sociology is its flexibility. Students have the opportunity to pursue a full range of academic options beyond the major. For example, utilizing existing programs and courses, it is possible for students to achieve a dual major in Sociology and Psychology, Sociology and Criminology, or to finish an MBA in slightly more than one calendar year after completion of their B.A. degree.

A major in Sociology consists of 36 hours, including Soc 101, either Ant 101 or Ant 102, Soc 371, Soc 373, Soc 381 and Soc 390. All anthropology courses may be taken for credit toward the major or minor in Sociology. Also Phl 230 and/or Phl 250 may be taken for credit toward the major. Courses required in the major such as Soc 101 and Ant 101 may also be used to fulfill distribution requirements. The department emphasizes internships in professional settings which integrate academic studies with work experiences such as Soc 393

Practicum and Soc 399 Cooperative Education. The credit hours earned in Soc 393 and Soc 399 may not be applied toward the 36 hours required for the major.

SOCIAL WORK/HUMAN SERVICES

Students interested in careers in drug and alcohol counseling, agency counseling, social work, or other human services occupations are urged to take at least three courses in social work, two courses in psychology, and complete 120 hours of supervised practical field experience in a professional setting (Soc 399). The latter requirement may be completed under the auspices of the Cooperative Education Program.

PRE-LAW

Students interested in law school may major in any field. Sociology provides appropriate preparation for legal studies. See the Pre-Law section in this Bulletin for further details.

ANTHROPOLOGY

Students can choose a concentration in Anthropology. The concentration consists of 12 hours, including Ant 101, Ant 102 and two upper-level courses in Anthropology.

SOCIOLOGY MINOR

A minor in Sociology consists of 18 hours, including Soc 101. At least one of the following courses is required: Social Psychology 341; Sociological Methods 371; Quantitative Reasoning in the Social Sciences 373; Sociological Theory 381.

The department offers Soc 399 (Cooperative Education) and Practicum (Soc 393), a supervised practical field experience designed for Sociology minors, in a professional setting. The hours earned in Cooperative Education or Practicum may not be applied toward the eighteen hours required for the minor.

SOCIOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Soc 101 Intro. to Sociology	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/> 15-16

Second Semester

Ant 101 Intro. to Anthropology	3
Eng 101 Composition or	4

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Distribution Requirement	3	Sixth Semester	
Distribution Requirements	<u>9</u>	Soc 371 Methods of Research	3
	15-16	Major Electives	6
Third Semester		Free Electives	<u>6</u>
Major Elective	3		15
Free Electives	<u>12</u>	Seventh Semester	
	15	Soc 373 Quantitative Reasoning	3
Fourth Semester		Major Elective	3
Major Elective	3	Free Electives	<u>9</u>
Free Electives	<u>12</u>		15
	15	Eighth Semester	
Fifth Semester		Soc 390 Senior Capstone	3
Soc 381 Social Theory	3	Free Electives	<u>11</u>
Major Elective	3		14
Free Electives	<u>9</u>		
	15		

DEPARTMENT OF COMMUNICATION STUDIES

CHAIRPERSON: DR. MARK D. STINE

Faculty: Professors: Elmes-Crahall, Kinney

Associate Professor: Stine

Assistant Professor: Estwick

Visiting Instructors: Mellon

Director of Shelburne Center: Brigido

Radio Station Manager: R. Loftus

COMMUNICATION STUDIES MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMMUNICATION STUDIES LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The major in Communication Studies has concentrations in Rhetoric and Public Communication; Organizational Communication (Public Relations); Broadcast Media (Radio/Television); and Journalism. Each concentration offers a wide choice of career options as well as graduate school preparation. While each concentration has its own unique curricular aspects, the goals are the same — a graduate who is able to write, speak, and think both analytically and creatively. Each concentration offers skills and performance courses and co-curricular activities that can be applied to everyday situations. In addition, the theory, writing and analysis courses enable students to advance beyond the entry level in their chosen fields or even to change fields entirely. We believe the curriculum also affords ample opportunity for the student to explore other disciplines. It is recommended that students who major in Communication Studies take a foreign language.

Departmental Requirements:

All students choosing to major in Communication Studies must fulfill specific department requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows:

- COM 101 Fundamentals of Public Speaking
- COM 102 Principles of Communication
- COM 124 Mass Media in Society

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- COM 202** Interpersonal Communication
- COM 324** Communication Research Methods
- COM 397** Senior Seminar

The Department also has a six-hour writing requirement for all Communication Studies majors.

Concentration Requirements:

Each concentration is described and outlined on the following pages.

Organizational Communication

This concentration introduces students to the theory, skills, and application of face-to-face communication in interpersonal, small group, organizational, and public settings. Its theoretical foundation is primarily in the behavioral sciences. Communication is viewed as an ongoing process, knowledge of which permits the student to apply his or her skills to a variety of contexts.

All students concentrating in Organizational Communication will take the following three courses (9 credits):

- COM 206** Business and Professional Speaking
- COM 302** Fundamentals of Public Relations
- COM 303** Organizational Communication

In addition, Organizational concentrators will complete 9 credits selected from the following courses:

- COM 203** Small Group Communication
- COM 301** Persuasion
- COM 304** Intercultural Communication
- COM 352** Advanced Public Relations Campaigns
- COM 399** or
- CPE 399** Internship (Only three credits of Internship may count in the concentration.)
- BA 322** Advertising (All prerequisites must be met for BA 322)

Writing Requirement (6 credits):

- COM 260** Basic Newswriting and either
- COM 262** Visual Rhetoric *or*
- Eng 202** Technical Writing

PUBLIC RELATIONS TRACK:

The Public Relations Society of America has developed guidelines for undergraduates wishing to enter the field of public relations. Students should consult an advisor within the department to determine what additional courses will be necessary to meet these guidelines.

Rhetoric and Public Communication

This concentration introduces students to the history, principles, and practices of traditional rhetoric. The concentration derives its theoretical foundation from the works of classical rhetoric. It is a performance-centered concentration in which students research, write, deliver, and analyze public discourse. Each course emphasizes adaptation of messages to diverse audiences, usually found in formal, deliberative settings.

All students concentrating in Rhetoric and Public Communication are required to take the following three courses (9 credits):

- COM 204** Argumentation and Debate
- COM 300** Communication Criticism
- COM 301** Persuasion

In addition, Rhetoric concentrators will take 9 credits selected from the following courses:

- COM 201 Advanced Public Speaking
- COM 203 Small Group Communication
- COM 206 Business and Professional
 Communication
- COM 302 Fundamentals of Public Relations
- COM 398 Topics in Presidential Campaign
 Rhetoric *or*
- COM 399
- CPE 399 Internship (Only three credits of
 Internship may count in the
 concentration.)

Writing Requirement (6 credits):

- COM 260 Basic Newswriting
- Eng 202 Technical Writing

POLITICAL COMMUNICATION TRACK:

Students who are interested in careers in political communication must satisfy the twelve-credit concentration requirement and take three political science courses at the 200 level or above. These courses should be chosen in consultation with an advisor.

**ORGANIZATIONAL COMMUNICATION AND RHETORIC & PUBLIC COMMUNICATION
CONCENTRATIONS- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

First Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 101 Fundamentals of Speech	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	15-16

Second Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 102 Principles of Communication	3
COM 124 Mass Media Literacy	3
Distribution Requirements	6
	15-16

Third Semester

COM 202 Interpersonal Communication	3
COM 260 Basic Newswriting	3
Writing Requirement	3
Free Elective	6
	15

Fourth Semester

Concentration Selections	3
Writing Requirement	3
Distribution Requirements	9
	15

Fifth Semester

Concentration Selection	6
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COM 302 Public Relations	3
Free Electives	<u>6</u>
	15
Sixth Semester	
Concentration Selection	3
Free Elective	3
Distribution	6
COM 300 Communication Criticism or	3
COM 303 Organizational Communication	<u>3</u>
	15
Seventh Semester	
COM 324 Research Methods	3
Concentration Selection	3
Free Electives	<u>9</u>
	15
Eighth Semester	
COM 397 Senior Seminar	3
Free Electives	<u>12</u>
	15

BROADCAST MEDIA

This concentration introduces students to the history, economics, regulations, and functions of the radio, television and cable industries. It provides students with a combination of skills, performance, and theory that will enable graduates to seek employment in those industries. In addition, students should be competitive in advertising, marketing, and research firms as well as audio/video media.

All students concentrating in Broadcast Media must take the following three courses (9 credits):

- COM 220 Introduction to Telecommunications
- COM 221 Digital Audio Production
- COM 222 Basic Video Production

In addition, Broadcast Media concentrators will take 9 credits selected from the following courses:

- COM 223 The Art of Film
- COM 300 Communication Criticism
- COM 320 Media Management
- COM 321 Broadcast Journalism
- COM 322 Advanced Video Production
- COM 362 Mass Communication Law
- COM 399 Internship (Only three credits of
or Internship may count in the
CPE 399 concentration.)

Writing Requirement (6 credits):

- COM 260 Basic Newswriting and
- Eng 202 Technical Writing

BROADCAST MEDIA CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Eng 101 Composition or	4
Distribution Requirement	3

COM 101 Fundamentals of Speech	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/>
	15-16
Second Semester	
Eng 101 Composition or	4
Distribution Requirement	3
COM 102 Principles of Communication	3
Distribution Requirements	6
COM 124 Mass Media Literacy	3
	<hr/>
	15-16
Third Semester	
COM 202 Interpersonal Communication	3
COM 220 Intro. To Telecommunications	3
COM 260 Basic Newswriting	3
COM 221 Digital Audio Production or	
COM 222 Basic Video Production	3
Free Elective	3
	<hr/>
	15
Fourth Semester	
Concentration Selection	3
ENG 202 Technical Writing and Professional Writing	3
Distribution Requirements	9
	<hr/>
	15
Fifth Semester	
Concentration Selection	3
Free Electives	12
	<hr/>
	15
Sixth Semester	
COM 322 Advanced Video Production	3
Free Electives	12
	<hr/>
	15
Seventh Semester	
COM 324 Research Methods	3
Concentration Selection	3
Free Electives	9
	<hr/>
	15
Eighth Semester	
COM 397 Senior Seminar	3
Free Electives	12
	<hr/>
	15

Journalism

This concentration is designed to prepare students to write crisp, concise, lively prose for mass audiences; to utilize, interpret, and analyze primary sources; and to offer thought-provoking commentary on contemporary issues and current events. Students are strongly advised to pursue a minor in English, Political Science, History or another area, with departmental approval.

All students concentrating in Journalism will take the following three courses (9 credits):

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- COM 262 Visual Rhetoric
- COM 360 Advanced Newswriting
- COM 362 Mass Communication Law

In addition, Journalism concentrators will take 9 credits selected from the following courses:

- COM 300 Communication Criticism
- COM 302 Fundamentals of Public Relations
- COM 321 Broadcast Journalism
- COM 361 Feature Writing
- COM 399 Internship (Only three credits of
or Internship may count in the
CPE 399 concentration.)

Writing Requirement (6 credits):

- COM 260 Basic Newswriting and
- Eng 202 Technical Writing

JOURNALISM CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 101 Fundamentals of Speech	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/>
	15-16

Second Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 102 Principles of Communication	3
Distribution Requirements	6
COM 124 Mass Media Literacy	3
	<hr/>
	15-16

Third Semester

COM 202 Interpersonal Communication	3
COM 260 Basic Newswriting	3
Concentration Selection	3
Free Electives	6
	<hr/>
	15

Fourth Semester

COM 262 Visual Rhetoric	3
Concentration Selection	3
Eng 201 Advanced Composition	3
Distribution Requirements	6
	<hr/>
	15

Fifth Semester

COM 362 Mass Communication Law	3
Distribution Requirements	3
Concentration Selections	6
Free Electives	3
	<hr/>
	15

Sixth Semester	
COM 360 Advanced Newswriting	3
Free Elective	<u>12</u>
	15
Seventh Semester	
COM 324 Research Methods	3
Concentration Selection	3
Free Electives	<u>9</u>
	15
Eighth Semester	
COM 397 Senior Seminar	3
Free Electives	<u>12</u>
	15

COMMUNICATION STUDIES MINOR

Minors are offered in each of the areas of concentration provided by the Department. Minor requirements are as follows:

Organizational Communication Minor

Required: Either COM 101 Fundamentals of Speech or COM 102 Principles of Communication

Electives: Five of the following:

- COM 202 Interpersonal Communication
- COM 203 Small Group Communication
- COM 206 Business and Professional Communication
- COM 301 Persuasion
- COM 302 Fundamentals of Public Relations
- COM 303 Organizational Communication
- COM 304 Intercultural Communication

Rhetoric and Public Communication Minor

Required: Either COM 101 Fundamentals of Speech or COM 102 Principles of Communication

Electives: Five of the following:

- COM 201 Advanced Public Speaking
- COM 203 Small Group Communication
- COM 204 Argumentation and Debate
- COM 206 Business and Professional Communication
- COM 300 Communication Criticism
- COM 301 Persuasion
- COM 302 Fundamentals of Public Relations

Broadcast Media Minor

Required: COM 220 Introduction to Telecommunications *Electives:* Five of the following:

- COM 124 Mass Media Literacy
- COM 221 Digital Audio Production
- COM 222 Basic Video Production
- COM 223 The Art of Film
- COM 321 Broadcast Journalism
- COM 322 Advanced Video Production
- COM 362 Mass Communication Law

College of Arts, Humanities, and Social Sciences

Journalism Minor

Required: COM 260 Basic Newswriting *Electives:* Five of the following:

- COM 124 Mass Media Literacy
- COM 302 Fundamentals of Public Relations
- COM 360 Advanced Newswriting
- COM 361 Feature Writing
- COM 362 Mass Communication Law

DIVISION OF HUMANITIES

CHAIRPERSON: DR. LAWRENCE T. KUHAR

The Division of Humanities comprises the programs in English, History, Philosophy, and Spanish.

English Faculty:

Associate Professors: Anthony, Hamill, Kuhar, Starner

Assistant Professors: Farrell, Kelly, Stanley

Instructor: Grier

Adjunct Faculty: Kemmerer, Kovacs, Lampman, Wills

Faculty Emeriti: Fiester, Gutin, P.Heaman, R. Heaman, Kaska, Karpinich

History Faculty:

Professor: Hupchik

Associate Professors: Wenger

Assistant Professor: Davidson

Adjunct Faculty: Gunn, Petrasko

Faculty Emeriti: Berlatsky,

Cox, Meyers, Rodechko

Philosophy Faculty:

Associate Professor: Paul

Visiting Assistant Professor: Reid

Faculty Emeritus: Kay

Spanish Faculty:

Associate Professor: Bianco

Instructor: Harris

Adjunct Faculty: Lepore

(French), Poggi (Spanish), Thackara (Spanish)

ENGLISH MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENGLISH LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18 (BEYOND ENG 101).

Wilkes University requires 120 credit hours for a B.A. degree in English. These include completion of General Education Requirements and 39 credit hours in English including ENG 101, which is a prerequisite for ENG 120.

The English major offers students an opportunity to develop skills in language, rhetoric, and writing, to practice critical and creative thinking, and to establish a foundation of liberal learning through the study of literature. The skills, values, and habits of thought acquired through the study of language and literature prepare students for careers in

teaching, graduate school, law, communications, journalism, business, government service, and other professional areas. The department strongly recommends that students who major in English take a foreign language.

A second major or a minor in English adds an attractive dimension to a student's major preparation in communications, business, theatre, pre-law, and other pre-professional and technical programs in which effective writing, liberal learning, and critical thinking are valued.

Students who major in English may concentrate in literature or writing, or may choose a program leading to certification in secondary teaching.

Non-majors may be admitted to courses numbered 300 and above with the permission of the instructor and department chair.

Literature and Writing Concentrations in English

Students who concentrate in literature are required to take English 120, 201, and three of four survey courses: English 233, 234, 281, and 282. The department strongly recommends that students concentrating in literature take all four survey courses. In addition, students must complete 19 credit hours in English courses numbered above 300, including one course in major author studies, one course in genre studies (fiction, drama, poetry), two courses in a period or movement, English 397, and a senior capstone project.

Students who concentrate in writing are required to take English 201 and an additional nine credit hours in other writing courses numbered above 200. Students must take English 120 and three of four survey courses: English 233, 234, 281, and 282. In addition, students must complete nine credit hours in advanced literature courses numbered above 300, including English 397, and a senior capstone project.

Certifications in Secondary Education, Middle Level Education, and Elementary Education

Students interested in Secondary Education, Middle Level Education, or Elementary Education certification should make appointments as early as possible with the chairpersons of the English program and Education Department to plan their professional studies. Students seeking certification as secondary level, middle level, or

elementary level education public school teachers should refer to the Education Department's undergraduate section of the current *Bulletin* for a complete outline of Pennsylvania Department of Education (PDE) and program requirements.

Students seeking certification as secondary public school teachers (seventh through twelfth grade certification) of English and a minor in Secondary Education must take English 120, 201, 225, 324, 393, and three of four survey courses: English 233, 234, 281, and 282. The department strongly recommends that students seeking certification take all four survey courses. In addition, students must complete twelve hours in English courses numbered above 300, including one course in major author studies, one course in genre studies (fiction, drama, poetry), one course in a period or movement, and English 397. Education courses required are ED 180, 190, 191, 220, 390, EDSP 210, EDSP 225, and EDSP 388.

These students will declare a MINOR in Secondary Education. The requirements for the minor in Secondary Education and certification are contained in the Education section of the Wilkes *Undergraduate Bulletin*. All Teacher Education students must apply for admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

Students seeking certification as middle level public school teachers (fourth through eighth grade certification) in English/Language Arts/Reading should refer to the Education Department's undergraduate section of the Undergraduate Bulletin for a complete outline of Pennsylvania Department of Education (PDE) and program requirements. Students should also consult carefully with their education program and English program advisors in planning their program.

Students seeking certification as elementary public school teachers should consult carefully with their advisors and the education department in planning their program.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The requirements for the minor in Secondary

Education and certification are contained in the Education section of the Wilkes Bulletin. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 gpa in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

ENGLISH MINOR

The minor in English requires fulfillment of General Education Requirements in composition and literature and fifteen credits in literature, writing or language studies courses numbered 200 or above.

Honors in English

Qualified students may participate in an honors program, which may lead to graduation with distinction in English. Honors students in English will be recognized upon completion of the following requirements:

1. Achievement of a graduating G.P.A. of 3.25 or higher;
2. Achievement of an average of 3.5 in English courses;
3. Completion of a program of independent study resulting in a thesis or writing project recognized as distinguished by a committee of department faculty;
4. Achievement in English studies indicated by performance on standardized assessment examinations.

The distinction "Honors in English" will be recorded on the student's transcript upon graduation.

ENGLISH MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition	4
Distribution Requirements	9
FYF 101 First-Year Foundations	3
	16

Second Semester

Eng 120 Literature and Culture	3
Distribution Requirements	9
Free Elective	3
	15

Third Semester

Eng 201 Writing about Lit. and Culture	4
Eng Survey Electives (233, 282)	3
Free Electives	9
	16

Fourth Semester

Eng Survey Electives (234, 281)	6
Free Electives	<u>9</u>
	15
Fifth Semester	
Major Electives*	6
Free Electives	<u>9</u>
	15
Sixth Semester	
Major Electives*	9
Free Electives	<u>6</u>
	15
Seventh Semester	
Eng 397	3
Free Electives	<u>12</u>
	15
Eighth Semester	
Major Capstone	1
Free Electives	<u>12</u>
	13

*Students select major electives to meet requirements in their area of concentration.

ENGLISH MAJOR WITH SECONDARY TEACHER CERTIFICATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

Students majoring in English and minoring in Secondary Education should consult with advisors in the English and Education departments to design an effective and efficient course of study that incorporates all requirements of the major and minor degree programs.

SPANISH MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN SPANISH LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

Study of foreign languages and literatures develops competence in another language, leads to a better understanding of international issues, and cultivates an appreciation of the differences among diverse cultures. Command of a foreign language enables students to advance their foreign language studies at the graduate level or pursue a broad range of career opportunities in the fields of education, domestic and international commerce, government service, industry, and many others.

Spanish is offered as a major field of study. A major in Spanish consists of twenty-four credit

hours beyond SP 204. Students seeking public school certification in Spanish and a minor in Secondary Education must take SP 205, 206, 208, 298, 301 (Introduction to Latin American Literature), and another literature course in a major writer, or genre, or period, and SP 397. Students pursuing Spanish certification are required to complete PSY 221 (Developmental Psychology.)

Students interested in K-12 certification in Spanish should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. Education courses required are ED 180, ED 190, ED 191, ED 220, ED 300 (Teaching Foreign Language with Field Experience), ED 380, ED 390 and EDSP 210, EDSP 225, and EDSP 388. All Teacher Education students must apply for admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified. See "Secondary Education Programs of Study and Certification Requirements" in this bulletin for complete details.

In the interest of broadening career options, all Spanish majors are advised to combine their language studies with another discipline. Students who elect a career in education are advised to study an additional language. All majors are strongly urged to spend at least a semester abroad arranged through their Spanish advisor.

Students who plan to major or minor in Spanish are particularly encouraged to consider completing a portion of their program overseas. Wilkes offers Study Abroad opportunities in Spain and Latin America. Students can spend a summer, a semester, or a year in the program of their choice.

SPANISH MINOR

Students may elect to minor in Spanish. A minor in Spanish consists of eighteen credit hours beyond SP 102. Study abroad is encouraged.

Certificate Program

The Spanish Language Certificate Program is designed for students, adult learners, and working professionals who wish to develop proficiency in Spanish to enhance their academic and career opportunities. Students enrolled in the Certificate Program are

College of Arts, Humanities, and Social Sciences

required to complete fifteen (15) credits in the study of Spanish beginning at the intermediate level; students can receive up to six (6) credits towards the Certificate Program through study abroad. The Certificate Program provides students with the flexibility to pursue Spanish at the advanced level without completing the requirements of an academic major or minor.

For more information, please contact Dr. Paola Bianco, Associate Professor of Spanish.

SPANISH MAJOR - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

SP 101 Elementary I	3
Eng 101 Composition or Distribution Requirement	4
Distribution Requirement	3
Distribution Requirements	6
YF 101 First-Year Foundations	3
	<hr/> 15-16

Second Semester

SP 102 Elementary II	3
Eng 101 Composition or Distribution Requirement	4
Distribution Requirement	3
Distribution Requirements	9
	<hr/> 15-16

Third Semester

SP 203 Intermediate I	3
Distribution Requirement	3
Free Electives	9
	<hr/> 15

Fourth Semester

SP 204 Intermediate II	3
SP 205 Conversation	3
Free Electives	9
	<hr/> 15

Fifth Semester*

SP 206 Adv. Grammar, Stylistics & Comp.	3
	3
Free Electives	9
	<hr/> 15

Sixth Semester

SP 208 Culture and Civilization	3
SP 301 Introduction to Literature	3
Free Electives	9
	<hr/> 15

Seventh Semester

SP 301 or 307 or 308	3
SP 298 Topics	3
Free Electives	9
	<hr/>

	<hr/> 15
Eighth Semester	
SP 397 Seminar	3
Free Electives	11
	<hr/> 14

*Study Abroad is strongly recommended for students in the sophomore or junior years. Students may spend a summer, semester, or an academic year in a Study Abroad program.

HISTORY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN HISTORY LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

Wilkes University requires 120 credit hours for the B.A. degree in History. These include 43 credit hours in distribution courses and 33 credit hours in history. History 101-102, History 125-126, History 297, History 397, and 15 additional credit hours in history courses numbered 300 and above are required. The 300-level courses must include a minimum of six hours each in American and non-American topics. Comparative courses count toward these minimum distribution requirements as either an American or a non-American topic. American topics will contain the designation (A) at the end of their titles; non-American topics (N) and comparative topics (C). The Department recommends that students who plan to continue their studies in history at the graduate level take a foreign language.

A variety of career options are open to History majors. Because history is a synthesis of the life experience that examines past economic, social, political, scientific, and religious conditions, a careful selection of history courses and elective credit hours will allow students to pursue career interests in business, government, teaching, communications, law, and social service. The History major includes a considerable number of elective credit hours that students may use to develop career interests. The department strongly recommends that some of these hours be used for internships or field experiences.

Certifications in Secondary Education and Middle Level Education

Students interested in Secondary Education or Middle Level Education (with a specialization in Social Studies) certification should make appointments as early as possible with the Coordinator of the History program and the

chairperson of the Education Department to plan their professional studies. Students seeking certification as secondary level or middle level education public school teachers should refer to the Education Department's undergraduate section of the current *Bulletin* for a complete outline of Pennsylvania Department of Education (PDE) and program requirements.

Students pursuing a History major and seeking secondary certification in Social Studies must take the following courses: HST 102; HST 125 & 126; HST 297; HST 397; and 15 credits of History electives (two American and two non-American topics). The following courses are also required for Social Studies Certification: ANT 101; EC 101; PS 111; PS 141; PSY 101; PSY 222; SOC 101; and 6 credits in Mathematics (MTH 150, Elementary Statistics, is highly recommended). Required Education courses are ED 180, 190, 191, 220, 390, EDSP 210, EDSP 225, and EDSP 388.

Students seeking secondary certification in Social Studies will declare a MAJOR in History and a MINOR in Secondary Education. The requirements for the minor in Secondary Education and certification are contained in the Education section of the Wilkes *Undergraduate Bulletin*. All Teacher Education students must apply for admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses, a 3.0 overall GPA, and pass the appropriate PRAXIS tests in order to be certified.

Students seeking certification as middle level public school teachers (fourth through eighth grade certification) with a specialization in Social Studies will major in Middle Level Education and take a prescribed course of study that incorporates History and the Social Sciences. Refer to the Education Department section of this bulletin for details of the curriculum and other degree requirements. Students should also consult carefully with their education program and English program advisors in planning their program.

HISTORY MINOR

A minor in History shall consist of 18 credit hours in courses offered by the department. The required courses are History 101, History 125, and History 126.

HISTORY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Hst 101 Historical Foundations of the Modern World	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/>
	15-16
Second Semester	
Hst 102 Europe Before 1600	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	9
	<hr/>
	15-16
Third Semester	
Hst 125 American History I	3
Hst 297 Research & Methods Seminar	3
Distribution Requirements	6
Free Electives*	3
	<hr/>
	15
Fourth Semester	
Hst 126 American History II	3
Distribution Requirements	9
Free Elective*	3
	<hr/>
	15
Fifth Semester	
Major Electives	6
Free Electives*	9
	<hr/>
	15
Sixth Semester	
Major Elective	3
Free Electives*	12
	<hr/>
	15
Seventh Semester	
Major Electives**	6
Free Electives*	9
	<hr/>
	15
Eighth Semester	
Hst 397 Seminar**	3
Free Electives*	11
	<hr/>
	14

*Sufficient elective credits are available to allow students to complete a minor in most fields. See Wilkes Bulletin for minor requirements.

**Hst 397 in the seventh semester for students planning to student teach in the eighth semester.

College of Arts, Humanities, and Social Sciences

PHILOSOPHY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN PHILOSOPHY LEADING TO THE B.A. DEGREE — 120 CREDITS, INCLUDING 30 CREDITS IN PHILOSOPHY.

TOTAL MINIMUM NUMBER OF CREDITS IN PHILOSOPHY REQUIRED FOR A MINOR — 18.

The Philosophy program focuses on philosophical issues relevant to “the art of living.” These are questions of life and death, questions about how to live, about whether life has meaning, about what kinds of beings we are and the responsibilities we have to ourselves and others, the significance of death in our lives, etc. These questions represent the core of philosophical exploration. They are not simply theoretical exercises, but rather questions of embodiment; we must consider how to put the answers into practice in our lives. Addressing these questions in the disciplined way that the study of philosophy teaches contributes to the well being of those engaged in the study and those with whom they interact, at present and in the future.

In addition, the study of philosophy, whether one pursues a major in Philosophy or chooses a few courses of particular interest, contributes to the development of the skills and habits of mind essential to educated men and women: clarity of thought, precision in the analysis of conflicting claims, the power to render sound judgments based upon an appreciation of differing perspectives, and the ability to express and to defend one’s views using well-reasoned arguments. Philosophy students find themselves well-prepared for careers in professional areas such as law, medicine, and teaching, as well as in areas such as journalism, government, and business. The skills that are honed in the study of philosophy are of value in virtually any career path.

The major requires 30 credit hours including PHL 101, PHL 122, and at least nine credits at the 300-level, including PHL 301, PHL 310 and a one credit capstone (PHL 390).

PHILOSOPHY MINOR

The minor in Philosophy consists of 18 credit hours, including PHL 101, PHL 122, and at least six credits at the 300-level, including PHL 301.

PHILOSOPHY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition *or* 4/3

Distribution Requirement	
FYF 101 First-Year Foundations	3
PHL 101 Introduction to Philosophy	3
Distribution Requirements	<u>6</u>
	15-16
Second Semester	
Eng 101 Composition <i>or</i>	4/3
Distribution Requirement	
PHL 122 Introduction to Symbolic Logic	3
Distribution Requirements	<u>9</u>
	15-16
Third Semester	
Major Elective	3
Distribution Requirements	<u>12</u>
	15
Fourth Semester	
PHL 301 Origins of Western Thought	3
Free Electives	<u>12</u>
	15
Fifth Semester	
PHL 310 Ethical Theory	3
Major Elective	3
Free Electives	<u>9</u>
	15
Sixth Semester	
Major Electives	6
Free Electives	<u>9</u>
	15
Seventh Semester	
Major Elective	3
Free Electives	<u>12</u>
	15
Eighth Semester	
PHL 390 Capstone	1
Major Elective	3
Free Electives	<u>12</u>
	16

DIVISION OF PERFORMING ARTS

CHAIRPERSON: JOSEPH C. DAWSON

Faculty:

Associate Professors: Dawson, Flint, Thomas

Assistant Professor: Simon

Adjunct Professors: Cross, Driscoll, Harris, C.

Helmacy, R. Helmacy, Insalaco, Lish,

Mariani, Minsavage, Phair, Rasmus,

Smallcomb, Unice, Zipay

Faculty Emeriti: Groh

Director of Dance: Kristin Degnan

Director of Theatre: Teresa Fallon

Coordinator of Music: Steven L. Thomas

DANCE MINOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN DANCE — 18.

As a dimension of its continuing development in the performing arts, Wilkes University provides a comprehensive program in the field of dance. The total minimum number of credits for a minor in Dance is 18 (above DAN 100). An advanced project in dance composition is also required of all students enrolled in the Dance minor; this project will be under the supervision of the minor advisor.

MUSIC MINOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN MUSIC — 18.

The music minor program at Wilkes University offers a range of musical experiences, including participation in performing ensembles, studies in music history, and studies in music theory. Music faculty members will both advise and mentor music minors. The 18 credit hour requirement may be sequenced over eight semesters or less.

The required courses for the minor in music are as follows:

Performance, 6 credits to choose from

MUS 121 Civic Band 0/3 credits (repeatable)

MUS 125 University Chorus 0/3 credits (repeatable)

MUS 127 Jazz Ensemble 0/3 credits (repeatable)

MUS 131 University Orchestra 0/3 credits (repeatable)

Music Theory, 3 credits

MUS 103 Music Theory I, 3 credits

Music History, 3 credits

MUS 210 Music History I, 3 credits

MUS 211 Music History II, 3 credits

Music Elective, 3 credits

Any non-performance ensemble class at the level of MUS 104 or higher. Possible classes include, but are not limited to

MUS 104 Music Theory II, 3 credits

MUS 198 Topics in Music Theory or Music History, 1 - 3 credits

MUS 298 Topics in Music Theory or Music History, 1 - 3 credits

MUS 395 Independent Research, Music Theory or Music History, 1 - 3 credits

Music Practice Rooms

A limited number of music practice rooms is available in Dart Hall. These rooms are generally reserved for those students majoring in Theatre Arts and those participating in ensembles or taking private music instruction from university or Wilkes Community Conservatory faculty. Because of the heavy enrollment in these courses, the university is unable to make these rooms available to students who are not enrolled in these curricular offerings.

Students who are eligible to use these rooms are assigned a key for the practice room through the Visual and Performing Arts Department Office. Since more than one student is assigned to a practice room it is expected that students will cooperate and work out compatible practice times. Failure to return the key to the practice room at the conclusion of the semester will result in a block being placed that precludes the release of the official transcript of the work done at the university.

MUSICAL THEATRE MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MUSICAL THEATRE LEADING TO THE B.A. DEGREE — 122.

The Musical Theatre Degree Program integrates studies in Theatre, Music and Dance. Establishing a foundational level in all three disciplines, the program also provides opportunities for advanced study in each area.

MUSICAL THEATRE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ENG 101 Composition 4

FYF 101 First-Year Foundations 3

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THE 190 Theatre Laboratory	1	MUS 400 Voice	1
THE 131 Acting I	3	Electives	9
MUS 100 Voice	1		15
MUS 125 Chorus	1	Eighth Semester	
MUS 103 Basic Musicianship or higher	3	THE 190 Theatre Laboratory	1
	16	DAN Dance Elective	3
Second Semester		MUS 400 Voice	1
ENG 120 Intro to Lit./Culture	3	THE or MUS Musical Theatre Elective	3
Distribution Requirements	6	Electives	6
THE 190 Theatre Laboratory	1		14
THE 132 Speech for the Stage (OPO)	3		
MUS 100 Voice	1	THEATRE ARTS MAJOR	
MUS 125 Chorus	1	TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN THEATRE ARTS LEADING TO THE B.A. DEGREE — 121.	
	15	TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.	
Third Semester		The Theatre Arts major is a diverse and balanced program that encourages many kinds of theatre artists: dancers who act, directors who design, actors who play music, and stage technicians who sing. The program combines the liberal arts core curriculum with the required 39 credits of Theatre Arts classes and 45 credits of electives. Theatre Arts majors may opt to use their electives to double major in another field or follow a course sequence in the following concentrations:	
Distribution Requirements	6	<i>Acting/Directing</i>	
THE 232 Acting II	3	<i>Dance</i>	
THE 190 Theatre Laboratory	1	<i>Theatre Design</i>	
THE 121 Stagecraft	3	THEATRE ARTS MINOR	
MUS 200 Voice	1	<i>Required course:</i>	
	14	THE 121 Stagecraft	
Fourth Semester		<i>Electives: Five of the following:</i>	
Distribution Requirements	9	THE 111 Fundamentals of Play Structure and Criticism	
THE 112 Script Analysis	3	THE 131 Acting I	
THE 190 Theatre Laboratory	1	THE 132 Speech for the Stage	
MUS 200 Voice	1	THE 211 Theatre History I	
	14	THE 312 Theatre History II	
Fifth Semester		THE 221 Scene Design	
Distribution Requirements	3	THE 232 Acting II	
THE 190 Theatre Laboratory	1	THE 234 Directing I	
THE 211 Theatre History I	3	THE 335 Directing II	
THE Elective	3		
MUS 300 Voice	1		
Electives	6		
	17		
Sixth Semester			
Distribution Requirements	3		
THE 190 Theatre Laboratory	1		
THE 312 Theatre History II	3		
THE Elective	3		
MUS 300 Voice	1		
Electives	6		
	17		
Seventh Semester			
THE 190 Theatre Laboratory	1		
THE Design Elective	3		
THE 393 Senior Seminar	1		

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THEATRE ARTS MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
THE 121 Stagecraft	3
THE 190 Theatre Laboratory	1
THE 131 Acting I	3
	<u>14</u>
Second Semester	
ENG 120 Intro to Lit. /Culture	3
Distribution Requirements	6
THE 132 Speech for the Stage (OPO)	3
THE 190 Theatre Laboratory	1
Electives	3
	<u>16</u>
Third Semester	
Distribution Requirements	6
THE 232 Acting II	3
THE 190 Theatre Laboratory	1
Electives	3
	<u>13</u>
Fourth Semester	
Distribution Requirements	9
THE 212 Script Analysis	3
THE 190 Theatre Laboratory	1
Electives	3
	<u>16</u>
Fifth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 211 Theatre History I	3
THE Theatre Design Elective	3
Electives	6
	<u>16</u>
Sixth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 312 Theatre History II	3
THE Elective	3
Electives	6
	<u>16</u>
Seventh Semester	
THE 190 Theatre Laboratory	1
THE 393 Senior Seminar	1
Electives	12
	<u>14</u>

Eighth Semester	
THE 190 Theatre Laboratory	1
THE Elective	3
Electives	12
	<u>16</u>

Theatre Arts majors may use their elective credits to earn a concentration in Acting/Directing, Dance, Theatre Design

THEATRE ARTS MAJOR WITH AN ACTING/DIRECTING CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
THE 190 Theatre Laboratory	1
THE 131 Acting I	3
THE 121 Stagecraft	3
	<u>14</u>
Second Semester	
ENG 120 Intro to Lit./Culture	3
Distribution Requirements	6
THE 190 Theatre Laboratory	1
THE 132 Speech for the Stage (OPO)	3
Elective	3
	<u>16</u>
Third Semester	
Distribution Requirements	6
THE 232 Acting II	3
THE 190 Theatre Laboratory	1
THE 234 Directing I	3
Electives	3
	<u>16</u>
Fourth Semester	
Distribution Requirements	9
THE 112 Script Analysis	3
THE 190 Theatre Laboratory	1
ENG Dramatic Literature Elective	3
	<u>16</u>
Fifth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 211 Theatre History I	3
THE 331 Acting III	3
THE 335 Directing II	3
Elective	3
	<u>16</u>

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Sixth Semester		THE 190 Theatre Laboratory	1
Distribution Requirements	3	DAN 110 Intro to Modern Dance	3
THE 190 Theatre Laboratory	1		16
THE 312 Theatre History II	3		
THE Elective	3		
ENG Dramatic Literature Elective	3		
Elective	3		
	16		
Seventh Semester			
THE 190 Theatre Laboratory	1		
THE 393 Senior Seminar	1		
THE 431 Acting IV	3		
THE Theatre Design Elective	3		
Elective	6		
	14		
Eighth Semester			
THE 190 Theatre Laboratory	1		
THE Elective	3		
Electives	9		
	13		
THEATRE ARTS MAJOR WITH A DANCE CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE			
First Semester			
ENG 101 Composition	4		
FYF 101 First-Year Foundations	3		
THE 190 Theatre Laboratory	1		
THE 131 Acting I	3		
THE 121 Stagecraft	3		
	14		
Second Semester			
ENG 120 Intro to Lit./Culture	3		
Distribution Requirements	6		
THE 190 Theatre Laboratory	1		
THE 132 Speech for the Stage (OPO)	3		
DAN 250 Classical Ballet	3		
	16		
Third Semester			
Distribution Requirements	6		
THE 232 Acting II	3		
THE 190 Theatre Laboratory	1		
DAN 130 Intro to Jazz Dance	3		
Elective	3		
	16		
Fourth Semester			
Distribution Requirements	9		
THE 112 Script Analysis	3		
		Fifth Semester	
		Distribution Requirements	3
		THE 190 Theatre Laboratory	1
		THE 211 Theatre History I	3
		DAN 120 Tap Dance	3
		Elective	6
			16
		Sixth Semester	
		Distribution Requirements	3
		THE 190 Theatre Laboratory	1
		THE 312 Theatre History II	3
		THE Elective	3
		DAN 320 Dance Composition	3
		Elective	3
			16
		Seventh Semester	
		THE 190 Theatre Laboratory	1
		THE 393 Senior Seminar	1
		THE Theatre Design Elective	3
		DAN Elective	3
		Elective	6
			14
		Eighth Semester	
		THE 190 Theatre Laboratory	1
		THE Elective	3
		Electives	9
			13
		THEATRE ARTS MAJOR WITH A THEATRE DESIGN CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE	
		First Semester	
		ENG 101 Composition	4
		FYF 101 First-Year Foundations	3
		THE 190 Theatre Laboratory	1
		THE 131 Acting I	3
		THE 121 Stagecraft	3
			14
		Second Semester	
		ENG 120 Intro to Lit./Culture	3
		Distribution Requirements	6
		THE 190 Theatre Laboratory	1
		THE 132 Speech for the Stage (OPO)	3
		ART 113 Drawing	3

	<u>16</u>
Third Semester	
Distribution Requirements	6
THE 232 Acting II	3
THE 190 Theatre Laboratory	1
THE Theatre Design Elective	3
Elective	<u>3</u>
	16
Fourth Semester	
Distribution Requirements	9
THE 112 Script Analysis	3
THE 190 Theatre Laboratory	1
Art Elective	<u>3</u>
	16
Fifth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 221 Theatre History I	3
THE Theatre Design Elective	3
Electives	<u>6</u>
	16
Sixth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 312 Theatre History II	3
THE Theatre Design Elective	3
Electives	<u>6</u>
	16
Seventh Semester	
THE 190 Theatre Laboratory	1
THE 393 Senior Seminar	1
THE 191 Design Practicum	3
Electives	<u>9</u>
	14
Eighth Semester	
THE 190 Theatre Laboratory	1
Electives	<u>12</u>
	13

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATION

SCHOOL OF EDUCATION

DEAN: DR. MICHAEL SPEZIALE

It is my pleasure, as the Dean of the College of Graduate and Professional Studies and School of Education, to share with you some of the highlights of our continuum of programs, core values and external partnerships, which are the basis for an outstanding array of degree and certification-based offerings. For the most current information on our programs, visit us at the Wilkes web site at www.wilkes.edu.

The Wilkes University School of Education was formed in June of 2008. It brings together, for the first time, the undergraduate Teacher Education Program, masters programs and the doctorate of education program – providing a continuum of study from freshman year through the terminal degree in education. The school is housed in the College of Graduate and Professional Studies.

At the undergraduate level, Wilkes offers degrees and certifications in Elementary Education, Early Childhood Education, Special Education and Secondary Education in several content areas. The department also offers an endorsement in English as a Second Language.

Students entering the undergraduate program can be assured that they will be well prepared to meet the challenges of this rewarding profession through participation in a dynamic, comprehensive program. Prospective teachers learn and apply the most relevant and current educational research and gain valuable experience through varied field experiences in regional school classrooms.

Graduate study in Education is offered primarily to enable teachers to enhance their preparation to become educational leaders. Each program is designed to broaden knowledge in the foundations of education as well as focus on a specific area of advanced training. The master's degree program in Education is offered with 11 majors in a variety of areas.

Wilkes University's Doctorate of Education (Ed.D.) in Educational Leadership is a post-master's program with areas of focus in Educational Technology and K-12 and Higher Education Administration.

Faculty who teach in the undergraduate and graduate programs have strong backgrounds in the field and work to stay abreast of the ever-changing landscape of education. They are

committed to students through continuous mentoring and academic support. At Wilkes you will find faculty who share a belief that education is a critical foundation for life's journey. Faculty believe that each student, no matter what the level, has individual strengths that need to be tapped to provide opportunities for educational success. These beliefs are evident in their teaching. The core values shared by the faculty at both the undergraduate and graduate levels are reflected in the respective mission statements.

The Mission of the Undergraduate Teacher Education Program (TEP) is to provide the educational community and society at large with competent, caring, and ethical educators who are lifelong learners, reflective practitioners, and effective communicators. The Teacher Education program provides opportunities for students to grow academically and professionally. The program promotes an appreciation for diversity, as well as a regard for research-based and innovative practices. The ethic of service and dedication are expected of Teacher Education students to meet the diverse needs of all students within the learning community.

The mission of Graduate Education programs at Wilkes is to provide the educational community with opportunities to become leaders in classroom instruction and in the administration of schools. As such, the Graduate Education Program seeks to promote the highest levels of intellectual growth and career development through a collaborative environment that supports teaching in a diverse learning environment, while valuing commitment to the educational communities it serves.

Recognizing the excellent performance of the graduate programs in leadership, the Pennsylvania Department of Education selected Wilkes as one of seven regional Leadership Centers in 2007-2008. The purpose of the regional centers is to help redefine principal and superintendent preparation guidelines for Pennsylvania.

The School of Education is also committed to engaging in partnerships to provide unique opportunities to all of our students, including: Learning Sciences International, which has partnered with Wilkes to develop and offer programs in 21st Century Teaching and Learning, Early Childhood Literacy and a letter of endorsement in Teacher Leadership and Instructional Coaching; Performance Learning

School of Education

Systems, which has partnered with Wilkes to develop and offer a program in Educational Development and Strategies; and Discovery Education, which in the most recent and unique endeavor, has partnered with Wilkes University to develop and offer a nationally based program in Instructional Media.

Collectively, these partnerships represent the entrepreneurial spirit, and the expanding geographical sphere of influence of the School of Education and its overall commitment to be the regional leader in the preparation of highly qualified educators and educational leaders.

As the Dean of the newly formed School of Education, I am extremely proud of the accomplishments of our faculty, staff and students. I look forward to continued successes and milestones as we collectively work to positively shape the future of education.

DEPARTMENT OF EDUCATION

CHAIRPERSON: DR. CAROLINE MAURER

Faculty: Associate Professors: Maurer, Morrison, Polachek

Assistant Professors: Balester, B. Bellucci, Camoni, Gardner, Murray-Galella

Faculty Emeriti: J. Bellucci, Fahmy, Johnson, Meyers

The Teacher Education Program (TEP) information in this 2010-11 *Undergraduate Bulletin* addresses new certification programs mandated by the Pennsylvania Department of Education (PDE) that will be followed by students who start in Fall 2010 or after. The new programs are

1. a new Pre-kindergarten through fourth grade (PK-4) certification will replace the current Kindergarten through sixth grade (K-6) certification;
2. a new choice of special education concentrations that specifies a grade band of Pre-kindergarten through eighth grades (PK-8) OR seventh through twelfth grades (7-12) will replace the current Pre-kindergarten through twelfth grade (PK-12) generalist certificate; and
3. a new Middle Level certification in grades four through eight (4-8).

Students who have started at Wilkes prior to Fall 2010 will in their current programs as listed on their current course requirements checklists for the following programs:

- Elementary Education (grades Kindergarten through 6)
- Special Education (pre-Kindergarten through grade 12)
- Secondary Education grades 7-12, with teacher certification in Biology, Chemistry, English, Earth & Space Science (with a major in Earth and Environmental Sciences), Spanish, and Social Studies (with a major in History or Political Science)

Current students must complete all required coursework and Praxis tests and apply for teaching certification by June 30, 2013. As of September 1, 2013, these programs will no longer be certified by the PA Department of Education.

**Students should regularly consult with their academic advisors and the Education Department for any changes or considerations. The Education Department offers specific

advising checklists and policy documents to help guide students in their respective programs.

ELEMENTARY AND EARLY CHILDHOOD EDUCATION MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ELEMENTARY/EARLY CHILDHOOD EDUCATION LEADING TO THE B.A. DEGREE — 120.*Mission of the Elementary and Early Childhood Program*

The mission of the Elementary and Early Childhood Program is to prepare highly effective teachers who have the knowledge, skills, and competencies to prepare PreK-4 students to achieve academic success, and who are prepared to serve a diverse group of children and families in a variety of educational settings.

Elementary/Early Childhood Education Major

Elementary/Early Childhood Education is a major leading to pre-kindergarten through fourth grade (PK-4) certification. This program incorporates an 18 credit minor in Reading Education. Elementary/Early Childhood Education majors take methods of teaching courses in math, science, social studies, the arts, physical education and health, reading, and language arts as well as courses in educational theory and practice. Students must fulfill all of the following requirements:

1. complete all course work, field experiences, clearances, PRAXIS tests, and student teaching;
2. complete the following General Education Curriculum requirements
 Oral Communications - Fulfilled by OPO courses in Education major
 Computer Literacy - 3 credits CS 115
 English - 7 credits (within the first 48 credit hours as required by the PDE):
 ENG 101—Composition
 ENG 120—Introduction to Literature and Culture
 Foreign Language or Philosophy - 3 credits (Foreign Language highly recommended)
 First-Year Foundations - 3 credits FYF 101
 History - 6 credits
 HST 101
 HST 125—American History I (highly recommended)
 OR HST 126—American History II
 Math - 6 credits (within first 48 credit hours as required by PDE):
 MTH 103—Mathematics for Elementary School Teachers I

School of Education

MTH 104—Mathematics for Elementary School Teachers II

OR two higher numbered courses in mathematics

Psychology - 6 credits

PSY 101—General Psychology

PSY 221—Developmental Psychology

Science - 6 credits (in two different areas with 1 Lab)

Biology —BIO 105 or higher

Earth Environmental Sciences—EES 105 or higher

Chemistry —CHM 105 or higher

Physics —PHY 105 or higher

Social Science - 3 credits

ANT 101, EC 102, PS 111, OR SOC 101

Visual and Performing Arts - 3 credits

ART 101, DAN 100, MUS 101 OR THE 100

3. complete the following Education courses (All courses are 3 credits unless otherwise noted).

NOTE: Departmental permission is required to register for all courses with field experiences.

ED 190 - Effective Teaching with Field Experience (40 hours field experience)

Students must have a minimum GPA of 2.5, Field Experience Placement Form completed, and current Act 34, 151, and FBI clearances submitted to Coordinator of Field Placements before established deadlines to enroll in ED 190. Students must achieve a grade of 2.5 or higher in ED 190 to proceed to other Education courses.

ED 191 - Integrating Technology into the Classroom (formerly ED 215)

Students must have a minimum GPA of 2.5 to enroll in ED 191. Students must achieve a final grade of 2.5 and a cumulative GPA of 2.85 or higher to proceed to 200-level Education courses.

EDSP 210 - Teaching Students with Special Needs (formerly ED 210)

ED 220 - Teaching Culturally and Linguistically Diverse Learners

EDSP 225 - Special Education Methods I with Field Experience (30 hours field experience. OPO course)

ED 263 - Child Development and Cognition (15 hours field experience)

ED 264 - Child Development and Cognition Classroom (30 hours field experience)

Students must take and pass Praxis I Tests in Reading, Writing, and Mathematics and have a 3.0 gpa prior to registering for 300-level

Education courses and content methods course.

ED 310 - Health, Physical Education, and Safety in Early Childhood and Elementary Education

ED 321 - Literacy Foundations I (30 hours of field experience;)

ED 322 - Literacy Foundations II (Prerequisite is ED 321)

ED 323 - Differentiated Reading

ED 324 - Children and Adolescent Literature

ED 325 - Applied Reading Strategies (15 hours field experience)

ED 330 - Mathematics in Early Childhood and Elementary Education

ED 341 - Language Arts (OPO course)

ED 344 - Assessment in Early Childhood and Elementary Education (this course will be replaced by EDSP 300, Assessment in Special Education, for students completing dual certification in PK-4 and SPecial Education PK-8)

ED 345 - Assessment in Education

ED 350 - The Arts

ED 360 - Social Studies

ED 363 - School, Family, and Community (this course will be replaced by all EDSP courses in combination for students completing dual certification in PK-4 and Special Education PK-8)

ED 370 - Science in Early Childhood and Elementary Education

ED 385 - Classroom Management

EDSP 388 - Inclusionary Practices (taken in conjunction with ED 390)

ED 390 - Student Teaching with Seminar (12 credits) (OPO course)

Note: Student must attend a preparation seminar and have departmental permission to register. 40 hours of pre-student teaching field experience is incorporated during the first two weeks of the student teaching semester.

Dual Special Education Certification

Mission

The mission of the Dual Special Education Program is to develop competent, caring, and ethical educators who are able to meet the diverse learning needs of all students across a variety of age, grade, and ability levels. The preparation program will facilitate competence in areas of academic, social, and emotional growth, and methods of maximizing a student's capabilities through diagnostic and instructionally adaptive practices.

The Dual Special Education certification program prepares candidates to work with special needs populations in pre-kindergarten through eighth grades (PK-8) OR seventh through twelfth (7-12) grades. Students will follow the requirements for an initial certification program in Elementary and Early Childhood Education, Middle Level Education, OR Secondary Education with a few course substitutions permitted as noted below, in addition to completing the extra requirements for the Special Education program. Special Education is a CONCENTRATION that students may ADD to their initial program in order to qualify for dual certification.

Students majoring in Elementary and Early Childhood Education with a concentration in Special Education PK-8 will complete the following courses in addition to the afore-cited Elementary and Early Childhood program requirements (note the course substitutions permitted):

ED 180 - Educational Psychology (A student must earn a final course grade of 2.5 in ED 180 and a cumulative GPA of 2.5 before proceeding to ED 190 and ED 191)

EDSP 226 - Special Education Methodology II with Field Experience (20 hours)

EDSP 227 - Behavior Management with Field Experience (20 hours)

EDSP 300 - Assessment in Special Education (this course replaces the PK-4 ED 344 - Assessment in Early Childhood and Elementary Education - course)

EDSP 302 - Special Education Methods
All EDSP courses in combination will substitute for the PK-4 ED 363 (School, Family, & Community) course.

Special Education certification candidates will complete half their student teaching in a special education setting and half in a regular education setting.

Students majoring in Middle Level Education with a concentration in Special Education PK-8 will complete the following courses in addition to the afore-cited Middle Level Education program requirements (note the course substitutions permitted):

EDSP 226 - Special Education Methodology II with Field Experience (20 hours)

EDSP 227 - Behavior Management with Field Experience (20 hours)

EDSP 300 - Assessment in Special Education

EDSP 302 - Special Education Methods (this course replaces the Middle Level ED 375 (Middle Level Methods) and ED 380 (Content Area Literacy) courses)

Special Education certification candidates will complete half their student teaching in a special education setting and half in a regular education setting.

English as a Second Language

The English as a Second Language (ESL) specialist program is a concentration that will prepare elementary or secondary teachers as ESL specialists capable of working with students whose second language is English.

Upon completion of the ESL specialist program, a Teacher Education candidate will be issued a Letter of Eligibility from Wilkes University, which must be retained by the candidate for future application to the PDE. ESL specialist is an "add-on" designation to an existing instructional certificate rather than a "stand-alone" certification.

Students may elect to become an ESL specialist with additional coursework added to their program of study. Elementary Education majors must complete the elementary program of study and their minor requirements as well as the courses listed below. Secondary Education candidates must complete their academic and education program requirements in addition to the following courses listed below. All courses are 3 credits each unless otherwise noted.

ESL Specialist Program Requirements:

9 credit hours in basic Teacher Education courses (or existing teaching certificate):

ED 180 - Educational Psychology
 ED 190 - Effective Teaching with Field Experience (40 hours)

EDSP 210 - Teaching Students with Special Needs

3 credit hours in intensive English language courses:

ENG 225 - Comparative Grammar
 ENG 324 - History of the English Language
 ENG 222 - Linguistics

9 credit hours in ESL instruction, language acquisition, and cultural awareness:

School of Education

- ED 220 - Teaching Culturally and Linguistically Diverse Learners (OPO course)
- ED 338 - Teaching ESL: Materials & Methodologies (15 hour field experience in ESL)
- ED 341 - Language Arts (OPO course)

3 (or more) additional credit hours in language and literacy acquisition:

- ED 321 - Literacy Foundations I (30 hours)
- ED 322 - Literacy Foundations II
- ED 380 - Content Area Literacy
- ENG 393 - The Teaching of English (30 hour field) (4 credits)

3 or more credit hours of a second language (or demonstrated basic language fluency)

SECONDARY EDUCATION PROGRAMS OF STUDY AND CERTIFICATION REQUIREMENTS:

Secondary Education Program - the Minor in Education

The Wilkes University Department of Education offers programs leading to Pennsylvania Department of Education (PDE) secondary (grades 7 - 12) certification in the following areas: **biology, chemistry, earth and space sciences, English, general science, mathematics, social studies, and also Spanish (a K-12 certification)**. Admission to Wilkes University is only the first step in gaining acceptance into the Teacher Education Program (TEP). Requirements for admission to the TEP are in compliance with the mandates of PDE.

Directives for Gaining Admission to the Teacher Education Program to Pursue Secondary Certification

- **Schedule meeting with Coordinator of the Secondary Education Program:** Students should plan to meet with the Education Department Coordinator of the Secondary Education Program as early as possible in their matriculation at Wilkes to ensure completion of the certification program within four years. At that meeting, students will receive an information packet about their program of study in the major and minor that will lead to certification.
- **Study Major and Declare Minor:** Students should begin their studies in an academic major related to certification and declare Secondary Education as a minor.

- **Fulfill English and Mathematics Requirements:** As required by the PDE, within the first 48 credit hours should complete the following courses: English - 7 credits to include ENG 101 (Composition) and ENG 120 (Introduction to Literature and Culture) and Mathematics - 6 credits.
- **Complete ED 180. Earn a 2.5 or higher:** There is no required GPA for ED 180. A grade of 2.5 in ED 180, as well as an overall GPA of 2.5, is required to enroll in ED 190 and ED 191.
- **Comply with Placement Requirements and Secure Proper Clearances:** A *Field Experience Placement Form* must be completed when registering for any course with a field experience. Act 34 (State Police), Act 151 (Child Abuse), and Act 114 (Federal Criminal History) clearances must be applied for and submitted to the Coordinator of Field Placements. These clearances must be clear (no record) and current. These clearances remain valid while the student is continuously enrolled at Wilkes.
- **Apply for Admission to Teacher Education Program:** During ED 190, students must begin the application process for admission to the Teacher Education Program. To be admitted to the TEP, students must achieve an overall GPA of 3.0 and pass all three PRAXIS I exams.
- **Register for and Pass PPST (Pre-Professional Skills Test), also known as Praxis I:** After successfully completing ED 190, students must pass the PRAXIS I (PPST) examinations in reading, writing, and mathematics and have these scores submitted to the Wilkes Education Department. Test bulletins may be obtained from the Education Department; test materials are available at <http://www.ets.org/praxis>. Students may enroll in ED 198, Preparation for PRAXIS I, prior to taking the test. **Students must pass the three PRAXIS I exams to register for any 300-level course related to the minor.**
- **Achieve Required GPA:** Students must earn a minimum of 2.5 in ED 180, ED 190, and ED 191 and achieve an overall GPA of 2.85 to enroll in 200-level education courses beyond these three courses. Then, to enter 300-level courses, students must achieve a 3.0 GPA. Education courses at the 100-, 200-, and 300-level must be passed with a minimum of 2.0. If less than a 2.0 is earned, students

may retake the course only once; the new grade will replace the old.

- **Register for and Pass PRAXIS II:** Preferably prior to student teaching and/or at the conclusion of formal studies in the chosen major field, students should take the appropriate PRAXIS II examination. This is required for certification in Pennsylvania. Complete information about registration, test dates, study guides is available at <http://www.ets.org/praxis>; the Department also provides guidance, resources, and support.
- **Self-Monitor Progress:** Students are responsible to monitor their GPAs each semester; students will be dropped from course(s) if required GPA is not achieved or if all three PRAXIS I tests are not passed before enrolling in 300-level courses.

The Education Minor

The Education minor consists of the following courses:

ED 180 - Educational Psychology (formerly ED 200)

ED 190 - Effective Teaching with Field Experience of 40 hours

Students must have a minimum GPA of 2.5, Field Experience Placement Form submitted, and current Act 34, 151, and FBI clearances submitted to the Coordinator of Field Placements before established deadlines to enroll in ED 190. Students must achieve a final grade of 2.5 or higher in ED 190 to proceed to other Education courses.

ED 191 - Integrating Technology into the Classroom (formerly ED 215)

Students must have a minimum GPA of 2.5 to enroll in ED 191. Students must achieve a final grade of 2.5 or higher and a cumulative GPA of 2.85 or higher to proceed to 200-level Education courses.

EDSP 210 - Teaching Students with Special Needs (formerly ED 210)

Students must have a cumulative GPA of 2.85 or higher to enroll in 200-level Education courses.

ED 220 - Teaching Culturally and Linguistically Diverse Learners (OPO course)

Students must have a cumulative GPA of 2.85 or higher to enroll in 200-level Education courses.

EDSP 225 - Special Education Methods I with Field Experience of 30 hours (OPO course)

Students must have a cumulative GPA of 2.85 or higher to enroll in 200-level Education courses.

ED 380* - Content Area Literacy (*not required for English majors.)

Students must be admitted to TEP prior to enrolling in a 300-level course.

ED 3XX (specific Secondary Methods course) Students must be admitted to TEP prior to enrolling in a 300-level course. These method courses are offered in the fall semester, *except* MTH 303, which is offered every *other* fall semester.

- ED 300 - Special Methods Foreign Languages 7-12 with Field Experience of 40 hours
- ED 371 - Special Methods Sciences 7-12 with Field Experience of 40 hours
- ED 381 - Special Methods Social Studies 7-12 with Field Experience of 40 hours
- ENG 393 - The Teaching of English with Field Experience of 40 hours
- MTH 303 - The Teaching of Mathematics with Field Experience of 40 hours
- EDSP 388 - Inclusionary Practices (3 credits)
- ED 390 - Student Teaching with Seminar (OPO course) (12 credits)

Other recommended courses for secondary education are

- ED 345 - Assessment in Education
- ED 385 - Classroom Management
- PSY 222 - Adolescent Psychology (required course for some majors)
- A foreign language

Candidates must maintain a 2.0 GPA in their secondary major courses and a cumulative 3.0 to remain in the Teacher Education Program.

CERTIFICATION REQUIREMENTS

Biology Certification

Students seeking biology certification should follow the Bachelor of Arts (B.A.) curriculum in Biology. The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking secondary certification in Biology are required to take the following courses:

School of Education

BIO 121 Principles of Modern Biology I
BIO 122 Principles of Modern Biology II
BIO 225 Population & Evolutionary Biology
BIO 226 Cellular & Molecular Biology
BIO 391 Senior Research Project
BIO 392 Senior Research Project
BIO 397 Professional Preparation
Techniques
CHM 113 Elements & Compounds Lab
CHM 115 Elements & Compounds
CHM 114 The Chemical Reaction Lab
CHM 116 The Chemical Reaction
CHM 231 Organic Chemistry I
CHM 233 Organic Chemistry I Lab
CHM 232 Organic Chemistry II
CHM 234 Organic Chemistry II Lab
CS elective
MTH 105 or MTH 111
MTH 106 or MTH 112
PHY 171
PHY 174
Major Electives (12 - 16)

In addition, students must take the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

Chemistry Certification

Students seeking chemistry certification should follow the Bachelor of Arts (B.A.) curriculum in Chemistry. The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking secondary certification in Chemistry are required to take the following courses:

CHM 115 Elements & Compounds
CHM 113 Elements & Compounds Lab
CHM 116 The Chemical Reaction
CHM 114 The Chemical Reaction Lab
CHM 231 Organic Chemistry I
CHM 233 Organic Chemistry I Lab
CHM 232 Organic Chemistry II
CHM 234 Organic Chemistry II Lab
CHM 248 Analytical Chemistry
CHM 246 Analytical Chemistry Lab
CHM 322 Advanced Inorganic Chemistry
CHM 351 Physical Chemistry I
CHM 353 Physical Chemistry I Lab
CHM 352 Physical Chemistry II
CHM 354 Physical Chemistry II Lab
CHM 341 Instrumental Methods for
Chemical Analysis
CHM 343 Instrumental Methods for
Chemical Analysis Lab
CHM 361 or CHM 362 Biochemistry
CHM 370*/ 371*/ 372* (two credits total)
*can each be taken for one or two credits

CHM 390 Junior Seminar
CHM 391 Senior Research I (OPO)
CHM 392 Senior Research II (OPO)
CS 125
MTH 111
MTH 112
MTH 212
PHY 201
PHY 202

Major Electives (six credits required)

In addition, students must take the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

Earth and Space Science Certification /

General Science Certification

Students seeking Earth and Space Science certification should follow the Bachelor of Arts (B.A.) curriculum in Earth and Environmental Sciences. This curriculum emphasizes human interactions with the earth and environmental sciences while still requiring an extensive background in the sciences. The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Required science courses for the Earth and Space Science certification include:

CS Elective
EES 211 - Physical Geology
EES 210 - Global Climatic Change
EES 212 - Historical Geology
EES 230 - Ocean Science
EES 240 - Principles of Environmental
Science
EES 251 - Synoptic Meteorology
EES 280 - Principles of Astronomy
EES 302 & 304 - Literature Methods &
Environmental Data Analysis
EES 394 - Field Study
EES 391 & 392 - Senior Projects I and II
MTH 150 - Elementary Statistics
PHY 171 & 174 - Principles and
Application of Classical and Modern
Physics
PSY 101 - General Psychology
CHM 113 & 115 - Elements and
Compounds with Lab

Optional for General Science Certification:
BIO 121 - Principles of Modern Biology I
BIO 122 or 225 - Principles II or
Population and Evolutionary Biology
CHM 114 & 116 - The Chemical
Reaction with Lab

In addition, students must take the required Education courses and special methods course (ED 371) followed by student teaching as

listed under Secondary Education Requirements.

English Certification

The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking secondary certification in English are required to take the following courses:

- ENG 101 - Composition
- ENG 120 - Literature and Culture
- ENG 201 - Writing about Literature and Culture
- ENG 225 - Comparative Grammar
- ENG 324 - History of the English Language
- Senior Capstone Project

Three of four survey courses

- ENG 233 - Survey of English Literature I
- ENG 234 - Survey of English Literature II
- ENG 281 - Survey of American Literature I
- ENG 282 - Survey of American Literature II

It is recommended that students seeking certification take all four survey courses

12 credit hours in English courses above 300, including ENG 397 Seminar

In addition, students must take PSY 101 (General Psychology), the required Education courses (with the exception of ED 380 Content Area Literacy), and the special methods course (ENG 393) followed by student teaching as listed under Secondary Education Requirements.

Spanish Certification

The B.A. curriculum offers flexibility so that students seeking K-12 certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking K-12 certification in Spanish must take the following courses:

- SP 101 and 102 - Elementary I & II
- SP 203 and 204 - Intermediate I & II
- SP 205 - Conversation
- SP 206 - Advanced Grammar, Stylistics, & Composition
- SP 208 - Culture & Civilization
- SP 301 - Introduction to Literature
- SP 298 - Topics
- SP 307 & 308 - Literature I & II
- SP 397 - Seminar
- PSY 101 General Psychology
- PSY 221 Developmental Psychology
- ANT 102 Cultural Anthropology

In addition, students must take the required Education courses and special methods course (ED 300) followed by student teaching as listed under Secondary Education Requirements.

Mathematics Certification

Students seeking Mathematics certification should follow the Teacher Certification track and elect to pursue a Bachelor of Arts or a Bachelor of Science degree. The curriculum for either offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

The requirements for each degree are found in the Undergraduate Bulletin under the Department of Mathematics and Computer Science.

Students seeking certification in Mathematics must take the following courses:

- CS 125 - Computer Science I
- MTH 111 and 112 - Calculus I and II
- MTH 202 - Set Theory & Logic
- MTH 212 - Multivariable Calculus
- MTH 214 - Linear Algebra
- MTH 343 - Introduction to Geometry
- MTH 311 - Real Analysis
- MTH 331 - Introduction to Abstract Algebra I
- MTH 351 - Probability and Mathematical Statistics I
- MTH 391 - Senior Seminar
- PSY 101 - General Psychology
- MTH electives: 3 for B.A.; 9 for B.S.
- Science electives: 6 for B.A.; 7 for B.S.

In addition, students must take the required Education courses and special methods course (MTH 303, offered every other fall semester) followed by student teaching as listed under Secondary Education Requirements.

Social Studies Certification

Students seeking Social Studies certification will major in history or political science.

The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students pursuing a History major and seeking secondary certification in Social Studies are required to take the following courses:

- HST 102 - Europe Before 1600
- HST 125 & 126 - American History I & II
- HST 297 Historical Research & Methods
- HST 397 Seminar

School of Education

History electives 15 credits (two American; two non-American topics)

Also required for Social Studies Certification:

ANT 102 Cultural Anthropology
EC 102 Principles of Economics II
PS 111 Introduction to American Politics
PS 141 Introduction to International Politics
PSY 101 General Psychology
PSY 222 Adolescent Psychology
SOC 101 Introduction to Sociology
6 credits in Mathematics (MTH 150 Elementary Statistics is highly recommended.)

In addition, students must take the required Education courses and special methods course (ED 381) followed by student teaching as listed under Secondary Education Requirements.

Students pursuing a Political Science major and seeking secondary certification in Social Studies are required to take the following courses:

PS 111 Introduction to American Politics
PS 141 Introduction to International Politics
PS 151 Governments of the World
PS 260 Introduction to Political Thinking
PS 265 Quantitative Reasoning for Social Sciences
PS 380 PS Senior Project
Major electives: 21 credits

Also required for Social Studies Certification:

ANT 102 Cultural Anthropology
EC 102 Principles of Economics II
HST 101 Historical Foundations
HST 125 & 126 American History I & II
PSY 101 General Psychology
PSY 222 Adolescent Psychology
SOC 101 Introduction to Sociology
6 credits in Mathematics (MTH 150 Elementary Statistics is highly recommended.)

In addition, students must take the required Education courses and special methods course (ED 381) followed by student teaching as listed under Secondary Education Requirements.

TEACHER EDUCATION PROGRAM ADMISSION REQUIREMENTS:

Students interested in preparing for teacher certification must be formally admitted to the Teacher Education Program at Wilkes University, which includes completion of a formal written application. Students are expected to review and comply with policy documents available in the Education

Department (Breiseth Hall 204). Policies may change due to PDE regulation changes.

The criteria for formal admission to the Teacher Education Program are:

1. completed 48 semester hour credits (including 6 credits of Mathematics and 6 credits of English as required by PDE);
 2. a minimum GPA of 2.5 to register for ED 190 (Effective Teaching with Field Experience) and ED 191 (Integrating Technology into the Classroom);
 3. final grades of 2.5 or higher in ED 180, ED 190, and ED 191;
 4. an overall GPA of 2.5 to proceed from 100-level ED to 200-level ED courses;
 5. an overall GPA of 3.0 is needed to be formally admitted into the Teacher Education Program and to continue in courses at the 300-level;
 6. **taking and passing the three PRAXIS tests in Reading, Writing, and Math (administered by Educational Testing Services) in order to register for 300-level Education courses;**
 7. a final grade of 2.0 in all courses (major and minor);
 8. a cumulative 3.0 GPA must be maintained in order to be retained in the program following formal admission (as required by PDE);
 9. submitted current/valid Act 34 State Police Criminal Record Check;
 10. submitted current/valid Act 151 Child Abuse History Clearance;
 11. submitted current/valid Act 114 FBI Fingerprint Check;
 12. completed formal Teacher Education Program Application, essay, signed Code of Professionalism and Academic Honesty, and signed understanding of student policies (completed during ED 190);
- Students must maintain all criteria in order to be retained in the Teacher Education Program.*

TEACHER EDUCATION PROGRAM STUDENT TEACHING REQUIREMENTS:

1. **Successful completion of requirements for TEP Admission and Retention, including passing scores on 3 PPST tests (Reading, Writing, Math)**
2. Achievement of the GPA major and minor requirements

3. Attendance at the Student Teaching Placement Meeting the semester prior to student teaching
4. Completion of all required paperwork obtained at Student Teaching Placement Meeting the semester prior to student teaching
5. Clearances with no offenses
6. Completion of all required coursework and fieldwork, with the exception of Student Teaching
7. Registration form with Advisor's signature
8. Approval of student teaching eligibility by major department, Education Department, and Teacher Education Committee
8. Completed PDE application form PDE 338C (University Verification Form - Part A) for Pennsylvania Teacher Certification.
9. Paid PDE Certification fees with a money order made payable to the "Commonwealth of PA Dept. of Education."

*****Program requirements may change at the discretion of the Pennsylvania Department of Education.***

ELEMENTARY & EARLY CHILDHOOD EDUCATION MAJOR WITH CERTIFICATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

Total Proposed Credits: 124

Elementary and Early Childhood Education majors will also complete a Reading Education minor within the major requirements.

Students are assigned to schools in Wyoming, Luzerne or Lackawanna counties for student teaching.

Note: Student teaching placement is contingent upon availability of supervisors and decisions of school administrators. Students may not student teach in a school from which they have graduated. Students are expected to reside within driving distance from Wilkes University when completing the student teaching semester.

TEACHER EDUCATION PROGRAM REQUIREMENTS FOR GRADUATION AND CERTIFICATION:

1. Achievement of the GPA major and minor requirements.
2. Completed all Wilkes University and TEP requirements.
3. Successfully completed Student Teaching, including satisfactory scores on each category of the Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430).
4. Provided evidence of passing scores on all relevant PRAXIS tests. Note: A student may graduate without passing all PRAXIS II tests, but cannot obtain PDE certification.
5. Completed the Wilkes University application for graduation (provided by the Registrar's office).
6. Reviewed graduation audit (provided by the Registrar's office) with academic advisor.
7. Completed PDE Application Form PDE 338G (General Application) for Pennsylvania Teacher Certification.

First Semester

- FYF 101 First-Year Foundations**
- PSY 101 General Psychology**
- HST 101 Historical Foundations of the Modern World**
- ENG 101 Composition**
- CS 115 Computers and Applications**

Second Semester

- ED 190 Effective Teaching *40**
- ED 191 Integrating Technology into the Classroom**
- HST 125/126 American History I or II**
- Science Elective**
- FL Elective**

Third Semester

- MTH 103 Mathematics for Elementary School Teachers I**
- SOC 101 Introduction to Sociology**
- ENG 120 Introduction to Literature and Culture**
- EDSP 210 Teaching Students with Special Needs**
- ED 263 Child Development and Cognition *15**

Fourth Semester

- Science Elective**
- MTH 104 Mathematics for Elementary School Teachers II**
- ED 220 Teaching Culturally and Linguistically Diverse Learners**
- ED 264 Child Development and Cognition - Classroom Application *30**
- EDSP 225 Special Education Methodology I *30**

Fifth Semester

School of Education

ART 101, DAN 100, MUS 101, OR THE 100

ED 344 Assessment in Early Childhood & Elementary Education **First Semester**

ED 321 Literacy Foundations I *30

ED 341 Language Arts

ED 360 Social Studies

FYF 101 First-Year Foundations ³

CS 115 Computers and Applications ³

ENG 101 Composition ³

PSY 101 General Psychology ¹⁵

Sixth Semester

ED 180 Educational Psychology ³

ED 330 Mathematics in Early Childhood and Elementary Education

Second Semester

ED 322 Literacy Foundations II

MTH 101 Solving Problems Using Mathematics ³

ED 324 Children's and Adolescent Literature

ED 190 Effective Teaching with Field Experience ³

ED 345 Assessment in Education

ED 191 Integrating Technology into the Classroom ³

ED 370 Science in Early Childhood and Elementary Education

Social Science Elective

ED 363 School, Family, and Community

Major Elective ¹⁸

Seventh Semester

Third Semester

ED 310 Health, Physical Education, and Safety

HST 101 Historical Foundations of the Modern World ³

ED 350 The Arts in Early Childhood and Elementary Education

ENG 120 Introduction to Literature and Culture ³

ED 323 Differentiated Reading

EDSP 210 Teaching Students with Special Needs ³

ED 385 Classroom Management

Math Elective ³

ED 325 Applied Reading Strategies *15

Science Elective ¹⁵

Major Elective

Eighth Semester

Fourth Semester

ED 390 Student Teaching with Seminar *40 (first two weeks pre-student teaching hours)

ED 220 Teaching Culturally & Linguistically Diverse Learners. ¹²

EDSP 388 Inclusionary Practices

Science Elective ⁵

Visual and Performing Arts Elective

Major Electives

***Denotes field experience hours**

SECONDARY EDUCATION CERTIFICATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE*

Fifth Semester

*Since the Education Minor may be pursued in combination with eight different majors (Biology, Chemistry, Earth & Environmental Sciences, English, History, Mathematics, Political Science, or Spanish), this sequence demonstrates one way all the minor courses should be taken. The required major courses, which all differ in total credits, and the required sequences of those courses may be accommodated to pursue the minor in Education.

EDSP 225 Special Education Method I with Field Experience

FL 101 or PHL 101 Foreign Language or Introduction to Philosophy

Major Electives

Major Electives

Sixth Semester

Major Electives

ED 380 Content Area Literacy**

Major Electives

** not required for English majors

Seventh Semester

ED XXX Special Methods with Field Experience

Major Electives

Major Electives

Eighth Semester

ED 390 Student Teaching with Seminar *40 (first two weeks pre-student teaching hours)

EDSP 388 Inclusionary Practices

To ensure that the academic major and Education minor are completed in four years, early in their matriculation at Wilkes, students should seek advice from the major advisor as well as from the Coordinator of the Secondary Education Program when planning their individual sequence of courses.

	Major Electives	9-
		16
SECONDARY CERTIFICATION AND SPECIAL EDUCATION CERTIFICATION (7-12) - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE	Seventh Semester	
	ED XXX Content Methods *40	:
	EDSP 300 Assessment in Special Education	:
	ED 380 Content Area Literacy	:
	Major Electives	1
		1
First Semester	Eighth Semester	
FYF 101 First-Year Foundations	ED 390 Student Teaching with Seminar *40 (first two weeks pre-student teaching hours)	1
ED 180. Educational Psychology	ED 388 Inclusionary Practices	:
MTH 101 Quantitative Reasoning	3	1
HST 101 Historical Foundations of the Modern World	3	
CS 115 Computers and Applications	3	
	<u>15</u>	
	*Denotes field experience hours	
Second Semester		
ED 190 Effective Teaching *40	3	
ENG 101 Composition	4	
ED 191 Integrating Technology into the Classroom	3	
Science Elective	3	
PSY 101 General Psychology	3	
	<u>16</u>	
Third Semester		
Science Elective	3	
Major Electives	6	
Visual & Performing Arts Elective	3	
EDSP 210 Teaching Students with Special Needs	3	
ENG 120 Introduction to Literature and Culture	3	
	<u>18</u>	
Fourth Semester		
Major Electives	6	
EDSP 225 Special Education Methodology I *30	3	
FL Elective	3	
Social Science Elective	3	
ED 220 Teaching Culturally & Linguistically Diverse Learners	3	
	<u>18</u>	
Fifth Semester		
Second Math Course	3	
EDSP 226 Special Education Methodology II *20	3	
Major Electives	9	
Social Science Elective	3	
PSY 221 Developmental Psych	3	
	<u>18</u>	
Sixth Semester		
EDSP 227 Behavior Management in Special Education *20	3	
EDSP 302 Special Education Methods	3	

COLLEGE OF SCIENCE AND ENGINEERING

DEPARTMENT OF AIR AND SPACE STUDIES

DIVISION OF BIOLOGY AND HEALTH SCIENCES

DEPARTMENT OF CHEMISTRY

DIVISION OF ENGINEERING AND PHYSICS

DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

COLLEGE OF SCIENCE AND ENGINEERING

DEAN: DR. DALE A. BRUNS

OUR MISSION

It is the mission of the College of Science and Engineering to provide challenging academic programs that promote understanding of principles in basic and applied sciences and mathematics; foster intellectual curiosity and critical thinking; develop skill in research, information technology, and engineering design; and facilitate student professional growth and development. The College cultivates faculty-student mentoring to promote application of advanced science and engineering concepts to help solve "real-world" problems and to encourage students to participate in leadership roles in their communities and in Northeastern Pennsylvania and to sustain individual initiative and life-long learning.

OUR VISION

Academic programs of the College of Science and Engineering will build on historic strengths of a traditional Wilkes education, revitalized through a new core and participatory strategic planning. Programs of the College emphasize experiential "hands-on" learning, teamwork in laboratories and class projects, state-of-the-art technology, individualized teacher-student mentoring, and a capstone senior research or design project, including cooperative education opportunities in the regional business community. These practical experiences, integrated with our diverse and innovative curricula, enhance our emphasis on core values of academic excellence and student-centered learning. The College seeks to foster agility and technical innovation in response to a rapidly changing marketplace and global economy, competition for quality students in higher education, changing population demographics (traditional students vs. adult learners), and increased requirements of employers for science and engineering graduates. The College will play an integral role in the overall success of the University's strategic goals and will expand its service sector to the Mid-Atlantic region.

PROGRAMS

Our best students and their professional career achievements illustrate the power of a cooperative and supportive learning environment that cuts across individual courses, programs, departments, and curricula. Individual faculty, departments, and programs

of the College have demonstrated academic excellence and success in partnering with industry, working with local community groups and local government, conducting research, serving on national panels and professional organizations, providing student internships, and fostering student-centered research and cooperative education. The College hosts a number of state-of-the-art laboratory facilities, often equipped through faculty grants and research projects that involve undergraduate students. A strong connection to our region enhances cultural, academic, and industrial opportunities for our students. National professional boards have accredited engineering programs within the College and various student chapters of professional organizations are active on campus. Our programs offer diverse opportunities for technical careers in education, industry, and government.

The College includes the following academic departments and divisions:

- Aerospace Studies
- Biology and Health Sciences
- Chemistry
- Engineering and Physics
- Environmental Engineering and Earth Sciences
- Mathematics and Computer Science

Bachelor's Degrees—Majors

- Applied and Engineering Sciences
- Biochemistry
- Biology
- Chemistry
- Computer Information Systems
- Computer Science
- Earth and Environmental Sciences
- Electrical Engineering
- Engineering Management
- Environmental Engineering
- Mathematics
- Mechanical Engineering
- Medical Technology

AIR AND SPACE STUDIES MINOR (AIR FORCE ROTC)

CHAIRPERSON: LIEUTENANT COLONEL TODD PEACHEY

Faculty: Professor: Lt. Col. Kaster

Assistant Professors: Maj. Everitte, Capt. Abadon

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR – 22.

The Air Force Reserve Officer Training Corps (AFROTC) program at Wilkes University permits students to earn commissions as officers in the U.S. Air Force while pursuing a university degree. Students enroll in either the four-year or two-year program. Students with three years remaining until graduation may enroll concurrently in the freshman and sophomore Air and Space Studies courses and can complete the four-year program in three years; moreover, any interested student may call the detachment and query staff regarding additional programs available (408-4860). A minor in Air and Space Studies is available to students who complete a minimum of 22 semester hours including: up to 16 hours of Air and Space Studies courses (AS 101, 102, 201, 202, 301, 302, 401, 402 and 3 hours for AFROTC Field Training AS 240, 4-week AFROTC Field Training; AS 250, 5-week AFROTC Field Training) and a minimum of 3 credit hours within one area listed below. This area should explore a discipline other than the student's major.

Additional courses required in the minor, by concentration:

History: 101, 102, 125, 126, 328, 334, 335, 376.

Political Science: 111, 141, 211, 212, 213, 221, 253, 261, 331, 332.

Business Administration: 151, 233, 234, 321, 326, 327, 341, 351, 352, 354, 356, 357.

Communication: 101, 102, 201, 202, 206, 220, 303, 352, 361, 399.

General Military Course (4-Year Program Only)

The first two years of the four-year program constitute the General Military Course (GMC). GMC courses are open to any university student. Students enrolling in these courses do not incur any military service obligation. (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) The GMC curriculum consists of four one-credit Air and Space Studies courses; a non-credit leadership laboratory each semester, which introduces

students to U.S. Air Force history and environment, customs, courtesies, drill and ceremonies, and leadership skills; and Physical Training (PT) twice weekly.

Field Training

Field training consists of a four-week, 3-credit Air and Space Studies course or a 5-week, 3-credit Air and Space Studies course conducted at selected Air Force bases. It provides students an opportunity to observe Air Force units and people at work; to participate in marksmanship, survival, athletics, and leadership training activities; to experience aircraft orientation flights; and to work with contemporaries from other colleges and universities. Transportation from the legal residence of the cadet to the field training base and return, food, lodging, and medical and dental care are provided by the Air Force.

Professional Development Program (PD) (Optional)

The program allows both GMC and POC members to visit a USAF base for up to three weeks during the summer (cadets attending Field Training are not eligible). PD allows the cadet to “shadow” an active duty officer working in the student’s career interest (i.e., pilot, navigator, communications, intelligence, etc). Transportation from the legal residence of the cadet to the PD base (and return), food, lodging, and medical and dental care during the visit are provided by the Air Force. The participating cadet is also provided a nominal stipend during the program.

Uniforms

All uniforms, equipment, and textbooks for AFROTC are supplied by the U.S. Air Force.

Scholarships

AFROTC also offers 2-to 5-year, full and partial tuition scholarships for which qualified students may compete, if they enroll in AFROTC. All scholarship awards are based on individual merit, regardless of financial need, with most scholarship recipients determined by central selection boards. Since scholarship applicants must meet certain academic, physical fitness and medical requirements to be considered by the scholarship boards, contact the Air and Space Studies Department early in the fall semester. High school students wishing to compete for AFROTC college scholarships must complete and submit an application early in the fall term of their senior year. ALL AFROTC SCHOLARSHIP RECIPIENTS ENTERING (OR TRANSFERRING TO) WILKES UNIVERSITY RECEIVE FREE ROOM AND BOARD. (To receive free room and board, the scholarship recipient must live in a Wilkes University-owned and operated

residence hall.) Contracted cadets also receive a monthly stipend (300-\$500, depending on AS-level) and \$900/year for a book allowance.

Commissioning

Students who satisfactorily complete the POC curriculum requirements are commissioned as Second Lieutenants in the U.S. Air Force and will serve on active duty in a career specialty they have chosen, consistent with USAF needs. Qualified students may compete for duty as pilots, navigators, engineers, missile or space operations officers, nurses, engineers, meteorologists, computer analysts, lawyers, security forces or any of a number of other career fields.

RECOMMENDED 4-YEAR COURSE SEQUENCE LEADING TO A COMMISSION IN THE UNITED STATES AIR FORCE

The General Military Course (GMC) consists of four one-credit courses which are introductory in nature and open to freshmen or sophomores. Students enrolling in these courses do not incur any military service obligation (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) Course credit values are shown with each course.

First Semester

AS 101 Foundations of the USAF I	1
AS 103 Leadership Laboratory	<u>0</u>
	1

Second Semester

AS 102 Foundations of the USAF II	1
AS 104 Leadership Laboratory	<u>0</u>
	1

Third Semester

AS 201 Evolution of USAF Air & Space Power I	1
AS 203 Leadership Laboratory	<u>0</u>
	1

Fourth Semester

AS 202 Evolution of USAF Air & Space Power II	1
AS 204 Leadership Laboratory	<u>0</u>
	1

Variations in the above schedule are possible. Sophomores with no AFROTC experience can enroll in both the one-credit freshman and sophomore courses (our "dual-enrollee" program).

Summer Field Training

Only one Field Training class is required. Students attending the 5-week class are students that have not completed the first four semesters of Air and Space Study classes

4-Week AFROTC Field Training

AS 240 4-week AFROTC Field Training	3
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5-Week AFROTC Field Training

AS 250 5-week AFROTC Field Training	3
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The Profession Officer Course (POC) consists of four three-credit courses which focus on leadership, management, national security studies and preparation for active duty. Students enrolled in the POC desiring to commission in the Air Force upon graduation must attend these courses. POC students may incur a military service obligation upon graduation even if they do not successfully complete these courses and fail to commission in the Air Force. (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) Course credit values are shown with each course. These courses are open to all college students as electives with the permission of the chairperson of the department.

Fifth Semester

AS 301 Air Force Leadership Studies I	3
AS 303 Leadership Laboratory	<u>0</u>
	3

Sixth Semester

AS 302 Air Force Leadership Studies II	3
AS 304 Leadership Laboratory	<u>0</u>
	3

Seventh Semester

AS 401 National Security Affairs/Active Duty Preparation I	3
AS 403 Leadership Laboratory	<u>0</u>
	3

Eighth Semester

AS 402 National Security Affairs/Active Duty Preparation II	3
AS 404 Leadership Laboratory	<u>0</u>
	3

DIVISION OF BIOLOGY AND HEALTH SCIENCES

CHAIRPERSON: DR. MICHAEL A. STEELE

Faculty: Professors: Klemow, Steele, Terzaghi

Associate Professors: Biggers, Kalter, Pidcock

Assistant Professors: Gutierrez, Kadlec, Stratford

Adjunct Faculty: Mullen, Ruotolo, Serfass

Faculty Emeriti: Hayes, Turoczi

Coordinator of Health Sciences: Sharp

Lab. Preparation Supervisor: Elias

Lab Preparation Assistant: Buzalka

Biology Instructor and Education Specialist: Chapman

BIOLOGY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOLOGY LEADING TO THE B.A. DEGREE - 122.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOLOGY LEADING TO THE B.S. DEGREE - 122.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR - 22.

The Biology program is a generalized program covering basic areas of biology. Specific pre-professional training is minimized in favor of the broadest possible background in the liberal arts as well as the biological sciences.

The B.A. curriculum offers flexibility so that those students in secondary education who are preparing to teach can include the professional semester of student-teaching in the eighth semester. Students majoring in biology may opt to earn a Pennsylvania Teaching Certificate for teaching biology in grades 7-12 by completing a minor in secondary education.

Students interested in Secondary Education declare the minor in secondary education with their advisor. The minor consists of the following courses: ED180, ED 190, ED 191, ED 220, ED 371 (Teaching Methods in Science), ED 380, ED 390, EDSP 210, EDSP 225 and EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and an overall 3.0 grade point average and pass the appropriate PRAXIS tests in order to be certified.

The B.S. curriculum meets all of the liberal arts requirements for the Bachelor of Arts degree.

In addition, it provides a greater concentration of advanced biology courses. This program is recommended for those students planning to enter industry, professional schools, or continue with graduate study in biology.

In order to emphasize the broadening aspects of biological knowledge, the department has established categories of specific biological fields from which the student must achieve reasonable diversity in the selection of upper-level courses. The four categories are (1) Molecular/Cellular Biology, (2) Structural and Functional Biology, (3) Diversity and Populational Biology, and (4) Botanical Biology. The B.A. major is required to take a total of four electives with one upper-level course from each of the four categories. The B.S. major must take a total of five electives with one upper-level course from each of the four categories and additionally select any one course from those same categories.

Courses within the four categories are constituted as follows:

- (1) Molecular/Cellular – Bio 326, 327, 328, 338, 345, 398
- (2) Structural/Functional – Bio 311, 314, 321, 323, 325, 398
- (3) Diversity/Populational – Bio 306, 312, 341, 343, 344, 346, 398
- (4) Botanical – Bio 361, 362, 366, 368, 398

BIOLOGY MINOR

Students in majors other than Biology may wish to elect a minor in Biology. The minor in Biology shall consist of a minimum of 22 credits. Required courses are Bio 121-122, 225-226 plus two 300-level, biology electives. These upper-level electives (exclusive of Independent Research, Bio 395-396) will be selected after consultation with the department chairperson.

Honors Program in Biology

Honor students in Biology will be recognized upon completion of the following requirements: achieving a graduating grade point average of 3.25 or better, receiving grades of 3.00 or better in all biology courses, pursuing independent research in biology and presenting their project results either at a national or regional scientific conference or through publication of a research paper. The distinction "Honors in Biology" will be recorded on the student's transcript upon graduation.

BIOLOGY MAJOR- REQUIRED COURSES
AND RECOMMENDED COURSE
SEQUENCES

First Semester

	B.A.	B.S.
Bio 121 - Principles of Modern Biology I	4	4
Chm 113 - Elem. & Compounds Lab	1	1
Chm 115 - Elements & Compounds	3	3
FYF 101 - First-Year Foundations	3	3
Mth 105 - Calculus for Life, Managerial, and Social Sciences I or Mth 111 - Calculus I	4	4
	<hr/>	<hr/>
	15	15

Second Semester

	B.A.	B.S.
Bio 122 - Principles of Modern Biology II	4	4
Chm 114 - The Chem. Reaction Lab	1	1
Chm 116 - The Chemical Reaction	3	3
Eng 101 - Composition	4	4
Mth 106 Calculus for Life, Managerial, and Social Sciences II or Mth 112 - Calculus II	4	4
	<hr/>	<hr/>
	16	16

Third Semester

	B.A.	B.S.
Bio 225 - Population and Evolutionary Bio.	4	4
Chm 231 - Organic Chemistry I	3	3
Chm 233 - Organic Chem. I Lab	1	1
Distribution Requirements	6	6
	<hr/>	<hr/>
	14	14

Fourth Semester

	B.A.	B.S.
Bio 226 Cellular and Molecular Biology	4	4
Chm 232 - Organic Chemistry II	3	3
Chm 234 - Organic Chem. II Lab	1	1
Distribution Requirements	6	6
	<hr/>	<hr/>
	14	14

Fifth Semester

	B.A.	B.S.
Bio 397 - Professional Prep. Techniques*	2	2
Bio Elective/Research	3	3
Phy 171 - Classical and Modern	4	4

Physics

Distribution Requirements	0	3
Free Elective**	9	3
Mth 150 Elementary Statistics		3
	<hr/>	<hr/>
	16-	16-
	18	18

Sixth Semester

	B.A.	B.S.
Bio 397 - Professional Prep. Techniques*	2	2
Bio Elective/Research	3	3
Phy 174 - Classical and Modern Physics	4	4
Distribution Requirements	3	3
Computer Science Elective	3	3
	<hr/>	<hr/>
	13-	13-
	15	15

Seventh Semester

	B.A.	B.S.
Bio 391 - Senior Research Projects	1	1
Bio Electives	3-4	6-8
Free Electives**	12	9
	<hr/>	<hr/>
	16-	16-
	17	18

Eighth Semester

	B.A.	B.S.
Bio 392 - Senior Research Projects	2	2
Bio Electives	3-4	6-7
Distribution Requirement	3	0
Free Electives**	7	7
	<hr/>	<hr/>
	15-	15-
	16	16

No more than four credits of Bio 395/396 can count toward the major.

*Only one semester of Bio 397 is required but it must be taken in either the fifth or sixth semester.

**Any course other than a biology course.

MARINE SCIENCE OPTION WITH A MAJOR
IN BIOLOGY AND A MINOR IN EARTH AND
ENVIRONMENTAL SCIENCES

Wilkes University is a member of the Wallops Island Marine Science Consortium, an association of both state and private institutions that oversee the operation of a marine field station located in southeastern Virginia. Through its membership in the Consortium, Wilkes offers to its students the full range of courses in marine sciences and oceanography regularly taught at the Station each summer. Interested students in Biology

College of Science and Engineering

may formally pursue a Marine Science Option concentration in a four-year program that is fully integrated into their major and a minor in Earth and Environmental Sciences. On a less formal basis, students who meet course prerequisites may complement regular coursework with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island Marine Science Station typically carry three credits and involve three weeks of intensive field and laboratory study at the Marine Station and related field sites (e.g. Florida Keys and Honduras). Facilities at the Station include dormitory space, cafeteria, labs, lecture halls, a variety of field and laboratory equipment (e.g. one large oceanographic vessel and three inshore vessels) and a range of inshore, offshore, and estuarine field sites. To enroll, students must first contact the coordinators of the Wallops Island Program at Wilkes University (prior to the spring semester) and then register for the appropriate course through the Wilkes University Registrar.

Courses regularly offered at the Station include:

MS 110 - Introduction to Oceanography
 MS 211 - Field Methods in Oceanography
 MS 221 - Marine Invertebrates
 MS 241 - Marine Biology
 MS 250 - Wetland Ecology
 MS 260 - Marine Ecology
 MS 300 - Behavior of Marine Organisms
 MS 330 - Tropical Invertebrates
 MS 331 - Chemical Oceanography
 MS 342 - Marine Biology
 MS 343 - Marine Ichthyology
 MS 345 - Ornithology
 MS 352 - Modeling in Environmental Biological Sciences
 MS 362 - Marine Geology
 MS 390 - Undergraduate Research in Marine Science
 MS 394 - Physiology of Marine Organisms
 MS 431 - Ecology of Marine Plankton
 MS 432 - Marine Evolutionary Ecology
 MS 433 - Advanced Methods in Coastal Ecology
 MS 450 - Coastal Geomorphology
 MS 451 - Coastal Environmental Oceanography
 MS 464 - Biological Oceanography
 MS 470 - Research Diver Methods
 MS 471 - Scanning Electron Microscopy: Marine Applications
 MS 490 - Marine Aquaculture
 MS 491 - Coral Reef Ecology and MS 492 - Marine Mammals
 MS 493 - Behavioral Ecology
 MS 500 - Problems in Marine Science

See Coordinators of the Wallops Island Program for outlines of individual courses and for information on the structure of the Marine Sciences Option.

MARINE SCIENCE OPTION CONCENTRATION WITH A MAJOR IN BIOLOGY- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Bio 121 - Modern Biology I	4
FYF 101 - First-Year Foundations	3
Mth 111 - Calculus I or	4
Mth 105 - Calculus for LMSS	
Chm 113 - Elements and Compounds Lab	1
Chm 115 - Elements and Compounds	3
	<hr/> 15
Second Semester	
Bio 122 - Modern Biology II	4
Eng 101 - Composition	4
Mth 112 - Calculus II or	4
Mth 106 - Calculus for LMSS	
Chm 114 - The Chemical Reaction Lab	1
Chm 116 - The Chemical Reaction	3
	<hr/> 16
Third Semester	
Bio 225 - Population and Evolutionary Biology	4
Chm 231 - Organic Chemistry I	3
Chm 233 - Organic Chemistry I Lab	1
EES 230 - Ocean Science	4
Distribution Requirement	3
	<hr/> 15
Fourth Semester	
Bio 226 Cellular and Molecular Biology	4
Chm 232 - Organic Chemistry II	3
Chm 234 - Organic Chemistry II Lab	1
Computer Science Elective	3
Distribution Requirements	3
Mth 150 Statistics	3
	<hr/> 17
MS__ Summer College MCS ²	3
Fifth Semester	
Phy 171 - Classical and Modern Physics	4
Bio 397 - Professional Preparation Techniques	2
Bio Electives/Research	6
Distribution Requirement	3
	<hr/> 15
Sixth Semester	
Phy 174 - Classical and Modern Physics	4

EES Elective	3
Bio Elective/Research	3
Bio/EES 343 - Marine Ecology 1, 3	3
Distribution Requirement	3
	<hr/>
	16
MS__ Summer College MCS ²	3
Seventh Semester	
Bio 391 - Senior Projects I	2
Bio Electives	3-4
Free Electives	6
Distribution Requirement	3
	<hr/>
	14-15
Eighth Semester	
Bio 392 - Senior Projects II	2
Bio Electives	6-7
Distribution Requirement	3
EES Elective	2-3
	<hr/>
	13-15

¹ EES/BIO 343 counts toward both BIO degree and EES minor.

² EES minor credits includes 2 MS courses at MSC Wallops Island, but not MS 110 or MS 260.

³ 18 minimum credits for EES minor includes BIO/EES 343.

Summary of Requirements:

Biology Course Credits (BIO 121, 122, 225, 226, 343, 397, 391, 392 & Wilkes BIO electives (18-20 credits) = 42-44

EES Minor Credits (EES 230, 343, 2 Wilkes EES electives, and 2 MS) = 18-19

Other Science, Math and Free Elective Credit = 48; Core and Distribution Credits = 25;

Minimum Program Credits = 127

HEALTH SCIENCES

EILEEN M. SHARP, M.S., COORDINATOR FOR HEALTH SCIENCES PROFESSIONAL PROGRAMS

DEBRA I. CHAPMAN, M.S., PREMEDICAL AND PRE-PROFESSIONAL PROGRAMS ADVISOR

Adjunct Faculty:

Ms. Denise Dolan, Coordinator, Medical Education, Guthrie Health System, Sayer, PA; and Richard English, M.D., Program Director, Family Practice Residency Program, Wyoming Valley Health Care System, Wilkes-Barre, PA in the premedical programs. Brian D. Spezialetti, Program Director, Medical Technology Program, Robert Packer Hospital, and Joseph King, M.D., Medical Director, Medical Technology Program, Robert Packer Hospital for the medical technology programs.

Health Sciences Committee

(reports to Dale Bruns, Ph.D., Dean of the College of Science and Engineering) Michael A. Steele, Ph.D., Committee Chair, Professor of Biology and Chair,

Division of Biology and Health Sciences; Amy Bradley, Ph.D., Associate Professor of Chemistry; Dale Bruns, Ph.D., Dean of the College of Science and Engineering; Debra I. Chapman, M.S., Instructor in Biology; Linda Gutierrez, M.D., Assistant Research Professor in Biology; Lisa Kadlec, Ph.D., Assistant Professor of Biology; Dan F. Koppen, M.D., Physician and Member of the Wilkes University Board of Trustees; Donald Mencer, Ph.D., Associate Professor of Chemistry; Kenneth A. Pidcock, Ph.D., Associate Professor of Biology; Edward J. Schicatano, Ph.D., Associate Professor of Psychology; Eileen M. Sharp, M.S., Coordinator for Health Sciences Professional Programs; and William J. Biggers, Ph.D., Associate Professor of Biology.

Wilkes University has a long-standing tradition of educating students who become health care professionals in a variety of community settings—large and small, rural and urban. The Health Sciences Programs at Wilkes provide a particularly broad and rich range of choices for entry into the medical and allied health professions.

The University's medical pre-professional programs prepare students for careers in allopathic and osteopathic medicine, dentistry, optometry, podiatric medicine, and veterinary medicine. Pre-professional programs in allied health provide preparation for students to enter the health care professions of physical therapy, occupational therapy, and clinical laboratory sciences.

Advisement, Guidelines and Procedures for all Health Sciences Students

All Health Sciences students must declare a specific academic major and also complete a core of courses for their chosen health profession. Many pre-doctoral students major in Biology, Chemistry or Biochemistry. However, students who have majored in the traditional liberal arts, Math or Engineering have also been successful in gaining admission to health professions schools. Health professions schools are generally interested in students who have in-depth training in the sciences along with a broad background in the humanities and social sciences. Many students pursuing one of the allied health areas major in Biology, Psychology or one of the other traditional science or social science programs.

An important component of the University's Health Sciences Programs is its counseling and advising system. The Wilkes tradition of close student advising permits thorough understanding of the student's aspirations and goals. A faculty advisor is assigned to the student in his or her academic major. This academic advisor is the first point of contact

regarding course planning and registration for the student. In addition, the student is counseled on the particulars of pre-doctoral and allied health education by the advisors in the Health Sciences Office.

The Health Sciences Office specifically provides information about standards for admission to the various health professions. In addition, time lines for individual programs, admission services for health professions schools, test dates and study guides for professional school admission exams, admission deadlines, and catalogues from a variety of professional schools in the health sciences are available.

All students planning to pursue careers in the health sciences must declare their specific interest with the Wilkes Health Sciences Office. Students must complete a Health Sciences Declaration Form as soon as they determine their interest and submit a schedule of their classes each semester to that office. The Declaration Form enables the Health Sciences Office to track the student and monitor his or her academic progress.

HEALTH SCIENCES PRE-PROFESSIONAL PROGRAMS

These programs prepare students for health professional programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine and Veterinary Medicine.

Overview

Wilkes University offers premedical programs that share a fundamental and formative premise— that unprecedented technological and scientific dynamism will characterize the context of medical careers conducted in the next thirty to fifty years. This perspective has important implications for the future health professionals' baccalaureate studies, including the need to master computer-based information access systems, to reach a level of mastery in the sciences permitting independent judgment and research, and to grow in ethical sensitivity and sophistication. Drawing on the University's strengths in science, information systems, and the humanities, Wilkes has defined an approach to health sciences pre-professional education that produces exceptionally competent and competitive candidates for admission to the nation's leading health professions institutions.

The Wilkes Health Sciences pre-professional graduate stands out first of all because he or she is not only broadly trained but also has mastered the rapidly evolving medical information technologies. Throughout the

science curriculum at Wilkes, students are exposed to and use databases that relate up-to-date information at the cutting edge of research in science fields. Interviews with professional school professors and admissions officers indicate that such information access skills are increasingly relevant and are essential for the health practitioner. As a comprehensive University, with a full range of bachelor's and master's degree programs in natural sciences, computer science, and engineering, Wilkes provides a sophisticated, research-capable science environment in which students learn how to negotiate the information-rich, highly complex, world of scientific database communications.

The future health practitioner will also be called upon to assess and implement promising information emerging in the fields of molecular biology, biochemistry, cell biology, and organic chemistry. A general exposure to science at the undergraduate level, typical of liberal arts college health sciences pre-professional studies, will no longer be sufficient to prepare medical students and practitioners to be fully competent as professionals. The Wilkes science-intensive pre-professional program involves students in research projects and applications activities during their undergraduate years and helps them to gain real mastery as scientists, able to make independent judgments and to conceptualize and conduct independent research. Health care now makes obsolete the former dichotomous categorization of science and pre-professional studies, in that the superior physician will increasingly have to be a research-capable scientist. Pre-professional studies at Wilkes have adapted to this trend well in advance of programs at most other institutions.

Database information and scientific dynamism make it necessary to focus attention on the moral and ethical dimensions of pre-professional studies. Through its General Education Requirements, Wilkes provides the future health practitioner with a highly meaningful learning experience in philosophy, ethics, and social problems. These learning experiences are augmented by the robust atmosphere of intellectual discussion and debate, which has long been one of Wilkes' distinguishing institutional characteristics, as a nondenominational, non-sectarian university at which issues of morality and ethics are taken seriously. In this way Wilkes prepares its Health Sciences students for the real world in which they will function as broadly educated, competent professionals.

The descriptions of courses and curricula that follow put into practice what we at Wilkes believe to be a progressive program of pre-professional studies in health care careers.

The Wilkes Health Sciences Pre-professional Core

(Required of all students aspiring to enter programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine, and Veterinary Medicine.)

A unique feature of the University's pre-professional education is the pre-professional core, a sequence of courses designed to prepare students for the challenges and rigors of a health care doctoral education. The core was developed after consulting admissions personnel from health professions schools regarding undergraduate courses required for admission. The pre-professional core not only includes the traditional requirements expected by health professions schools, but also capitalizes on the University's strengths in science and technology.

The pre-professional core includes a meaningful research or project experience, a practicum and observation experience provided by local health professionals, knowledge and utilization of computers in healthcare, meaningful laboratory background with emphasis on the understanding and use of modern instrumentation, and participation in a variety of seminars and programs offered through the Health Sciences Office.

The Wilkes Pre-professional Core requires the following courses as a minimum:*

2 courses in Modern Biology (BIO 121-122)

(A third course in Comparative Anatomy, BIO 314, is recommended)

4 courses in Chemistry (CHM 115-116, 231-232)

1 course in Biochemistry (CHM 361 or 362)

1 course in Medical Informatics (CS 265)

2 courses in Physics (PHY 171-174 or 201-202)

2 courses in Mathematics (MTH 105-106 or 111-112)

1 course in Psychology (PSY 101)

1-2 courses in English** (emphasizing writing skills)

Research course or a Special Project ***

A shadowing experience (20–25 hrs) in each of the undergraduate years

Attendance at Health Science Office-sponsored events on campus

**Pre-optometry students are also required to complete statistics (MTH 150), Cellular and Molecular Biology (BIO 226) and Medical Microbiology (BIO 327).*

**Pre-dentistry students are also required to complete a course in sculpture (ART 122).*

***English course requirements (as well as other prerequisite course requirements) vary from one health professions school to another. It is the student's responsibility to meet the requirements of a particular health professions school.*

****Students enrolled in one of the accelerated seven-year programs may elect to be waived from the senior year research course or special project.*

All students intending to enter doctoral programs in health care must complete these pre-professional core courses. Students should work with their academic advisors to integrate this core into the recommended course sequence for their academic major as outlined in this Bulletin.

The goals of the Pre-professional Core are to:

- Help the student develop a useful scientific foundation.
- Serve as a unique signature, which Wilkes graduates can carry forward as successful professionals.
- Facilitate the preparation for standardized admissions tests such as the MCAT, OAT, and DAT.

Letter of Evaluation

Students applying to a health professions school may request a Letter of Evaluation from the Wilkes Health Sciences Committee. In order to receive the Letter of Evaluation from the Committee, students must have a Declaration Form on file, successfully complete the Pre-professional Core, develop knowledge of and experience in the field they wish to enter through shadowing and gain experience in the social service field by volunteering their time with community agencies. These types of experiences are required by most health-professions schools. The application for the committee letter must be submitted to the Health Sciences Committee by May 1st of a student's junior year.

Placement of Pre-doctoral Students

Wilkes enjoys an enviable record of placement of students in health professions schools with acceptance rates of almost 90%. Allopathic medical schools accepting Wilkes students

College of Science and Engineering

include George Washington, Georgetown, Harvard, Johns Hopkins, Drexel University, Pennsylvania State University-Hershey, Stanford, SUNY Upstate, Temple University, Thomas Jefferson University, Tulane, the University of Pennsylvania, the University of Pittsburgh and Yale. A number of Wilkes students also enter osteopathic medical schools such as Lake Erie College of Osteopathic Medicine, the Philadelphia College of Osteopathic Medicine, Ohio University College of Osteopathic Medicine, and University of Health Sciences College of Osteopathic Medicine in Kansas City.

Wilkes students have attended dental school at the University of Connecticut, Tufts University, the University of Pittsburgh, the University of Buffalo School of Dental Medicine, and Temple University. Preoptometry students have gained admission to institutions such as Illinois College of Optometry, New England College of Optometry, Ohio State University College of Optometry, and Pennsylvania College of Optometry. Podiatric medical schools accepting Wilkes students include California College of Podiatric Medicine, New York College of Podiatric Medicine, Ohio College of Podiatric Medicine, and Temple University School of Podiatric Medicine. Wilkes students have also gained admission to veterinary schools such as the Oklahoma State University School of Veterinary Medicine, the University of Illinois School of Veterinary Medicine, University of Pennsylvania School of Veterinary Medicine, the University of Wisconsin-Madison Veterinary School, and the Virginia-Maryland Regional College of Veterinary Medicine.

AFFILIATED DEGREE PROGRAMS IN MEDICINE

I. Early Assurance B.S./M.D. Programs in Allopathic Medicine

Wilkes has developed special early assurance joint B.S./M.D. degree programs and established agreements with three major medical schools, which lead to a baccalaureate degree from Wilkes University and the professional degree in medicine upon completion of medical school. Once students have been granted acceptance to Wilkes University, and identified as qualified to be considered for selection to one of the early assurance programs, they will be required to submit essays and letters of recommendation from two high school science teachers and one humanities/English teacher to the Health Sciences Committee and successfully complete three interviews. If ultimately selected for any

of the three programs, students must satisfy all requirements as articulated in each specific affiliation agreement. All students in these early assurance programs will spend their 7th or 8th semester in a clinical setting. Wilkes University has established special affiliations with Guthrie Health Systems (GHS), which includes the Robert Packer Medical Center in Sayre, Pennsylvania (Guthrie Scholars) and the Wyoming Valley Health Care System (WVHCS), which includes the General Hospital in Wilkes-Barre, PA (Wyoming Valley Scholars) for students to participate in this clinical experience.

A. PREMEDICAL SCHOLARS PROGRAMS WITH DREXEL (FORMERLY MCP-HAHNEMANN) UNIVERSITY SCHOOL OF MEDICINE

Drexel University School of Medicine (Drexel) in Philadelphia and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from northeastern Pennsylvania and the southern tier of New York State (from Binghamton to Corning) who are interested in a career in medicine. Students from northeastern Pennsylvania may choose either the Guthrie Scholars or the Wyoming Valley Scholars clinical site. Southern tier New York students will spend their semester at the Guthrie clinical site.

This program allows high school seniors to be assured admission to Drexel University School of Medicine as they enter Wilkes University to do their undergraduate work. Details of this program are as follows:

1. Program Admission

- a. To be considered for selection to the Drexel Premedical Scholars Program, applicants must meet the following conditions:
 - Be accepted into the entering freshman class at Wilkes University by November 15th of their senior year in high school.
 - Have a minimum combined SAT score of 1270 (with no subset less than 560) (The new SAT writing sample will be considered, but no official minimum score has yet been determined.)
 - Have a high GPA
 - Rank in the top 10% of their high school graduating class

- Have satisfactorily completed Completed the following high school prerequisite courses or equivalents: four (4) years of mathematics; four (4) years of English; three (3) years of science (at least one semester each of biology, chemistry, and physics)
 - Have had at least one shadowing experience (preferably with a primary care or general practice physician)
- b. Up to six (6) Premedical Scholars may be selected to the program each year.
 - c. Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office will notify students who meet minimal qualification criteria for selection to this early assurance program. To be selected, students are required to successfully complete interviews at Wilkes, at either the Robert Packer Medical Center of the Guthrie Health Care System or the Wyoming Valley Health Care System, and at the Drexel University School of Medicine.
 - d. Only students from northeastern Pennsylvania and the lower tier of New York (from Binghamton to Corning) for the Guthrie Scholars Program and northeastern Pennsylvania for the WVHCS Scholars Program will be considered.
 - e. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
 - f. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core. Students must maintain a minimum overall GPA of 3.5 and a cumulative GPA of 3.5 in the prerequisite sciences during their four (4) years at Wilkes, without repeating a course. Students who receive a grade below a 2.0 in any course will be automatically disqualified from the program. Students must score, in a single test, "9" or better on the verbal subsection and "10" or better on the physical sciences and biological sciences subsections or a minimum score of 31 (with no sub-section less than "8") and a letter score of "M" or higher on the writing subsection of the MCAT by the end of their junior year at Wilkes to complete the medical school admission requirements. Additional requirements are specified in the acceptance letter from the medical school and Wilkes University.
- b. The off-campus clinical semester requires a total of 15 credits of course work, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussion on Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department. **Students in the Guthrie Program** will spend the 7th or 8th semester of undergraduate study at the Robert Packer Medical Center in Sayre, PA, doing clinical research and studying the rural and semi-rural Health Care Delivery System of northeastern Pennsylvania and the lower tier of New York. In return for Guthrie's investment in them, students in the Guthrie Scholars Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Robert Packer Medical Center. **Students in the WVHCS Program** will spend the 7th or 8th semester of undergraduate study at the Wyoming Valley Health Care System in Kingston, PA, doing clinical research and studying the semi-rural Health Care Delivery System of northeastern Pennsylvania. In return for Wyoming Valley's investment in them, students in the WVHCS Scholars Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Wyoming Valley Health Care System.

College of Science and Engineering

- c. Four (4) years of medical school study at Drexel University.

B. THE PREMEDICAL SCHOLARS PROGRAM WITH THE PENNSYLVANIA STATE UNIVERSITY COLLEGE OF MEDICINE AT HERSHEY

The Pennsylvania State University College of Medicine at Hershey (Penn State Hershey) and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from rural and/or medically underserved areas of Pennsylvania who must be interested in a career in primary health medicine. This program allows students to select either the Guthrie Scholars clinical site or the Wyoming Valley Scholars clinical site for their senior year clinical experience.

The program allows high school seniors to be assured admission to the Pennsylvania State University College of Medicine at Hershey as they enter Wilkes University to do their undergraduate work. Details of this program are as follows:

1. Program Admission

- a. To be considered for selection to the Penn State Hershey Premedical Scholars Program, applicants must meet the following conditions:
- Be accepted into the entering freshman class at Wilkes University by November 15th of their senior year in high school
 - Have a minimum combined SAT score of 1250 (The new SAT writing sample will be considered, but no official minimum score has yet been determined.)
 - Have a high GPA
 - Rank in the top 10% of their high school graduating class
 - Have satisfactorily completed three (3) years of natural sciences, including biology, chemistry and physics, and mathematics through trigonometry (calculus is recommended)
 - Have had at least one shadowing experience (preferably with a primary care or general practice physician)
- b. Two Premedical Scholars may be selected to the program each year.

- c. Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office will notify students who meet minimum qualification criteria for selection to this early assurance program. To be selected, students are required to successfully complete interviews at Wilkes, at either the Robert Packer Medical Center of the Guthrie Health Care System or the Wyoming Valley Health Care System, and at the Pennsylvania State University College of Medicine.
- d. Emphasis in recruiting will be placed on students from rural and/or medically underserved areas of Pennsylvania who wish to pursue a career in primary care medicine.
- e. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- f. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four years of successful undergraduate premedical study at Wilkes University. Student must maintain a minimum GPA of 3.5 in biology, chemistry and physics and an overall GPA of at least 3.5 by the end of their junior year at Wilkes. Specific criteria by year are as follows.

Freshman Year

- Minimum GPA of 3.3

Sophomore Year

- Minimum GPA of 3.4
- Shadowing experience with a primary care physician
- Meet with the Associate Dean for Admissions and Student Affairs of the Penn State College of Medicine

Junior Year

- Minimum GPA in biology, chemistry and physics of 3.5 and a minimum overall GPA of 3.5
- A second shadowing experience with a primary care physician
- A Letter of Evaluation from the Health Sciences Committee at Wilkes University
- Completion of the MCAT
- Completion of the AMCAS application

Senior Year

- Maintain a high level of academic achievement and complete the Wilkes University premedical core of courses
 - Participate in the clinical site experience during the 7th or 8th semester
 - Meet with the Associate Dean for Admissions and Student Affairs of the Penn State College of Medicine
- a. The off-campus semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions on Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department.
 - b. Students must complete their 7th or 8th semester in college at either the Robert Packer Hospital or the General Hospital. In return for Guthrie's or Wyoming Valley's investment in them, students must spend parts of the 3rd and 4th years in medical school doing required and elective clinical rotations at either Robert Packer Medical Center or General Hospital (dependent on which location they spent their 7th or 8th semester at Wilkes).
 - c. Completion of the MCAT examination is required for admission to the Pennsylvania State University College of Medicine. The exam must be taken by April of the junior year at Wilkes. Students are expected to perform at or above the mean score in each section when compared with the previous College of Medicine entering class. Additional requirements are specified in the acceptance letter from the medical school and Wilkes University.
 - d. Four (4) years of medical school study at the Pennsylvania State University College of Medicine at Hershey.

C. THE PREMEDICAL SCHOLARS PROGRAM WITH THE STATE UNIVERSITY OF NEW YORK UPSTATE MEDICAL UNIVERSITY AT SYRACUSE, NEW YORK (SUNY UPSTATE)

The State University of New York Upstate Medical University at Syracuse, New York (SUNY Upstate) and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from the southern tier of New York State, from Binghamton to Corning. Students will

spend their clinical semester at the Guthrie Scholars clinical site in Sayre, Pennsylvania.

This program allows high school seniors to be assured admission to SUNY Upstate Medical University as they enter Wilkes University to do their undergraduate work. The program is as follows:

1. Program Admission

- a. High school applicants must have a minimum combined SAT score of 1200 to be considered for admission to the SUNY Upstate Premedical Scholars Program. The new SAT writing sample will be considered, but no official minimum score has yet been determined.
- b. Students admitted to the program, after successful interviews at Wilkes, Robert Packer Medical Center, and SUNY Upstate, will be simultaneously assured admission to medical school at SUNY Upstate Medical University and to Wilkes University.
- c. Students must maintain a minimum GPA of 3.5 in biology, chemistry, mathematics and physics (BCMP) during their first three (3) years at Wilkes to complete the medical school admission requirements. [No Medical College Admission Test (MCAT) is required] Additional requirements will be specified in the acceptance letter from the medical school and Wilkes University.
- d. Emphasis in recruiting for this program will be placed on students from the southern tier of New York State, from Binghamton to Corning.
- e. The deadline for application and acceptance to Wilkes University is November 15th of their senior year in high school.
- f. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- g. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core.

- b. The off-campus semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions of Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each department.
Students in the program will spend the 7th or 8th semester of undergraduate study at the Guthrie Scholars clinical site in Sayre, Pennsylvania, doing clinical and basic science research, and studying the rural and semi-rural Health Care Delivery System of New York. In return for Guthrie's investment in them, students in the SUNY Upstate Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Robert Packer Medical Center.
- c. Four (4) years of medical school study at SUNY Upstate Medical University. Third and fourth year medical students in the program will be assigned to the SUNY Upstate Clinical campus at Binghamton to complete their required and elective clinical rotations.

II. Seven-Year Affiliated Health Professions Programs

In addition to the traditional four-year premedical undergraduate programs, Wilkes University has developed affiliations with health professions schools in osteopathic medicine, dentistry, optometry, and podiatric medicine. These programs permit students to spend three years at Wilkes in the basic sciences and liberal arts and four years at the affiliated health professions school. The University has developed these seven-year health professions programs with the following institutions:

- Philadelphia College of Osteopathic Medicine (PCOM)
- Temple University School of Dentistry (TUSD)
- Pennsylvania College of Optometry (PCO)
- Temple University School of Podiatric Medicine (TUSPM)
- State University of New York College of Optometry (SUNY-Optometry)

These programs offer a unique opportunity for outstanding high school students, who are fairly certain of the career path they wish to pursue, to complete their pre-professional and professional education in seven years. Students should have a high GPA and high rank in their high school graduating class, a

combined SAT score of 1200 or better (with no score less than 550) and have completed Honors or AP coursework, especially in the sciences. The new SAT writing sample will be considered, but no official minimum score has yet been determined.

In order to qualify for any of these seven-year programs, students must apply and be accepted to Wilkes University by January 1st of their senior year in high school. If minimum prerequisites are met and students are accepted to the University, they will be interviewed by representatives of the Wilkes University Health Sciences Committee prior to April 1st of their senior year in high school for final selection. Once students are selected for one of these affiliated programs and begin their undergraduate education, they will receive assistance from the Health Sciences Office in advising them through their accelerated program of study and in the application process to the health profession school. Students will be expected to maintain a high GPA and are required to participate in shadowing experiences, volunteer activities and seminars and programs sponsored by the Health Sciences Office during their three years at Wilkes in addition to meeting the requirements listed below by each individual health professional institution.

SEVEN-YEAR PROGRAMS WITH A MAJOR IN BIOLOGY- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
BIO 121 Principals of Modern Biology I	4
CHM 113 Elements and Compounds Lab	1
CHM 115 Elements and Compounds	3
FYF 101 First-Year Foundations	3
MTH 105 Calculus for Life, Managerial and Social Sciences I	4
	15
Second Semester	
BIO 122 Principals of Modern Biology II	4
CHM 114 The Chemical Reaction Lab	1
CHM 116 The Chemical Reaction	3
ENG 101 Composition	4
MTH 106 Calculus for Life, Managerial and Social Sciences II	4
	16
Third Semester	
BIO 225 Population and Evolutionary Biology	4
CHM 231 Organic Chemistry I	4
COM 101 Fundamentals of Public Speaking	3
Distribution Requirement	3

Distribution Requirement	3
	17
Fourth Semester	
BIO 226 Cellular and molecular Biology	4
CHM 232 Organic Chemistry II	4
PSY 101 General Psychology	3
CS 265 Medical Informatics	3
Distribution Requirement	3
	17
Fifth Semester	
BIO 397 Professional Preparation Techniques	2
BIO Elective	4
PHY 171 Princ. of Classical and Modern Physics	4
MTH 150 Elementary Statistics	3
Distribution Requirement	3
	16
Sixth Semester	
BIO Elective	4
CHM 362 Biochemistry: Metabolism	4
PHY 174 App. of Classical and Modern Physics	3
Distribution Requirement	3
Free Elective	3
	17

Select one course from Structural/Functional category.

Select one course from Diversity/Populational category.

Pre-optometry students must complete BIO 327 (Medical Microbiology).

Following successful completion of their first year of basic science education in professional school, a student is responsible for transferring the credits earned at the professional school to Wilkes and Wilkes will confer upon each student the Wilkes University baccalaureate degree.

Wilkes University students must apply for and receive a Health Sciences Committee Letter of Evaluation after their sophomore year in order to apply to any of the affiliated institutions. Only students who have earned a high grade point average by the end of their sophomore year and who have fulfilled appropriate requirements of the Pre-professional Core and the General Education Requirements will be endorsed and receive a Letter of Evaluation for the seven-year programs. Students whose academic credentials fall beneath the standards set by the Committee will be advised to complete a third year of study at Wilkes before

reapplying for a Letter of Evaluation. Decisions for admission to these health professions schools are made by a Joint Admissions Committee from Wilkes University and the affiliated institution. Students must meet all admission requirements as outlined by the health professions schools with the final admission decision determined by the health professions institution.

• *Philadelphia College of Osteopathic Medicine (PCOM)*

PCOM holds up to fifteen (15) seats each year for Wilkes University students who are recommended by the Health Sciences Committee for admission and who meet all of PCOM's admission requirements. Students should consult the Wilkes Health Sciences Office for information regarding PCOM's requirements for a minimum grade point average and MCAT score.

• *Temple University School of Dentistry (TUSD)*

TUSD reserves a minimum of four (4) seats each year for Wilkes students who meet all of Temple University's admission requirements. Wilkes students will be granted an automatic invitation for an interview if they submit their application no later than December 1 of the year prior to matriculation to TUSD and they meet the following minimum requirements as specified by Temple Dentistry:

- Track as a science major in the Wilkes pre dental program.
- Submit application letter to TUSD prior to December 1 of the junior year at Wilkes.
- Receive a Letter of Evaluation from the Wilkes University Health Sciences Committee.
- Earn a minimum grade point average of 3.5 by the end of the 5th semester in the Basic Sciences, 3.4 in the Sciences, and 3.3 overall.
- Earn a minimum score of 18 in the Science section and 18 as the academic average on the Dental Admission Test (DAT).

Students who are interviewed will then be evaluated for admission by the Temple University Admission Committee.

Pennsylvania College of Optometry (PCO)

State University of New York College of Optometry (SUNY-Optometry)

Temple University School of Podiatric

Medicine (TUSPM)

PCO holds up to four (4) seats, SUNY-Optometry holds up to six (6) seats, and TUSPM holds up to six (6) seats each year for Wilkes University students who are endorsed for admission by the Wilkes Health Sciences Committee and who meet all of the appropriate institution's admission requirements. Students should consult the Wilkes Health Sciences Office for information regarding requirements for a minimum grade point average (GPA) and a minimum score on the appropriate health professions school admission test.

Wilkes University takes pride in having developed these affiliated seven-year medical programs, which have been ongoing since the late 1970s. Currently, large numbers of alumni who have graduated from these programs are in successful professional practice. We especially encourage highly motivated and academically gifted students to take advantage of these abbreviated specialized programs and join those already enrolled in this pursuit.

III. State University of New York, State College of Optometry Affiliation Programs

A. OPTOMETRY SCHOLARS PROGRAM

Wilkes University and the State University of New York, State College of Optometry offer a special academic affiliation in optometric education, the Optometry Scholars Program. Up to six (6) students per year may be selected into a seven-year Bachelor of Arts or Science (B.A. or B.S.) and Doctor of Optometry (O.D.) program. Students chosen for this joint degree program are admitted to a designated, prescribed major at Wilkes University and simultaneously admitted to candidacy to the SUNY College of Optometry's professional program of study.

1. Program Admission

- a. High school applicants must have a minimum combined SAT of 1200 (at least 600 math and 550 verbal), a minimum of 93 for their high school grade point average, and place in the top 10% of their graduating class. The new SAT writing sample will be considered, but no official minimum score has yet been determined.

- b. Students selected for the SUNY Optometry Scholars Program, after successful interviews at Wilkes and SUNY College of Optometry, will be simultaneously admitted to candidacy in the Optometry School at State University of New York, College of Optometry and to Wilkes University.
- c. Students in this program must maintain a GPA of 3.3 overall and a 3.3 in the required science and math portion of the joint degree track curriculum, with no grade lower than a 2.0 in each individual science and math prerequisite course. Students must also attain a total science score above 330 on the Optometry Admissions Test (OAT) with no score in any one area below 310.
- d. Students must receive a positive Letter of Evaluation from the Wilkes Health Sciences Committee, pass reasonable personal interview standards and submit all required application materials during their junior year at Wilkes.

2. Program format

- a. Three (3) years of successful undergraduate study at Wilkes University, which includes coursework in an academic major and in the Pre-professional Core.
- b. Students in this program must also visit and shadow three different professional optometric offices in order to become more fully acquainted with the profession of optometry during their undergraduate study at Wilkes University.
- c. Four (4) years of Optometry School study at SUNY College of Optometry. At the successful completion of their first year of Optometry school, students may transfer their credits to Wilkes and Wilkes will grant the baccalaureate degree.

B. EARLY ASSURANCE PROGRAM

Wilkes University and SUNY Optometry also offer an Early Assurance program to which Wilkes sophomores who are interested in a career in optometry may apply.

To be considered, each applicant must:

- Have completed two (2) years of undergraduate study (approximately 60 hours) and at least 70% of SUNY's prerequisite courses.

- Maintain throughout the four years a total GPA of 3.3 and a 3.3 GPA in the SUNY prerequisite science and math courses, with no grade lower than a 2.0 (C) in any of the SUNY prerequisite courses.
- Demonstrate a basic knowledge of and a motivation for a career in optometry.
- Take the Optometry Admission Test (OAT) in their junior or senior year and attain a total science score above 330 with no score below 310.
- Provide high school and college transcripts and SAT scores to SUNY Optometry.
- Receive a positive Letter of Evaluation from the Wilkes University Health Sciences Committee.
- During their senior year at Wilkes University, be interviewed at SUNY Optometry.
- Applications are due at SUNY by June 1 following the sophomore year. After the submission and review of all written materials, each applicant receiving serious consideration for admission to the Early Assurance Program will be offered an opportunity to interview at the SUNY College of Optometry. Candidates will be notified of committee action in writing prior to August 31st.

C. TRADITIONAL ADMISSION PROGRAM

SUNY Optometry also welcomes applications from Wilkes University juniors interested in a career in optometry who wish to apply to the professional program by the traditional method.

IV. Transfer Doctoral Degree Program

The transfer program is similar to our Seven-Year Affiliated Degree programs. However, instead of choosing this 3+4 track before entering Wilkes University as a freshman (as in the 3+4 programs), a student may elect this path during their tenure as an undergraduate student.

Typically, four (4) years of undergraduate study are required to qualify for the bachelor's degree. Wilkes University makes an exception to this requirement in special circumstances for doctoral students in allopathic and osteopathic medicine, dentistry, optometry, podiatric medicine, veterinary medicine, and doctoral-level physical therapy (DTP).

These students may, with the approval of the Wilkes Academic Standards Committee,

satisfy the requirements for the bachelor's degree by completing three years of an academic major, at least the last two of which must be at Wilkes, and by requesting credit toward the degree for their first two years of work in professional school. Students in these programs must, however, satisfy the General Education Requirements at Wilkes University to be considered for a bachelor's degree from the University.

Such students must also petition the Academic Standards Committee for permission to graduate, submit official transcripts from the professional school, and pay the usual graduation fees. In all cases, the final approval for the granting of the baccalaureate degree rests with the Academic Standards Committee of Wilkes University.

ALLIED HEALTH PROGRAMS

Wilkes University has developed programs that prepare students for admission to physical therapy and occupational therapy schools as well as programs in clinical laboratory sciences.

Overview

With career opportunities expanding in the allied health fields known as physical therapy, occupational therapy, clinical laboratory sciences, physician assistant and chiropractic medicine, admission to programs in these areas has become increasingly competitive. Wilkes University has defined an approach to pre-allied health education to produce competitive, noteworthy candidates for admission.

The University has structured a program of study emphasizing the basic sciences and social sciences to provide students with the appropriate background knowledge to enter occupational and physical therapy programs. The curriculum is complemented by an advising system that closely monitors the student's academic progress and their application process to a professional program.

Students interested in allied health fields must meet with their academic advisors and advisors from the Health Sciences Office early in their freshman year to work out an individualized course of study. Students may plan to apply to a preprofessional undergraduate program in physical therapy, occupational therapy physician assistant and chiropractic medicine after two or three years of coursework at Wilkes. Students may also plan to complete an undergraduate degree at Wilkes and apply to an entry-level allied health master's or doctoral degree program. Career plans affect course selection and must be reviewed with academic and health sciences advisors.

I. Physical Therapy

Physical Therapy is a profession concerned with restoration of physical function and the prevention of disability following disease, injury, or loss of body parts. The goal of physical therapy is to help the patient reach maximum potential and to assume a place in society while learning to live within the limits of his/her capabilities.

Physical therapists are qualified to utilize such physical agents as therapeutic heat, light, electricity, water, exercise, or massage in treating patients. Treatment may consist of teaching the patient an exercise regimen to increase muscle power or improve coordination, or teaching the patient to walk with prostheses, braces, or other ambulatory aids. Appropriate psychological and sociological principles are applied in motivating and instructing the patient, his or her family, and others. Physical therapists may delegate selected forms of treatment to supportive personnel with assumption of the responsibilities for the care of the patient and the continuing supervision of the supportive personnel.

Career opportunities exist for physical therapists in hospitals, rehabilitation centers, pediatric facilities, private practice, research, industry, sports medicine, school systems, nursing homes and other health care settings.

The Wilkes Pre-Physical Therapy Core

In addition to completing an academic major, each student must also complete the Wilkes University Pre-Physical Therapy Core, which provides a base from which students can structure their classes. The Pre-Physical Therapy Core includes a sequence of courses that are common prerequisites at most physical therapy schools. It must be emphasized that there are no universal prerequisite courses for all physical therapy programs. Therefore, students must consult with each school to which they seek to apply to ascertain that particular school's prerequisites.

The Wilkes Pre-Physical Therapy Core (Minimum Requirements per the Drexel University and Widener University Doctor of Physical Therapy Degree Programs)

A. THE PRE-PHYSICAL THERAPY CORE

- Five (5) courses in Biology for a total of 19-20 credits to include the following:
Principles of Modern Biology I & II (BIO 121 & 122)
Medical Anatomy and Physiology I & II (BIO 314 & 321)*

One of the following upper-level Biology courses:

- Functional Histology (BIO 323)
- Molecular Biology (BIO 324)
- Immunology and Immunochemistry (BIO 326)
- Medical Microbiology (BIO 327)
- Genetics (BIO 345) or

Senior Research Projects (BIO 391, 392)
OR Independent Research (BIO 395, 396)
OR Independent Research (PSY 395, 396)

* Please note that *Cellular and Molecular Biology (BIO 226)* is required as a course to precede the 300-level biology courses.

- Two courses in General Chemistry with laboratory for a total of 8 credits (For example: CHM 115 & 116 with labs CHM 113 & CHM 114)
- Two courses in Physics with laboratory for a total of 8 credits (For example: PHY 171 & 174)
- Two courses in Psychology for a total of 6 credits: General Psychology (PSY 101 and Developmental Psychology (PSY 221)
- One course in Statistics for a total of 3 credits (For example: PSY 200 or MTH 150)
- Mathematics (as per the requirements of professional school(s))
- Five courses in the Humanities and Social Sciences for a total of 15 credits. For example: courses that satisfy Areas I and III of the Distribution Requirements of the Wilkes University Core.

B. VOLUNTEER EXPERIENCE IN PHYSICAL THERAPY

Each institution has varied prerequisites and all professional schools generally require a certain number of volunteer hours in physical therapy. Some or all of those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Cooperative Education Office or through the Health Sciences Office.

C. LETTERS OF EVALUATION

One composite letter from the Wilkes University Health Sciences Committee and one letter from a physical therapist.

In addition to completing this minimum Pre-Physical Therapy Core, students must consult prerequisite guidelines published by the particular institutions from which they wish to gain admission.

A. AFFILIATED PROGRAM WITH DREXEL UNIVERSITY DEPARTMENT OF REHABILITATION SCIENCES: DOCTOR OF PHYSICAL THERAPY DEGREE PROGRAM

The affiliated physical therapy program requires four (4) years of study at Wilkes University leading to the Bachelor's Degree and three (3) years of study at Drexel University leading to the Doctoral Degree in Physical Therapy. Early admission to the Drexel University graduate program is granted to up to five (5) Wilkes students, who have satisfied all requirements for admission, per year.

Students should consult the previous section of the Bulletin for the prerequisite courses required for admission to Drexel University's Affiliated Physical Therapy Program.

Wilkes students applying to Drexel University must meet the criteria for admission outlined here:

- A cumulative grade point average at the end of six full semesters of 3.25 or above, as noted in the curricular outline.
- Completion of all science courses with a cumulative grade point average of 3.00 or above.
- Minimum Graduate Record Examination (GRE) score of 1600.
- Volunteer experience in physical therapy for at least 75 hours.
- Petition to the Wilkes University Health Sciences Committee for a Letter of Evaluation to accompany their application. This request must be made in writing to the Committee by May 15th of the student's junior year.
- Obtain a Letter of Evaluation/Recommendation from a licensed physical therapist.

Students who meet the guidelines of this program will be automatically granted an interview with the Drexel Physical Therapy Committee on Admissions. The decision to offer acceptance to students into this program shall be made by the Program in Physical Therapy Committee on Admissions of Drexel University. In addition, students must also complete all requirements for a bachelor's degree from Wilkes University prior to matriculation at Drexel University.

B. AFFILIATED PROGRAM WITH WIDENER UNIVERSITY: DOCTOR OF PHYSICAL THERAPY DEGREE PROGRAM

The Affiliated Physical Therapy Program provides students the opportunity to transfer from Wilkes University to the Doctor of Physical Therapy Program at Widener University to earn a joint 3+3 B.S./D.P.T. degree. Selected students able to meet or exceed established criteria will be eligible for a GUARANTEED place in the Widener Physical Therapy Program. Widener guarantees five (5) seats each year for this D.P.T. Program. Students will also be given the opportunity to earn a joint 4+3 B.S./D.P.T. degree.

Students should consult the previous section of the Bulletin for prerequisite courses required by Widener University's Doctor of Physical Therapy Program.

1. High school students applying for admission to this guaranteed-seat program must meet the following criteria:
 - Apply and be accepted to Wilkes University by January 1 of their senior year in high school.
 - Have a minimum SAT score of 1200 (with no sub-section less than 550). The new SAT writing sample will be considered, but no official minimum score has yet been determined.
 - Have a high school GPA of 3.45 or higher
 - Rank in the top 25% of their high school graduating class
2. Wilkes University freshmen or sophomores who wish to be considered for admission must meet the following criteria:
 - Be a student in good standing at Wilkes
 - Have a cumulative GPA of 3.0 with no grade in the Pre-Physical Therapy Core curriculum of less than a 3.0
3. The selection process will include interviews with the Wilkes University Health Sciences Committee and the Widener University Department of Physical Therapy.
4. Undergraduate program requirements are as follows:
 - Completion of prerequisite courses with a cumulative GPA of 3.0
 - Computer literacy, either by demonstration or successful completion of a computer course or a challenge examination.

- Graduate Record Exam (GRE) general test scores of 1000 or better on the combined verbal and quantitative sections
 - Evidence of volunteer service in physical therapy (usually 50 hours or more)
 - Three favorable letters of recommendation: one from the Wilkes University Health Sciences Committee, one from a physical therapist, and one from an individual chosen by the student.
 - Participation in Health Sciences Office-sponsored events on campus.
5. Students who have completed their baccalaureate degree at Wilkes will be subject to the same admission guidelines as the 3+3 students.

C. AFFILIATED PROGRAM WITH TEMPLE UNIVERSITY COLLEGE OF ALLIED HEALTH PROFESSIONS: DOCTOR OF PHYSICAL THERAPY PROGRAM

This Affiliated Physical Therapy Program requires four (4) years of study at Wilkes University and three (3) years of professional study at Temple University, leading to the Doctor of Physical Therapy degree following successful completion of the three years at Temple.

The Affiliated Physical Therapy Program with Temple University requires students to complete a series of prerequisite courses as part of their four years of study at Wilkes. A listing of these courses is available in the Wilkes Health Sciences Office or through the Temple University Department of Physical Therapy.

Candidates must also complete the Graduate Record Exam (GRE) in the fall semester of their fourth year of study at Wilkes. To qualify for admission at Temple, students must earn a minimum of a 3.0 GPA while at Wilkes and score above the fiftieth percentile on the GRE. Wilkes students who meet the standards of this affiliated program will be given special consideration for admission by Temple.

II. Occupational Therapy

Occupational therapists work with members of the community who encounter difficulties with tasks of living. These difficulties may be from developmental deficits, the aging process, physical illness or injury, economic stress, cultural differences, or psychological problems which present barriers for an individual to function in life. The occupational therapist bases service on a rapidly growing field of

knowledge to enhance the individual's abilities to function and prevent areas of dysfunction. The therapist uses selected, goal-directed activities to encourage learning, re-education, growth and strength, and to promote general health. Occupational therapists provide services along with other health professionals in a number of different settings ranging from hospitals and clinics to schools to reach a wide population of all ages.

The Wilkes Pre-Occupational Therapy Core

In addition to completing an academic major, each student must also complete the Wilkes University Pre-Occupational Therapy Core. The Pre-Occupational Therapy Core provides a base from which students can structure their classes. The Pre-Occupational Therapy Core includes a sequence of courses identified by the American Association of Occupational Therapy Schools as common prerequisites at most occupational therapy schools. It must be emphasized that there are no universal prerequisite courses for all existing occupational therapy programs.

The Wilkes Pre-Occupational Therapy Core requires as a minimum:

Two Courses in Modern Biology (BIO 121-122)

Two Courses in Anatomy and Physiology (BIO 115-116 or BIO 331-332)

One Course in Chemistry (CHM 115 with CHM 113 lab)

One Course in Mathematics (MTH 100, 101 or 105)

Four Courses in Psychology (PSY 101, 200, 221 and 222)

One Course in Sociology (SOC 101)

(An additional course, SOC 251, is also recommended)

Cooperative Education or Internship

In addition to completing the Core, students must consult prerequisite guidelines published by the particular institutions from which they wish to gain admission. Institutions have varied prerequisites and generally require a certain number of volunteer hours in occupational therapy. Some or all of those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Cooperative Education Office.

Affiliated Program in Occupational Therapy at Temple University College of Allied Health Professions: Master's in Occupational Therapy

Wilkes University offers a specialized,

affiliated program in Occupational Therapy with Temple University that requires four (4) years of study at Wilkes and two (2) years of study at Temple University, leading to a master's degree in Occupational Therapy.

The Affiliated Occupational Therapy Program with Temple University requires students to complete a series of prerequisite courses as part of their four years of study at Wilkes. A list of these courses is available in the Wilkes Health Sciences Office or through the Temple University Department of Occupational Therapy.

Placement of Pre-Physical Therapy and Pre-Occupational Therapy Students

Wilkes University graduates have been accepted to a number of physical therapy and occupational therapy schools including: Columbia University College of Physicians and Surgeons, Duke University and Drexel (formerly MCP-Hahnemann) University School of the Health Sciences, Tufts Graduate School of Arts and Sciences, Thomas Jefferson University Program in Occupational Therapy, Temple University Health Sciences Center, Allegheny University, and University of Pittsburgh School of Health and Rehabilitation Sciences.

III. Clinical Laboratory Sciences (Medical Technology)

The Board of Registry of Medical Technology, part of the American Society for Clinical Pathology, recommends certain requirements for a program of training leading to a B.S. degree. The curriculum offered at Wilkes University follows these recommendations and is presented below.

At the completion of three years, the student may be accepted by an affiliated program of medical technology for a period of twelve months of clinical training. Following graduation from the programs, the students will receive the B.S. degree in Medical Technology from Wilkes University and will be eligible for certification as a Medical Technologist by the Board of Registry of Medical Technology or as a Clinical Laboratory Scientist by the National Certification Agency for Medical Laboratory Personnel.

Wilkes University has established a formal affiliation with the Robert Packer Hospital in Sayre, PA. Fulfillment of the fourth-year requirement at non-affiliated NACCLS-certified hospital programs may be arranged

by agreement between the program and Wilkes University.

CLINICAL LABORATORY SCIENCE MAJOR (MEDICAL TECHNOLOGY)- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Bio 121 Principles of Modern Biology I	4
Chm 115 Elements and Compounds/CHM 113	4
FYF 101 First-Year Foundations	3
Mth 105 or 111 Calculus I	4
	<hr/> 15
Second Semester	
Bio 122 Principles of Modern Bio II	4
Chm 116 The Chemical Reaction/CHM 114	4
Eng 101 Composition	4
Distribution Requirements	3
	<hr/> 15
Third Semester	
Bio 225 Population and Evolutionary Biology I	4
Chm 231 Organic Chemistry I/Chm 233	4
Computer Science Elective	3
Distribution Requirements	3
	<hr/> 14
Fourth Semester	
Bio 226 Cellular and Molecular Biology	4
Chm 232 Organic Chemistry II/Chm 234	4
Mth 150 Elementary Statistics	3
Distribution Requirements	3
	<hr/> 14
Fifth Semester	
Bio 327 Medical Microbiology	4
Chm 361 Biochemistry I	3
Distribution Requirements/Free Electives	9
	<hr/> 16
Sixth Semester	
Bio 326 Immunology and Immunochemistry	4
Bio 397 Professional Prep. Techniques	2
Phy 174 Classical and Modern Physics	4
Distribution Requirements/Free Electives	6
	<hr/> 16
Seventh and Eighth Semesters	
CLINICAL LABORATORY SCIENCES PROFESSIONAL STUDY YEAR	

College of Science and Engineering

The 30 credits supplied by the twelve months of clinical training are divided into the following courses:

Bio 371 Clinical Microbiology	7
Bio 372 Clinical Chemistry	8
Bio 373 Clinical Hematology/Coagulation	5
Bio 374 Clinical Immunohematology	4
Bio 375 Clinical Immunology/Serology	3
Bio 376 Clinical Seminar	<u>3</u>
	30

The total minimum number of credits required for a major in Clinical Laboratory Science (Medical Technology) leading to the B.S. degree is 120.

Other Professions

Information on academic programs in related health fields, such as Nursing, Prepharmacy and Pharmacy at Wilkes (Pharm.D. Degree), may be found in the appropriately labeled sections of this Bulletin. Wilkes University has a number of affiliations with other health professions institutes whereby students receive some special consideration for interview and admission. Consult the Health Sciences Office for the information on these affiliations.

DEPARTMENT OF CHEMISTRY

CHAIRPERSON: DR. TERESE M. WIGNOT

Faculty: Professor: Verret

Associate Professors: Bradley, Castejon, Mencer, Trujillo, Wignot

Assistant Professors: Dinescu, Peters

Adjunct Faculty: Carr, St. Martin

Faculty Emeriti: Bohning, Faut, Rozelle, Stine, Swain

Laboratory Manager: Bianco

Lab Preparation Specialist: Tambasco

BIOCHEMISTRY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOCHEMISTRY LEADING TO THE B.S. DEGREE - 122.

The Biochemistry curriculum is designed to provide comprehensive background education and training for those students interested in this interdisciplinary area.

The B.S. curriculum meets the liberal arts requirements of the University with a concentration in advanced courses. It was developed for those students who wish to prepare for Biochemistry as a professional option. Holders of this degree seek employment directly in the field or they can pursue advanced degrees in graduate school.

The biochemistry degree was developed for those students interested in Biochemistry as a means of preparation for entrance into health science professional schools such as allopathic, osteopathic, and podiatric medicine; dental medicine; optometry, etc. Two specific features of the program are that students (1) may pursue the first three years of the Biochemistry degree curriculum in the three-year option under one of the Wilkes University combined seven-year medical and baccalaureate degree programs or (2) use the seventh or eighth semesters in cooperative research programs. The latter option is particularly useful for those students selected to The Premedical Scholars Program (see Affiliated Degree Programs in Medicine).

BIOCHEMISTRY BACHELOR OF SCIENCE DEGREE - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE (122 CREDITS)**First Semester**

Chm 113 - Elem. and Compounds Lab	1
Chm 115 - Elements and Compounds	3

Bio 121 - Princ. of Modern Biology I	4
Mth 111 - Calculus I	4
FYF 101 - First-Year Foundations	3
Distribution Requirement	3
	<hr/> 18
Second Semester	
Chm 114 - The Chem. Reaction Lab	1
Chm 116 - The Chemical Reaction	3
Bio 122 - Princ. of Modern Biology II	4
Mth 112 - Calculus II	4
Eng 101 - Composition	4
	<hr/> 16
Third Semester	
Chm 231 - Organic Chemistry I	3
Chm 233 Organic Chem. I Lab	1
Phy 201 - General Physics I	4
CS 125 Computer Science I	4
Distribution Requirement	6
	<hr/> 18
Fourth Semester	
Chm 232 - Organic Chemistry II	3
Chm 234 Organic Chem. II Lab	1
Phy 202 - General Physics II	4
Mth 212 Multivariable Calculus	4
Chm 248 Analytical Chemistry	3
Chm 246 Analytical Chemistry Lab	1
	<hr/> 16
Fifth Semester	
Chm 351 - Physical Chemistry I	3
Chm 353 - Physical Chemistry I Lab	1
Chm 361 - Biochemistry I	3
Distribution Requirement	3
Chm 341 Instrumental Analysis	3
Chm 343 Instrumental Analysis Lab	1
	<hr/> 14
Sixth Semester	
Chm 352 - Physical Chemistry II	3
Chm 354 - Physical Chemistry II Lab	1
Chm 362 - Biochemistry II	3
Chm 370 Integrated Laboratory	1
Chm 390 Junior Seminar	1
Bio 226 Cellular and Molecular Biology	4
Distribution Requirement	3
	<hr/> 16
Seventh Semester	
Chm 391 - Senior Research I	2

College of Science and Engineering

Chm 371 Integrated Laboratory	1
Biology Elective	3-4
Distribution Requirement	3
Free Elective	8
	<hr/>
	12-13
Eighth Semester	
Chm 322 Advanced Inorganic Chemistry	3
Chm 372 Integrated Laboratory	1
Chm 392 - Senior Research II	2
Biology Elective	3-4
Free Elective	3
	<hr/>
	12-13

All biochemistry majors (B.S.) are required to take a total of three (3) credits of Integrated Laboratory (Chm 370, 371, 372).

CHEMISTRY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CHEMISTRY LEADING TO THE B.S. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CHEMISTRY LEADING TO THE B.A. DEGREE — 121.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 22.

The Chemistry curriculum is designed to provide a comprehensive background in the fundamentals of the science and to contribute to the general education of the student. Graduates with a B.S. degree may find industrial or government employment or continue advanced studies in a graduate or professional school. The B.A. degree is available for students who need additional flexibility to prepare for a career in secondary education, the health professions (such as medicine, dentistry, etc.), law, business, engineering, computer science, or other related areas. In all cases students will choose electives for the various career options after consultation with departmental advisors.

The B.A. program in Chemistry will include specific concentrations which will allow students to have a solid, fundamental background in chemistry in combination with other disciplines such as art, business, mathematics, computer science, secondary education, environmental sciences, etc. The ultimate goal is to create a curriculum that is easily adapted to the ever-changing challenges of multidisciplinary academic endeavors. The B.A. program in Chemistry may be accredited, dependent on the student's choice of chemistry courses.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 180, ED 190, ED 191, ED 215, ED 220, ED 371 (Teaching Methods in Science), ED 380, ED 390, and EDSP 210, EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses, a 3.0 cumulative GPA, and pass the appropriate PRAXIS tests in order to be certified.

Wilkes is approved by the American Chemical Society for the professional training of chemists. Students who complete the B.S. program are certified for membership eligibility in the Society at graduation. The B.S. programs in Chemistry and Biochemistry will maintain ACS accreditation.

Required courses are indicated in the following suggested curricular outlines which are based on an extensive prerequisite structure. The order of the courses presented in this sequential arrangement is a suggested one and changes in the order may be made after faculty advisement.

CHEMISTRY MINOR

A minor in Chemistry consists of the completion of 22 credits in chemistry, including Chm 115 and Chm 116. Selection of other courses must be in keeping with the existing prerequisites as specified in this Bulletin.

CHEMISTRY BACHELOR OF SCIENCE DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE (120 CREDITS)

First Semester

Chm 113 - Elem. and Compounds Lab	1
Chm 115 - Elements and Compounds	3
Eng 101 - Composition or	4
Distribution Requirement	3
Mth 111 - Calculus I	4
FYF 101 - First-Year Foundations	3
	<hr/>
	14-15

Second Semester

Chm 114 - The Chem. Reaction Lab	1
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College of Science and Engineering

Chm 116 - The Chemical Reaction	3
Eng 101 - Composition or Distribution Requirement	4
Mth 112 - Calculus II	3
Distribution Requirement	4
CS 125 Computer Science I	4
<hr/>	
17-18	

Third Semester

Chm 231 - Organic Chemistry I	3
Chm 233 - Organic Chem. I Lab	1
Phy 201 - General Physics I	4
Distribution Requirements	6
<hr/>	
14	

Fourth Semester

Chm 246 Analytical Chemistry Lab	1
CHM 248 Analytical Chemistry	3
Chm 232 - Organic Chemistry II	3
Chm 234 - Organic Chem. II Lab	1
Mth 212 Multivariable Calculus	4
Phy 202 - General Physics II	4
<hr/>	
16	

Fifth Semester

Chm 341 - Instrumental Analysis	3
Chm 343 - Instrumental Analysis Lab	1
Chm 351 - Physical Chemistry I	3
Chm 353 - Physical Chemistry I Lab	1
Chm 361 - Biochemistry I	3
Distribution Requirement	3
<hr/>	
14	

Sixth Semester

Chm 370 - Integrated Laboratory	1-2*
Chm 390 - Junior Seminar	1
Chm 352 - Physical Chemistry II	3
Chm 354 - Physical Chemistry II Lab	1
Chm 322 - Inorganic Chemistry	3
Distribution Requirement	3
<hr/>	
12-13	

Seventh Semester

Chm 371 Integrated Laboratory	1-2*
Chm 391 Senior Research	2
Major Elective	3
Free Electives	9
<hr/>	
15-16	

Eighth Semester

Chm 372 Integrated Laboratory	1-2*
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Chm 392 Senior Research	2
Major Electives	3
Free Electives	9
<hr/>	
15-16	

**All chemistry majors (B.S.) are required to take a total of four (4) credits of Integrated Laboratory (Chm 370, 371, 372).*

**CHEMISTRY BACHELOR OF ARTS DEGREE
REQUIRED COURSES AND RECOMMENDED
COURSE SEQUENCE (121 CREDITS)**

First Semester

Chm 113 - General Chemistry Lab	1
Chm 115 - General Chemistry I	3
Eng 101 - Composition or Distribution Requirement	4
Mth 111 - Calculus I	3
FYF 101 - First-Year Foundations	4
<hr/>	
14-15	

Second Semester

Chm 114 - General Chemistry Lab II	1
Chm 116 - General Chemistry II	3
Eng 101 - Composition or Distribution Requirement	4
CS 125 Computer Science I	3
Mth 112 - Calculus II	4
<hr/>	
15-16	

Third Semester

Chm 231 - Organic Chemistry I	3
Chm 233 - Organic Chem. I Lab	1
Phy 201 - General Physics I	4
Combination Program Elective	3
Distribution Requirement	3
Free Electives	3
<hr/>	
17	

Fourth Semester

Chm 232 - Organic Chemistry II	3
Chm 234 - Organic Chem. II Lab	1
MTH 212 - Multivariable Calculus	4
Chm 248 - Analytical Chemistry	3
Chm 246 - Analytical Chemistry Lab	1
Phy 202 - General Physics II	4
<hr/>	
16	

Fifth Semester

Chm 351 - Physical Chemistry I	3
Chm 353 - Physical Chemistry I Lab	1
Chm 341 - Analytical Chemistry	3

College of Science and Engineering

Chm 343 - Analytical Chemistry Lab	1
Combination program Elective	3
Distribution Requirements	<u>3</u>
	14

Sixth Semester

Chm 352 - Physical Chemistry II	3
Chm 354 - Physical Chemistry II Lab	1
Combination Program Elective	3
Chm 390 Junior Seminar	1
Distribution Requirements	<u>9</u>
	17

Seventh Semester

Combination Program Electives	6
Chm 391 Senior Research	2
Chm 371 Integrated Laboratory	2
Free Electives	<u>3</u>
	13

Eighth Semester

Chm 392 Senior Research II	2
Combination Program Elective	3
Free Electives	<u>9</u>
	14

Students in the B.A. program are required to take a total of two (2) credits of Integrated Laboratory (Chm 370, 371, 372).

DIVISION OF ENGINEERING AND PHYSICS

DIRECTOR: DR. RODNEY S. RIDLEY, SR.

*Faculty: Professors: Arora, Ghorieshi, Gilmer,
Kalim, Orehotsky, Razavi, Srinivasan*

Associate Professor: Ridley

Assistant Professor: Janecek

Instructor: Nabaa

*Faculty Emeriti: Bailey, Donahoe, Hostler,
Maxwell, Placek*

Technical Support Staff: Adams

MISSION

The mission for engineering students is to enable the professional development of their abilities for analysis and design within the context of environment. The Wilkes view emphasizes engineering as a creative, hands-on profession with leadership responsibilities. Teamwork, ethics, and professional communications permeate the educational experience to enhance the graduate's technical problem solving ability. Wilkes Engineering graduates will possess the vision, confidence, and will to pursue and assume increasing responsibilities in engineering and leadership throughout their careers.

ENGINEERING

Engineering is a creative profession in which technological problems are met within the framework of scientific possibilities, economic constraint, and cultural preference. The Wilkes University engineering programs provide the knowledge and investigative skills, both theoretical and experimental, to responsibly address professional and societal needs through modern curricula, hands-on experience, and a personalized academic environment. Students intending to major in Engineering are encouraged to be well prepared in the sciences and mathematics. Engineering students may also elect to complete a minor in Physics.

Wilkes University offers five engineering programs. Three programs maintain professional accreditation (Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, ABET, III Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: 410 347-7700): Electrical Engineering and Mechanical Engineering are housed in the Division of Engineering and Physics, and Environmental Engineering is housed within the Department of Environmental Engineering and Earth Sciences on page 137.

Two additional engineering programs are configured to provide greater flexibility to pursue depth and breadth in specific areas of interest to the student: Applied and Engineering Sciences and Engineering Management, both housed in the Division of Engineering and Physics.

HONORS IN ENGINEERING

Upon the recommendation and approval of the Engineering faculty, honor students in Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of 3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through the publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

STUDENT ACTIVITIES

Professional societies in which students participate include the American Society of Mechanical Engineers (ASME), the Institute of Electrical and Electronic Engineers (IEEE), the Society of Women Engineers (SWE), the Pennsylvania Society of Professional Engineers (PSPE), the Society of Automotive Engineers (SAE), and Engineering Student Council. Students also participate in various on-campus activities and design competitions such as the Mini-Baja Off-Road Design Competition

COOPERATIVE EDUCATION

An important characteristic of all engineering programs at Wilkes University is the Cooperative Education experience, a valuable option usually scheduled during the junior year. The co-op option may be continued into the summer preceding the senior year. Participants derive three advantages from a co-op experience: a determination of how they wish to fill their elective courses during the senior year, an enhanced ability to conduct a job search, and a greater recognition that career opportunities may be stimulating and fulfilling as well as financially rewarding. The Cooperative Education opportunity provides a natural extension of the college experience.

APPLIED AND ENGINEERING SCIENCES

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN APPLIED AND ENGINEERING SCIENCES LEADING TO THE B.S. DEGREE – 120.

The four-year Bachelor of Science degree program in Applied and Engineering Science

College of Science and Engineering

(A&ES) blends a core of engineering preparation with flexibility for students to focus on areas of specific interest. It is ideal for students with specific engineering interests outside the configuration of traditional engineering programs. Successful examples include medicine, performing arts engineering (sound, lighting, staging, recording), computer science, safety and reliability, information technology, and patent law. To this end, faculty and facilities center on the individual, incorporating the adoption of new technological developments with an emphasis on analysis, design and application; on student-faculty-industry cooperative projects; on the concept of teamwork; and on the hands-on student utilization of modern laboratories and computer systems. Wilkes University does not maintain professional accreditation for the A&ES program.

The A&ES program demands careful planning by the student with her/his faculty advisor to assure a clear and well-planned program configured realistically to the students' interests and needs.

APPLIED & ENGINEERING SCIENCES B.S. DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition	4
ME 180 CADD Lab	1
Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
PHY 201 General Physics I	4
	<hr/>
	16

Second Semester

Mth 112 Calculus II	4
Distribution Requirement	6
EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
	<hr/>
	17

Third Semester

Chm 113 Elements and Compounds Lab	1
Chm 115 Elements and Compounds	3
Free Elective	3
Distribution Requirement	6
	<hr/>
	13

Fourth Semester

EES 202 Biogeochemistry or	3
EGR 200 Intro. to Materials Science	3
Free Elective	9

Distribution Requirement	3
	<hr/>
	15

Fifth Semester

EE 283 Electrical Measurements Lab.	1
ME 231 Statics & Dynamics I	3
EE 211 Electrical Circuits and Devices	3
Free Elective	6
Distribution Requirement	3
	<hr/>
	16

Sixth Semester

EGR 399 Cooperative Ed. or Tech. Electives	6
Technical Elective	3
EGR 201 Professionalism and Ethics	1
EGM 320 Engineering Project Analysis	3
	<hr/>
	13

Seventh Semester

EGR 391 Senior Project I*	1
Technical Electives	6
Free Elective	9
	<hr/>
	16

Eighth Semester

EGR 392 Senior Project II*	2
Electives	6
Technical Electives	6
	<hr/>
	14

*EGR 391 and 392 can be replaced by EGM/ENV/ME 391 and 392 depending on the student's concentration. Technical Electives may be selected from advisor-approved science, math or engineering courses numbered 200 or above. Consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

ELECTRICAL ENGINEERING

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ELECTRICAL ENGINEERING LEADING TO THE B.S. DEGREE — 130.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER ENGINEERING — 22.

The four-year Bachelor of Science degree program in Electrical Engineering (EE) is dedicated to the principle of preparing its students for industry and graduate study with the expectation of eventual leadership responsibilities. To that end, its faculty and facilities focus on an emphasis of design and industrial experience; student-faculty-industry cooperative projects; teamwork; the adoption of new technologies; and on the hands-on student utilization of laboratories and computing systems. The Electrical Engineering Program maintains ABET accreditation as noted above under the heading of Engineering.

The EE program is designed to achieve a balance among the major areas of Communication Systems, Microelectronics and Computer Systems. The student may choose to specialize within the EE program in any of the following areas: Communication & Information Systems; Computer Hardware & Software Engineering and Design & Fabrication of Microelectronic Devices & Circuits. A description of program objectives and outcomes is available in the Division office and is posted on the Division of Engineering and Physics Bulletin Board.

MINOR IN ELECTRICAL ENGINEERING

A 22-credit Computer Engineering (CE) minor is a special and highly focused option for students majoring in Electrical Engineering and other related disciplines. The CE minor consists of: CS 125 Computer Science I, CS 126 Computer Science II, EE 241 Digital Design, EE 345 Computer Organization, EE 342 Microcomputer Operation & Design, plus one elective course from an Application Area (e.g. EE 314 Control Systems or CS 355 Computer Networks or ME 317 Robotics or CS 367 Computer Graphics).

ETA KAPPA NU, the International Electrical Engineering Honor Society, established the Kappa Beta chapter at Wilkes in 1991. The Society recognizes Electrical Engineering students and professionals who display exemplary academic achievement and service. It provides a forum to encourage continued achievement and service among its members, the University and the community.

A Master of Science degree in Electrical Engineering (MSEE) is also available; it is described in a separate Bulletin.

ELECTRICAL ENGINEERING B.S. DEGREE - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
PHY 201 General Physics I	4
Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
ME 180 CADD Lab	1
Eng 101 Composition	4
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	16
Second Semester	
EGR 200 Intro. to Materials Science or	3
EES 202 Biogeochemistry	
Mth 112 Calculus II	4

EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
Distribution Requirement	3
	<hr/>
	17
Third Semester	
CHM 113 Elements and Compounds Lab	1
CHM 115 Elements and Compounds	3
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
Mth 211 Intro. to Differential Equations	4
ME 231 Statics & Dynamics	3
	<hr/>
	15
Fourth Semester	
EGR 214 Linear Systems	3
EE 251 Electronics I	3
EGR 222 Mechatronics	3
EE 241 Digital Design	4
Distribution Requirement	3
	<hr/>
	16
Fifth Semester	
EE 252 Electronics II	4
EE 271 Semiconductor Devices	3
EE 373 CAD for Microfab	1
EE 381 Microfabrication Lab	3
Technical Elective	3
Distribution Requirement	3
	<hr/>
	17
Sixth Semester	
EGR 399 Cooperative Education or	6
Technical Electives	
EGR 201 Professionalism and Ethics	1
Distribution Requirement	6
EGM 320 Engr. Project Analysis	3
	<hr/>
	16
Seventh Semester	
EE 314 Control System	3
EE 337 Engineering Electromagnetics I	4
EE 391 Senior Project I	1
EE 325 Energy Conversion Devices	3
Technical Elective	3
Distribution Requirement	3
	<hr/>
	17
Eighth Semester	
EE 339 Engineering Electromagnetics II	4
EE 382 Modern Communication Systems	4
EE 392 Senior Project II	2
Technical Elective	3

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Free Elective 3

16

Technical electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above, to satisfy a concentration requirement. Students consult with Co-op Advisor for availability and proper scheduling of Cooperative Education.

ENGINEERING MANAGEMENT

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENGINEERING MANAGEMENT LEADING TO THE B.S. DEGREE — 130.

The four-year Bachelor of Science degree program in Engineering Management (EgM) prepares students for eventual leadership responsibilities in technological environments. Traditional paths for EgM graduates include project management, project engineering, process management, new product development, manufacturing management, new product development processes, quality control, and reliability analysis.

The EgM program integrates the engineering disciplines of electrical and mechanical engineering with business. Flexibility exists for the student to develop concentrations in Information Systems or Entrepreneurship, for example. This program is attractive to companies seeking graduates who are well-rooted in engineering fundamentals yet are broadly interested in technology, competitive markets, and business development. Wilkes University does not maintain professional accreditation for the Engineering Management degree.

The EgM program demands careful academic program planning by the student with her/his faculty advisor to assure a clear and well-planned program configured realistically to the student's interests and needs.

ENGINEERING MANAGEMENT B.S. DEGREE- REQUIRED COURSES AND RECOMMENDED FOUR-YEAR COURSE SEQUENCE

First Semester

Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
ME 180 CADD Lab	1
Eng 101 Composition	4
PHY 201 General Physics I	4
	16

16

Second Semester

EGR 200 Intro. to Materials Science or	3
EES 202 Biogeochemistry	
Mth 112 Calculus II	4
EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
Distribution Requirement	3
	17

Third Semester

Chm 113 Elements and Compounds Lab	1
Chm 115 Elements and Compounds	3
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
ME 231 Statics & Dynamics	3
Mth 211 Intro. to Differential Equations	4
Distribution Requirement	3
	18

Fourth Semester

Ec 102 Economics II	3
ME 232 Strength of Materials	3
EGR 214 Linear Systems	3
Mth 150 Statistics or BA/Ec 319 Economic Statistics	3
Acc 161 Intro. to Financial Accounting	3
EGR 222 Mechatronics	3
	18

Fifth Semester

EgM 321 Quant. Anal. & Prog. Methods	3
BA 321 Marketing or Ec 101 Economics I	3
BA 351 Management of Organizations	3
ME 335 Egr. Modeling & Analysis	3
BA 234 Business Law or Acc 162 Managerial Accounting	3
	15

Sixth Semester

EGR 399 Cooperative Education or	6
Technical Electives	6
EGR 201 Professionalism and Ethics	1
Distribution Requirements	6
EgM 320 Engr. Project Analysis	3
	16

Seventh Semester

EgM 391 Senior Projects I	1
BA 341 Managerial Finance	3
Technical Electives	6
Distribution Requirements	3
Free Elective	3
	16

Eighth Semester

EgM 392 Senior Projects II	2
EgM 336 Engr. & Manag. Models	3
Technical Electives	6
Free Elective	3
	<hr/> 14

Technical Electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above to satisfy a concentration requirement. Consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

MECHANICAL ENGINEERING

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MECHANICAL ENGINEERING LEADING TO THE B.S. DEGREE — 130.

The Division of Engineering offers a four-year Bachelor of Science degree program in Mechanical Engineering. The four-year Bachelor of Science degree program in Mechanical Engineering (ME) is dedicated to the principle of preparing its students for industry and graduate study with the expectation of eventual leadership responsibilities. To that end, its faculty and facilities focus on an emphasis of design and industrial experience; student-faculty-industry cooperative projects; teamwork; the adoption of new technologies; and on the hands-on student utilization of laboratories and computing systems. The Mechanical Engineering program maintains ABET accreditation as noted above under the heading of Engineering.

The ME program is designed to achieve a balance among the major areas of Machine Design, Electro-Mechanical Systems, and Thermal Systems. The student may choose to specialize within the ME program in any of the following areas: Thermal, Design, and Micro-Electro-Mechanical Systems. A description of program objectives and outcomes is available in the Division office and is posted on the Division of Engineering and Physics Bulletin Board.

MECHANICAL ENGINEERING B.S. DEGREE-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
ME 180 CADD Lab	1
Eng 101 Composition	4
PHY 201 General Physics I	4
	<hr/>

	<hr/> 16
Second Semester	
EGR 200 Intro. to Materials Science or	3
EES 202 Biogeochemistry	
Mth 112 Calculus II	4
EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
Distribution Requirement	3
	<hr/> 17

Third Semester	
Chm 113 Elements and Compounds Lab	1
Chm 115 Elements and Compounds	3
Mth 211 Intro. to Differential Equations	4
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
ME 231 Statics & Dynamics I	3
Distribution Requirement	3
	<hr/> 18

Fourth Semester	
EGR 222 Mechatronics	3
ME 232 Strength of Materials	3
ME 234 Statics & Dynamics II	3
ME 322 Egr. Thermodynamics	3
EGR 214 Linear Systems	3
ME 175 Intro to Mfg/Machining	1
	<hr/> 16

Fifth Semester	
ME 321 Fluid Mechanics	3
ME 323 Fluid Mechanics Lab	1
ME 215 Intro. to Manufacturing Processes	3
ME 335 Engineering Modeling and Analysis	3
ME 333 Machine Design I	3
Distribution Requirements	3
	<hr/> 16

Sixth Semester	
EGR 399 Cooperative Education or	6
Technical Electives	6
EGR 201 Professionalism and Ethics	1
Distribution Requirements	6
EgM 320 Engr. Project Analysis	3
	<hr/> 16

Seventh Semester	
ME 324 Heat and Mass Transfer	3
ME 326 Heat & Mass Transfer Lab	1
ME 384 Mechanical Design Lab.	3
ME 391 Senior Projects I	1
Technical Elective	3

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EE 314 Control Systems	3
Distribution Requirement	<u>3</u>
	17
Eighth Semester	
Technical Elective	6
ME 392 Senior Projects II	2
ME 332 Mechanics of Vibration	3
Free Elective	<u>3</u>
	14

Technical Electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above to satisfy a concentration requirement. Students consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

PHYSICS MINOR

Physics is the study of physical phenomena including forces, energy, momentum, friction, electricity, electrostatics, magnetism, acoustics, heat, light, and relativity. It is thus the foundation of mechanical, civil, and electrical engineering and also is central to music, sound and architecture.

Wilkes University offers a minor in Physics, which requires the satisfactory completion of twenty hours as follows:

<i>Required courses</i>	<i>Credit hours</i>
Phy 201, Phy 202, and Phy 203	11
Electives (from the following list; at least three credits must be a 300-level course):	9
CHM 251, CHM252, EE337, EGR200 EES251, EES280, ME231, ME321, ME322, MTH361, MTH362, PHY398	
Minimum Total Requirement	20

The Physics minor may be ideally suited for engineers seeking additional theoretical preparation in the physical sciences.

DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

CHAIRPERSON: DR. BRIAN E. WHITMAN

Faculty: Professors: Bruns, Case, Halsor, Redmond

Associate Professors: Murthy, Troy, Whitman

Adjunct Professors: Hofman, Walski

Laboratory Manager: Oram

Laboratory Technician: Longenberger

Visiting Assistant Professor: Frederick

The Department of Environmental Engineering and Earth Sciences (EEES) offers the following degree programs:

B.S. in Environmental Engineering

B.S. in Earth and Environmental Sciences

B.A. in Earth and Environmental Sciences

The above programs incorporate a strong background in all of the sciences and include extensive laboratory and field experience. The department highlights unique facilities such as a certified water quality laboratory used for teaching and contract work and The Center for Geographic Information Science (GIS). Other facilities in the area are used for field study in courses and student research.

The center for Geographic Information Science is an EEES state-of-the-art technology facility that integrates the use of GIS student research encompassing a variety of applications: environmental planning and assessment, watershed analysis, lake and stream studies, database management and analysis for soils, wetlands, vegetation, land cover, and environmental pollution. The Center was originally funded in 1993 by an extramural EEES faculty research grant and recently was expanded with a faculty education grant to facilitate GIS applications across various courses in the EEES environmental curriculum.

EARTH AND ENVIRONMENTAL SCIENCES MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES LEADING TO THE B.A. — 124.

WITH SECONDARY TEACHING CERTIFICATION IN EARTH AND SPACE SCIENCE — 133.

WITH SECONDARY TEACHING CERTIFICATION IN EARTH AND SPACE SCIENCE AND GENERAL SCIENCE — 137.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED

FOR A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES LEADING TO THE B.S. — 123.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN GEOLOGY — 18.

The interdisciplinary nature of the programs provides the student with a unique breadth of understanding of the principles and concepts of the earth and environmental sciences while emphasizing methods of analysis and experimentation of very complex, dynamic, and interactive quality; cooperative internships with environmental organizations and industries are encouraged.

The major leading to the B.S. degree emphasizes the technical and analytical aspects of the earth and environmental sciences and is designed for those students intending to work as scientists in laboratory, field, or research positions. Students with this degree may enter graduate programs in geology, meteorology, and environmental sciences.

The major leading to the B.A. degree emphasizes human interactions with the earth and the environment. The student is required to choose an appropriate minor, such as political science, technical writing, and business administration. Another option is to satisfy the requirements leading to a Pennsylvania Secondary Teaching Certificate with certification in Earth and Space Science. By adding one chemistry and two biology courses, the student would also satisfy requirements for certification in General Science.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the Coordinator of the Secondary Education Program to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 180, ED 190, ED 191, EDSP 210, ED 220, EDSP 225, ED 371, ED 380, EDSP 388, and ED 390. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

EARTH AND ENVIRONMENTAL SCIENCES AND GEOLOGY MINORS

Two minors are offered by the department. A minor can be obtained by students with a demonstrated expertise in Earth and Environmental Sciences or Geology as determined by the faculty of the department.

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The minimum requirement for the Earth and Environmental Sciences minor can be met by students who have completed 18 credits in EES courses (at least 12 credits at the 200-level or above). For the Geology minor, 18 credits of prequalified environmental EES geology courses are required (at least 15 credits at the 200-level or above). Only those course credits for which a student has achieved a grade of 2.0 or higher will count toward the minimum requirements for either minor. Courses counted toward the Geology minor could not be used for the existing EES minor; however, since there is no geology major, EES majors, like any other major, could pursue a Geology minor. Also, EES majors may take any of the Environmental Engineering courses (ENV), if prerequisites are satisfied.

Courses that qualify for the Geology Minor

<i>Course</i>	<i>Credits</i>
EES 105 Planet Earth	3
EES 211 Physical Geology	4
EES 212 Historical Geology	3
ENV 315 Soils	3
ENV 321 Hydrology	4
EES 370 Geomorphology	3
EES 375 Geochemistry	3
EES 381 Mineralogy**	3
EES 382 Petrology**	3
EES 391* Senior Projects I	1
EES 392* Senior Projects II	2
EES 395* Independent Research I	1-3
EES 396* Independent Research II	1-3

*Content must be within the field of geology.

** Required for minor in geology.

MARINE SCIENCE OPTION WITH A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES AND A MINOR IN BIOLOGY

Wilkes University is a member of the Wallops Island Marine Science Consortium, an association of both state and private institutions that oversee the operation of a marine field station located in southeastern Virginia. Through its membership in the Consortium, Wilkes offers to its students the full range of courses in marine sciences and oceanography regularly taught at the Station each summer. Interested students in Earth and Environmental Sciences may formally pursue a Marine Science Option concentration in a four-year program that is fully integrated into their EES major and a minor in Biology. On a less formal basis,

students who meet course prerequisites may complement regular coursework with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island Marine Science Station typically carry three credits and involve three weeks of intensive field and laboratory study at the Marine Science Station and related field sites (e.g. Florida Keys and Honduras). Facilities at the Station include dormitory space, cafeteria, labs, lecture halls, a variety of field and laboratory equipment (e.g. one large oceanographic vessel and three inshore vessels) and a range of inshore, offshore, and estuarine field sites. To participate in the Marine Science Option concentration or to enroll in individual courses, students must first contact the coordinators of the Wallops Island Program at Wilkes University (prior to the spring semester) and then register for the appropriate course through the Wilkes University Registrar.

Courses regularly offered at the Station include:

MS 110 Introduction to Oceanography
MS 211 Field Methods in Oceanography
MS 221 Marine Invertebrates
MS 394 Physiology of Marine Organisms
MS 241 Marine Biology
MS 250 Wetland Ecology
MS 260 Marine Ecology
MS 300 Behavior of Marine Organisms
MS 330 Tropical Invertebrates
MS 331 Chemical Oceanography
MS 342 Marine Botany
MS 343 Marine Ichthyology
MS 345 Ornithology
MS 352 Modeling Applications in Environmental
MS 362 Marine Geology
MS 390 Undergraduate Research in Marine Science
MS 394 Physiology of Marine Organisms
MS 431 Ecology of Marine Plankton
MS 432 Marine Evolutionary Ecology
MS 433 Advanced Methods in Coastal Ecology
MS 450 Coastal Geomorphology
MS 451 Coastal Environmental Oceanography
MS 464 Biological Oceanography
MS 470 Research Diver Methods
MS 471 Scanning Electron Microscopy: Marine Applications
MS 490 Marine Aquaculture
MS 491 Coral Reef Ecology
MS 492 Marine Mammals
MS 493 Behavioral Ecology and Biological Sciences
MS 500 Problems in Marine Science

See Coordinators of the Wallops Island Program for outlines of individual courses and for more information on the structure of the Marine Science Option.

**EARTH AND ENVIRONMENTAL SCIENCES
B.S. DEGREE- REQUIRED COURSES AND
RECOMMENDED COURSE SEQUENCE**

First Semester

ENG 101 Composition	4
FYF 101 First-Year Foundations	3
MTH 111 Calculus I or MTH 105 (1)	4
CHM 113 Elements & Compounds Lab	1
CHM 115 Elements & Compounds	3
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	15

Second Semester

CHM 114 Chemical Reaction Lab	1
CHM 116 Chemical Reaction	3
Distribution Requirement	3
EES 211 Physical Geology	4
MTH 112 Calculus II or MTH 1061	4
	<hr/>
	15

Third Semester

BIO 121 Modern Biology I	4
MTH 150 Statistics	3
Free Elective	3
Distribution Requirements	3
PHY 171 Principles of Classical and Modern Physics	4
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	17

Fourth Semester

BIO 122 Modern Biology II	4
EES 240 Principles of Environmental Engineering & Science	4
PHY 174 Appl of Classical & Modern Physics	4
CS Elective	3
	<hr/>
	15

Fifth Semester

EES 230 Ocean Science	4
EES 251 Synoptic Meteorology	4
EES 271 Environ. Mapping I or EES/ENV Elective	3
EES 394 Field Study	1
ENV 321 Hydrology	4
ME 180 CADD	1
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	17

Sixth Semester

EES 202 Biogeochemistry	3
EES 244 Instrumental Analysis	3
EES 272 Environ. Mapping II or EES/ENV Elective	3
EES 302 Literature Methods	1
EES 304 Environmental Data Analysis	2
Free Elective	3
	<hr/>
	15

Seventh Semester

Free Elective	2
EES/ENV Electives	6
Distribution Requirements	6
EES 391 Senior Projects I	1
	<hr/>
	15

Eighth Semester

ENV 330 Water Quality or ENV 332 Air Quality	4
EES/ENV Elective	3
Distribution Requirements	6
EES 392 Senior Projects II	2
	<hr/>
	15

(1) Substitution of MTH 105-106 is permissible in consultation with advisor. MTH 105-106 will not retrospectively satisfy the calculus requirement of any engineering degree at Wilkes.

NOTE: B.S. candidates are encouraged to complete a science minor (e.g., Physics, Chemistry, etc.; consult the Bulletin for program details). Candidates are also encouraged to have relevant Co-op experience, 6 credits of which may count as EES electives.

NOTE: Courses at the 200-level and above are intended for science and math majors only. Exceptions by permission of the instructor. Election of a 200-level course by a non-science major will preclude registration for the corresponding 100-level course.

NOTE: A student following the above major sequence (and an 18 credit option in second semester freshman year) can satisfy all freshman and sophomore pre-pharmacy requirements except 6 credits of distribution requirements and 3 credits as COM 101. These may be addressed in consecutive summer sessions in consultation with the major advisor.

**MARINE OPTION CONCENTRATION WITH
MAJOR IN EARTH AND ENVIRONMENTAL
SCIENCES- REQUIRED COURSES AND
RECOMMENDED COURSE SEQUENCES**

First Semester

BIO 121 Modern Biology I	4
FYF 101 First-Year Foundations	3
MTH 111 Calculus I	4
CHM 113 Elem. & Compounds Lab	1
CHM 115 Elements and Compounds	3
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	<u>15</u>		<u>15</u>
Second Semester		Eighth Semester	
BIO 122 Modern Biology II	4	EES 392 Senior Projects II	2
ENG 101 Composition	4	EES/ENV Electives	6
MTH 112 Calculus II	4	Distribution Requirements	6
CHM 114 The Chem. Reaction Lab	1	Free Electives	<u>2</u>
CHM 116 The Chemical Reaction	<u>3</u>		<u>16</u>
	<u>16</u>	(1) EES/BIO 343 counts toward both EES degree and BIO minor.	
Third Semester		(2) BIO minor includes 2 MS courses (biology content) at MSC Wallops Island, but not MS 110 or MS 260.	
EES 230 Ocean Science	4	(3) 22 minimum credits for BIO minor includes BIO/EES 343.	
BIO 225 Population and Evolutionary Biology	4	NOTE: Three (3) credits of EES Electives must be in either EES 271 or EES 272.	
ME 180 CADD Lab	1	Summary of Requirements:	
Distribution Requirements	<u>6</u>	EES Course Credits (EES 230, 211, 240, 251, 394, 343, 244, 302, 304, 391, 392 & Wilkes EES electives (15 credits)) = 44	
	<u>15</u>	BIO Minor Credits (BIO 121, 122, 225, 226, 343 and 2 MS) = 25	
Fourth Semester		Other Science, Math and Free Elective Credits = 38	
EES 211 Physical Geology	4	Core and Distribution Credits = 25	
Computer Science Elective	3	EARTH AND ENVIRONMENTAL SCIENCES B.A. DEGREE (EARTH AND SPACE SCIENCE EDUCATION)- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCES	
EES 240 Principles of Environmental Engineering & Science	4	First Semester	
BIO 226 Cellular & Molecular Biology	<u>4</u>	ENG 101 Composition	4
	<u>15</u>	FYF 101 First-Year Foundations	3
MS_Summer College MCS (BIO Course)(2)	3	MTH 105 Intro to Calculus	4
		PSY 101 General Psychology I	3
Fifth Semester		BIO 121 Principles of Modern Bio I	<u>4</u>
PHY 171 Classical and Modern Physics or	4		18
PHY 201 Introductory Physics I	4	Second Semester	
EES 251 Synoptic Meteorology	4	EES 211 Physical Geology	4
EES 394 Field Study	1	Distribution Requirement	6
EES/ENV Elective	3	Computer Science Elective	3
Distribution Requirement	<u>3</u>	BIO 122 Principles of Modern Biology II or	4
	<u>15</u>	BIO 225 Population and Evolutionary Biology	<u>2</u>
Sixth Semester			<u>17</u>
PHY 174 Appl Classical & Modern Physics or	4	Third Semester	
PHY 202 Introductory Physics II	4	EES 230 Ocean Science	4
BIO/EES 343 Marine Ecology (1, 3)	3	Distribution Requirement	6
EES 244 Instrumental Analysis	3	PHY 171 Prin of Classical and Modern Physics	4
EES 302 Literature Methods	1	ED 190 Effective Teaching	<u>3</u>
EES 304 Environmental Data Analysis	2		<u>17</u>
MTH 150 Statistics	3		
	<u>16</u>		
MS__ Summer College MCS(BIO Course) (2)	3		
Seventh Semester			
EES 391 Senior Projects I	1		
EES/ENV Electives	6		
Distribution Requirement	3		
Free Electives	<u>5</u>		

Fourth Semester			
EES 240 Principles of Environmental Engineering & Science	4		<i>By adding CHM 114, CHM 116, BIO 121, and BIO 122 or 225 to the Earth and Space Science Education Track, the candidate would satisfy course certification requirements for general science.</i>
EES 212 Historical Geology	3		
PHY 174 Classical & Modern Physics	4		
ED 200 Educational Psychology	3		
ED 371 Methods of Teaching Science	3		
	<hr/>	17	
Fifth Semester			
CHM 113 Elements and Compounds Lab	1		<i>Summary of Requirements:</i> EES Course Credits (EES 210, 211, 212, 230, 240, 251, 280, 302, 304, 391, 392, 394) = 33 EES Electives = 9 ED Minor Credits (ED 190, 200, 210, 220, 315, 371, 380, 390A) = 36 Other Science and Math Credits = 30 Core and Distribution Credits = 24
CHM 115 Elements and Compounds Lecture	3		
EES 251 Synoptic Meteorology	4		
EES 394 Field Study	1		
ED 210 Teaching Students with Special Needs	3		
ED 215 Integrating Technology in the Classroom	3		
MTH 150 Elementary Statistics	3		
	<hr/>	18	
Sixth Semester			
CHM 114 Chemical Reaction Lab	1		ENVIRONMENTAL ENGINEERING MAJOR TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENVIRONMENTAL ENGINEERING LEADING TO THE B.S. DEGREE — 134. The Department of Environmental Engineering and Earth Sciences (EEES) offers a four-year ABET-accredited degree program in Environmental Engineering (ENV). This program provides strong engineering and scientific experience with advanced techniques heavily integrated into the curriculum. Students intending to major in this program are encouraged to be well prepared in the sciences and mathematics. The first year of coursework is common to all engineering programs. Specialization is achieved through the appropriate selection of the technical electives. The department highlights unique facilities such as a certified water quality laboratory used for teaching and contract work, and The Center for Geographic Information Science (GIS). Other facilities in the area are used field study in courses and student research. The student professional chapters of the Society of Women Engineers (SWE) and the Air & Waste Management Association (A&WMA), in conjunction with the Department of Environmental Engineering and Earth Sciences (EEES) periodically offer seminars on subjects of a timely nature. Attending these seminars and taking the E.I.T. (Engineers-In-Training) Exam are mandatory for the completion of the degree.
CHM 116 Chemical Reaction Lecture	3		
EES 302 Literature Methods	1		
EES 304 Environmental Data Analysis	2		
ED 220 Multicultural Education	3		
ED 380 Content Area Reading	2		
EDSP 225 Sp Ed Meth I w/ Field Exp/OPO	3		
Distribution Requirement	3		
	<hr/>	18	
Seventh Semester			
EES 391 Senior Projects I	1		
ED 390 Intern Teaching	15		
	<hr/>	16	
Eighth Semester			
EES 392 Senior Projects II	2		
EES 210 Global Climate Change	3		
EES 280 Principles of Astronomy	4		
EES Electives (1)	9		
	<hr/>	18	

(1) Three credits of EES electives must include either EES 271 or EES 272.

NOTE: All B.A. degree candidates are required to complete an appropriate minor or teaching certification. Other B.A. programs and minors may be considered by the Department.

Adding one additional course in Chemistry will satisfy the course requirements for certification in General Science.

Honors Program in Environmental Engineering

Upon the recommendation and approval of the Environmental Engineering faculty, honor students in Environmental Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of

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3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

ENVIRONMENTAL ENGINEERING B.S. DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

CHM 113 Elements and Compounds lab	1
CHM 115 Elements and Compounds	3
Mth 111 Calculus I	4
ME 180 CADD Lab	1
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
	<hr/>
	16

Second Semester

EES 202 Biogeochemistry or	
EGR 200 Intro. to Materials Science	3
MTH 112 Calculus II	4
CS 125 Computer Science I or	4
EGR 140 Computers in Engineering	3
PHY 201 General Physics I	4
Distribution Requirement	3
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	17-18

Third Semester

MTH 211 Intro. to Differential Equations	4
PHY 202 General Physics II	4
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
ME 231 Statics & Dynamics	3
ENV 205 Environmental Microbiology	1
	<hr/>
	16

Fourth Semester

EES 211 Physical Geology	4
ME 322 Engineering Thermodynamics	3
EES 240 Principles of Environmental Science	4
ME 232 Strength of Materials	3
Distribution Requirement	3

Fifth Semester

ENV 315 Soils	3
ENV 321 Hydrology	4
ME 321 Fluid Mechanics	3
Distribution Requirement	3
ME 323 Fluid Mechanics Lab	1
Technical Elective ¹	3
	<hr/>
	17

Sixth Semester

ENV 330 Water Quality	3
ENV 332 Air Quality	4
EGM 320 Engineering Project Analysis	3
EGR 201 Professionalism and Ethics ²	1
Technical Elective ¹	3
Distribution Requirement	3
	<hr/>
	17

Seventh Semester

ENV 305 Solid Waste Management	3
ENV 351 Water and Wastewater Treatment	4
ENV 353 Air Pollution Control	3
ENV 391 Senior Projects I	1
Distribution Requirement	3
Technical Elective ¹	3
	<hr/>
	17

Eighth Semester

ENV 322 Water Resources Engineering	3
ENV 352 Environmental Engineering Hydraulics	3
ENV 354 Hazardous Waste Management	3
ENV 392 Senior Projects II	2
Technical Elective ¹	3
Distribution Requirement	3
	<hr/>
	17

¹ Advisor-approved science or engineering courses numbered 200 or above with at least one course in engineering. Technical electives must include either EES 271 or EES 272.

² Consult with advisor for availability and proper scheduling. May be taken on campus, at other institutions and/or off campus as an independent study or distance learning course.

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CHAIRPERSON: DR. V. MING LEW

Faculty: Professors: Berard, Koch, Tillman

Associate Professors: Bracken, Harrison, Kapolka, Lew, Sullivan

Assistant Professor: Kong

College of Science and Engineering

Third Semester

CS 225 Computer Science III	3
CS 224 Cobol and File Management or CS 283 Web Development I	3
Eng 202 Technical Writing	3
Distribution Requirements	6
	<hr/>
	15

Fourth Semester

CS 226 Computer Science IV	3
Mth 150 Elementary Statistics	3
BA 153 Management Foundations	3
Distribution Requirements	6
	<hr/>
	15

Fifth Semester

CS 324 Systems Analysis or CS 325 Database Management	3
CS 317 Software Integration or CS Elective	3
CS 224 Cobol and File Management or CS 283 Web Development I	3
BA 351 Management of Organizations and People	3
Distribution Requirements	3-6
	<hr/>
	15-18

Sixth Semester

CS Electives	6
BA 354 Organizational Behavior	3
Distribution Requirements and/or Free Electives	6
	<hr/>
	15

Seventh Semester

CS 324 Systems Analysis or CS 325 Database Management	3
CS 317 Software Integration or CS Elective	3
CS 391 Senior Projects I	1
BA Elective	3
Distribution Requirements or Free Electives	3 - 6
	<hr/>
	13-16

Eighth Semester

CS 392 Senior Projects II	2
Distribution Requirements and/or Free Electives	12-15
	<hr/>
	14-17

*Summary of Minimum Credit
Distribution for the CIS Major:*

*Credit
Hours*

CS 125, 126, 224, 225, 226, 283, 317, 324, 325, 391, 392.	32
CS/Mth Electives (select 3 of the following)	
CS335, CS340, CS367, CS355, CS321, CS360, CS363, CS 383, MTH 354, CS334, CS366, or CS350	9
BA required courses BA 153, Acc161, Acc 162, BA 351 and BA 354	15
BA elective courses (select one of the following) BA352, BA321, or BA341	3
Mth 105, 150	7
FYF 101, ENG 101, 202	10
Distribution Requirements	24
Free Electives	20
Total	120

COMPUTER SCIENCE

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER SCIENCE LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER SCIENCE LEADING TO THE B.S. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER SCIENCE — 17.

A program of study leading to a B.A. or B.S. degree with a major or minor in Computer Science is offered by the Department of Mathematics and Computer Science.

MAJOR IN COMPUTER SCIENCE

The Computer Science curriculum consists of theoretical as well as application-oriented courses and is based on a strong foundation in mathematics. The B.A. degree is intended for those interested in management and social sciences, whereas the B.S. degree requires greater concentration in the engineering, natural and physical sciences. Two tracks of study are offered to satisfy students' interests and career goals. A gaming and media design track can be chosen to prepare students for work in the expanded gaming industry. A traditional track can be taken to prepare students for graduate study and research in the discipline, or for employment in government or industry. Students are encouraged, through the attainment of a minor or second major, to acquire competence in an area that lends itself to meaningful computer applications.

Because certain required and elective courses are offered in either alternate semesters or alternate years, or when demand warrants, degree candidates are strongly encouraged to meet with their advisors on a regular basis to discuss their academic schedule to ensure satisfactory progress toward the degree.

COMPUTER SCIENCE MINOR

A minor in Computer Science requires the completion of 17 credits, consisting of the following courses:

<i>Required Courses:</i>	<i>Credit Hours</i>
CS 125, CS 126, CS 225 and CS 226	14
<i>Electives:</i>	
One additional 300-level course,	3

College of Science and Engineering

excluding any required courses and
 CS 321, CS 324, CS 360,
 CS 363 and CS 364

Minimum Total Required 17

**COMPUTER SCIENCE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE
 SEQUENCE, CLASSIC TRACK**

First Semester

	B.A.	B.S.
CS 125 Computer Science I	4	4
FYF 101 First-Year Foundations	3	3
Eng 101 Composition or Distribution Requirement	4/3	4/3
Mth 111 Calculus I	4	4
	14-15	14-15

Second Semester

	B.A.	B.S.
CS 126 Computer Science II	4	4
Mth 112 Calculus II	4	4
Distribution Requirements	3	3
Eng 101 Composition or Distribution Requirement	4 3	4 3
	14-15	14-15

Third Semester

	B.A.	B.S.
CS 225 Computer Science III	3	3
Mth 202 Set Theory and Logic	4	4
Laboratory Science Sequence	0	4
Distribution Requirement	9	6
	16	17

Fourth Semester

	B.A.	B.S.
CS 226 Computer Science IV	3	3
Mth 231 Discrete Math	3	3
Laboratory Science Sequence	0	4
Distribution Requirements	6	3
Eng 202 Tech. Writing	3	3
	15	16

Fifth Semester

	B.A.	B.S.
CS 326 Operating System Principles or CS 328 Analysis of Algorithms	3	3
Mth 150 Elementary Statistics or Mth 351 Probability and Statistics I	3	3
Laboratory Science Elective	0	4
Distribution Requirements and/or Free Electives	9	6
	15	16

Sixth Semester

B.A. B.S.

CS 334 Software Engineering	3	3
CS Elective or CS330	3	3
CS Elective or CS 319 Programming Languages or CS 323 Theory of Computation or CS 327 Compiler Design	3	3
Free Electives	6	6
	<u>15</u>	<u>15</u>

Seventh Semester

	B.A.	B.S.
CS 391 Senior Projects 1	1	1
CS Elective	3	3
CS 326 Operating System Principles or CS 328 Analysis of Algorithms	3	3
Free Electives	6-9	6-9
	<u>13-16</u>	<u>13-16</u>

Eighth Semester

	B.A.	B.S.
CS 392 Senior Projects II	2	2
CS Elective or CS330	3	3
CS Elective or CS 319 Senior Programming Languages or CS 323 Theory of Computation or CS 327 Compiler Design	3	3
Free Electives	6-9	6-9
	<u>14-17</u>	<u>14-17</u>

COMPUTER SCIENCE B.S.- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE, GAMING AND MEDIA DESIGN TRACK

First Semester

CS 125 Computer Science I	4
FYF 101 First-Year Foundations	3
Eng 101 Composition or Distribution Requirement	4/3
Mth 111 Calculus I	4
	<u>14-15</u>

Second Semester

CS 126 Computer Science II	4
Mth 112 Calculus II	4
Distribution Requirements	3
Eng 101 Composition or Distribution Requirement	4/3
	<u>14-15</u>

Third Semester

CS 225 Computer Science III	3
Mth 202 Set Theory and Logic	4
Laboratory Science Sequence	4
Distribution Requirement	6
	<u>17</u>

Fourth Semester

College of Science and Engineering

CS 226 Computer Science IV	3
Mth 231 Discrete Math	3
Laboratory Science Sequence	4
Distribution Requirement or CS 366 Gaming I	3
Eng 202 Technical Writing	3
	<hr/>
	16
Fifth Semester	
CS 328 Analysis of Algorithms or CS Elective	3
Mth 150 Elementary Statistics or Mth 351 Probability and Statistics I	3
CS 340 Artificial Intelligence or CS 367 Computer Graphics	3
PHY 201 - General Physics	4
	<hr/>
	13
Sixth Semester	
CS 334 Software Engineering	3
CS 366 Gaming I or CS 368 3D Game Development	3
CS Elective or Distribution Requirement	3
Distribution Requirements	6
	<hr/>
	15
Seventh Semester	
CS 328 Analysis of Algorithms or CS Elective	3
CS 340 Artificial Intelligence or CS 367 Computer Graphics	3
CS 391 Senior Projects I	1
Free Electives	6-9
	<hr/>
	13-16
Eighth Semester	
CS 368 3D Game Development or CS Elective	3
CS 392 Senior Projects II	2
Free Electives	9-12
	<hr/>
	14-17

SCIENCE ELECTIVES FOR COMPUTER SCIENCE MAJORS

B.A. candidates: See General Education Requirements.

B.S. candidates: A laboratory science sequence which must be one of the following:

Bio 121-122; Chm 113/115-114/116; EES 211, 230; or Phy 201-202.

and

One additional 4-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be numbered above 200 except that Bio 121, 122, Chm 113/115 or 114/116 are also acceptable in this requirement.

Computer Science Electives for Computer Science Majors:

Classic Track: CS 319 or CS 323 or CS 327, and three additional 300-level CS courses not listed as required courses.

Gaming and Media Design Track: Any two 300-level CS courses not listed as required courses.

*Summary of Minimum Credit Distribution for**Computer Science - Classic Track:*

	B.A.	B.S.
CS 125, 126, 225, 226, 326, 328, 330, 334, 391, 392	29	29
CS319 or 323 or 327	3	3
CS Electives	9	9
Mth 111, 112, 202, 231 and 150 or 351	18	18
Eng 101, 202	7	7
FYF 101	3	3
Science Electives	6	12
Distribution Requirements	18	18
Free Electives	27	21
<i>Minimum Total Required</i>	<i>120</i>	<i>120</i>

Computer Science Majors - Gaming and Media Design:

	B.S.
CS 125, 126, 225, 226, 328, 334, 340, 366, 367, 368, 391, 392	35
CS Electives	6
Mth 111, 112, 202, 231 and 150 or 351	18
Eng 101, 202	7
FYF 101	3
PHY201	4
Science Electives	8
Distribution Requirements	18
Free Electives	21
<i>Minimum Total Required</i>	<i>120</i>

MATHEMATICS MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MATHEMATICS LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MATHEMATICS LEADING TO THE B.S.

College of Science and Engineering

DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN MATHEMATICS — 21.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN STATISTICS — 21.

Programs of study leading to the B.A. or B.S. degree with a major or minor in Mathematics along with a minor in Statistics are offered by the Department of Mathematics and Computer Science.

The Department offers two tracks leading to a baccalaureate degree in Mathematics: the Standard Mathematics Track and the Teacher Certification Track. The Teacher Certification Track provides preparation for secondary school teaching. The Standard Mathematics Track prepares students for graduate study and research in mathematics, or for careers in industry or government, depending on the upper-level electives chosen in consultation with the faculty advisor. The Standard Track, when combined with an appropriate second major or minor, can also provide an excellent foundation for professions in business and management; economics; law; medicine; actuarial, computing, engineering, environmental and physical sciences. Both tracks share a common core of study in modern algebra, analysis, probability, and statistics.

In both tracks a student may opt for either a Bachelor of Arts or Bachelor of Science degree. The B.A. degree is intended for those who wish to elect more humanities and social science courses, whereas the B.S. degree requires greater concentration in the natural and physical sciences.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. The Teacher Certification track is specifically designed to incorporate requirements necessary for certification in secondary education. Upon completion of all requirements, students receiving a degree in mathematics with secondary teaching certification will also receive a minor in Secondary Education. Questions regarding requirements for the minor in Secondary Education should be directed to the Education Department.

MATHEMATICS MINOR

Because certain required and elective courses are offered in either alternate semesters or alternate years, or when demand warrants, degree candidates are strongly encouraged to meet with their advisors on a regular basis to discuss their academic schedule to ensure satisfactory degree progress.

<i>Required Courses</i>	<i>Credit Hours</i>
Mth 111 - 112	8

Electives:

Two of the following courses:

Mth 202, 211, 212, 214, 231	7-8
Any two MTH courses numbered 300 or higher excluding MTH 303, MTH 391, and MTH 392	6-8
<i>Minimum Total Required</i>	<u>21-24</u>

STATISTICS MINOR

In a wide range of sciences, both natural and social, statistical analysis is of major importance both in conducting research and in understanding its findings. Likewise, in governmental planning and industrial management, statistical methods are a necessary tool and constitute a major application of mathematics and computing. The minor in Statistics is intended to support work in a major either in another mathematical science or in a number of other disciplines.

<i>Required Courses:</i>	<i>Credit Hours</i>
Mth 105-106 or Mth 111-112	8
CS 125	4

Mth 351-352; and Mth 354	9
Minimum Total Required	21

STANDARD MATHEMATICS TRACK- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

	B.A.	B.S.
Mth 111 Calculus I	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
CS 125 Computer Science I	4	4
FYF 101 First-Year Foundations	3	3
	14-15	14-15

Second Semester

	B.A.	B.S.
Mth 112 Calculus II	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
Distribution Requirements	9	6
Phy 201 General Physics I	-	4
	16-17	17-18

Third Semester

	B.A.	B.S.
Mth 202 Set Theory and Logic	4	4
Mth 211 Intro. to Ordinary Differential Equations	4	4
Science Elective	3	3
Distribution Requirements	6	6
	17	17

Fourth Semester

	B.A.	B.S.
Mth 212 Multivariable Calculus	4	4
Mth 214 Linear Algebra	3	3
Science Elective	3	4
Distribution Requirements	-	3
Free Elective	3	0
	13	14

Fifth Semester

	B.A.	B.S.
Mth 311 Functions of a Real Variable or Mth 331 Intro to Abstract Algebra I	4	4
Mth 351 Probability and Mathematical Statistics I	3	3
Free Electives	9	6
	16	13

Sixth Semester

	B.A.	B.S.
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College of Science and Engineering

Mth/CS Elective	6	6
Free Electives	9	9
	<hr/>	<hr/>
	15	15

Seventh Semester

	B.A.	B.S.
Mth 391 Senior Seminar	1	1
Mth 311 Functions of a Real Variable or Mth 331 Intro. to Abstract Algebra I	4	4
Mth/CS Elective	-	3
Free Electives	9	7
	<hr/>	<hr/>
	14	15

Eighth Semester

	B.A.	B.S.
Mth 392 Senior Seminar	2	2
Mth/CS Elective	3	3
Free Electives	9	9
	<hr/>	<hr/>
	14	14

TEACHER CERTIFICATION MATHEMATICS TRACK- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

	B.A.	B.S.
Mth 111 Calculus I	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
CS 125 Computer Science I	4	4
FYF 101 First-Year Foundations	3	3
	<hr/>	<hr/>
	14-15	14-15

Second Semester

	B.A.	B.S.
Mth 112 Calculus II	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
Psy 101 General Psychology	3	3
Distribution Requirements	6	3
Lab Science Sequence I	-	4
	<hr/>	<hr/>
	16-17	17-18

Third Semester

	B.A.	B.S.
Mth 202 Set Theory and Logic	4	4
Ed 190 Effective Teaching	3	3
Lab Science Sequence II	3	4
Distribution Requirements	6	6
	<hr/>	<hr/>
	16	17

Fourth Semester

B.A.	B.S.
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Mth 212 Multivariable Calculus	4	4
Mth 214 Linear Algebra	3	3
ED 180 Educational Psychology	3	3
Science Elective	3	4
Free Elective	3	-
	<hr/>	<hr/>
	16	14
Fifth Semester		
	B.A.	B.S.
Ed 210 Teach. Students w/Special Needs	3	3
Mth 343 Intro. to Geometry or Mth 303 Teaching of Mathematics in Secondary School	3/4	3/4
Mth 311 Functions of a Real Variable or	4	4
Mth 331 Intro. to Abstract Algebra Distribution Requirement	-	3
Free Electives	3	0
	<hr/>	<hr/>
	13-14	13-14
Sixth Semester		
	B.A.	B.S.
Mth/CS Electives	3	9
Ed 220 Multicultural Education	3	3
EDSP 225 Special Education Methodology	3	3
Ed 380 Content Area Reading	2	2
Free Electives	3	0
	<hr/>	<hr/>
	14	17
Seventh Semester		
	B.A.	B.S.
Mth 343 Intro. to Geometry or Mth 303 The Teaching of Mathematics in Secondary School	3/4	3/4
Mth 311 Functions of a Real Variable or Mth 331 Intro to Abstract Algebra I	4	4
Mth 351 Probability and Mathematical Statistics	3	3
Mth 391 Senior Seminar	1	1
ED 191 Technology in the classroom	3	3
	<hr/>	<hr/>
	14-15	14-15
Eighth Semester		
	B.A.	B.S.
EDSP 388 Inclusionary Practices	3	3
Ed 390A Intern Teaching	12	12
	<hr/>	<hr/>
	15	15

College of Science and Engineering*Science Electives for Mathematics Majors:*

B.A. candidates: See General Education Requirements.

B.S. candidates: A laboratory science sequence which must be one of the following: BIO 121-122; Chm 113/115-114/116; EES 211, 230; or Phy 201-202 and one additional 4-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be numbered above 200 except that Bio 121, 122, Chm 113/115 or 114/116 are also acceptable in this requirement.

*Mathematics/Computer Science Electives for Mathematics Majors:**Standard Mathematics Track:*

Any two Mth courses numbered above 300; and for

B.A. candidates: Mth 231, or any Mth or CS course numbered above 300, excluding Mth 303

B.S. candidates: Two of the following: Mth 231, or any MTH or CS course numbered above 300, excluding Mth 303

Teacher Certification Mathematics Track:

Any one 3-credit MTH course numbered above 300; and for B.S. candidates:

Two of the following courses:

Mth 211, Mth 231, CS 227, or any Mth or CS course numbered above 300

*Summary of Minimum Credit Distribution:**Standard Mathematics Track*

	B.A.	B.S.
Mth 111, 112, 202, 211, 212, 214, 311, 331, 351, 391, and 392	37	37
Mth/CS Electives	9	12
CS 125	4	4
Science Electives	6	12
Eng 101	4	4
FYF 101	3	3
Distribution Requirements	18	18
Free Electives	39	30
Total	120	120

Teacher Certification Mathematics Track

	B.A.	B.S.
Mth 111, 112, 202, 212, 214, 303, 311, 331, 343, 351, and 391	38	38
Mth/CS Electives	3	9
CS 125	4	4
Science Electives	6	12
Eng 101	4	4
Ed 180, 190, 191, 220, EDSP 210, 225, 380, 388 and 390A	32	32
FYF 101	3	3
Psy 101	3	3
Distribution Requirements	15	15
Free Electives	9	0
Total	120	123

THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

DEAN: DR. PAUL C. BROWNE

THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

DEAN: DR. PAUL C. BROWNE

The Jay S. Sidhu School of Business and Leadership combines a strong core business education with the development of skills for authentic leadership and ethical business practices. The School offers degree programs for undergraduate and MBA students. In addition, it houses the Sovereign Center for Leadership and Management Development to provide leadership and professional development programs for business executives, managers and supervisors throughout the region.

The School bears the name of Jay S. Sidhu, a 1973 graduate of the Wilkes MBA program, a member of the University Board of Trustees, and former President and chief executive of Sovereign Bancorp. Mr. Sidhu and Sovereign Bank, a financial institution based in Reading, Pennsylvania, have provided Wilkes with a major gift to endow the School in Mr. Sidhu's name.

The Sidhu School offers three undergraduate degrees: the Bachelor of Business Administration degree (including an accelerated degree completion option for adult learners), the Bachelor of Business Administration degree in Entrepreneurship, and the Bachelor of Science degree in Accounting. The School also offers the Master of Business Administration degree, described in the *Wilkes University Graduate and Professional Studies Bulletin*.

The Sidhu undergraduate business program is centered on self-development through three interconnected components: a balanced set of foundation courses, preparation for entry into specific careers and jobs, and leadership development. At the heart of the experience is the Personal and Professional Development (PPD) Series. Consisting of seven one-credit courses, it engages small student cohorts in a four-year process of discovery and development. Students explore their knowledge, values, learning styles, and competencies in a spirit of self-examination, self-awareness and self-knowledge, forming the basis for an evolving Life and Learning Plan. The PPD series draws on the resources of the University and surrounding community and provides a linking thread throughout a student's experience in the business administration, accounting, and entrepreneurship programs. Courses challenge students to reflect on their learning

and assess how well they are progressing in the integration of content with skill and competency development. The goal is to develop graduates who understand the value of cognitive and emotional intelligence as they exercise authentic leadership in careers that demand individual commitment to excellence and genuine appreciation for teamwork.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of these programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing business programs at Wilkes.

Closely linked to the Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for students to apply what they study in classroom settings to functioning organizations under the direction of senior staff at each unit.

The School provides a wealth of co-curricular and extracurricular opportunities for students to develop and hone their personal leadership skills. Campus chapters of Delta Epsilon Chi () and the Society for Advancement of Management (SAM) provide students with opportunities for professional development, social interaction and national exposure. The Wilkes University Students in Free Enterprise (SIFE) team provides the opportunity to make a difference through service and to develop leadership, teamwork and communication skills through learning, practicing and teaching the principles of free enterprise. These organizations are open to all students, regardless of major or career interests.

Upper-level accounting students serve as tax preparers in the Volunteer Income Tax Assistance (VITA) program of the U.S. Internal Revenue Service. VITA provides free tax-filing assistance for low-income and elderly residents of Wilkes-Barre and the surrounding vicinity, while giving students actual, hands-on experience in completing and filing personal tax returns. Wilkes University and the Sidhu School also sponsor an active chapter of Delta Mu Delta, an honorary business society that recognizes the

highest levels of academic achievement by undergraduate and graduate students.

Bachelor's Degree-Majors

Accounting (B.S.); Business Administration (B.B.A.); Entrepreneurship (B.B.A.)

BUSINESS ADMINISTRATION AND ACCOUNTING

CHAIRPERSON: DR. JUSTIN C. MATUS

Faculty: Professors: Alves, Batory, Liuzzo, Rexter, Taylor

Associate Professors: Chisarick, Engel

Assistant Professors: Das, Edmonds, Frear, Gordon, Hao, Matus, Raineri, Xiao

Adjunct Faculty: Albany, Gorman, Hughes, Kosicki, McDonald, Ruthkosky, Sabatini, Sowcik, Zipay

Faculty Emeriti: Broadt, Capin, Gera, Raspen

ACCOUNTING MAJOR

COORDINATOR: DR. MARIANNE M. REXER

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ACCOUNTING LEADING TO THE B.S. DEGREE — 125.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The Jay S. Sidhu School of Business and Leadership offers a major in Accounting, providing the necessary background for an entry-level professional position in public, private or governmental accounting. Students receive the necessary educational background to compete successfully for placement in graduate and professional schools and licensures as certified public accountants and certified management accountants. Those choosing a career in administration receive the managerial training necessary for success in a full range of leadership roles.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited both the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the Accounting major at Wilkes.

The Accounting curriculum parallels that of Business Administration and Entrepreneurship and contains four tiers. The *first tier* begins with a comprehensive study of the arts, sciences, mathematics,

communications, and humanities. This liberal arts core is a common experience to all majors and provides the basis for a broadly educated individual. To become competitive, effective organizational leaders and self-fulfilled individuals, Accounting graduates are expected to possess the skills and knowledge acquired through this liberating exposure to the arts, sciences, mathematics, and the humanities.

The *second tier* of educational experience provides a general background in statistical, financial, and managerial techniques. Subjects included in this area of study are finance, economics, management, and marketing, including a two-semester Integrated Management Experience which serves as the school's foundation course in the study of accounting, business, and entrepreneurship. This tier also includes a sequence of seven one-credit courses called the "Professional and Personal Development" series, designed to engage all business students in an in-depth exploration and assessment of their personal strengths, goals, and career aspirations and provide a series of developmental activities and experiences to facilitate their transition into professional careers.

The *third tier* of basic educational skills relates to the fields of financial and managerial accounting. A rigorous thirty-six credit hours are devoted to current accounting theory and applications through the use of texts, computer applications, cases, and practical experience. The sequence begins with introductory level accounting and progresses through intermediate, tax, cost, auditing, and accounting information systems. A fourth tier utilizes an accounting internship to bond classroom knowledge with practical experience. Most students are placed with public accounting firms where it is possible to experience many areas of accounting as well as a broad range of business problems in a short time span. Additionally, for students with a more specialized interest, accounting internships are also available in banks, in private industry, and with the government. The Wilkes internship program is the oldest in Northeast Pennsylvania, and most successful interns have been placed in positions of their choice, including the large international accounting firms.

A *fifth tier*, a five and a half year BS/MBA program, is available for students who wish to meet the needs of a professional in the 21st century. This program offered by the Jay S.

Sidhu School of Business and Leadership has been developed to encompass each of the above-mentioned levels, along with an additional year and a half of graduate coursework. Upon successful completion, the student will have earned a Bachelor of Science degree in Accounting and a Master of Business Administration degree with 161 credit hours of coursework.

Accounting alumni can be found in public accounting firms ranging in size from those of individual practitioners to international organizations. Many of our graduates who began their careers in public accounting have since moved into leadership positions with government or private industry.

The Accounting major in the Jay S. Sidhu School of Business and Leadership at Wilkes University will provide an individual with the combined educational skills to be a future success as a leader in the accounting profession, industry, or government.

ACCOUNTING MINOR

Students from other disciplines, even those unrelated to business, have been inclined to select an Accounting minor to enhance their major field of study. The minor provides the student with enough background to begin with professional entry-level employment while developing a background in his or her chosen field of study. The minor program is composed of ACC 161-162, ACC 201-202 and six additional elective credits in accounting.

ACCOUNTING MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
ACC 151 Integrated Management Experience I	3
CS 115 Computers and App.	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Distribution Requirement	3
PPD 101 Personal and Professional Development I	1
	17
Second Semester	
ACC 152 Integrated Management Experience II	3
COM 101 Public Speaking	3
MTH 107 Business Math	3
Distribution Requirement	3
Distribution Requirement	3
PDD 102 Personal and Professional	1

Development II	16
Third Semester	
ACC 161 Financial Accounting	3
BA 351 Management of Organizations & People	3
EC 101 Principles of Economics	3
Distribution Requirement	3
Distribution Requirement	3
PPD 201 Personal and Professional Development III	1
	16
Fourth Semester	
ACC 162 Managerial Accounting	3
BA 321 Marketing	3
EC 102 Economics II	3
Distribution Requirements	6
PPD 202 Personal and Professional Development IV	1
	16
Fifth Semester	
ACC 201 Intermediate Accounting I	3
ACC 321 Taxes	3
BA 233 The Legal Environment of Business	3
BA 319 Business Statistics	3
BA 354 Organizational Behavior	3
PPD 301 Personal and Professional Development V	1
	16
Sixth Semester	
ACC 202 Intermediate Accounting II	3
ACC 322 Advanced Taxes	3
BA 234 Business Law	3
BA 341 Managerial Finance	3
BA 352 Prod/Operations Mgmt.	3
PPD 302 Personal and Professional Development VI	1
	16
Seventh Semester	
ACC 301 Advanced Financial Accounting	3
ACC 331 Auditing	3
Free Elective	3
BA 358 International Business Seminar	3
BA 361 Business Strategy and Decision-making	3
PPD 401 Personal and Professional Development VII	1
	16
Eighth Semester	

The Jay S. Sidhu School of Business and Leadership

ACC 311 Advanced Managerial Accounting	3
ACC 341 Accounting Info Systems	3
ACC 362 Accounting Internship or or	6
ACC 362 Accounting Internship* and Free Elective	6
	12

* Accounting 362 may be taken for 6 credits in place of the Free Elective in semester 8.

BUSINESS ADMINISTRATION MAJOR

COORDINATOR: DR. JUSTIN C. MATUS

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A BACHELOR OF BUSINESS ADMINISTRATION DEGREE — 125.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A BUSINESS ADMINISTRATION MINOR — 18.

The Jay S. Sidhu School of Business and Leadership offers undergraduate and graduate degree programs in Business Administration with a variety of concentrations leading to executive, managerial and technical careers in business, industry, and governmental organizations.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited both the undergraduate and graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the Business Administration major at Wilkes. Students interested in pursuing graduate or professional studies will find that the curriculum provides the appropriate foundation for such opportunities.

The Business Administration curriculum parallels that of Accounting and Entrepreneurship and contains a minimum of three tiers. These tiers or steps are intended to combine simultaneously a rigorous general education with the flexibility of individualized program design. The *first tier* begins with a comprehensive study of the arts, sciences, mathematics, communications, and humanities. This liberal arts core is a common experience to all majors and provides the basis for a broadly educated individual. To become competitive, effective, organizational leaders and self-fulfilled individuals, Business Administration graduates are expected to possess the skills and knowledge acquired through this

liberating exposure to the arts, sciences, mathematics, and the humanities.

The *second tier* of the curriculum is the Business Administration core, which transmits a common educational experience to all Business Administration majors by addressing topics that are recognized to be basic and necessary to all practicing professionals. Although the following twenty-three courses are required by the Business Administration core, four of them fulfill Distribution Area requirements of the University core and so are counted in the first tier grouping. They appear here for completeness:

- ACC 161 Financial Accounting and Decision Making
- ACC 162 Managerial Accounting and Decision Making
- BA 151 Integrated Management Experience I
- BA 152 Integrated Management Experience II
- BA 233 The Legal Environment of Business
- BA 234 Business Law
- BA 257 Management Information Systems
- BA 309 Business Correspondence and Reports
- BA 319 Business Statistics
- BA 321 Marketing
- BA 341 Managerial Finance
- BA 351 Management of Organizations and People
- BA 352 Production and Operations Management
- BA 354 Organizational Behavior
- BA 356 The Social Responsibility of Business
- BA 358 International Business
- BA 361 Business Strategy and Decision-Making
- BA 362 Professional Business Experience (or an experiential Independent study)
- COM 101* Public Speaking
- CS 115* Computers and Applications
- Ec 101 Economics I
- Ec 102* Economics II
- Mth 107* Business Mathematics
- 6 additional credits in General Education Electives
- PPD 101 Personal and Professional Development I
- PPD 102 Personal and Professional Development II
- PPD 201 Personal and Professional Development III
- PPD 202 Personal and Professional Development IV
- PPD 301 Personal and Professional Development V

PPD 302 Personal and Professional Development VI

PPD 401 Personal and Professional Development VII

**Meets a requirement in the University core*

The third tier requires completion of twelve credits of elective courses within the major (Both BA and ENT prefixed courses can be used). Students wishing to satisfy the requirements for a particular concentration area must complete at least six of their third-tier credits within that concentration area (See below for a complete description of these concentration areas.)

The Bachelor of Business Administration degree program also contains nine credits of free electives for further customization of one's educational program. A student who wishes to declare a minor in an area such as computer science, communication studies, foreign languages, political science, psychology, or sociology can easily do so. Through a judicious selection of elective concentration courses and use of the free electives courses, it is possible for a student to fulfill two concentrations without the necessity of adding extra credits or extra semesters to one's program. Academic, personal, and career advisors are available to assist students in the selection of concentration areas and coursework. In much the same way, minors, double majors, or a personalized package of electives can be constructed around the interests of the students with the concerned, caring advice of these counselors.

Business Administration alumni can be found in positions of leadership in organizations throughout the world. They are leaders in both the public and private sectors. In addition, our alumni are educators, researchers, scholars, entrepreneurs, and other professionals. For the next generation of executives and professionals seeking similar realizations of their ambitions, the Bachelor of Business Administration degree program at Wilkes will prepare them admirably for their demanding futures as leaders of our global and diverse environment in the 21st century.

Closely linked to the Jay S. Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for business students to apply what they study in classroom settings to functioning

organizations under the direction of senior staff at each unit.

The following course sequence is recommended for students pursuing the Bachelor of Business Administration degree. By following this recommendation, all University core and School core requirements will be completed in their proper sequences. Students transferring into Wilkes and/or the Bachelor of Business Administration degree program can use this semester-by-semester outline as guidance for completing coursework.

MARKETING MINOR

For students in Business Administration and other disciplines, the Jay S. Sidhu School of Business and Leadership offers a minor program in Marketing. Students considering careers in or involving aspects of the marketing profession will find the Minor in Marketing an excellent complement to their primary academic and career interests. All students seeking the Minor in Marketing will be required to complete a minimum of eighteen (18) credits from the following list of courses:

- BA 321 Marketing
- BA 322 Advertising
- BA 324 Retailing
- BA 326 The Selling Process
- BA 327 Marketing Seminar
- BA 328 Consumer Behavior
- BA 198/298/398 Topics in Marketing
- BA 395/396 Independent Study in Marketing
- COM 302 Public Relations
- ENT 203 Opportunity Recognition: Creativity and Innovation
- ENT 252 The Entrepreneurial Leader
- ENT 321 Analyzing Markets and Competition
- ENT 384 Small Business Consultancy

BUSINESS ADMINISTRATION MINOR

For majors in other disciplines, the Jay S. Sidhu School of Business and Leadership offers the minor program in Business Administration. Thus, students who may be contemplating a career in business as a means of fully utilizing their already chosen majors will find that the Business Administration minor can complement their other academic and career interests. All students wishing to minor in Business Administration will be required to complete a minimum of eighteen credits, or six courses, to include three required courses, BA 153, ACC 161 and BA 351, plus any three other courses (a) having the BA prefix and/or (b) approved by the Chairperson of the Jay S. Sidhu School of Business and Leadership.

The Jay S. Sidhu School of Business and Leadership

BUSINESS ADMINISTRATION MAJOR-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
BA 151 Integrated Management Experience I	3
CS 115 Survey of Computers	3
Eng 101 Composition or Distribution Requirement	3-4
FYF 101 First-Year Foundations	3
Distribution Requirement	3
PPD 101 Personal and Professional Development I	1
	<hr/>
	16-17
Second Semester	
BA 152 Integrated Management Experience II	3
Com 101 Public Speaking	3
ENG 101 or Distribution Requirement	3-4
Distribution Requirement	3
Distribution Requirement	3
PPD 102 Personal and Professional Development II	1
	<hr/>
	16-17
Third Semester	
Acc 161 Financial Accounting and Decision Making	3
BA 351 Management of Organizations and People	3
EC 101 Economics I	3
MTH 107 Business Mathematics	3
Distribution Requirement	3
PPD 201 Personal and Professional Development III	1
	<hr/>
	16
Fourth Semester	
Acc 162 Managerial Accounting and Decision Making	3
BA 257 Management Information Systems	3
BA 309 Business Correspondence and Reports	3
BA 321 Marketing	3
EC 102 Economics II	3
PPD 202 Personal and Professional Development IV	1
	<hr/>
	16
Fifth Semester	
BA 233 The Legal Environment of Business	3

BA 319 Business Statistics	3
BA 354 Organizational Behavior	3
Distribution Requirement	3
Free Elective	3
PPD 301 Personal and Professional Development V	1
	<hr/>
	16
Sixth Semester	
BA 234 Business Law	3
BA 341 Managerial Finance	3
BA 352 Production & Operations Mgt.	3
BA 356 Social Responsibility	3
Free Elective	3
PPD 302 Personal and Professional Development VI	1
	<hr/>
	16
Seventh Semester	
BA 358 International Business	3
BA 361 Bus Strategy & Decision Making	3
Concentration Electives	6
Distribution Requirement	3
PPD 401 Personal and Professional Development VII	1
	<hr/>
	16
Eighth Semester	
BA 362 Management Field Experience	3
Concentration Electives	6
Free Elective	3
	<hr/>
	12
<i>Bachelor of Business Administration Degree</i>	
<i>Note:</i> Students who pursue the Bachelor of Business Administration degree must complete 12 credits from any of the concentration areas or other elective courses having ACC, BA, EC, or ENT prefixes. Students who wish to satisfy the requirements for a particular concentration area must complete at least 9 of their 12 credits within that concentration area. Students are not required to satisfy the requirements for a concentration area, but they may choose to do so. Students will receive credit for no more than two concentration areas.	
Concentration Areas	
<i>Business Economics</i>	
Any EC prefixed course in addition to EC 101, EC 102 and EC/BA 319; includes EC 198/298/398 (Topics in Economics), EC 395-396 (Independent Study in Economics), and EC 399 (Co-Op Ed in Economics).	
<i>Finance</i>	
ACC 201 Intermediate Accounting I	
BA 342 Property and Life Insurance	

BA 343 Investments and Portfolio Management
 BA 345 Long-Range Financial Planning
 BA 198/298/398 Topics in Finance
 BA 395/396 Independent Research in Finance
 ENT 342 Entrepreneurial Finance
International Business
 BA 395/396 Independent Research in International Business
 EC 340 International Trade and Finance
 BA 198/298/398 Topics in International Business
Marketing
 BA 322 Advertising
 BA 324 Retailing
 BA 326 The Selling Process
 BA 327 Marketing Seminar
 BA 328 Consumer Behavior
 BA 198/298/398 Topics in Marketing
 BA 395-396 Independent Study in Marketing
 COM 302 Public Relations
 ENT 203 Entrepreneurial Identification: Innovation and Creativity
 ENT 252 The Entrepreneurial Leader
 ENT 321 Analyzing Markets and Competition

ACCELERATED BBA PROGRAM- COURSE SEQUENCE

Term	Block A (7 weeks)	Block B (7 weeks)
First Year		
1st	ABA 100 Integrated Management Exp.	ABA 110 Leadership and Org. Mgmt
2nd	ABA 161 Financial Accounting	ABA 190 Integrated Econ. for Business
3rd	ABA 130 Marketing and Retailing	ABA 150 The Legal Environment of Bus. and Bus. Law
Second Year		
4th	ABA 140 Integrated Bus. Math & Stat.	ABA 120 Effective Comm. for Business
5th	ABA 162 Managerial Accounting	ABA 170 Human Res. & Cust. Rel. Mgmt.
6th	ABA 180 Financial Management	ABA xxx Emphasis Elective 1
Third Year		
7th	ABA xxx Emphasis Elective 2	ABA 200 Bus. Strategy & Decision Making
8th	ABA 210 Professional Bus. Experience	

ACCELERATED BBA PROGRAM

The Sidhu School offers a Bachelor of Business Administration degree through an accelerated degree completion option for adult learners, ages 25 and older, who have already earned credit for a substantial amount of prior college coursework. Candidates must have earned at least thirty credit hours of college credit to enter the program. A total of sixty credit hours, covering the general education requirements for a Wilkes undergraduate degree and free electives, must be earned outside the courses specifically included in the Accelerated BBA.

The program provides preparation that is equivalent to the regular BBA in business administration. It consists of sixty credits earned through twelve core courses and three concentration electives, each worth four credits. The design assures that students will receive complete equivalent coverage of all learning outcomes delivered through the existing BBA program, in compliance with the standards of the Association of Collegiate Business Schools and Programs (ACBSP.) Students will take two courses each term, including fall, summer and spring, leading to completion of the program in seven and a half terms, over two and a half years.

ENTREPRENEURSHIP MAJOR

COORDINATOR: DR. ALVES

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENTREPRENEURSHIP LEADING TO THE B.B.A. DEGREE — 125.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

Entrepreneurship creates value and improves society's standard of living. It is an integrating discipline that draws on knowledge and skills developed in a variety of areas. Entrepreneurial endeavors are successful when they identify opportunities, assess those opportunities, and take action to pursue the opportunities. Students earning the Bachelor of Business Administration in Entrepreneurship will understand the motivations, behaviors, and strategies necessary to create, implement, and sustain new ideas and ventures.

The Association of Collegiate Business Schools and Programs (ACBSP) accredited the undergraduate and graduate business administration programs as well as the undergraduate program in accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional

schools as well as potential employers and therefore serves as a major competitive advantage for students completing the entrepreneurship major at Wilkes.

The entrepreneurship curriculum blends the traditional components of a management education with the study of those content, skill, and sensitivity areas that uniquely define entrepreneurship. Through a combination of academic and clinical experiences students will develop an appreciation and understanding of the entrepreneurial process. The entrepreneurship major curriculum is composed of three blocks: the general education or university core, the Entrepreneurship core, and electives. The university core provides the liberal arts foundation that is necessary for a well-balanced education and perspective.

The Entrepreneurship core is the second block or tier. It begins with the year-long foundation course, The Integrated Management Experience, ENT151 and ENT152, a course designed to provide an overview of the functions of management and their interrelatedness, to plan and operate a business integrated with and grounded in understanding financial accounting, and the entrepreneurial process. The Entrepreneurship core requires the following 30 courses. Four of them fulfill general education requirements and are counted as meeting university core requirements.

- ACC 161 Financial Accounting and Decision Making
- ACC 162 Managerial Accounting and Decision Making
- ENT 151 The Integrated Management Experience I
- ENT 152 The Integrated Management Experience II
- BA 233 Legal Environment of Business
- BA 234 Business Law
- BA 309 Business Correspondence and Reports
- BA 321 Marketing
- BA 341 Managerial Finance
- BA 356 Social Responsibility of Business
- COM 101* Public Speaking
- CS 115* Survey of Computers
- Ec 101 Principles of Economics I
- Ec 102* Principles of Economics II
- ENT 201 Nature and Essence of Entrepreneurship
- ENT 203 Opportunity Identification: Creativity and Innovation
- ENT 252 The Entrepreneurial Leader
- ENT 321 Analyzing Markets and Competition

- ENT 342 Financing the Entrepreneurial Venture
- ENT 361 Practicing Entrepreneurship
- ENT 362 Entrepreneurship Internship
- ENT 385 Opportunity Assessment: Technical, Economic, and Market Feasibility
- Mth 107* Business Mathematics
- PPD 101 Personal and Professional Development I
- PPD 102 Personal and Professional Development II
- PPD 201 Personal and Professional Development III
- PPD 202 Personal and Professional Development IV
- PPD 301 Personal and Professional Development V
- PPD 302 Personal and Professional Development VI
- PPD 401 Personal and Professional Development VII

** Meets requirement in the University core*

The Third block includes major elective courses. Twelve credits of Entrepreneurship major electives are required. Nine credits must come from the following courses:

- BA 322 Advertising
- BA 327 Marketing Seminar
- BA 328 Consumer Behavior
- ENT 198/298/398 Topics Seminar
- ENT 384 Small Business Consultancy
- ENT 395/396 Independent Research

The final three Entrepreneurship major elective credits must come from disciplines with course number prefixes: ART, COM, EGM, DAN, ENG, MUS or THE.

In addition to the twelve Entrepreneurship major elective credits, nine free elective credits are required.

ENTREPRENEURSHIP MINOR

For majors in other disciplines, the Jay S. Sidhu School of Business and Leadership offers a minor in Entrepreneurship. Students who may be contemplating pursuit of entrepreneurial opportunities will find the Entrepreneurship Minor an excellent complement to their chosen majors. Required courses to complete the Entrepreneurship Minor are:

- ENT 151 Integrated Management Experience I
- ENT 152 Integrated Management Experience II
- BA 321 Marketing
- ENT 201 Nature and Essence of Entrepreneurship
- ENT 361 Practicing Entrepreneurship
- ENT 384 or ENT 362 Small Business Consultancy or Entrepreneurship Internship

The Entrepreneurship program is closely affiliated with the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both offer academic and experiential opportunities under the direction of senior professional staff.

Change is an accepted constant in today's world. And change, whether it is gradual or radical, is a rich source of opportunity. The entrepreneurship Major and Minor will prepare students to recognize and act upon opportunities and meet the challenges that lie ahead.

The following course sequence is recommended for students pursuing the Bachelor of Business Administration in Entrepreneurship degree. By following this recommendation, all University and Entrepreneurship core requirements will be completed in their proper order. Students transferring into Wilkes and/or the Bachelor of Business Administration in Entrepreneurship degree program can use this semester-by-semester outline as guidance for completing coursework.

ENTREPRENEURSHIP MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ENT 151 Integrated Management Experience I	3
CS 115 Survey of Computers	3
Eng 101 Composition	4
FYF 101 First-Year Foundations	3
Distribution Requirement	3
PPD 101 Personal and Professional Development I	1
	17

Second Semester

ENT 152 Integrated Management Experience II	3
COM 101 Public Speaking	3
Mth 107 Business Mathematics	3
Distribution Requirements	6
PPD 102 Personal and Professional Development II	1
	16

Third Semester

ENT 201 Nature and Essence of Entrepreneurship	3
ENT 203 Opportunity Identification: Creativity and Innovation	3
Acc 161 Financial Accounting and Decision Making	3

EC 101 Principles of Economics I	3
Distribution Requirement	3
PPD 201 Personal and Professional Development III	1
	16

Fourth Semester

ENT 252 The Entrepreneurial Leader	3
Acc 162 Managerial Accounting and Decision Making	3
BA 309 Business Correspondence and Reports	3
BA 321 Marketing	3
EC 102 Principles of Economics II	3
PPD 202 Personal and Professional Development IV	1
	16

Fifth Semester

ENT 321 Analyzing Markets & Competition	3
BA 233 The Legal Environment of Business	3
BA 341 Managerial Finance	3
Distribution Requirement	3
Free Elective	3
PPD 301 Personal and Professional Development	1
	16

Sixth Semester

ENT 342 Financing Entrepreneurial Ventures	3
ENT 385 Opportunity Assessment: Technical, Economic, and Market Feasibility	3
BA 234 Business Law	3
BA 356 Social Responsibility of Business	3
Entrepreneurship Elective	3
PPD 302 Personal and Professional Development VI	1
	16

Seventh Semester

ENT 361 Practicing Entrepreneurship	3
Entrepreneurship Electives	6
Distribution Requirement	3
Free Elective	3
PPD 401 Personal and Professional Development VII	1
	16

Eighth Semester

ENT 362 Entrepreneurship Internship	3
Entrepreneurship Elective	3
Distribution Requirement	3
Free Elective	3

THE NESBITT COLLEGE OF PHARMACY AND NURSING

THE SCHOOL OF PHARMACY

THE SCHOOL OF NURSING

THE NESBITT COLLEGE OF PHARMACY AND NURSING

DEAN: DR. BERNARD W. GRAHAM, R.PH.

The Nesbitt College of Pharmacy and Nursing combines the two clinically based academic programs of Wilkes University. These programs, administered by the School of Pharmacy and the Department of Nursing, have a theme centered on the development of skills needed to care for patients in a 21st-century health care system.

The School of Pharmacy is the home for the two-year Prepharmacy Guaranteed Seat program and the four-year professional program. Students who successfully complete the Prepharmacy Guaranteed Seat program matriculate directly into the accredited program leading to the Doctor of Pharmacy degree. The School also accepts a limited number of Wilkes and other students into this professional program. The department of Pharmaceutical Sciences offers the B.S. in pharmaceutical sciences. This degree will prepare students for entry-level positions in the pharmaceutical industry or advanced study in graduate school.

The School of Nursing houses a multitude of accredited nursing programs both undergraduate and graduate. Students of nursing may matriculate directly into the Bachelor of Science or from careers as LPNs or RNs. Students who already have a baccalaureate degree in another discipline and wish to pursue a career in the nursing profession may compete for a seat in the Professional Master's Program. Practicing professional nurses may choose to pursue the RN-MS program which leads into the advanced practice master's degree.

SCHOOL OF PHARMACY

DEAN: DR. BERNARD W. GRAHAM, R.PH.

Assistant Dean: Dr. Harvey A. Jacobs

Chairperson, Department of Pharmaceutical Sciences: Dr. Arthur H. Kibbe

Chairperson, Department of Pharmacy Practice: Dr. Edward F. Foote

Faculty: Professors: Foote, Graham, Kibbe, Witczak

Associate Professors: Bohan, Jacobs, Kristeller, Longyore, McCune, McManus, Malinowski, Olenak, Roke-Thomas, Trombetta, Welch, Wright

Assistant Professors: Bolesta, Bommarreddy, J. Ference, K. Ference, Manning, Metka, Patel, Russell, VanWert

Instructors: Billek, Holt-Macey, Musheno, Nanstiel

The School of Pharmacy offers a program of professional study leading to the Doctor of Pharmacy (Pharm.D.) degree. The purpose of the program is to prepare graduates for successful pharmacy practice in the health care environment of the twenty-first century. The U.S. health care system has been undergoing rapid, even dramatic, change. This transformation is expected by most observers to continue for some time. Those individuals and organizations responsible for the delivery of pharmaceutical care have not been and will not be sheltered from the forces of change. It becomes necessary, therefore, to provide new practitioners with the necessary knowledge base and skills required in a transformed health care system.

With the rapid transformation of health care delivery, a strong foundation in the basic sciences (e.g., pharmaceuticals, pharmacology, medicinal chemistry, anatomy and physiology) remains essential while clinical knowledge (e.g., therapeutics, pharmacokinetics, pathophysiology) and skills (e.g. physical assessment, patient counseling, clinical decision-making) become even more important. Successful practice will demand an improved understanding of the social sciences (e.g., psychology, sociology, economics, health policy, management). Most importantly, the future pharmacy practitioner must have outstanding interpersonal skills. Among these are the abilities to communicate effectively and to function in a team environment.

OUR MISSION

Our mission is to educate and develop highly qualified professionals and notably contribute to the ever-changing science and practice of pharmacy.

OUR VISION

We aspire to be recognized as a premiere School of Pharmacy through progressive education, cutting-edge practice, and significant contribution to the science of pharmacy.

OUR VALUES

Personalized education

We are committed to educating future professional pharmacists. We demonstrate this through our emphasis on communication, team-building, personal mentoring, close interprofessional relationships, and interdisciplinary curriculum, service-learning, and small class size.

Cornerstone Scholarship

Scholarly pursuits support our commitment to educational excellence, faculty development, quality patient care, and the advancement of the practice and science of pharmacy.

Ultimate Service and Practice

We regard progressive pharmacy care, committed professionalism, and civic engagement as essential to cultivating a dedication to the health and wellness of the community in which we live.

PREPHARMACY GUARANTEED SEAT PROGRAM

The two-year, prepharmacy course sequence is intended to prepare the student for the challenges of Wilkes University's four-year Doctor of Pharmacy curriculum. The prepharmacy program at Wilkes University is outlined below.

Admission to the Prepharmacy Guaranteed Seat Program (Enrollment limit: up to 70)

Students may only enter the Prepharmacy Guaranteed Seat Program as freshmen from high school. Minimum criteria for consideration for admission are listed below.

Applicants for the *Prepharmacy Guaranteed Seat Program* must first complete a Wilkes

The Nesbitt College of Pharmacy and Nursing

University Application which can be obtained from the University's Admissions Office. Applicants who meet the SAT criteria and class rank criteria will be forwarded an application for the School of Pharmacy. These applications will be reviewed by the School of Pharmacy and top applicants will be invited for a personal interview. Final admission into the program will be based on a thorough evaluation of students based on high school rank (or GPA if school does not rank), SAT scores, and the results of the personal interview. Interviewed applicants not selected for immediate admission will be placed on a wait list. Wait-listed students will be offered seats in the Guaranteed Seat Prepharmacy Program as they become available. In some instances, students may not be notified of an available seat in the Prepharmacy Guaranteed Seat Program until the summer.

School of Pharmacy applications for the *Prepharmacy Guaranteed Seat Program must be completed by February 1. There are typically many more applicants than seats in the entering Prepharmacy Guaranteed Seat Program. As applicants are admitted on a rolling basis, all seats may be awarded before the February 1 deadline. Applicants are encouraged to complete the application process as early as possible.*

Minimally, each candidate must:

- Be a graduate of, or near graduation from, an accredited high school or academy;
- Rank in the upper half of his or her class;
- Attain a combined SAT score of 1000 (Math and Verbal);
- Complete the School of Pharmacy Prepharmacy Application. (This is separate from the Wilkes University Admissions Application.);
- Have worked in a pharmacy or have shadowed a pharmacist for at least eight hours;
- Submit one recommendation letter from a pharmacist;
- Submit two recommendation letters from teachers, employers, or other individuals who can provide an objective appraisal of the student's ability; and
- Successfully complete an interview with the School of Pharmacy.

PLEASE NOTE: *attaining minimum academic requirements does not infer or promise an interview or admission into the Prepharmacy Guaranteed Seat program!*

PREPHARMACY*- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition or	4
MTH 105 Calculus I	4
Bio 121 Principles of Modern Biology I	4
Chm 113 Elements & Compounds Lab	1
Chm 115 Elements and Compounds	3
FYF 101 First-Year Foundations	3
	<hr/>
	15

Second Semester

Eng 101 Composition or	4
MTH 105 Calculus I	4
Bio 122 Principles of Modern Bio II	4
Chm 114 The Chemical Reaction Lab	1
Chm 116 The Chemical Reaction	3
Distribution Requirements	6
	<hr/>
	18

Third Semester

Chm 231 Organic Chemistry I	3
Chm 233 Organic Chemistry Lab	1
Com 101 Fundamentals of Speech	3
Ec 102 Principles of Economics II	3
Distribution Requirements	6
	<hr/>
	16

Fourth Semester

Chm 232 Organic Chemistry II	3
Chm 234 Organic Chemistry Lab	1
Phy 174 Classical and Modern Physics	4
Mth 150 Elementary Statistics	3
Distribution Requirements	6
	<hr/>
	17

**Some requirements may be satisfied via satisfactory achievement on advanced placement tests or Wilkes' challenge exams.*

PHARMACY PROFESSIONAL PROGRAM

The Professional Program is four years and leads to the Doctor of Pharmacy (Pharm.D.) degree. Graduates of the program are eligible for state examination to become licensed pharmacists after completing appropriate internship hours. The four years of education consist of three years of in-class (i.e., lecture, laboratory, discussion group) and one year of experiential education.

Admission into the Professional Program (Enrollment limit: 65)

To be admitted into the Professional Program of the School of Pharmacy, a student must have either enrolled in and successfully completed

the Prepharmacy Guaranteed Seat Program at Wilkes University as outlined above or have submitted a successful application to the School of Pharmacy.

I. Admission through the Prepharmacy Guaranteed Seat Program

Students enrolled in the Wilkes University Prepharmacy Guaranteed Seat Program who meet the following conditions are automatically admitted to the Professional Program:

- complete four semesters as a full-time pre-pharmacy student and successfully complete, with a 2.0 or higher, **ALL** prerequisite courses at Wilkes University by the spring of the fourth semester (sophomore year). Pre-requisite courses taken must include 8 credits of general chemistry, 8 credits of organic chemistry, 4 credits of general physics, 8 credits of general biology, 4 credits of calculus, 3 credits of statistics, 3 credits of microeconomics and 3 credits of oral communications.
- maintain a **prerequisite cumulative GPA of 3.0** or better for the prerequisite courses listed above through the Spring of your fourth semester (sophomore year).
Failure to maintain your prerequisite cumulative GPA of 3.0 or better in the prerequisite courses listed above through the Spring of your fourth semester (sophomore year) will result in losing the guaranteed seat.
- maintain a cumulative Grade Point Average (GPA) of 3.0 or better for all courses taken through the Spring of fourth semester (sophomore year).
Failure to maintain a cumulative Grade Point Average (GPA) of 3.0 or better in all courses taken through the Spring of your fourth semester (sophomore year) will result in losing the guaranteed seat.
- earn grades of 2.0 or greater in all prerequisite courses through the spring of fourth semester (sophomore year). One prerequisite course grade less than 2.0 may be repeated at Wilkes University with the higher grade replacing the lower grade on the official transcript.
All prerequisite courses must be recorded with a grade of 2.0 or greater by the end of the Spring of your fourth semester (sophomore year). Earning a grade of 2.0 or less in a course that cannot be repeated by the end of the Spring of your fourth semester (sophomore year) will result in losing your guaranteed seat. Also, earning two or more prerequisite course grades less than 2.0, even if one is successfully repeated, will result in

losing the guaranteed seat. (Please see below, Admission through the Application Process.)

- maintain the highest levels of academic and personal honesty throughout the prepharmacy program.
Students caught in the act of cheating, collusion, plagiarism or other and all acts violating the Wilkes University Honesty Policy and/or the Student Code of Conduct may be subject to dismissal from the Guaranteed Seat Program.
- score at least the 25th percentile score in the composite Pharmacy College Admission Test (PCAT).

The School of Pharmacy will accept the highest PCAT scores of multiple attempts.

In addition, advanced placement courses may be accepted in fulfillment of some of these requirements. However, grades for AP-accredited courses will not be factored into the prerequisite or overall GPAs.

A majority of General Education Core Requirements must be completed prior to entering the Pharmacy Program. There is no room in the Pharmacy Curriculum to complete General Education Core Requirements. General Education Core Requirements may be completed at other accredited colleges or Universities and transferred into Wilkes University.

Students in the Wilkes University Prepharmacy Guaranteed Seat Program who do not meet these conditions must compete for available seats in the Professional Program through the application process.

II. Admission through the Application Process

Faculty reserve the right to select from among the applicants who will have the best opportunity to complete the curriculum within four years and have productive professional lives. Admission is based upon the student's academic ability as reflected in grades from prepharmacy courses, number of courses repeated, typical course loads, PCAT scores, total academic career, and references, as well as a successful interview. If applicable, the committee will also consider the most recent academic performance for those non-traditional students returning to college life after hiatus. Each Spring a select group of applicants are invited for an interview, based upon a complete evaluation of all submitted application materials. Any missing documentation will compromise the application.

The number of seats in the professional program available through the application

process is dependent on the number of Prepharmacy Guaranteed Seat Students able to claim a seat. A portion of remaining seats are available on an academically competitive basis to Wilkes students with overall and prerequisite GPAs above a 3.0, and a portion are available to transfer students with overall and prerequisite GPAs above a 3.0 on a competitive basis. To be classified as a Wilkes student, the student must complete and be enrolled at Wilkes University for two full-time consecutive semesters before enrollment in the professional program AND must complete 18 credits of prerequisite courses at Wilkes University by the end of the Spring semester prior to enrollment in the professional program. Failure to meet both of these criteria will result in classification as "transfer student."

How to Apply

To obtain a School of Pharmacy application, you may call or write:

School of Pharmacy
Wilkes University
Wilkes-Barre, PA 18766
(570) 408-4280
1-800-WILKESU ext. 4280
pharm@wilkes.edu

The application can be downloaded from:
www.wilkes.edu/include/academics/pharmacy/apply.doc

Please note: the School of Pharmacy application is different from the Wilkes University application. All applicants must complete the application and return it before February 1 for the upcoming Fall semester.

Pharmacy Minimum Admission Requirements

To be considered for admission to the Professional Program of the School of Pharmacy, the applicant:

- should complete the Wilkes University General Education Course Requirements or have completed a baccalaureate degree;
- must complete all Pharmacy Prerequisite Courses listed below by the end of the Spring semester prior to admission;
- must obtain a minimum overall GPA of 2.50 and a minimum GPA of 2.50 in the Pharmacy Prerequisite Courses listed below (Wilkes student). Preferential consideration will be given to Wilkes students with GPAs of 3.0 or higher.
- must obtain a minimum overall GPA of 3.00 and a minimum GPA of 3.00 in the Pharmacy Prerequisites listed below for preferential consideration (non-Wilkes student);

- obtain a grade of C (2.0) or better in each of the Pharmacy Prerequisite Courses listed below;

Prerequisite grades less than 2.0 may be repeated with the higher grade factoring into the GPA. However, applications will not be considered if more than 2 grades less than 2.0 in prerequisite courses are recorded. In addition, repeating courses in which a grade above a 2.0 was earned will not factor into the GPA. However, exceptions to the above rules will be considered on an individual basis and only if students can provide written explanation of extenuating circumstances.

(Note: admission into the Pharmacy Program is extremely competitive. Earning the minimum academic criteria necessary to submit an application does not in any way infer or promise an interview or admission into the program.)

- must provide three completed recommendation forms, one of which must be from a pharmacist;
- must successfully complete the interview process;
- must demonstrate acceptable written communication skills; and
- must submit scores on the Pharmacy College Admission Test (PCAT) by February 1.

Pharmacy prerequisites:

Two semesters (8 credits) of General Chemistry with labs
Two semesters (8 credits) of Organic Chemistry with labs
Two semesters (8 credits) of General Biology with labs
One semester (4 credits) of Calculus
One semester (3 credits) of Statistics
One semester (4 credits) of General Physics with lab
One semester (3 credits) of Microeconomics
One semester (3 credits) of Oral Communications

III. Pharmacy Organization

Professional Standards

Students enrolled in the program of the School of Pharmacy are expected to endorse professional standards by subscribing to the Oath of the Pharmacist. Students are also expected to abide by the American Pharmacists Association's Code of Ethics of the Profession.

Progression Requirements

All students in the Professional Program of the School of Pharmacy are required to meet minimum standards for progression. Academic progression requirements include a minimum

semester and a cumulative pharmacy GPA of 2.0. In addition, no student shall be allowed more than 8.0 credits of less than 2.0 grades in required professional courses both inside and outside of the School. Any course with a grade of 0.0 must be repeated. At the end of each semester the progress of each student in the Professional Program will be reviewed. Students failing to meet minimal academic standards at the end of any semester must petition the Student Review Subcommittee through the Assistant Dean to further progress in the School. More inclusive policies, including but not limited to acceptable classroom and experiential site behavior, alcohol and substance abuse, and other issues impacting the image of the professional program and the student, adopted within these guidelines are distributed to all students in the school of pharmacy.

Experiential Curriculum Component

Experiential learning is a critical component of the curriculum at Wilkes. Before being placed in an experiential setting, all students are required to:

- possess professional liability insurance,
- have documentation of immunizations,
- pass a physical examination,
- be certified in Basic Cardiac Life Support and Basic First Aid,
- possess an active Pennsylvania Pharmacy Intern License, and
- pass a drug test.

The Introductory Pharmacy Practice Experience (IPPE) consists of a number of different experiences. During the summer following successful completion of the P-1 year, students will complete a 2-week (80 hour) Introductory Pharmacy Practice Experience (IPPE I). The second professional year (the P-2 year) includes 40 hours of IPPE II during the fall and/or spring semester. In addition, students will complete a 2-week (80 hour) IPPE III during the summer after the P-2 year. In the third professional year (P-3) of the professional program, the curriculum includes a two-semester course in service learning (longitudinal care), and 40 hours of IPPE IV. These P-2 and P-3 experiences are in the Wilkes-Barre/Scranton area, but are away from campus.

The fourth professional year (the P-4 year) of the professional program is devoted to Advanced Pharmacy Practice Experience (APPE). Each student will be assigned to 1

six-week rotation, plus 6 five-week rotations, some of which may be at some distance from the Wilkes-Barre area. As much as possible, The School of Pharmacy will assist in locating safe, affordable housing for clerkships. Since patient care is a continuous activity, some experiences may be conducted outside of regular school/business hours. Note also that APPE start and end dates do not adhere to the regular university calendar. The student is responsible for paying all transportation and housing costs for all experiential components of the curriculum.

Graduation, Degree and Licensure Requirements

It is the student's responsibility to meet all graduation requirements, and it is expected that all students accepted into the Pharm.D. Program will meet regularly and frequently with their advisors to ensure timely progress toward their Doctor of Pharmacy degree. Graduation is dependent on successful completion of all required and elective course requirements in the School of Pharmacy (see Progression Requirements) AND completion of all General Education Requirements mandated by Wilkes University.

A student entering the Professional Program with a bachelor's degree from a four-year accredited college or university is exempted from the University's General Education Requirements, but is not exempted from the prerequisite entry requirements prescribed by the School of Pharmacy for entry into the Professional Program.

All non-degreed students entering the Professional Programs are encouraged to complete the General Education Requirements prior to beginning the Professional Curriculum, and especially before the completion of the second professional year (P-2). As a matter of record, non-degreed students who have successfully completed the second professional year (P-2) in the School of Pharmacy AND completed all General Education Requirements will be awarded a generic Bachelor of Science degree. The pass-through B.S. degree does not meet eligibility requirements for licensure as a pharmacist; it is only intended to acknowledge the academic achievement of students completing four years of university-level education.

Pharmacy licensure is governed by state law. All states require graduation from an accredited School or College of Pharmacy. Additional requirements for licensure should

The Nesbitt College of Pharmacy and Nursing

be requested from the state in which licensure is sought. It is the student's responsibility to fulfill all requirements for the state in which they seek licensure. Students must contact that State Board of Pharmacy for all appropriate paperwork. For further information, please contact the Dean's Office in the School of Pharmacy.

The School of Pharmacy reserves the right to revise the Pharmacy Curriculum at any time in order to prepare students for future practice roles, meet new accreditation requirements and to incorporate innovations in instruction.

**DOCTOR OF PHARMACY PROGRAM
REQUIRED COURSES AND RECOMMENDED
COURSE SEQUENCE FOR PROFESSIONAL
PROGRAM**

P-1 Fall Semester	
PHA 301 Found. of Pharm. Practice I	2
PHA 308 Pharm. and Health Care Delivery	3
PHA 311 Pharmaceutics I	4
PHA 313 Pharm. Calculations	1
PHA 327 Medical Microbiology	4
PHA 331 Anatomy/Physiology I	4
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P-1 Spring Semester	
PHA 302 Pharmacy Care Lab I	1
PHA 304 Found. of Pharm. Practice II	2
PHA 310 Clinical Research Design	3
PHA 312 Pharmaceutics II	4
PHA 332 Anatomy & Physiology II	4
PHA 365 Medical Biochemistry	4
	<hr/>
	18
P-1 Summer	
PHA 335 Intro. Pharmacy Practice Exp (IPPE I)	2
P-2 Fall Semester	
PHA 401 Pharmacy Care Lab II	1
PHA 405 Pharmaceutical Care Systems	2
PHA 411 Biopharm/Clinical Kinetics	4
PHA 421* Pharmacotherapeutics I	2
PHA 423* Pharmacotherapeutics II	2
PHA 425* Pharmacotherapeutics III	3
Elective	2-3
	<hr/>
	16-17
P-2 Spring Semester	
PHA 410 Biotechnology/Immunology	3
PHA 412 Mgt. of Pharm. Operations	3
PHA 426* Pharmacotherapeutics IV	2

PHA 428* Pharmacotherapeutics V	4
PHA 430* Pharmacotherapeutics VI	2
PHA 440 IPPE II	1
Elective	2-3
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	17-18

P-2 Summer	
PHA 445 IPPE III	2

P-3 Fall Semester	
PHA 501 Pharmacy Care Lab III	1
PHA 503 Longitudinal Care I	1
PHA 505 Pharmacy Law	2
PHA 509 Economic Evaluation of Pharm.	3
PHA 521* Pharmacotherapeutics VII	2
PHA 523* Pharmacotherapeutics VIII	4
PHA 525* Pharmacotherapeutics IX	2
Elective	2-3
	<hr/>
	17-18

P-3 Spring Semester	
PHA 502 Pharmacy Care Lab IV	1
PHA 504 Longitudinal Care II	1
PHA 526* Pharmacotherapeutics X	2
PHA 528* Pharmacotherapeutics XI	2
PHA 530* Pharmacotherapeutics XII	4
PHA 532 Alternative Medicine/Nutrition	3
PHA 555 IPPE IV	1
Elective	2-3
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	16-17

***Sequential Courses**

**P-4 Advanced Pharmacy Practice Experiential
Year
Duration: 36 Weeks Credits: 36**

APPE Rotations

The APPE portion of the curriculum consists of 7 rotations in various settings. Rotation #1 is 6 weeks in duration. Rotations #2-7 are 5 weeks in duration.

There are four required APPE rotations.

- PHA 510 Internal Medicine
- PHA 511 Ambulatory Care
- PHA 512 Community Practice
- PHA 513 Health System

In addition, there are three elective APPE rotations. Information will be provided during the P-3 year.

SCHOOL OF NURSING

DEAN: DR. MARY ANN MERRIGAN

Faculty: *Associate* *Professors:*

Merrigan, Zbegner, Zielinski

Assistant Professors: Darby, Daughtry,

Golder, Havrilla, McCormick, Malkemes,

Rosenquist, Ruppert, Sheikh, Soprano,

Stewart

Nursing Associates: Bilder, Grandinetti

Adjunct Faculty: Babcock

Faculty Emeriti: Castor, Druffner, Schreiber,

Telban

Director of Clinical Nursing

Simulation Center: Chmil

Clinical Associate: Dennis

Director of Experiential Learning: Drozdis

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED
FOR A MAJOR IN NURSING LEADING TO THE B.S.
DEGREE — 127.**

ACCREDITATION

The baccalaureate program in Nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by the Commission on Collegiate Nursing Education (CCNE).

Philosophy and Curriculum

The practice of professional nursing is a deliberative process of assessing, analyzing, planning, implementing, and evaluating care with clients that promotes and restores health and prevents illness. The baccalaureate program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care.

Professional nursing is based upon the integration of knowledge from the humanities, the physical and social sciences, nursing theories and research. The curriculum is based on the development of the individual throughout the life cycle.

The curriculum flows from the philosophy and covers a four-year academic period. It includes integrated nursing courses, electives and the General Education Requirements. Due to the cultural diversity of clients, it is suggested that students consider taking a foreign language. Written agreements with the cooperating hospitals and agencies in Northeastern Pennsylvania ensure clinical facilities for the student's practice, which is concurrent with the classroom theory. **(STUDENTS ARE RESPONSIBLE FOR THEIR OWN TRANSPORTATION TO ASSIGNED CLINICAL AREAS.)**

In addition, opportunities for learning are provided in the Clinical Nursing Simulation Center, which is equipped with audio-visual and computer-assisted instructional materials. A simulated clinical environment allows the student to practice the psychomotor skills necessary in nursing practice. A faculty member is available to assist the students.

Advanced Placement

The School of Nursing provides advanced placement for applicants to enter the program at their level of competency. Previous education and/or practical experience which would involve repetitive learning justify advancing the applicant to higher level responsibilities.

Transfer and professional master's students, registered nurse students and licensed practical nurses are required to have a personal interview with the school chairperson or her designee to plan their program and to determine their placement status before they can be accepted into the Wilkes Nursing Program.

SPECIFIC REQUIREMENTS FOR THE NURSING PROGRAM

Students majoring in Nursing are required to have completed courses in English (4 units), Social Studies (three units), Mathematics (two units including Algebra), and Science (two units including Biology and Chemistry) during their secondary school program.

The student of nursing assumes all the financial obligations listed in the section on fees in this Bulletin. Additional expenses incurred in the Nursing Program are listed in the Nursing Student Handbook. A price list for these items follows.

Students must obtain from the Department Secretary, early each May, the appropriate health examination forms to be completed and returned to the School of Nursing by June 15th. Failure to have all examinations completed and documented by June 15th results in a \$100 late fee.

In order to progress into clinical nursing courses, students must complete the Kaplan Nursing Admission Test from Kaplan and LWV Integrated Testing Program with a composite score at the 55th percentile or better in each of the following: Essential Math Skills, Science Reading Comprehension, and Written Comprehension.

The Nesbitt College of Pharmacy and Nursing

Clinical nursing courses are introduced in the sophomore year. Satisfactory clinical performance is an essential component of each nursing course. All nursing majors must earn a 2.0 or better in all nursing courses, the required science courses (BIO 113, 115-116; Physics 170; EES 242), and English 101 to continue in the program. A nursing student who earns less than a 2.0 in a nursing course may repeat that course once. A nursing student who earns less than a 2.0 in a second nursing course is ineligible to continue in the nursing program.

A student may be required to submit, at any time, to a health evaluation by a physician, or nurse practitioner, if evident limitations interfere with the student's practice or learning.

In addition to fulfilling the academic requirements of the University, students majoring in Nursing are required to successfully complete comprehensive examinations and required studies as assigned by the School of Nursing before being eligible to graduate.

LPN-BS PROGRAM

Licensed Practical Nurse (LPN) students have the opportunity to challenge the first clinical year in Nursing by successfully completing examinations and the National League for Nursing (NLN) Mobility Examinations. These examinations are used to facilitate the LPN to RN transition.

For details and enrollment information, contact the Dean of the School of Nursing.

RN-BS PROGRAM

This program is designed for students who are already Registered Nurses (RNs) and have graduated from AD or diploma nursing programs. This practice is in compliance with the Pennsylvania Articulation Plan to promote educational mobility of RNs based on a common core of knowledge that is recognized without special testing. Upon successful completion of NCLEX-RN and Nursing 299 the student is awarded 36 Wilkes Nursing credits. Registered Nurse students meet the same academic requirements as the basic students with the exception of the total number of credits required (RNs' total number of credits is 120, a reduction of seven elective credits).

RN-MS PROGRAM

This program is designed for the experienced, practicing professional who plans to earn an advanced degree in nursing. Acceleration through the baccalaureate portion of the

program allows this professional to enter into advanced practice efficiently.

For details and enrollment information, contact the Dean of the School of Nursing.

PROFESSIONAL MASTER'S PROGRAM

This program admits students with baccalaureate degrees, but no previous nursing education, and prepares them for entry into the nursing profession. Upon successful completion of the program, students are awarded a Master's Degree in Nursing (THIS IS NOT AN ADVANCED PRACTICE DEGREE.)

The program is designed for students who already hold a baccalaureate degree in a discipline other than nursing. Completion of the requirements for this master's-level program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care. The curriculum is designed for the adult learner and builds upon earlier educational experiences in the humanities, social studies and sciences. It is based on the development of the individual throughout the life cycle.

The curriculum flows from both the University's and the Department's philosophies and addresses the nursing needs of the region and the nation. It provides opportunity for individuals with changing career aspirations, and it is designed to prepare the learner for a variety of roles in professional practice. Following completion of the prerequisite courses, the program can be completed in three full-time semesters.

Graduates of the Professional Master's Program will earn a Master of Science degree and will be educationally eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN), which must be successfully completed for registration as a professional nurse. A pass-through Bachelor of Science degree with a major in Nursing will be entered on the student's transcript upon completion of all Clinical Nursing courses.

PREREQUISITES:

- Applicants must have received a baccalaureate degree from an accredited institution with a minimum undergraduate GPA of 3.0.
- A 3-credit elementary statistics course is required and two semesters of anatomy and physiology and one semester of microbiology, with a related laboratory

experience in each of these courses, are required.

- A self-study Medical Terminology module (details and information provided by the Nursing Department) must be completed.
- The Kaplan Nursing Admission and LWV Integrated Testing Program must be completed with a composite score in the 60th percentile or better in each of the following: Essential Math Skills, Science Reading Comprehension, and Written Comprehension.
- Applicants whose native language is not English or who hail from non-English-speaking countries must submit satisfactory scores on the TOEFL along with their applications.
- Nutrition, a co-requisite course, is to be completed no later than the student's first semester in the Professional Master's Program.

**Clinical hours will be distributed among Acute, Chronic and Community settings.*

LENGTH OF PROGRAM:

- The total number of credits to complete the Professional Master's Program, beyond the pre- and co-requisite requirements, is 48.
- The Program can be completed in three full-time semesters.

ACADEMIC PROGRESSION:

- Any grade below 80 in a nursing course is a failure. A student who is unsuccessful in a nursing course is ineligible to continue in, and may not return to, the Professional Master's Program.

**PROFESSIONAL MASTER'S PROGRAM*-
REQUIRED COURSES AND RECOMMENDED
COURSE SEQUENCE**

First Semester

NSG 401 Nursing Practice I	12
NSG 505 Current Perspectives in Nursing	3
	<hr/> 15

Second Semester

NSG 402 Nursing Practice II	12
NSG 406 Advanced Health Assessment	3
NSG 498 Pharmacotherapeutics and Clinical Decision-Making in Nursing A	2
	<hr/> 17

Third Semester

NSG 403 Nursing Practice III	12
NSG 502 Application of Nursing Research	3
NSG 498 Pharmacotherapeutics and Clinical Decision-Making in Nursing B	1
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The Nesbitt College of Pharmacy and Nursing

License to Practice

Candidates for a license to practice in the health field are required to have "good moral character." The Pennsylvania State Board of Nursing takes into consideration, when deciding on the applications for registration and a license to practice under their jurisdiction, whether candidates have been convicted of any felony or misdemeanor. Candidates are referred to the regulations specified in the Professional Nurse Law (P.L. 317, No. 69).

Additional Nursing Expenses and Fees

Items	Freshman	Sophomore	Junior	Senior
National Student Nurses Association (NSNA)	\$80		\$80	
Uniform Shirt		\$25-30		
Uniform Pants		\$15-25		
Lab Coat/Scrub Jacket		\$20-40		
Scrubs		\$20-30		
Uniform Shoes		\$40 and up		
Stethoscope		\$30 and up		
Bandage Scissors		\$6		
Hemostats		\$6		
Pen Light		\$2-6		
BP Cuff		\$30		
AHA CPR Certification for Health Care Providers		\$30		\$30
Criminal Record Check		\$40 and up		
PA Child-Abuse-History Clearance		\$10		
Physical, Immunizations, and PPD		\$100 and up*	\$100 and up*	\$100 and up*
Liability Insurance		\$30-40**	\$30-40**	\$30-40**
Comprehensive Examinations		\$70 per semester**	\$70 per semester**	\$70 per semester**
Field Trip				Approx. \$100**

*May be covered by student's medical insurance.

**Will be billed by Financial Management Office.

THE SCHOOL OF NURSING FACULTY RESERVES THE RIGHT TO REVISE THE NURSING MAJOR REQUIREMENTS AS DEEMED NECESSARY AT ANY TIME TO PREPARE STUDENTS FOR NEW AND EMERGING ROLES IN NURSING.

NURSING MAJOR- REQUIRED COURSES
AND RECOMMENDED COURSE SEQUENCE

First Semester

NSG 171 Health Care Terminology
 BIO 115 Human Anatomy and Physiology I
 ENG 101 Composition* or Distribution Requirement
 PSY 101 General Psychology or
 SOC 101 Intro. to Sociology or
 ANT 101 Intro. to Anthropology*
 FYF 101 First-Year Foundations

NSG 310 Nursing Care of the Older Adult Client

NSG 305 Intro. to Nursing Research

Electives

1

Eighth Semester

NSG 320 Senior Practicum

NSG 303 Contemporary Issues and Trends in Nursing

Electives

* Please note students must take Eng 101 and both
 Psy and Soc/Ant 101 during their freshman year.

**Please note: Math 150 is required and prerequisite
 to Nsg 305.

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Second Semester

BIO 113 Microbiology
 BIO 116 Human Anatomy and Physiology II
 ENG 101 Composition* or Distribution Requirement
 PSY 101 General Psychology or
 SOC 101 Intro. to Sociology or
 ANT 101 Intro. to Anthropology*
 ANT 101, 212, SOC 251 or 263 or Distribution Requirement

Third Semester

NSG 200 Principles of Normal Nutrition
 NSG 210 Principles of Nursing
 NSG 273 Physical Assessment
 PHY 170 Concepts in Physics and Chemistry

3

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Fourth Semester

NSG 220 Nursing Care of the Childbearing Family
 NSG 230 Nursing Care of the Childrearing Family
 EES 242 Environmental Health
 PSY Elective
 ANT 101, 212, SOC 251 or 263 or Distribution Requirement

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Fifth Semester

NSG 240 Nursing Care of the Adult Client I
 NSG 268 Pathophysiology for the Professional Nurse
 MTH 150 Elementary Stats**
 Distribution Requirement

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Sixth Semester

NSG 250 Nursing Care of the Adult Client II
 NSG 260 Nursing Care of the Psychiatric Mental Health Client
 NSG 272 Pharmacotherapeutics and Decisionmaking in Nursing
 Distribution Requirement

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Seventh Semester

INTERDISCIPLINARY MAJORS, INTERDISCIPLINARY MINORS, AND SPECIAL PROGRAMS

INTERDISCIPLINARY MAJORS

Individualized Studies Major

INTERDISCIPLINARY MINORS

Women's Studies Minor

SPECIAL PROGRAMS

Army ROTC (Military Science)

Cooperative Education

Pre-Law Studies

Pre-MBA Studies

Study Tour Experience

INTERDISCIPLINARY MAJORS

INDIVIDUALIZED STUDIES MAJOR

This program is designed for those capable and motivated students who wish to undertake a course of study that cannot be provided by any of the offered bachelor's degree programs. The student will be responsible for submitting a coherent written proposal for a program of study which must be attached to an Individualized Studies form available in the Registrar's Office and submitted to the Academic Standards Committee no later than the first semester of the student's junior year. The proposal should articulate what the course of study is, why the existing degree alternatives do not fulfill that course of study, and how the student will make use of existing Wilkes courses to accomplish his or her degree requirements. The proposal may be composed solely by the student; however, the student should seek the advice of his or her advisor in formulating the plan. The program of studies must take minimally three additional full-time semesters to complete, and may include courses offered by all departments at the University. The student's record must demonstrate previous academic excellence at Wilkes University. In addition, credit may be assigned for appropriate off-campus study, work, and/or travel, or for knowledge or experience obtained prior to enrollment, with approval of the appropriate department and the Academic Standards Committee. The proposal must be approved by an appropriate advisor, and then by the Academic Standards Committee.

Degree Requirements

The basic requirements for the degree in Individualized Studies are the accumulation of at least 120 credits, the completion of the Wilkes University General Education Requirements, and the completion of an appropriate number of Junior/Senior-level courses.

See also Majors in Applied and Engineering Sciences; Biology Major/Marine Science Option/Minor in Earth and Environmental Sciences; Computer Information Systems; Criminology; Earth and Environmental Sciences Major/Marine Science Option/Biology Minor; Health Sciences; Integrative Media; International Studies; Medical Technology; Musical Theatre; and Nursing.

INTERDISCIPLINARY MINORS

WOMEN'S STUDIES MINOR

Women's Studies Coordinating Committee: Professors Anthony, Batory, Bracken, Elmes-Crahall, Garr, Hamill, Kalter, Stanley, Taylor, Tindell, Tuttle

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The Women's Studies Program at Wilkes University welcomes students interested in the study of women, gender, sexuality, and feminism. This interdisciplinary program offers courses in a wide range of subject areas in the social sciences, humanities, sciences and contemporary arts.

The Women's Studies Minor focuses on expanding traditional scholarship by studying the ways gender has structured intellectual and social traditions. The minor is designed to add a professionally and personally valuable concentration for students majoring in such areas as business, sociology, English, communications, psychology, and nursing, as well as for students in pre-medical and pre-law courses of study.

Students may earn the minor by taking Women's Studies 101 and 15 credit hours of designated Women's Studies eligible courses. Students are additionally required to complete a major research project in their senior year that addresses gender as a category of analysis; ideally, the project will be integrated with the Capstone in the student's major. Students who intend to pursue a minor in Women's Studies should take WS 101 before taking more than two other courses offered in the minor.

Students who wish to declare the minor should contact the Women's Studies Program Coordinator, Professor Holley Hansen, 321 Breiseth Hall, holley.hansen@wilkes.edu to aid them in the selection of courses and assist in the development of the senior-year research project.

See also Minors in Aerospace Studies; Computer Engineering; Criminology; International Studies; Neuroscience; Policy Studies; Statistics.

SPECIAL PROGRAMS

ARMY ROTC (MILITARY SCIENCE)

CHAIRPERSON: LIEUTENANT COLONEL HAINES

Faculty: Professor Major Ramsey

Wilkes University offers students the opportunity to participate in Army ROTC at

Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

nearby King's College through the Northeast Pennsylvania Officer Training Corps Battalion. The classes are given in Benaglia Hall at King's College, a 5-minute walk north on Franklin Street from Wilkes University. Students that participate in this program do so without penalty to their full-time academic status at Wilkes University.

The primary objective of the Army Reserve Training Program is to develop leadership capabilities in students and to train future officers for the active Army, US Army Reserve and the Army National Guard.

Army ROTC is a flexible program that can be tailored to the individual student's schedule particularly in the freshman and sophomore years. Military Science instruction is offered at King's College with both two- and four-year programs leading to a commission as an officer in one of the three components of the United States Army.

To obtain a commission, qualified male and female students must pass a physical examination and complete either the two- or four-year program of Military Science courses. Students normally take one course per semester during their four-year course of study.

All students receiving ROTC scholarships, as well as juniors and seniors and some sophomores participating in Army ROTC, are contracted with the Army and receive a monthly stipend. The stipend starts as \$300 per month during their freshman year, increases to \$350 during their sophomore year, \$450 during their junior year and \$500 during their senior year. The stipend is paid directly to the student each month that the student is in school.

The Army ROTC Department provides all uniforms, equipment and textbooks required for the classes. In addition to the academic classes, students may also participate on a voluntary basis in many additional training opportunities such as physical training and hands-on equipment training each week. Each semester there is a military social event and at least one optional weekend training session that includes such events as military marksmanship, cross country orienteering, military rappelling, leadership application courses and obstacle/confidence courses. During breaks and vacations students can volunteer for active army training such as military parachute operations, helicopter operations, military mountain climbing and training with active Army units in the United States and overseas. All training is cost-free to

the student and students are paid for some summer training courses.

The ROTC program consists of two programs, the basic course normally given during the freshman and sophomore years and consisting of MS 211, MS 212, MS 221 and MS 222, and the advanced course, normally taken during the junior and senior years and consisting of MS 231, MS 232, MS 241, MS 242 and MS 251.

Students who have completed basic training in any U.S. service may qualify for placement in the advanced course. Additionally, students who have not completed the ROTC basic course may qualify for the advanced course by attending a paid four-week Leadership Training Course conducted at Fort Knox, Kentucky.

Freshman and sophomore students can compete for two-, three-, and four-year ROTC scholarships that pay full tuition and up to \$1200 per year for books. The Army will commission graduates as second lieutenants with a starting salary of over \$40,000 per year plus medical and dental benefits as well as 30 days paid vacation per year.

For more information on the Army ROTC program at Wilkes University contact the Army ROTC Department at 570-208-5900 ext 5305 or ext 5301.

The Basic Course constitutes a two-year program for freshmen and sophomores and is designed to provide a general knowledge of the roles, organization, missions, and basic leadership techniques. Students enrolled in the Basic course who are not receiving Army ROTC scholarships incur no military obligations.

Basic Course

Consists of two one-credit and two two-credit courses, which provide students with a basic level of military knowledge and are open to all freshmen and sophomores. Students enrolling in basic level courses incur no military service obligation. Course credit values are shown with each course.

First Semester

MIL 211 Concepts of Leadership I	1
MIL 251 Leadership Laboratory	0
	1

Second Semester

MIL 212 Concepts of Leadership II	1
MIL 252 Leadership Laboratory	0
	1

Third Semester

Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

MIL 221 Dynamics of Leadership I	2
MIL 251 Leadership Laboratory	0
	2
Fourth Semester	
MIL 222 Dynamics of Leadership II	2
MIL 252 Leadership Laboratory	0
	2

Army ROTC is a flexible program and variations of this schedule are possible. Sophomores and second-semester freshmen with no prior military experience can enroll in more than one basic level class under the ROTC Compression Program. Students who have not completed the basic courses and have at least two years remaining until graduation may still apply for entry into the Advanced Course, but must qualify for advanced placement credit.

Advanced Course

Consists of two two-credit and six one-credit courses open to students who have three or four semesters of college remaining. Course credit values are shown with each course.

Fifth Semester

MIL 100 Physical Fitness Training	1
MIL 231 Military Leadership I	2
MIL 251 Leadership Laboratory	0
	3

Sixth Semester

MIL 100 Physical Fitness Training	1
MIL 232 Military Leadership II	1
MIL 252 Leadership Laboratory	0
	2

Seventh Semester

MIL 100 Physical Fitness Training	1
MIL 241 Advanced Military Leadership I	2
MIL 251 Leadership Laboratory	0
	3

MIL 251/252 (Leadership Laboratory) and MIL 100 (Physical Fitness Training) are mandatory for all cadets enrolled in the Army ROTC Advanced Course as well as ROTC scholarship recipients and must be taken concurrently with each Military Leadership course.

COOPERATIVE EDUCATION AND INTERNSHIPS

Cooperative Education is a program that formally integrates a student's studies with work experiences in employing organizations. Students may alternate semesters of full-time study and full-time professional work experience or they may combine work and

study in the same term; in either case, students earn academic credit and, in many cases, a salary while gaining valuable experience in a work environment. Internships are available throughout the United States in the summer, spring and/or fall, and assistance with internship placements is readily available to eligible students. Students are urged to explore the various possibilities with the Coordinator of Cooperative Education as early as their sophomore year.

PRE-LAW STUDIES

Pre-law Advisory Council: Professors Hepp, Kuhar, Liuzzo, Whitman

Coordinating Pre-Law Advisor: Kreider

Wilkes University has developed a carefully designed Pre-law Advisory Program which has proved able to provide exceptionally effective support for students seeking admission to graduate schools of law. The Pre-law Program at Wilkes is based on the principle that admission to, and success in, law school depends upon completion of a rigorous curriculum at the undergraduate level as well as an up-to-date understanding of the law school admission process. One of the greatest strengths of Wilkes University is its ability to provide students from different educational backgrounds with a sound education that prepares them for the challenges of leading professional schools.

Law schools do not prescribe a specific undergraduate major but rather suggest a broadly-based educational program that enhances the student's ability to reason, read analytically, and write effectively. Students interested in law school may major in any field, but the most frequently chosen areas are: political science, English, history and business administration. Majors such as Philosophy, Sociology, Nursing, Biology, Engineering, Computer Science, Psychology, or Earth and Environmental Sciences also provide appropriate preparation for legal studies. Indeed, a major in a technical field may be especially useful in particular aspects of legal practice.

Advising

Wilkes students are assigned to faculty advisors in the areas of their majors. These advisors guide them regarding degree requirements in particular fields. Pre-law students also consult with a designated pre-law advisor, who acquaints them with aspects of legal study and practice. The pre-law advisor has available law school catalogs and information on the Law School Admission Test (LSAT). We strongly

Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

recommend that the LSAT be taken during June between the junior and senior year.

As the senior year approaches, the pre-law advisor can provide suggestions as to which law schools are most likely to admit students with particular academic records and LSAT scores. Most importantly, the pre-law advisor helps to overcome the myths which too often affect student thinking about law schools.

PRE-MBA STUDIES

The Jay S. Sidhu School of Business and Leadership offers a nationally accredited Master of Business Administration program that expands business knowledge, management skills and leadership capability of current and future professionals from many disciplines, functions, and jobs to enhance their success at work, adding value both for the student and for the organizations with which the student is associated. The program offers advanced training in the functional areas of business and also provides the opportunity for specialization in a selected field through additional training in Accounting, Entrepreneurship, Finance, Health Care Administration, Human Resources Management, International Business, Marketing, Operations Management, or Organizational Leadership and Development. An MBA degree is appropriate for students of any academic discipline who would like to receive the analytical and strategic skills they need to step confidently into the business world.

Undergraduate students who are interested in pursuing an MBA degree can register for the Pre-MBA program during any year of undergraduate study. This program is designed to prepare students with a variety of academic backgrounds for the MBA program. Undergraduate students may use undergraduate required and elective courses to satisfy MBA prerequisite Foundation Courses. These courses, each bearing one credit, represent fundamental business competencies. Up to twelve credits may be waived. This gives students the opportunity to earn an undergraduate degree and an MBA within five and one-half years. Listed below are the Foundation Competencies and the Undergraduate Course(s) that satisfy each.

Foundation Competency	Undergraduate Course Equivalent(s)
Financial Accounting	ACC 161
Managerial Accounting	ACC 162
Finance	BA 341 or EGM 320
Management	BA 351, PHA 412 or ENT

201

Marketing	BA 321
Law	BA 233 or 234 or PHA 505
Macroeconomics	EC 101 or PHA 509
Microeconomics	EC 102
International Business	BA 358
Statistics	BA 319, PSY 200, MTH 150 or ENT 321
Operations Management	BA 352 or EGM 336
MIS	BA 257 or ACC 341 or EGM 321

Students who enter the Pre-MBA program will be counseled by a graduate advisor. Advising sessions are used as an opportunity to prepare students for entrance into the MBA program through communication of student career ambitions and strengths and identification of course scheduling options. It is recommended that entrance into the program occurs within the freshman or sophomore years in order to maximize the number of Foundation courses that will be waived upon degree completion. Students interested in the Pre-MBA program should contact the Office of Graduate Studies at (570) 408-4235 or graduatestudies@wilkes.edu in order to arrange an appointment with a graduate advisor.

STUDY ABROAD

Study Abroad is an elective option to all students in good academic standing who wish to study at foreign institutions. Earned academic credit may be applied toward the requirements for a bachelor's degree at Wilkes. Overseas study may be for a period of a year, a semester, or a summer. Information regarding the specific programs available to Wilkes students is available from the Study Abroad Coordinator. Students wishing to use financial aid to assist with the costs of study abroad must see the Director of Financial Aid and must complete the "Consortium Financial Aid Agreement" form, available in the Registrar's Office. Students must also complete all required application materials of the desired program before registering for Study Abroad. Course selection and preregistration take place with the student's academic advisor in coordination with the Study Abroad Coordinator. Students must complete the "Transfer Credit Request Form" (with all the appropriate signatures) and register for Study Abroad before conducting their study abroad.

STUDY TOUR EXPERIENCE

Study Tour Experience Coordinating Committee: Professors Arora, Hamill, Merryman, Morrison, Starner.

The Study Tour Experience is a unique learning experience recently developed for students who wish to travel but who cannot afford the time to spend an entire semester abroad. The Study Tour Experience is a three-credit course with a variety of sections designed to give students the opportunity to experience another culture through an intensive period of study and travel abroad under the guidance of a knowledgeable instructor. Offered during summer sessions or winter break intercessions, current sections include tours to China, India, Africa, England, and Malaysia. New sections are being developed continuously.

The Study Tour Experience has four components: a pre-travel orientation, the concentrated group travel experience, a writing emphasis, and a post-travel follow-up session. The five- to ten-day period of on-campus pre-travel orientation includes an overview of the geography, ecology, history, language, art, and culture of the country or area of study. The group travel portion of the course consists of a ten- to fourteen-day study tour guided by a course instructor who is particularly well experienced in the culture. Students will be more than tourists; they will be afforded an up-close, interactive, hands-on experience that will be memorable, enjoyable,

and educational. In addition, students will be expected to keep a detailed travel journal and, after the trip, write a paper or conduct a short project appropriate to the area of study. Finally, upon return to campus a follow-up session will be held in which students will meet for a joint class debriefing to share insights and reflections.

One unique feature of this learning experience is that it is available for credit or without credit. Students may receive three elective credits for the study tour at the significantly reduced tuition of \$500, in addition to travel expenses. Those who elect to travel but receive credit will pay only touring costs, generally not to exceed a maximum of \$3,000. Travel fees are intended to include all costs, including air and overland travel, hotels, meals, transfers, visas and inoculations where required. These credits may then be used in a variety of ways, to be determined by each division of the University. Furthermore, the course is open to alumni and community members who might wish to accompany friends and family members abroad, or who might simply want to travel in the comfort and safety of a Wilkes University program.

Anyone who is interested in further details about the Study Tour Experience should contact the Center for Continued Learning or any member of the coordinating committee.

COURSE DESCRIPTIONS

ACCOUNTING COURSES

ACC 151. INTEGRATED MANAGEMENT EXPERIENCE I
THREE CREDITS

Same as BA 151 and ENT 151. See BA 151 for course description.

ACC 152. INTEGRATED MANAGEMENT EXPERIENCE II
THREE CREDITS

Same as BA 152 and ENT 152. See BA 152 for course description. *Prerequisite: ACC 151 or BA 151 or ENT 151.*

ACC 161. FINANCIAL ACCOUNTING AND DECISION-MAKING
THREE CREDITS

This is a study of the nature, function, and environment of accounting, including the accounting information system, account analysis and decision-making. The course provides an understanding of accounting issues and objectives for proper interpretation and analysis of financial accounting information.

ACC 162. MANAGERIAL ACCOUNTING AND DECISION-MAKING
THREE CREDITS

Managerial accounting is an internal tool to generate information for managerial planning and control. Students will develop an understanding of operating and capital budgets, standard costs, incremental concepts, relevant costs, transfer pricing, and responsibility and profit center reports as a means of analysis as well as techniques of measurement. *Prerequisite: ACC 161.*

ACC 201. INTERMEDIATE ACCOUNTING I
THREE CREDITS

A study of the accounting information system and the accounting standards applicable to corporate balance sheet accounts and their related counterparts that result in revenue and expense recognition on the income statement and statement of retained earnings. Course topics include the financial accounting standards, financial statement preparation, cash and receivables, inventories and cost of goods sold, and plant and depreciation. *Prerequisite: ACC 161.*

ACC 202. INTERMEDIATE ACCOUNTING II
THREE CREDITS

This course is a study of the accounting standards applicable to intangible assets, liabilities, and stockholders' equity. Also, it focuses on the application of generally accepted accounting principles that relate to various technical reporting areas within financial statements. Emphasis is placed on technical standards and the necessary disclosure requirements for these reporting areas. Course topics include earnings per share, securities that can dilute earnings per share, corporate investments and accounting for corporate income taxes and pensions. *Prerequisite: ACC 201.*

ACC 301. ADVANCED FINANCIAL ACCOUNTING
THREE CREDITS

A comprehensive review and analysis of various accounting issues relating to corporate consolidations, partnerships, governmental units, non-profit organizations, estates, trusts, and bankruptcies. Extensive computerized applications are an integral part of this course. *Prerequisite: Acc 202.*

ACC 311. ADVANCED MANAGERIAL ACCOUNTING
THREE CREDITS

Advanced treatment of managerial accounting topics with emphasis on generation, communication, and use of information to assist management in performance of the planning and control function. Information systems design, budgeting, variance analysis, and direct costing concepts are covered. *Prerequisite: ACC 162.*

ACC 321. TAXES
THREE CREDITS

Introduction to the Internal Revenue Code for individuals and sole-proprietorships. Preparation of individual tax returns based on the current tax law, regulations, and revenue ruling letters. Introduction to tax research using various traditional and electronic reference services. *Prerequisite: Acc 161.*

Course Descriptions

ACC 322. ADVANCED TAXES THREE CREDITS

Introduction to certain tax laws as they apply to Corporations, S Corporations, and Partnerships. This involves developing a thorough understanding of tax research and how tax planning may help the financial entity to minimize the tax liability. *Prerequisite: Acc 321.*

ACC 331. AUDITING THREE CREDITS

To understand the most important concepts in auditing and how they are used in decision making, evidence accumulation and reporting. This entails understanding the concepts, methods and processes of control that provide for the accuracy and integrity of financial data and the safeguarding of business assets; along with understanding the nature of attest services and the conceptual and procedural bases for performing them. *Prerequisite: Acc 202.*

ACC 341. ACCOUNTING INFORMATION SYSTEMS THREE CREDITS

To develop a solid understanding of and appreciation for the use of accounting information employed to process and sort business events so as to provide information for the functions of financial reporting, internal responsibility accounting and decision support. This understanding includes applications via spreadsheets, databases, general ledgers, and the internet. *Prerequisite: Acc 162 and BA 351.*

ACC 362. ACCOUNTING INTERNSHIP THREE OR SIX CREDITS

This course provides job experience as an entry-level accountant through a minimum of 170 (3 credits) or 340 (6 credits) hours working experience with either certified public accounting firms, governmental agencies, or private businesses. Internships are offered on a competitive basis following student interviews with interested employers. (All courses listed through the seventh semester should be taken prior to this course.) *Prerequisite: ACC 202.*

ACC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

ACC 397. SEMINAR ONE TO THREE CREDITS

ACC 198/298/398. TOPICS VARIABLE CREDIT

Special offerings designed to introduce students to subjects of current interest in accounting which are not covered in other courses.

AIR AND SPACE STUDIES COURSES

AS 101-102. FOUNDATIONS OF THE USAF I/II TWO CREDIT HOURS EACH

This survey course briefly covers topics relating to the Air Force and defense. It focuses on the structure and missions of Air Force organizations, officership and professionalism. It is also a good introduction into the use of communication skills.

AS 103/104. LEADERSHIP LABORATORY NO CREDIT

This course (to be taken in conjunction with AS 101 and 102) is a weekly laboratory that touches on the topics of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies.

AS 201-202 EVOLUTION OF USAF AIR AND SPACE POWER I/II TWO CREDIT HOURS EACH

This survey course is concerned with the beginnings of manned flight and the development of aerospace power in the United States, including the employment of air power in WWI, WWII, Korea, Vietnam, the Gulf War and the peaceful employment of U.S. air power in civic actions, scientific missions and support of space exploration.

AS 203/204. LEADERSHIP LABORATORY
NO CREDIT

This course (to be taken in conjunction with AS 201 and 202) provides you with the opportunity to demonstrate fundamental management skills and prepares you for Field Training.

AS 240. AFROTC FIELD TRAINING (4-WEEKS) (SUMMER)
TWO CREDITS

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics. *Prerequisites: AS 101, 102, 201, 202; an interview by Professor of Air and Space Studies and other military requirements.*

AS 250. AFROTC FIELD TRAINING (5-WEEKS) (SUMMER)
THREE CREDITS

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics. *Prerequisite: Interview by Professor of Air and Space Studies and other military requirements.*

PROFESSIONAL OFFICER COURSES

The Professional Officer Courses (POC) constitute a four-semester program, normally taken during the junior and senior years, leading to commissioning as a U.S. Air Force officer. The POC concentrates on concepts and practices of management and leadership, national defense policy, and communicative skills.

AS 301-302. AIR FORCE LEADERSHIP STUDIES I/II
THREE CREDITS EACH

This course is a study in the anatomy of leadership, the need for quality and management leadership, the role of discipline in leadership situations and the variables affecting leadership. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts. Deal with actual problems and complete projects associated with planning and managing the Leadership Laboratory. *Prerequisite: AFROTC approved membership in the POC or permission of instructor.*

AS 303/304. LEADERSHIP LABORATORY
NO CREDIT

This course (taken in conjunction with AS 301 and 302) provides you the opportunity to develop your fundamental management skills while planning and conducting cadet activities.

AS 401-402 NATIONAL SECURITY AFFAIRS/PREPARATION FOR ACTIVE DUTY I/II
THREE CREDITS EACH

Learn about the role of the professional military leader in a democratic society; societal attitudes toward the armed forces; the requisites for maintaining adequate national defense structure; the impact of technological and international developments on strategic preparedness and the overall policy-making process; and military law. In addition, you will study topics that will prepare you for your first active-duty assignment as an officer in the Air Force.

Prerequisite: AFROTC approved membership in the POC or permission of instructor.

AS 403/404. LEADERSHIP LABORATORY
NO CREDIT

This course (taken in conjunction with AS 401 and 402) provides you with the opportunity to use your leadership skills in planning and conducting cadet activities. It prepares you for commissioning and entry into the active-duty Air Force.

ANTHROPOLOGY COURSES

ANT 101. INTRODUCTION TO ANTHROPOLOGY
THREE CREDITS

A general survey of the processes that generate human cultural and biological variation through time and among contemporary human groups. An introduction to cultural and physical anthropology, archaeology, and anthropological linguistics.

Course Descriptions

ANT 102. CULTURAL ANTHROPOLOGY

THREE CREDITS

A detailed examination of the methods and theories employed in the description and comparison of human cultures, as applied to problems in intercultural relations. Course content is based upon case and cross-cultural studies.

ANT 211. ANTHROPOLOGY THROUGH FILM

THREE CREDITS

A general survey of the use of still photography and cinematography in the depiction of the content of various cultures.

ANT 212. PEOPLES AND CULTURES OF THE WORLD

THREE CREDITS

An overview of social organizations, ethnicity, and cultural developments in various regions of the world: North American Native Americans, the Middle East, Africa, Latin America, Asia. Topics are rotated. The contributions of ecological, economic, political and ideological factors to the region's social system are examined in regard to present cultural obligations.

ANT 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: By arrangement with an instructor and approval of department chairperson.*

ANT 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ANT 198/298/398/498. TOPICS

THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

ART COURSES

ART 101. EXPERIENCING ART

THREE CREDITS

Lectures and discussion on the elements of art and the forerunners of modern and contemporary art. Two and three dimensional studio work is explored through the creative process in a variety of media. Fee: \$40.

ART 111. FUNDAMENTALS OF COLOR AND DESIGN

THREE CREDITS

A basic level design course involving the elements and principles of two-dimensional design and the study of color systems. Fee: \$40.

ART 113. DRAWING

THREE CREDITS

An introductory course exploring the organization and potential of line, space, and texture through a variety of media and subject matter. Fee: \$40.

ART 120. PAINTING I

THREE CREDITS

An introduction to painting methods and materials with an emphasis on composition and basic color theory. Oil, watercolor, and acrylic painting techniques are explored in both realistic and abstract styles. Fee: \$40.

ART 121. PRINTMAKING
THREE CREDITS

An introduction to monotype, intaglio and relief printmaking processes. Traditional and creative contemporary approaches to printing original works on paper in a print workshop environment. Fee: \$40.

ART 122. SCULPTURE
THREE CREDITS

An introductory to the basic concepts of three-dimensional form and space. Modeling in clay from life; and casting, carving and direct building techniques in plaster among other traditional methods of sculpture will be explored. Fee: \$40.

ART 123. CERAMICS
THREE CREDITS

Exploration into the basic methods and techniques of hand building and wheel work. Experimentation in surfaces decoration, glazing, and kiln firing. Fee: \$40.

ART 133. PHOTOGRAPHY
THREE CREDITS

An introduction to the fundamentals of photography; camera usage, subject consideration, lighting, darkroom techniques, and the preparation of photographs for exhibit. Fee: \$40. **NOTE: Each student must have access to an adjustable 35mm camera and provide their own black and white film and photo paper.**

ART 134. COMPUTER GRAPHICS I
THREE CREDITS

A foundation course that introduces the basics of Photoshop, Illustrator, InDesign and Adobe Acrobat, as well as the theory, terminology, and genres of graphic design. Fee: \$40.

ART 140. HISTORY OF ART I
THREE CREDITS

A survey of the art and architecture of Western Civilization from pre-history through the Early Renaissance. Non-western cultures will also be introduced. Slide lectures and discussion will focus on major artworks and trends within their cultural setting.

ART 141. HISTORY OF ART II
THREE CREDITS

A survey of the art and architecture of Western Civilization from the High Renaissance to the present. Slide lectures and discussions will focus on major artists, artworks, and trends within their cultural setting.

ART 220. PAINTING II
THREE CREDITS

Increased emphasis on development of style and experimentation in contemporary art methods and techniques. Fee: \$40. **Prerequisite: Art 120 or permission of instructor.**

ART 234. COMPUTER GRAPHICS II
THREE CREDITS

A continuation of Graphic Design I designed to reinforce further development in Photoshop, Illustrator, InDesign, and Adobe Acrobat, as well as theory, terminology, and genres of graphic design. Includes the use of media and processes of scanning, collage, typography, and layouts for print. Fee: \$40. **Prerequisite: Art 134 or permission of instructor.**

ART 240. MODERN ART AND DESIGN
THREE CREDITS

20th century art and design will be considered in relation to central themes in modern civilization, such as science and technology, social and political revolution, historicism, and formalism. Slide lectures and discussions will treat objects as diverse as paintings and refrigerators, buildings and billboards.

Course Descriptions

ART 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and creative work for advanced students in the field of the major under the direction of a staff member. *Prerequisite: Approval of department chairperson is required.*

ART 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ART 198/298/398. TOPICS

VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Recent studio topics have included Life Drawing, Mural Painting, Color Photography, and Ceramic Sculpture. Past topics in art history have included Modern Architecture, A History of Surrealism, and Nineteenth Century Art. Fee \$40.

BIOLOGY COURSES

BIO 105. THE BIOLOGICAL WORLD

THREE CREDITS

This course presents concepts and modern ideas pertaining to the natural world and the life sciences. Each semester a selected topic will be addressed and explored from an investigative set of perspectives. While the scientific method will be emphasized in each offering, the range of topics, identified as a subtitle in the course offering data, will include for example (1) Genetics, Evolution and Ecology: Implications for a Changing Society, or (2) Human Biology, or (3) Contemporary Issues in the Life Sciences, among others. This course is intended for students who are not majoring in science, engineering, prepharmacy, nursing or B.S. programs in mathematics or computer science. Fall semesters: Human Biology—two hours of lecture and two hours of laboratory per week. Dissections of specimen may be required in the laboratory component. Fee: \$105. Spring semesters: Contemporary Issues in the Life Sciences—three hours of lecture each week.

BIO 113. MICROBIOLOGY

FOUR CREDITS

This course presents the basic principles of bacteriology and the relationship of micro-organisms to disease and its prevention, control, and treatment. It considers the effects of microbes within the body and the body's reaction to them. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$105. Offered every spring semester.

BIO 115-116. HUMAN ANATOMY AND PHYSIOLOGY

FOUR CREDITS EACH

This course provides a general study of the human body, its structure and normal function. It provides an appreciation of the complex nature of the human body with relation to the promotion of a healthy organism. Dissections of specimens are required in the laboratory portion of these courses. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$105 each course. *Prerequisite for Bio 116: Bio 115 or permission of instructor.* Bio 115: Offered every fall semester. Bio 116: Offered every spring semester.

BIO 121. PRINCIPLES OF MODERN BIOLOGY I

FOUR CREDITS

An introduction to concepts of modern biology for students majoring in biology and other sciences. Topics covered include the origin of life, basic biochemistry, cell structure and function, energetics, reproduction and heredity, molecular genetics, and evolution. Four hours of lecture and three hours of laboratory per week. Required of all Biology majors. Laboratory fee: \$105. *Corequisite: Chm 115. Offered every fall semester.*

BIO 122. PRINCIPLES OF MODERN BIOLOGY II
FOUR CREDITS

An introduction to biological diversity and mammalian structure and function for science majors, usually taken as a continuation of BIO 121. Topics include organismal classification, a survey of biological diversity (including characteristics, ecology, phylogenetic relationships, and economic and biomedical uses) of plants, animals and microbes, and an overview of the mammalian body addressing the form and function of key organ systems. Dissections of specimens are required in the laboratory portion of this course. Four hours of lecture, three hours of laboratory per week. Required of all Biology majors. Laboratory fee: \$105. *Offered every spring semester.*

BIO 225. POPULATION AND EVOLUTIONARY BIOLOGY
FOUR CREDITS

This course emphasizes the patterns and processes of evolutionary change in living systems in an ecological context. It reviews the basic characteristics and dynamics of populations, and the relevance of population ecology and population genetics to the evolution of species. Human evolution, sociobiology and other controversial issues are also covered. Laboratory exercises emphasize an experimental approach to more in-depth study of specific topics covered in lecture. Four hours of lecture, three hours of laboratory. Required of all biology majors. Laboratory fee: \$105. *Prerequisite: Bio 121-122. Offered every fall semester.*

BIO 226. CELLULAR AND MOLECULAR BIOLOGY
FOUR CREDITS

Cell structure in relation to function. Biochemistry and physiology of animal, plant, and bacterial cells and their viruses are presented in a molecular biology context. The cell in division and development. Four hours lectures, three hour of laboratory. Required of all biology majors. Laboratory fee: \$105. *Prerequisite: Bio 121-122. Offered every spring semester.*

BIO 306. INVERTEBRATE BIOLOGY
FOUR CREDITS

This course is a study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology, and ecology. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 311. COMPARATIVE PHYSIOLOGY
FOUR CREDITS

Comparative Physiology encompasses the study of organ functions and organ system functions in different animal groups. Emphasis will be on the systemic physiology of vertebrate animals. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 312. PARASITOLOGY
FOUR CREDITS

Parasitology is the study of organisms that live on or within other organisms and the relationship of these organisms to their hosts. This course deals with the common parasites that infect man and other animals. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 314. COMPARATIVE VERTEBRATE ANATOMY
FOUR CREDITS

This course deals with the evolution and anatomy of the organ systems of vertebrates. Lectures survey the comparative anatomy of the vertebrate classes. Laboratory Dissections include the Lamprey, Shark, Mud Puppy, and Cat in detail. Lecture three hours per week, laboratory three hours per week. Laboratory fee: \$105. *Prerequisites: BIO 121-122, 225. Offered in alternate years.*

BIO 321. MAMMALIAN PHYSIOLOGY
FOUR CREDITS

This course examines the function of mammalian systems with regard to homeostasis, metabolism, growth and reproduction. Normal physiological processes as well as some pathophysiological situations are covered. The emphasis is on human physiology; however, other mammalian systems are discussed to demonstrate physiological adaptability to various environmental situations. Laboratory exercises include physiological experimentation in living systems and in computer

Course Descriptions

simulations. Lecture: three hours; Laboratory: three hours. Fee: \$105. *Prerequisites: Bio 121-122, 226, or permission of instructor. Offered in alternate years.*

BIO 323. FUNCTIONAL HISTOLOGY FOUR CREDITS

This course emphasizes the microscopic examination of mammalian tissues from morphological and physiological perspectives. Reference is made to organ embryogenesis to support the understanding of organ form and function. Tissue preparation for histological examination is included. Lecture, three hours; laboratory, three hours per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 325. ENDOCRINOLOGY FOUR CREDITS

This course will focus on the structure, biochemistry, and function of mammalian hormones and endocrine glands; avian, amphibian and invertebrate hormones will also be discussed, where relevant. Clinical pathologies resulting from excess or insufficient hormones will be discussed, as this is essential to mastering an understanding of Endocrinology. Laboratory exercises include experimentation in living systems and computer simulations. Lecture: three hours per week; Laboratory: three hours per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 226, or permission of instructor. Offered in alternate years.*

BIO 326. IMMUNOLOGY AND IMMUNOCHEMISTRY FOUR CREDITS

This course is concerned with the biologic mechanisms and chemistry of reactants and mediators associated with natural and acquired states of immunity, tissue and blood serum responses to infection and immunization, and related patho-physiologic alterations of hypersensitivity phenomena in vertebrate animals and man. Three lectures and one three-hour laboratory per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 327. MEDICAL MICROBIOLOGY FOUR CREDITS

Medical Microbiology provides a professional-level introduction to microbiology that is focused on application of microbiology to the study of infectious disease etiology and epidemiology. The laboratory covers techniques used in isolation and identification of microorganisms. Lecture: three hours a week; Laboratory: three hours per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, Chm 231-232*

BIO 328. DEVELOPMENTAL BIOLOGY FOUR CREDITS

A course dealing with the principles of animal development from descriptive, experimental, and evolutionary perspectives. Laboratory work includes both descriptive and experimental embryology as well as more molecular techniques. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 329. VIROLOGY THREE CREDITS

Virology provides an introduction to the biology of animal viruses. Description of viral molecular architecture and genome organization is followed by a survey of strategies employed for multiplication and regulation of gene expression. Pathogenesis of viral infections is considered from perspectives of viral reproduction strategies and host defense. *Prerequisites: Bio 121-122, 225-226, Chm 231, 232, 233, 234.*

BIO 330. INTRODUCTION TO BIOINFORMATICS THREE CREDITS

An introduction to the ways computers are used to make sense of biological information, especially the data generated by the human genome project. Topics covered include databases and data mining, pair-wise and multiple sequence alignment, molecular phylogeny, finding genes in raw DNA sequences, predicting protein and RNA secondary and tertiary structures, generating and analyzing microarray data, DNA fingerprinting, rational drug design, metabolic simulation and artificial intelligence. *Offered online alternate spring semesters, with one assignment each week.*

**BIO 341. FRESHWATER ECOSYSTEMS
THREE CREDITS**

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$105. (same as EES 341) *Prerequisites: EES 211 or 240 or BIO 121-122, or consent of instructor. Offered in alternate years.*

**BIO 343. MARINE ECOLOGY
THREE CREDITS**

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$105. (Cross-listed with EES 343) *Prerequisites: EES 230 (Ocean Science) and Bio 121-122. Students must have formal course experiences in oceanography and biology at the science major level or have completed their sophomore year as a biology major. Offered in alternate years.*

**BIO 344. ECOLOGY
FOUR CREDITS**

An examination of contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. (Cross-listed with EES 344) *Prerequisites: Bio 121-122, or permission of instructor. Offered in alternate years.*

**BIO 345. GENETICS
FOUR CREDITS**

This course presents a detailed treatment of genetics beyond the introductory level in the areas of both transmission and molecular genetics. Includes discussion of the role of genetics in such areas as developmental medicine. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every fall semester.*

**BIO 346. ANIMAL BEHAVIOR
FOUR CREDITS**

Animal Behavior is a course emphasizing behavior as the response of an organism to physical and social environmental change, and covering the processes that determine when changes in behavior occur and what form the changes take. Laboratories, using local fauna, demonstrate principles discussed in lecture. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 361. PLANT FORM AND FUNCTION
FOUR CREDITS**

An introduction to the morphology, anatomy, cytology and physiology of vascular plants. Structural and functional aspects of plants are interpreted in relation to each other and within ecological and evolutionary contexts. Offered in a workshop format of two three-hour sessions per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every fall semester.*

**BIO 362. PLANT DIVERSITY
FOUR CREDITS**

A comprehensive survey of algae, bryophytes, and vascular plants emphasizing their structure, reproductive biology, natural history, evolution, and importance to humans. Offered in a workshop format of two three-hour sessions per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every spring semester.*

**BIO 366. FIELD BOTANY
THREE CREDITS**

A specialized summertime field course that emphasizes a taxonomic, phylogenetic, and ecological survey of vascular plants indigenous to Northeastern Pennsylvania. Course includes field trips to a diverse array of habitats in Northeastern Pennsylvania. (Cross-listed with EES 385) *Prerequisites:*

Course Descriptions

Bio 121-122, or permission of instructor. Offered in alternate years.

BIO 368. MEDICAL BOTANY THREE CREDITS

A specialized summertime course that provides a scientifically-based overview of the ways that plants affect human health. Topics include cultural and historical perspectives of plants and medicine, plants that treat human ailments, and psychoactive plants. Lecture two hours per day for five weeks.

Prerequisites: Bio 121-122, 225, Chm 231-232 or permission of instructor. Offered in alternate years.

BIO 391-392. SENIOR RESEARCH PROJECTS ONE CREDIT, TWO CREDITS

The student will pursue independent research as a member of a team of senior biology majors. Each team will be responsible for the identification of an original research problem, a thorough literature review of the problem, a detailed prospectus prepared in the format of a grant proposal, complete execution of the research project, a formal oral presentation, and a final manuscript prepared in standard journal format. Senior research is required of all biology majors seeking a four-year degree in biology. *Prerequisite: Open only to senior biology majors. Bio 391. Offered every fall semester. Bio 392. Offered every spring semester.*

BIO 394. BIOLOGICAL FIELD STUDY ONE TO THREE CREDITS

On-site study of biological problems or situations incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour of lecture per week plus field trip. Fee: variable. *Prerequisites: Bio 121-122, or permission of instructor.*

BIO 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

This course involves independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required; it must also be orally presented at an appropriate off-campus science meeting. *Prerequisite: Written approval of department chairperson is required. Candidates for Independent Research must have a minimum GPA of 3.00 and be of upper class standing.*

BIO 397. PROFESSIONAL PREPARATION TECHNIQUES TWO CREDITS

Professional Preparation Techniques introduces biology majors to biology as a profession. Students learn how to read, write, and analyze research papers, and how to make oral presentations and posters using electronic and paper-based supplements. Career development issues, including effective presentation of credentials, are also addressed. *Prerequisite: Junior-level standing. Offered every fall and every spring semester.*

BIO 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 minimum cumulative average, consent of academic advisor, approval of placement by department chairperson.*

BIO 198/298/398. TOPICS VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor.*

BUSINESS ADMINISTRATION COURSES

ABA 100. INTEGRATED MANAGEMENT FOUR CREDITS

The first module takes you through the entrepreneurial process from creating a business concept to

planning the venture to launching and operating the business to harvest and closure of the firm. In the second module you learn how businesses operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. Most importantly, you will learn and experience how the pieces fit together through integrating the functional areas and tracking information and performance using financial accounting principles.

ABA 110. LEADERSHIP AND ORGANIZATIONAL MANAGEMENT

FOUR CREDITS

This course takes an interdisciplinary approach combining the major theories of management and organizational behavior. The theories and practices of planning, organizing, controlling and leading the organization are incorporated into a behavioral approach including ethical decisionmaking. Understanding of individual, formal, and informal group behavior; macro- and microorganizational structures, motivation and leadership theories, group influences, conflicts, decision-making, communication, with emphasis on behavioral science applications in developing organizational effectiveness are explored with an emphasis on the global business environment. *Prerequisite: ABA 100.*

ABA 120. EFFECTIVE COMMUNICATIONS FOR BUSINESS

FOUR CREDITS

An emphasis on written and oral communications. Students practice writing major business correspondence including letters, persuasive requests and refusals, inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing. Students learn the major techniques of effective oral presentations such as, organizing for impact, gaining and keeping audience attention, multimedia applications, and adapting to cross-cultural audiences. *Prerequisite: ABA 100.*

ABA 130. MARKETING AND RETAILING

FOUR CREDITS

Marketing and Retailing (BA 130) an introduction to the planning and activities of marketing. The course will provide an understanding of the dynamic role marketing plays in the global and national economy as well as the organization. You will have the opportunity to build a knowledge base about the following areas: strategic marketing, research, consumer behavior, segmentation and targeting, marketing mix planning, the selling process, implementation, and evaluation. We will identify marketing and retailing challenges, ethical thinking and action, and global dimensions of the practice of marketing and retailing. *Prerequisite: ABA 100.*

ABA 140. INTEGRATED BUSINESS MATH AND STATISTICS

FOUR CREDITS

This course serves as an introduction to the primary calculations and tools needed in business and economics. Topics include, but are not limited to: algebraic functions, interest rates, defining and describing data, numerical and graphical summaries of data, hypothesis testing, and regression and correlation analysis. Emphasis on mathematical modeling in the business environment.

ABA 150. THE LEGAL ENVIRONMENT AND BUSINESS LAW

FOUR CREDITS

This course provides a foundation for business managers to operate within the legal environment in which all businesses in our society function. It provides an overview of law and our legal system, the lawmaking and adjudicatory processes, and the roles of economic, social, and political forces in the shaping of constraining legal rules and regulations. It also provides an in-depth study of contracts, commercial transactions, the Uniform Commercial Code, business organizations, property law, liability and accountants, and debtor-creditor relationships.

ABA 161. FINANCIAL ACCOUNTING

FOUR CREDITS

This course will communicate an understanding of the nature, function and environment of accounting and the accounting information system within an organization. Through analysis of both financial accounting information and supporting accounting principles, students will study decision-making and how those decisions affect the organization and its financial statements.

ABA 162. MANAGERIAL ACCOUNTING

FOUR CREDITS

Managerial accounting is an internal tool used to generate information for managerial planning and

Course Descriptions

control. Students will develop an understanding of how costs flow through the manufacturing process and how financial and non-financial information is used to make budgeting and other managerial accounting decisions.

Prerequisite: ABA 161.

ABA 170. HUMAN RESOURCES AND CUSTOMER RELATIONSHIP MANAGEMENT

FOUR CREDITS

This course deals with acquiring skills and understanding of the legal aspects, as well as the planning and technologies involved with local, regional, national, and global human resource management. Topics such as global human resource management, selection and recruitment, job analysis and design are explored. Also included are appraising and rewarding performance, compensation and benefits, and labor management relations. Along with these topics customer relationship management is explored from a human resources perspective. *Prerequisite: ABA 100.*

ABA 180. FINANCIAL MANAGEMENT

FOUR CREDITS

A study of the financial theories and decision-making models relating to: financial analysis and planning; working capital management; cash budgeting; capital asset acquisitions; capital asset financing; cost of capital; capital structuring; acquisitions; divestitures; and reorganizations.

Prerequisite: ABA 100 and ABA 140.

ABA 190. INTEGRATED ECONOMICS FOR BUSINESS

FOUR CREDITS

This course introduces the student to both macroeconomic and microeconomic theories. Core issues in both disciplines such as supply and demand, fiscal policy, employment, and monetary policy are explored in a business environment context. *Prerequisites: ABA 100.*

ABA 200. BUSINESS STRATEGY AND DECISION MAKING

FOUR CREDITS

This is a capstone course which integrates the functional areas of business from the perspective of top management. Emphasis is on the role of management in the formation and execution of strategic plans and a particular emphasis on improving a company's performance. *Prerequisites: ABA 100, ABA 130 and ABA 180.*

ABA 210. PROFESSIONAL BUSINESS EXPERIENCE

FOUR CREDITS

This course is part of a two-session (14 Week) professional business experience in which students apply their accumulated knowledge, skills, and abilities in a private or public organization related to the students' academic objectives and career goals. The course will include cooperative education, independent study, and/or an experiential component. Components of the Personal and Professional Development Program will be explored during class time. *Prerequisites: ABA 100, ABA 140 and ABA 180.*

BA 151. INTEGRATED MANAGEMENT EXPERIENCE I

THREE CREDITS

Integrated Management Experience is a two-semester sequence that takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. You learn how businesses plan and operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. Most importantly, you will learn and experience how the pieces fit together through integrating the functional areas and tracking information and performance using financial accounting principles. (Same as ACC 151 and ENT 151).

BA 152. INTEGRATED MANAGEMENT EXPERIENCE II

THREE CREDITS

Integrated Management Experience is a two-semester sequence that takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. You learn how businesses plan and operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. You develop a clear understanding of the importance of accounting cycles and how financial accounting principles provide not only information but an integrating thread for all types of organizations. (Same as ACC 152 and ENT 152). *Prerequisite:*

ACC/BA/ENT 151.

BA 153. MANAGEMENT FOUNDATIONS

Management Foundations provides the framework for further study in accounting, business administration, and entrepreneurship programs. Functional areas of management are examined. This class is closed to freshmen and any student who completed ACC/BA/ENT 151 and ACC/BA/ENT 152.

THREE CREDITS

BA 198/298/398. TOPICS

VARIABLE CREDIT

Lectures on subjects of special current interest in business which are not covered in other courses.

BA 230. MONEY AND BANKING

THREE CREDITS

A study of money credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent developments in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships. (Cross listed as EC 230).

BA 233. THE LEGAL ENVIRONMENT OF BUSINESS

THREE CREDITS

This course provides a foundation for business managers to operate within the legal environment in which all businesses in our society function. It provides an overview of law and our legal system, the lawmaking and adjudicatory processes, and the roles of economic, social, and political forces in the shaping of constraining legal rules and regulations.

BA 234. BUSINESS LAW

THREE CREDITS

An in-depth study of contracts, commercial transactions, the Uniform Commercial Code, business organizations, property law, liability and accountants, and debtor-creditor relationships. Provides the necessary legal background for those entering the accounting profession.

BA 257. MANAGEMENT INFORMATION SYSTEMS

THREE CREDITS

This course introduces the fundamental concepts underlying the design, implementation, control, and evaluation of business-oriented computer based information systems, office automation, information reporting, and decision making.

BA 309. BUSINESS CORRESPONDENCE AND REPORTS

THREE CREDITS

An emphasis on written communications: practice in writing major classification of business letters; persuasive requests and refusals, inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing.

BA 319. BUSINESS STATISTICS

THREE CREDITS

An introduction to the primary tools of research in business and economics; the collection, summarization, analysis, and interpretation of statistical findings relevant to business decisions. Two hours of lecture and one hour of individualized laboratory. Topics covered will include, but not be limited to, descriptive statistics, probability, sampling theory, hypothesis testing, and regression and correlation analysis. (Cross-listed as Ec 319.)

BA 321. MARKETING

THREE CREDITS

An introduction to the planning and activities of marketing. Emphasis on budgeting, product conception and development, pricing, distribution channels and promotion.

BA 322. ADVERTISING

THREE CREDITS

A managerial analysis of the decisions involved in advertising. Topics include research, ethics, campaign design, copy, art, media, budgeting, and effectiveness. *Prerequisite: BA 321.*

Course Descriptions

BA 324. RETAILING THREE CREDITS

A basic course that discusses opportunities in retailing; types of retail institutions; problems of store policy, store location; study of organizational structure of department stores; organization and functions of all store divisions. *Prerequisite: BA 321.*

BA 326. THE SELLING PROCESS THREE CREDITS

Examines the buyer-seller relationship process of marketing products and services to consumers and organizations. Emphasis is placed on sales techniques, presentation styles and sales management skills appropriate to the business interaction. *Prerequisite: BA 321.*

BA 327. MARKETING SEMINAR THREE CREDITS

In-depth examination of selected issues and problems in marketing. Specific topics alternate depending on student and faculty interests in areas such as marketing strategy formulation, marketing research, new product development, international marketing and sports marketing. *Prerequisite: BA 321.*

BA 328. CONSUMER BEHAVIOR THREE CREDITS

This course presents a survey and integration of concepts and theories that help explain or predict consumer behavior. Emphasis is on the implications of this information for marketing planning. *Prerequisite: BA 321.*

BA 341. MANAGERIAL FINANCE THREE CREDITS

A study of the financial theories and decision-making models relating to: financial analysis and planning; working capital management; cash budgeting; capital asset acquisitions; capital asset financing; cost of capital; capital structuring; acquisitions; divestitures; and reorganizations. *Junior/Senior standing recommended.*

BA 342. PROPERTY AND LIFE INSURANCE THREE CREDITS

A study of principles of life, health, property, and liability insurance applied to the needs of individuals and organizations *Prerequisite: BA 341.*

BA 343. INVESTMENTS AND PORTFOLIO MANAGEMENT THREE CREDITS

A survey of the features and characteristics of investment instruments; the operation and regulation of security markets; the techniques of security analysis and valuation; financial intermediaries; modern and traditional portfolio theory and management. *Junior/Senior standing recommended.*

BA 345. LONG-RANGE FINANCIAL PLANNING THREE CREDITS

A survey of the tools and techniques currently employed by financial decision-makers when evaluating organizational performance and developing future courses of action. Emphasis will be placed upon long-range planning and capital budgeting techniques. *Prerequisites: BA 341 and BA 343.*

BA 351. MANAGEMENT OF ORGANIZATIONS AND PEOPLE THREE CREDITS

Introduction to the theory and practice of managing organizations, including planning, organizing, and controlling. Interdisciplinary in nature, social and ethical dimensions of managing are examined. *Junior standing or ACC/BA/ENT 151 recommended.*

BA 352. PRODUCTION AND OPERATIONS MANAGEMENT THREE CREDITS

Principles of decision-making, systems design, introduction to quantitative tools of analysis; fundamentals of production, inventory, financial, and distribution management. *Prerequisite: BA 319 and BA 351.*

**BA 354. ORGANIZATIONAL BEHAVIOR
THREE CREDITS**

A behavioral science approach to understanding individual, formal, and informal group behavior; macro- and micro-organizational structures, motivation and leadership theories, group influences, conflicts, decision-making, communication, with emphasis on behavioral science applications in developing organizational effectiveness. *Prerequisite: BA 351.*

**BA 356. THE SOCIAL RESPONSIBILITY OF BUSINESS
THREE CREDITS**

A course dealing with the problems faced by managers in responding to issues such as: the kinds and extent of social responsibility to be assumed by businesses, employee rights, consumerism, and the balance of public and private interests. *Junior standing recommended.*

**BA 358. INTERNATIONAL BUSINESS
THREE CREDITS**

An introduction to the field of international business. The empirical dimensions of the world economy; business enterprise in international trade; trade channels; effects of economic, political and social environment on international management problems of international operations; the role of government in fostering international business. A substantial amount of writing is required. *Prerequisite: BA 351 and senior standing.*

**BA 359. BUSINESS LEADERSHIP THEORY AND PRACTICE
THREE CREDITS**

This course offers the student an introduction to leadership theory and practice. The course addresses the use and usefulness of various leadership styles and models in the decision-making process. Emphasis is placed on the student's personal growth and development. Through a series of self-assessments, students explore their personal leadership style. The class includes presentations and projects focused on increasing leadership skills. *Prerequisite: BA 151, BA 351 or permission of instructor.*

**BA 361. BUSINESS STRATEGY AND DECISION-MAKING
THREE CREDITS**

The first of a two-semester capstone experience. This course integrates the functional areas of business from the perspective of top management. Emphasis is on the role of management in the formation of strategic and long-range plans. *Prerequisite: BA 321, BA 341, and BA 351.*

**BA 362. PROFESSIONAL BUSINESS EXPERIENCE
THREE CREDITS**

This course is part of a two-semester professional business experience in which students apply their accumulated knowledge, skills and abilities in a private or public organization related to the students' academic objectives and career goals. The course will include cooperative education (see Cooperative Education section of this Bulletin for placement procedures), independent study, and/or an experiential component. (Credits in excess of 3 may be applied toward the degree's Free Elective requirement.) *Prerequisite: BA 321, BA 341, and BA 351.*

**BA 390. E-BUSINESS I
THREE CREDITS**

The course is designed to help develop your knowledge and understanding of the fluid field of e-commerce. The internet is a key platform facilitating commerce and communication on a global basis. After the slow introduction phase and the incredibly fast growth stage, e-commerce has matured and is transforming the value chain of virtually every industry in the United States. This course will provide you with the opportunity to learn and experience e-marketing, security and privacy issues associated with the legal/regulatory environment in cyberspace, and ethics and public policy issues. *Prerequisites: BA 321, BA 351.*

**BA 393 E-BUSINESS II
THREE CREDITS**

The content and process of the capstone course provides a rigorous, integrative experience of all areas of management and transnational management in a variety of environments. Through lectures and discussions of articles, students are exposed to seminal theory on a given topic. In addition, topic-specific, integrative thinking and communication skills are developed throughout the discussions of the articles and cases. The main topics will include competitive strategy and

Course Descriptions

formulation, industry analysis, globalization of management, information systems, e-commerce, manufacturing as a competitive strategy, horizontal and vertical integration, computer integrated manufacturing and capacity expansion. *Prerequisites: BA 390, CS 383.*

BA 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

CAREERS COURSES

CAR 101. LIFE/CAREER PLANNING ONE CREDIT

A study of the components of career decision-making, including the influence of personal goals, values, interests, and perceived skills. The practical application of theory results in a portfolio of information essential to deliberate and effective decision-making.

CHEMISTRY COURSES

CHM 95. PREPARATION FOR GENERAL CHEMISTRY THREE CREDITS

This course is designed to serve the remedial needs of students who require a "preparatory" course to General Chemistry (CHM 115/116). It provides an introduction to and practice with the principles and concepts essential for understanding chemistry. Key topics covered in this course include reviewing basic mathematical tools and improving problem-solving skills. In addition, a discussion of the fundamental chemical laws, the structure of matter, and the periodic table is presented. Finally, the use of chemical formulas to describe various chemical reactions and their stoichiometry is covered. Please note, however, that this course does not satisfy any chemistry requirements in any major.

CHM 105. CHEMISTRY AND MODERN SOCIETY THREE CREDITS

This course will emphasize consumer applications of chemistry with some emphasis on environmental consequences of the use of various forms of energy (nuclear, coal, petroleum, natural gas) and everyday chemicals including food, drugs, agricultural chemicals, and chemicals used in pest control. Details are given separately.

CHM 113. ELEMENTS AND COMPOUNDS LAB ONE CREDIT

Three hours a week. Fee: \$105. *Corequisite: Chm 115.*

CHM 114. THE CHEMICAL REACTION LAB ONE CREDIT

Three hours a week. Fee: \$105. *Corequisite: Chm 116.*

CHM 115. ELEMENTS AND COMPOUNDS THREE CREDITS

Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure. Class, three hours a week; problem session, one hour a week. *Corequisite: Chm 113.*

CHM 116. THE CHEMICAL REACTION THREE CREDITS

A detailed study of chemical equilibria in aqueous solution. Class, three hours a week; problem session, one hour a week. *Prerequisites Chm 113, Chm 115; Corequisite: Chm 114.*

CHM 231. ORGANIC CHEMISTRY I THREE CREDITS

An introduction to the chemistry of carbon compounds which develops the interconnected relationship between bonding, structure and reactivity in organic compounds. Instrumental methods will be presented as a means to determine the structure of reaction products. Class, three hours a week; pre-lab session, one hour a week. *Prerequisite: Chm 114, 116; Corequisite: Chm 233.*

**CHM 232. ORGANIC CHEMISTRY II
THREE CREDITS**

A continuation of Chm 231 with emphasis on organic syntheses. Class, three hours a week; pre-lab session, one hour a week. *Prerequisite: Chm 231, 233; Corequisite: Chm 234.*

**CHM 233. ORGANIC CHEMISTRY I LAB
ONE CREDIT**

After an introduction to standard organic reaction, purification, physical characterization, and spectroscopic techniques, students will investigate concepts discussed in CHM 231. Three hours a week. Fee: \$105. *Corequisite: Chm 231.*

**CHM 234. ORGANIC CHEMISTRY II LAB
ONE CREDIT**

Weekly labs that parallel the lecture topics and emphasize organic synthesis and characterization, including multistep synthesis. Three hours a week. Fee: \$105. *Corequisite: Chm 232.*

**CHM 246. ANALYTICAL CHEMISTRY LAB
ONE CREDIT**

Laboratory for CHM 248. One three hour laboratory per week. Lab fee \$105. *Corequisite: Chm 248.*

**CHM 248. ANALYTICAL CHEMISTRY
THREE CREDITS**

A course in the application of the principles of chemical equilibria to obtain the qualitative and quantitative information about the composition and structure of matter. An introduction to the importance of sampling is included along with methods for the statistical treatment of data. The course focuses primarily on the analyses of elemental and ionic species using electrochemical, spectroscopic and chromatographic techniques. Three one-hour lecture sessions per week. *Prerequisite: Chm 116 and Chm 114 Corequisite: Chm 246*

**CHM 322. INORGANIC CHEMISTRY
THREE CREDITS**

CHM 322 presents a survey of current topics in Inorganic Chemistry. The first half of the course offers a survey of main group chemistry, including individual group trends. The second half of the course covers Crystal Field Theory, Ligand Field Theory, reaction mechanisms and organometallic compounds. *Prerequisites: Chm 116, Chm 114.*

**CHM 341. INSTRUMENTAL METHODS FOR CHEMICAL ANALYSIS
THREE CREDITS**

A course in the fundamental principles that provide the basis for the design and fabrication of chemical instrumentation. The underlying physical basis for each method is introduced through an exploration of the capabilities, limitations, and applications of a wide range of separations, spectroscopic, and electrochemical methods. Two one-hour lecture periods and one hour of on-line instruction. *Corequisite: CHM 343, CHM 351.*

**CHM 351. PHYSICAL CHEMISTRY I
THREE CREDITS**

This course emphasizes the molecular approach to physical chemistry. It begins discussing the principles of quantum mechanics and their applications in chemistry, leading to atomic and molecular structure, and chemical bonding. These concepts are then used in the development of atomic and molecular spectroscopy. Photochemistry is introduced. Three one-hour lecture sessions per week. *Prerequisites: CHM 116, MTH 212, PHY 202.*

**CHM 352. PHYSICAL CHEMISTRY II
THREE CREDITS**

Statistical mechanics is used to formulate Thermodynamics in terms of atomic and molecular properties. A molecular interpretation of the laws of thermodynamics

Course Descriptions

CHM 353. PHYSICAL CHEMISTRY I LAB

ONE CREDIT

Laboratory experiments are performed in order to reinforce concepts in CHM351. Bench as well as computational experiments are carried out, including photoelectric effect, resonance states in the particle in a one-dimensional box system, molecular orbital theory applications and molecular spectroscopy. Fee: \$105. *Corequisite: CHM 351*

CHM 354. PHYSICAL CHEMISTRY II LAB

ONE CREDIT

Laboratory experiments are performed in order to reinforce concepts in CHM352. Bench as well as computational experiments are carried out, including calorimetry, phase equilibrium, colligative properties, kinetics and applications of the Monte Carlo method to chemical kinetics. Fee: \$105. *Corequisite: CHM 352*

CHM 361. BIOCHEMISTRY: STRUCTURE AND FUNCTION

THREE CREDITS

This course is a study of the physical and chemical properties of proteins, nucleic acid, fatty acids, and carbohydrates emphasizing the relationship between the chemical structure and the biological function. The course includes the physical methods of biochemistry, enzyme kinetics, bioenergetics and nucleic acid transcription and translation. *Prerequisite: Chm 232.*

CHM 362. BIOCHEMISTRY: METABOLISM

THREE CREDITS

This course is a study of the catabolism and anabolism of carbohydrates, fatty acids and amino acids. The course emphasizes the regulation and integration of major metabolic pathways, including glycolysis, the Krebs' cycle, electron transport, gluconeogenesis, pentose phosphate pathway, fatty acid metabolism and amino acid metabolism. *Prerequisite: Chm 232.*

CHM 370-372. INTEGRATED LABORATORY I-III

ONE-TWO CREDITS EACH

Laboratory experiments related to the five major areas of chemistry. Labs will be chosen in order to show proficiency in each of the required areas. Labs will include synthesis, isolation and characterization of chemical compounds, spectroscopy, kinetics, calorimetry, chromatography, electrophoresis, and other chemical and biochemical methods. Laboratory 3 hours a week per credit hour. Fee: \$105. *Prerequisites: CHM 232, CHM341*

CHM 390. JUNIOR SEMINAR

ONE CREDIT

CHM 390 is a 1 hour course offered during the spring semester and designed to prepare chemistry/biochemistry students for: their careers after graduation, and for their capstone research projects undertaken in their fourth year. The course will cover topics such as résumé preparation, communication of scientific information, internships, job searches, and preparation for graduate school. Students will prepare a topical literature review on their chosen project in conjunction with their selection of a research advisor. *Prerequisite: Junior standing and declared Chemistry/Biochemistry major.*

CHM 391. SENIOR RESEARCH I

TWO CREDITS

The planning and execution of a chemistry research project under the direction of a faculty member. It is expected that this will be a laboratory research project. Students will also learn how to search the chemical literature using modern computer methods. Students are required to attend weekly Department seminars and present at least one seminar. Fee: \$105. *Prerequisite: Senior standing in a Chemistry curriculum.*

CHM 392. SENIOR RESEARCH II

TWO CREDITS

Students will carry out a chemistry research project under the direction of a faculty member. It is expected the project will be a laboratory research project. The project must culminate in a written report and the results must be presented at a Department seminar. Students are required to attend weekly Department seminars and present at least one seminar. Fee: \$105.

CHM 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS EACH

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper is required. Fee: \$105.

CHM 398. TOPICS
ONE TO THREE CREDITS

A study of topics of special interest, such as advanced physical chemistry, advanced analytical chemistry, advanced organic chemistry, surface and colloid chemistry, nuclear chemistry, chemical kinetics, polymer chemistry, or spectroscopy.

CHM 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson. Students without the indicated prerequisites for 200- and 300-level chemistry courses may enroll after written permission of the instructor has been approved by the department chairperson.*

COMMUNICATION STUDIES COURSES

COM 101. FUNDAMENTALS OF PUBLIC SPEAKING
THREE CREDITS

Principles of study, application, and evaluation of public speaking. Emphasis will be upon meeting the needs of students through individualized instruction in oral communication settings. The course is taught each semester.

COM 102. PRINCIPLES OF COMMUNICATION
THREE CREDITS

A study of the theory and process of communication. Required of all department majors. Taught every spring semester.

COM 124. MASS MEDIA LITERACY
THREE CREDITS

This is a survey course that takes a literacy approach to the study of mass media and their role in society. Taught every spring semester.

COM. 144. DEPARTMENT PRACTICUM
ONE TO TWO CREDITS

A - Debate and Forensics, B - P.R. Agency, C - WCLH Radio, D - The Beacon, E - Television, F - Department. The Department Practicum may be taken for one to two credits per semester with the total not to exceed six. Students may earn credit for major roles and positions of major responsibility in the above cocurricular activities. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Credits earned are applicable toward graduation but do not count toward the requirements of any concentration in COM. Written approval of credit must be by advisor and Department Chairperson.

COM 201. ADVANCED PUBLIC SPEAKING
THREE CREDITS

Inquiry into the practice and principles of speech composition and presentation. Detailed analysis of the areas of invention, arrangement, style, and delivery, and an introduction to speech criticism. *Prerequisite: COM 101 or consent of instructor.*

COM 202. INTERPERSONAL COMMUNICATION
THREE CREDITS

The course focuses on interpersonal communication theory and its application to improving the student's interpersonal skills in managing conflict, negotiating, interviewing, and in developing

Course Descriptions

relationships. Taught fall semesters. *Prerequisite: COM 102 or consent of instructor*

COM 203. SMALL GROUP COMMUNICATION THREE CREDITS

The course is designed to expand the student's knowledge of the theories and types of small group communication. Emphasis on the task, leadership, and interpersonal skills of participants. *Prerequisite: COM 102.*

COM 204. ARGUMENTATION AND DEBATE THREE CREDITS

Training in the fundamentals of argumentation and debate, with practice in gathering and organizing evidence and support materials. Course taught every other fall semester. *Prerequisite: COM 101 or consent of instructor.*

COM 206. BUSINESS AND PROFESSIONAL COMMUNICATION THREE CREDITS

Course will concentrate on communication theory as applied to business and professional settings. Students will make several oral presentations and participate in interviewing and conferences. *Course taught fall semester alternate years.*

COM 220. INTRODUCTION TO TELECOMMUNICATIONS THREE CREDITS

Study of the radio, television, and cable industries. Emphasis on their development as public and commercial institutions. Consideration of economic and regulatory issues affecting programming.

COM 221. DIGITAL AUDIO PRODUCTION THREE CREDITS

A study of the principles and techniques of audio production. A special emphasis is placed on radio-related issues, skills, and projects. Consideration of the sound media as tools of artistic expression. Lecture and laboratory. *Taught every fall semester.*

COM 222. BASIC VIDEO PRODUCTION THREE CREDITS

A study of the principles and techniques of TV Studio Production. A special emphasis is placed on the utilization of these techniques in a broadcast setting. Included will be: Camerawork, Switching, Studio Equipment, Set Design, Directing and Producing. Every semester. Fee: \$40.

COM 223. THE ART OF FILM THREE CREDITS

An introduction to the esthetics, techniques, and critical analysis of cinematic art through the study of representative films of current and past film directors. Screenings and writing intensified.

COM 252. INTERNSHIP THREE TO SIX CREDITS

A supervised program of work and study in any of the concentrations. Written permission of the department is required. *Every semester.*

COM 260. BASIC NEWSWRITING THREE CREDITS

Fundamentals of newsgathering, newswriting, and news judgment for all media; study of news sources; fieldwork, research, and interview techniques. Fee: \$40. *Prerequisite: Eng 101.*

COM 262. VISUAL RHETORIC THREE CREDITS

This course offers a rhetorical approach to visual design theory and application. Through readings, discussions, and assignments, students will learn the specialized language of visual design strategies and theories; to experiment with specific design software programs (PageMaker, Adobe Photoshop, QuarkXPress); to analyze rhetorical elements of visual and verbal design choices; to apply creative and ethical design strategies; to work with a real client, problem-solve and troubleshoot for design needs; to understand the interdependency between visual and verbal persuasive appeals in all forms of print and web communication. *Prerequisite: COM 260.*

COM 300. COMMUNICATION CRITICISM
THREE CREDITS

Theories from classical to contemporary will be applied to the analysis of written, visual and electronic messages. Emphasis on speech writing and criticism. *Prerequisite: COM 101.*

COM 301. PERSUASION
THREE CREDITS

Study and practice of persuasive speaking. General theories of persuasion, the role of persuasion in a democratic society, and an introduction to modern experimental research in the field. *Prerequisite: COM 101.*

COM 302. FUNDAMENTALS OF PUBLIC RELATIONS
THREE CREDITS

An introduction to the fundamentals of public relations practice, including program planning and evaluation, working with the media, writing for PR, and coordinating special events and functions. Taught fall semesters. *Prerequisite: COM 260.*

COM 303. ORGANIZATIONAL COMMUNICATION
THREE CREDITS

Course focuses attention on traditional and modern concepts of communication channels in simple and complex organizations. Considerable attention is given to interviewing and conducting communication audits. *Prerequisite: COM 102 or permission of instructor.*

COM 304. INTERCULTURAL COMMUNICATION
THREE CREDITS

Intercultural Communication is a systematic study of what happens when people from different cultural backgrounds interact face-to-face. The course is a balance between theoretical and practical knowledge, with emphasis on immediately usable knowledge. Guest speakers, in-class simulations, cross-cultural interviews, and research projects ask students to apply communication skills to actual intercultural situations. *Prerequisite: COM 102 or permission of instructor.*

COM 320. MEDIA MANAGEMENT
THREE CREDITS

This course will provide a framework for understanding the functions and methods of media managers in both print and non-print media. *Prerequisites: COM 220, or permission of instructor.*

COM 321. BROADCAST JOURNALISM
THREE CREDITS

A study of the principles and methods of broadcast journalism. *Prerequisites: COM 221 and COM 222.*

COM 322. ADVANCED VIDEO PRODUCTION
THREE CREDITS

A study of the principles and techniques of video production. Scripting, producing, and editing videography are subjects covered extensively by this course. Each student will produce several video productions. Taught every spring semester. *Prerequisite: COM 222.*

COM 324. COMMUNICATION RESEARCH METHODS
THREE CREDITS

Study of research methods in various areas of communication. Emphasis on ability to research literature and critique a research design. Consideration of content analysis and empirical design. Required of all majors. *Prerequisite: COM 102 and completion of departmental writing requirement. Course taught every fall semester.*

COM 352. ADVANCED PUBLIC RELATIONS CAMPAIGNS
THREE CREDITS

COM 352 is an advanced course in public relations, taught in seminar format. Emphasis is placed on planning, researching, budgeting, carrying out and evaluating actual public relations campaigns. The course is both writing and speaking intensive. In cooperation with various community-based businesses and non-profit clients, student "teams" conduct actual, semester-long promotional campaigns. Students should be competent in basic news writing, interviewing and fundamentals of public relations. Course taught alternate spring semesters. *Prerequisite: COM 302.*

Course Descriptions

COM 360. ADVANCED NEWSWRITING THREE CREDITS

A study of specialized reporting and an introduction to news editing. *Prerequisite: COM 260.*

COM 361. FEATURE WRITING THREE CREDITS

A study of feature articles for newspapers, syndicates, magazines, and specialized publications. Practice in research, interviewing, and writing. *Prerequisite: COM 260.*

COM 362. MASS COMMUNICATION LAW THREE CREDITS

Current legal problems, theory of controls in journalism, television, and radio; libel, copyright, privacy law, and other legal issues affecting the mass media. A case study approach will be used.

COM 370. WRITING FOR MAGAZINES AND E-ZINES THREE CREDITS

This course will introduce students to writing and publishing processes, particularly as they pertain to trade, consumer and electronic magazines. The course investigates various publishing avenues including freelance submissions; research, writing and editing roles on established publications; and ghost writing. Students will develop a variety of articles for both traditional print and electronic publications, as well as develop the necessary query letters and electronic inquiry messages. In addition, students will hone existing research, interview and editing skills. Final projects will have students collaborate in writers' workshop settings to develop an original electronic publication as well as write and revise a publishable portfolio to freelance articles for consumer or trade publications. *Prerequisite: COM 260.*

COM 372. MANAGING A PUBLIC RELATIONS AGENCY THREE CREDITS

Focus on difference between in-house public relations and agency operators. Students work with several clients. *Prerequisite: COM 302.*

COM 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the speech and communication programs under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. Written permission of department is required.

COM 397. SENIOR SEMINAR/COMMUNICATIONS THREE CREDITS

An in-depth investigation of current research and ethical issues in communication. A research paper and senior project required. Required of all majors. Prerequisite: COM 324 and junior/senior standing. *Course taught every spring semester.*

COM 398. TOPICS ONE TO THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

COM 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.). *Prerequisites: Sophomore standing, 2.25 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

COMPUTER SCIENCE COURSES

To see a tentative list regarding the timing of our 300-level offerings in Computer Science, please refer to the following URL: <http://mathcs.wilkes.edu>.

CS 115. COMPUTERS AND APPLICATIONS
THREE CREDITS

An introduction to computers and computing, with emphasis on personal computing in both the Windows and OSX operating systems. Extensive hands-on experience will involve the application of current commercial software (including word processing, database, and spreadsheet). *Not open to students who have received credit in any 200-level CS course. Students majoring in either Computer Science or Computer Information Systems will not receive credit for this course.*

CS 125. COMPUTER SCIENCE I
FOUR CREDITS

Introduction to information technology and programming (history of computing, Unix, text editors, word processing, spreadsheets, introduction to programming), basic data types, functions, decision structures, loops, one-dimensional list structures, testing, debugging, and an introduction to computer graphics). 3 hours lecture, 2 hours laboratory each week. *Prerequisite: Secondary mathematics including geometry and algebra II. Offered every fall, spring and summer.*

CS 126. COMPUTER SCIENCE II
FOUR CREDITS

A study of advanced programming concepts, structures, and techniques (professional/ethical issues, testing/debugging, fundamentals of programming, basic data structures: strings, lists, multidimensional arrays, objects, hashes, objects/inheritance/polymorphism, recursion, divide and conquer, machine representation of data, hardware components, machine instructions). 3 hours lecture, 2 hours laboratory each week. *Prerequisite: CS 125 or equivalent programming experience. Offered every fall and spring.*

CS 224. COBOL AND FILE MANAGEMENT
THREE CREDITS

A study of file management techniques using ANS COBOL. Introductory and advanced programming techniques are presented using problems commonly found in a business environment. Topics include control break processing, tables and arrays, file processing, and interactive processing. *Prerequisite: CS 126 or previous programming experience. Offered in the fall semester of even years when demand warrants.*

CS 225. COMPUTER SCIENCE III
THREE CREDITS

A study of the use of a high-level language to implement basic data structures such as strings, lists, arrays, objects, and hashes and their application to searching, sorting, and hashing. Representation of numbers and strings at the machine level. The course will also include an introduction to the concepts of algorithm design and problem solving with an emphasis on algorithm development, analysis and refinement. *Prerequisite: CS 126. Offered every fall.*

CS 226. COMPUTER SCIENCE IV
THREE CREDITS

A continuation of CS 225. Topics include programming language paradigms, advanced use of word processors and spreadsheets, including macros, linked data structures, and an introduction to discrete mathematics, including counting, probability, and graphs. *Prerequisite: CS 225. Offered every spring.*

CS 265. MEDICAL INFORMATICS
THREE CREDITS

This course will cover basic principles of computer use and information management in health care (including general medicine, dentistry, optometry, pharmacy). Topics will include basic computing concepts, the characteristics of medical data, and the use of computers in the administrative, diagnostic, and research-oriented medical tasks. The course is primarily directed towards students who intend to pursue careers in health-related fields. *Offered every spring.*

CS 283. WEB DEVELOPMENT I
THREE CREDITS

An introduction to the development of interactive web sites, including HTML, Javascript, forms and CGI programs, server side includes, cookies, web server configuration and maintenance, and Java Applets. *Prerequisites: CS 126. Offered in the fall semester of odd years when demand warrants.*

Course Descriptions

CS 317. SOFTWARE INTEGRATION

THREE CREDITS

An introduction to the integration of application programs, including email clients, word processors, spreadsheets, and database systems using Microsoft Office and Visual Basic. *Prerequisite: CS 126. Offered every fall.*

CS 319. PRINCIPLES OF PROGRAMMING LANGUAGES

THREE CREDITS

A study of the principles that govern the design and implementation of programming languages. Topics include language structure, data types, and control structures. Programming projects will familiarize students with features of programming languages through their implementation in interpreters. *Prerequisite: CS 226.*

CS 321. SIMULATION AND DATA ANALYSIS

THREE CREDITS

Methods of handling large data bases including statistical analysis and computer simulations. The emphasis will be upon discrete simulation models with a discussion of relevant computer languages, ARENA, GPSS, and/or SIMSCRIPT. Prerequisites: CS 125 and either Mth 105 or Mth 111.

CS 323. THEORY OF COMPUTATION

THREE CREDITS

This course formalizes many topics encountered in previous computing courses. Topics include languages, grammars, finite automata, regular expressions and grammars, context-free languages, push-down automata, Turing machines and computability. *Prerequisites: Mth 231 and CS 126.*

CS 324. SYSTEMS ANALYSIS

THREE CREDITS

A study of the design and implementation of large computer projects. Special emphasis is placed on applications to business systems. Students will use a CASE tool for automated systems analysis and design. *Prerequisite: CS 217 or CS 224 or CS 226.*

CS 325. DATABASE MANAGEMENT

THREE CREDITS

Practical experience in solving a large-scale computer problem including determination of data requirements, appropriate data organization, data manipulation procedures, implementation, testing and documentation. *Prerequisite: CS 126.*

CS 326. OPERATING SYSTEM PRINCIPLES

THREE CREDITS

Analysis of the computer operating systems including Batch, Timesharing, and Realtime systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices. *Prerequisite: CS 226.*

CS 327. COMPILER DESIGN

THREE CREDITS

A study of compiler design including language definition, syntactic analysis, lexical analysis, storage allocation, error detection and recovery, code generation and optimization problems. *Prerequisite: CS 226.*

CS 328. ALGORITHMS

THREE CREDITS

Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication of real numbers, and various combinatorial algorithms. *Prerequisites: CS 226 and Mth 202.*

CS 330. COMPUTER ARCHITECTURE

THREE CREDITS

A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers". An emphasis will be placed on machine language, instruction formats, addressing modes, and machine representation of numbers. *Prerequisite: CS 226.*

**CS 334. SOFTWARE ENGINEERING
THREE CREDITS**

A course in "programming in the large." Topics include software design, implementation, validation, maintenance, and documentation. There will be one or more team projects. *Prerequisite: CS 226.*

**CS 335. ADVANCED DATABASE CONCEPTS
THREE CREDITS**

A continuation of CS 325. Concentration on the design of a large scale database system, current special hardware and software, and the role of a DBMS in an organization. *Prerequisite: CS 325.*

**CS 340. ARTIFICIAL INTELLIGENCE
THREE CREDITS**

This course will provide an overview of artificial intelligence (AI) application areas and hands-on experience with some common AI computational tools. Topics include search, natural language processing, theorem proving, planning, machine learning, robotics, vision, knowledge-based systems (expert systems), and neural networks. *Prerequisite: CS 126.*

**CS 350. OBJECT-ORIENTED PROGRAMMING
THREE CREDITS**

Object-oriented concepts and their application to human-computer interaction. Concepts to be covered include object, classes, inheritance, polymorphism, design patterns, GUI interface guidelines, and design of interfaces. There will be programming projects in one or more object-oriented languages using one or more GUI interface guidelines. *Prerequisite: CS 226.*

**CS 355. COMPUTER NETWORKS
THREE CREDITS**

This course introduces basic concepts, architecture, and widely used protocols of computer networks. Topics include the Open System Interconnection (OSI) model consisting of physical link layer, data layer, network layer, transport layer, session layer, presentation layer, and application layer; medium access sublayer and LAN; various routing protocols; Transmission Control Protocol (TCP) and Internet Protocol (IP) for internetworking. *Prerequisite: Either CS 225, or CS 126 and CS 224.*

**CS 360. LINEAR PROGRAMMING
THREE CREDITS**

Graphical linear programming, simplex algorithm sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with MTH 360). *Prerequisites: CS 125, and either Mth 105 or Mth 111.*

**CS 363. OPERATIONS RESEARCH
THREE CREDITS**

A survey of operations research topics such as decision analysis, inventory models, queuing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with Mth 363). *Prerequisites: CS 125, and either Mth 105 or Mth 111.*

**CS 364. NUMERICAL ANALYSIS
THREE CREDITS**

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with MTH 364). *Prerequisites: Mth 112 and CS 125 (or equivalent programming experience). Offered when demand warrants.*

**CS 366. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION
THREE CREDITS**

This course will explore the foundations of 3 dimensional animation processes as they apply to multiple mediums. Students will build computer-based models and environments, texture, light, animate and render content for Integrative Media projects or as stand-alone pieces. (Cross-listed with IM 350). *Prerequisite: CS 126 or IM 201.*

Course Descriptions

CS 367. COMPUTER GRAPHICS

THREE CREDITS

Introduction to equipment and techniques used to generate graphical representations by computer. Discussion of the mathematical techniques necessary to draw objects in two- and three-dimensional space. Emphasis on application programming and the use of a high-resolution color raster display.

Prerequisite: CS 226.

CS 368. 3 DIMENSIONAL GAME DEVELOPMENT

THREE CREDITS

An overview of simulation, engine-based, and real-time game systems with a focus on theory, creation and animation of three-dimensional models used within a game context. (Cross-listed with IM 368)

Prerequisite: CS 366 (IM 350) or CS 367.

CS 370. SPECIAL PROJECTS

VARIABLE CREDIT

The definition, formulation, programming, solution, documentation, and testing of a sophisticated problem or project under close faculty supervision. The project will be drawn from industry, business, or governmental agency in the greater Wilkes-Barre area. The student will be expected to present a written report at the conclusion of the project. This course may be taken as part of the Cooperative Education Program. A student may apply at most six credits of CS 370 and a maximum of twelve credits in CS 370 and Cooperative Education 399 toward the graduation requirement in the computer science major. *Prerequisite: Senior standing and approval of department chairperson.*

CS 383. WEB DEVELOPMENT II

THREE CREDITS

An introduction to the development of dynamic, database-driven sites, including active server pages, PHP, authentication, session tracking and security, and the development of shopping cart and portal systems. *Prerequisite: CS 283, CS 325.*

CS 391. SENIOR PROJECTS I

ONE CREDIT

Design and implementation of a software project under the direction of a faculty member. Students will normally work in teams. Detailed requirements and design documents are required, and will be presented at the end of the semester. *Prerequisite: CS 334 or CS 325. Offered every fall.*

CS 392. SENIOR PROJECTS II

TWO CREDITS

Design and implementation of a software project under the direction of a faculty member. Students will normally work in teams. Production of a finished product, including software and documentation, is required. There will be an open-forum presentation of the project at the end of the semester. *Prerequisite: CS 391. Offered every spring.*

CS 395-396. INDEPENDENT STUDY IN COMPUTER SCIENCE

VARIABLE CREDIT

Individual study in a chosen area of computer science under the supervision of a faculty member. May be repeated for credit. *Prerequisite: Approval of department chairperson.*

CS 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures. *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

CS 198/298/398. TOPICS IN COMPUTER SCIENCE

VARIABLE CREDIT

Study of one or more special topics in computer science. May be repeated for credit, if involving different topics. *Prerequisite: Varies with selected topics. Offered when demand warrants.*

DANCE COURSES

DAN 100. DANCE APPRECIATION: COMPREHENSIVE DANCE FORMS
THREE CREDITS

A general introduction to the various types of dance: (classical ballet, modern, jazz, and theatrical). This course is appropriate for the person who has had absolutely no participatory experience in this art form. It is designed to cultivate especially an appreciation of the aesthetic dimensions of dance, perceived for the first time as an opportunity for personal physical engagement.

DAN 120. TAP DANCE
THREE CREDITS

An introduction to the fundamentals of tap dancing, with special reference to the techniques of great American artists.

DAN 150. CLASSICAL DANCE FOR THE STAGE
TWO CREDITS

An introductory course entailing lecture/demonstration and studio exercises designed to explore the movement dynamics appropriate to dramatic presentation. Special emphasis is given to the development of sound classical ballet technique (per a modified Vaganova methodology) as the foundation for the cultivation of poise, stage presence, kinetic flexibility, and physical stamina – valuable qualities for the acting profession. Particular attention is given to pantomime and non-dance movement such as fencing and hand-to-hand combat in a stage-space setting.

DAN 153. POINTE I
TWO CREDITS

Basic techniques of ballet on pointe; introduction to variations from the classical repertory. This course is designed to help the female dancer make the transition from demi-pointe dancing.

DAN 157. PAS DE DEUX I
TWO CREDITS

The basic techniques required for male and female dancers to perform as a unit. This course is intended to provide a gradual and individually-paced introduction into the techniques as well as the psychology of classical ballet partnering. *Prerequisite: Audition.*

DAN 210. MODERN DANCE I
THREE CREDITS

This course builds on the foundation provided the student in DAN 110, elaborating further on the fundamentals of modern dance according to the Graham method. It is designed to provide an experimentation structured and professionally informed exploration of the art of modern dance. Its objective is the acquisition, at each individual student's pace, of the qualities of grace, physical stamina, muscular and ligament flexibility, and movement musicality.

DAN 211. MODERN DANCE II
THREE CREDITS

This course is the sequel to DAN 210, providing the truly committed student with the opportunity, at an intermediate level, for an even more substantive and diversified participatory engagement in modern dance. It engages the student/dancer in highly individualized movements based on personalized, multi-faceted and changing artistic standards. *Prerequisite: DAN 210 or permission of instructor.*

DAN 220. ADVANCED TAP
THREE CREDITS

The acquisition and development of advanced tap dance technique through drills and exercises and the appreciation of the rich history of tap dance in America through lecture, video/demonstrations, and readings. *Prerequisite: DAN 120 or permission of instructor.*

DAN 230. JAZZ DANCE I
THREE CREDITS

The first course involving an intensive and progressively challenging engagement in jazz technique and performance utilizing a fusion of methodologies all of which are ballet based. This course is designed for the student with limited dance experience, still having a basic understanding of ballet terminology and body placement. Core skills as well as body conditioning are emphasized, investigating different genres within the context of the jazz discipline. Classical Jazz, Musical Theatre

Course Descriptions

Jazz, Musical Video style jazz and lyrical styles of jazz will be introduced.

DAN 231. JAZZ DANCE II THREE CREDITS

The second in the progressively demanding courses in the four-semester sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills by utilizing a fusion of methodologies, all of which are ballet based. Through the study of jazz dance techniques as systematized using various methods, students are encouraged to perceive the nature of dance movement and to acquire some proficiency in its application to stage performance and achieve greater awareness of body structure and function. Select choreographers, directors, and teachers will play a significant role in the material chosen for this course. *Prerequisite: DAN 230 or permission of instructor.*

DAN 250. CLASSICAL BALLET I THREE CREDITS

The first course in the study of the theory and techniques of Russian classical ballet, as pursued in the curricula of the schools of the Bolshoi and Kirov Ballets and derived from the methodology devised by Agrippina Vaganova and Cecchetti.

DAN 251. CLASSICAL BALLET II THREE CREDITS

This course is designed to build on the foundation acquired in DAN 250 for an intensive intellectual, emotional, and physical engagement in the study of the theory and techniques of Russian classical ballet, as pursued in the curricula of the schools of the Bolshoi and Kirov Ballets and derived from the methodology devised by Agrippina Vaganova and Cecchetti. *Prerequisite: DAN 250 or permission of instructor.*

DAN 261. DANCE IMPROVISATION I TWO CREDITS

Designed to develop creativity in dance by exercising the student in movement in free forms while training the body as a disciplined instrument. Exploration of the broad range of dance movement in a choreographical context is intended to introduce the student into the elementary aspects of dance perception and design.

DAN 310. MODERN DANCE III THREE CREDITS

This is an advanced course in modern dance, affording the student the opportunity to engage, experientially, in some of the more technically and choreographically demanding and innovative aspects of modern dance. In the exploration of these movement elaborations, the aesthetic vision of the choreographers may be perceived, especially in terms of how they adapted much of the disciplined technique of classical ballet in an exciting syncretic fusion. *Prerequisite: DAN 211 or permission of instructor.*

DAN 311. MODERN DANCE IV THREE CREDITS

An advanced level course in Modern Dance technique. In addition to continued study of the concepts from DAN 310, specific contemporary styles will be explored.

DAN 320. DANCE COMPOSITION THREE CREDITS

An introduction to the craft of making dance works. Class emphasis is on developing movement material, structuring solid dance works and documenting the creative process. A writing component is required. *Prerequisite: DAN 120 or permission of instructor.*

DAN 330. JAZZ DANCE III THREE CREDITS

Jazz Dance III is third in the progressively demanding courses in the four-semester elective sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills using various methodologies, all of which are ballet based. Students at this level are expected to have a greater understanding of ballet terminology and body placement. Emphasizing a blending of theory and practice, this course is intended to encourage students to explore another dimension of personal fulfillment while cultivating realistically their potential as physically coordinated, aesthetically sensitive, poised and graceful persons, with a deeper understanding of dance as

recreation vs. dance in a professional environment relating to theatre studies. Within this course the student will investigate the intent of the choreographer/director as well as experience the choreographic process itself. Creativity, logic and reasoning skills will be enhanced, with the intention of aiding the student in transferring these aspects to their chosen major. Select choreographers, directors, and teachers will play a significant role in the material presented, with the expectation of the student delving deeper into the creative process of dance. *Prerequisite: DAN 231 or permission of instructor.*

DAN 331. JAZZ DANCE IV
THREE CREDITS

The fourth level in the progressively demanding courses in the four-semester elective sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills per various methodologies, all of which are ballet based. At this level the student is expected to have an adequate knowledge of ballet terminology, body placement, and body conditioning, with a focus on transferring these skills to choreography, improvisation, class structure and the creative process itself. This course is intended to take the dance student to a higher level of physical and creative awareness. A greater understanding of physics, as it relates to dance, kinesiology, anatomy, and the processing of more intricate exercises and combinations are a major focus. Once again, select choreographers, directors and teachers will play a significant role in the material presented. A deeper understanding of a person's creative potential will be investigated, using life experiences of selected persons. *Prerequisite: DAN 330 or permission of instructor.*

DAN 350. CLASSICAL BALLET III
THREE CREDITS

This course is designed to build on the foundation laid in DAN 250-251. Course presentation will employ lecture/demonstration and studio exercises designed to explore the movement dynamics which are especially appropriate to the classical dance genre. The objective of this course is the continued individually paced development of the qualities of grace, physical stamina, muscular and ligament flexibility, and movement musicality, especially via direct and active engagement in classical dance technique. *Prerequisite: DAN 251 or permission of instructor.*

DAN 351. CLASSICAL BALLET IV
THREE CREDITS

This course is designed to continue to build on the foundation laid in DAN 250-251, 350. Special emphasis will be given in this course to the development of sound classical ballet technique (per a modified Vaganova methodology) as the foundation for the cultivation of poise, stage presence, kinetic flexibility, and physical stamina. *Prerequisite: DAN 350 or permission of instructor.*

DAN 198/298. TOPICS
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses.

EARTH AND ENVIRONMENTAL SCIENCES COURSES

EES 105. PLANET EARTH
THREE CREDITS

The nature of our planet and how it works are examined in the context of Earth as a constantly changing dynamic system. An emphasis on global scale processes and the interaction of humans and their physical environment is coupled with in-depth coverage of how science is done and the scientific principles that influence our planet, its rocks, mountains, rivers, atmosphere and oceans. Major subtropical areas in the Planet Earth series may include geology (Forces of Geologic Change), oceanography (The Restless Ocean), astronomy (The Cosmic Perspective), and the relationship between people and their physical surroundings (The Global Environment). Intended for students who are not majoring in science, engineering, prepharmacy, nursing, or B.S. programs in mathematics or computer science. Two hours lecture and two hours laboratory per week. Fee: \$95. *Prerequisite: No previous background in science or college-level mathematics is required.*

EES 202. BIOGEOCHEMISTRY
THREE CREDITS

Fundamentals of the circulation of materials through the earth's air, soils, waters, and living organisms are examined from the perspective of introductory chemical principles. Global cycles of

Course Descriptions

water, carbon, nitrogen, phosphorus, and sulfur are investigated in detail with emphasis on the roles of microorganisms, chemical equilibrium, and oxidation-reduction processes in biogeochemical cycling. Laboratory focuses on (1) student designed projects to gather data which illustrate key concepts in chemical weathering processes in aqueous solutions, oxidation-reduction reactions, and microbial mediation of elemental cycling and (2) building problem solving skills. Two hours lecture and three hours laboratory per week. Fee: \$95. *Prerequisite: CHM 115.*

EES 210. GLOBAL CLIMATIC CHANGE THREE CREDITS

The nature and function of earth's global climate are examined from a unified system perspective. Major questions focus on scientific versus public understanding of trends in global temperature, precipitation, and sea level. The course emphasizes negative and positive feedback processes that force key changes in the earth's climate system: past, present, and future. Topics include fundamentals of global and regional heat and water balance; the role of elemental cycles in controlling climate (e.g. the carbon cycle); descriptive climate classification; long-term, short-term, and catastrophic climatic change (e.g. ice ages and bolide impacts); and human effects on climate (e.g. enhanced greenhouse, rising sea level). This course integrates a scientific understanding of climatic change and explores contemporary social and economic policy responses to change scenarios.

EES 211. PHYSICAL GEOLOGY FOUR CREDITS

Description, analysis, and laboratory studies of earth materials, structures, and processes, including earth's surface, interior, age, and origin. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only).

EES 212. HISTORICAL GEOLOGY THREE CREDITS

A study of the geologic record of the earth's formation and evolution, including methods of dating. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisite: EES 211 or permission of instructor.*

EES 218. ENVIRONMENTAL ETHICS THREE CREDITS

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism, and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as PHL 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

EES 230. OCEAN SCIENCE FOUR CREDITS

An interdisciplinary approach to the study of the fundamentals of oceanography emphasizing physical, chemical, and biological interrelationships. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only).

EES 240. PRINCIPLES OF ENVIRONMENTAL ENGINEERING & SCIENCE FOUR CREDITS

A study of physical, chemical, and biological components of environmental systems and a discussion of processes involved in water quality management, air quality management, waste management, and sustainability. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only). *Prerequisite: MTH 105 or higher.*

EES 242. ENVIRONMENTAL HEALTH FOUR CREDITS

To provide students with an understanding of man's impact on the environment and how those impacts can be controlled or mitigated. Students completing this course should be able to recognize environmental problems and understand control and preventative measures. Three hours lecture, three hours laboratory. Fee: \$95. *Prerequisites: Introductory physics and chemistry. Students who have taken EES 240 will be admitted only with the consent of the instructor.*

EES 244. INSTRUMENTAL ANALYSIS**FOUR CREDITS**

Primarily a laboratory course in the applications of instrumental techniques for obtaining quantitative information about the composition and structure of matter. Lab work includes chromatographic, spectroscopic and electrochemical techniques. Emphasis is placed on the use of computers for data acquisition, management and analysis. The course serves students in biochemistry, chemistry, biology, geology, health-related sciences, engineering and environmental sciences who desire experience with these techniques and how they are applied to problem solving. Two 1-hour lecture and one 3-hour laboratory sessions per week. Fee \$95. (Cross-listed with CHM 246/248). *Prerequisite: CHM 116.*

EES 251. SYNOPTIC METEOROLOGY**FOUR CREDITS**

Topics include surface and upper-air weather systems, weather phenomena, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only).

EES 261. REGIONAL GEOGRAPHY**THREE CREDITS**

Topics covered include maps and charts, and basic elements of physical, cultural, historical, and economic geography as applied to specific geographic regions. Three hours lecture.

EES 271. ENVIRONMENTAL MAPPING I: THE GLOBAL POSITIONING SYSTEM**THREE CREDITS**

An introduction to the Global Positioning System (GPS) and environmental mapping concepts and applications. Topics include coordinate systems, reference ellipsoids, geodetic datums, and map projections. Practical field use of GPS is emphasized within the context of understanding system components, satellite signal processing, selective availability, base station differential correction, and data export to a geographical information system. Two hours lecture and three hours laboratory. Fee: \$95.

EES 272. ENVIRONMENTAL MAPPING II: GEOGRAPHIC INFORMATION SYSTEMS**THREE CREDITS**

An introduction to Geographic Information Systems (GIS). Topics include history of GIS, relational database management, data input/output, quality control, integration with CAD and remote sensing technologies, data analysis, and GIS as a decision support tool. Laboratory component emphasizes practical skills in GIS data management and analysis. Two hours lecture and three hours laboratory. Fee: \$95.

EES 280. PRINCIPLES OF ASTRONOMY**FOUR CREDITS**

Topics include orbital mechanics, results of planetary probes, spectra and stellar evolution, and cosmology. Three hours lecture and three hours laboratory. Fee: \$95. (For science majors only)

EES 302. LITERATURE METHODS**ONE CREDIT**

The nature and use of important sources of information in earth and environmental sciences are developed through retrospective searching methods and current awareness techniques. The use of computer data bases, the design of personal computer information files, information search strategies, and manual search procedures are included. Literature preparation for Senior Projects (EES 391-392). *Prerequisite: Junior standing.*

EES 304. ENVIRONMENTAL DATA ANALYSIS**TWO CREDITS**

To acquaint students majoring in earth and environmental sciences with the techniques and methods of data acquisition and analysis, including environmental sampling methodology and data management. Emphasis will be placed on examination of real data sets from various areas of the earth and environmental sciences with particular emphasis placed on using and applying graphical and statistical procedures used in EES 391-392 (Senior Projects). *Prerequisite: MTH 150 and junior standing or permission of instructor.*

Course Descriptions

EES 341. FRESHWATER ECOSYSTEMS

THREE CREDITS

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$95 (same as BIO 341) *Prerequisites: EES 211 or 240 or BIO 121-122, or permission of instructor. Offered in alternate years.*

EES 343. MARINE ECOLOGY

THREE CREDITS

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$95. (Same as BIO 343). *Prerequisites: EES 230 (Ocean Science) and BIO 121-122 or permission of instructor.*

EES 344. ECOLOGY

FOUR CREDITS

Ecology examines contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$95. (Same as BIO 344). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

EES 366. FIELD BOTANY

THREE CREDITS

This is a specialized summertime field course which emphasizes a taxonomic, phylogenetic, and ecological survey of higher plants indigenous to Northeastern Pennsylvania. Due to the extensive field work, enrollment is somewhat more restricted than in other courses; therefore, written permission from the instructor is the prime prerequisite of those upperclassmen wishing to register for the course. (Same as BIO 366). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

EES 370. GEOMORPHOLOGY

THREE CREDITS

Land forms, their evolution, and the human role in changing the surface of the earth, utilization of geologic and hydrologic information, and field investigations. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 211.*

EES 381. MINERALOGY

THREE CREDITS

Ionic structure of minerals; physical properties and external form as consequences of structure; determination of minerals by physical tests. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 211 and CHM 115.*

EES 382. PETROLOGY

THREE CREDITS

A study of the identification, classification, composition, genesis, and alteration of igneous, sedimentary, and metamorphic rocks and their relation to crustal processes and environments. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 381.*

EES 391. SENIOR PROJECTS I

ONE CREDIT

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in EES.*

EES 392. SENIOR PROJECTS II

TWO CREDITS

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be

considered in the design. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EES 391 or permission of the instructor.*

EES 394. FIELD STUDY
ONE TO THREE CREDITS

On-site study of an earth or environmental problem or situation incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour lecture, plus field trip(s). Fee: \$90. *Prerequisites: EES 211 and EES 240.*

EES 395-396. INDEPENDENT RESEARCH I & II
ONE TO THREE CREDITS EACH

Independent study or research of a specific earth or environmental science topic at an advanced level under the direction of a departmental faculty member. For three credits, a defensible research paper is required. *Prerequisites: Upper-class standing and approval of academic advisor, research advisor, and department chairperson.*

EES 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures). *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EES 198/298/398. TOPICS IN EES
VARIABLE CREDIT

Departmental courses on topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. May be repeated for credit. *Prerequisite: Varies with topic studied.*

EES 498. ADVANCED TOPICS
ONE TO THREE CREDITS

Departmental courses on advanced topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. Available for either undergraduate or graduate credit. May be repeated for credit. *Prerequisite: Senior or graduate standing.*

ECONOMICS COURSES

EC 101. PRINCIPLES OF ECONOMICS
THREE CREDITS

Presents basic economic problems and shows how these problems are solved in a free enterprise economy; the effects of the increasing importance of the economic role of government; the nature of national income and the modern theory of income determination; how money and banking, fiscal policy, and monetary policy fit in with income analysis and keep the aggregate system working. The course deals mainly with macroeconomic problems.

EC 102. PRINCIPLES OF ECONOMICS II
THREE CREDITS

Based upon a broad microeconomic foundation concentrating on such units as the consumer, the firm, and the industry. A general view of the free market system; the economics of the firm and resource allocation under different market structures; production theory; pricing and employment of resources; economic growth and development.

EC 230. MONEY AND BANKING
THREE CREDITS

A study of money, credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent developments in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships. (Cross listed with BA 230.)

Course Descriptions

EC 320 THE ECONOMICS OF CRIME THREE CREDITS

A study of the economic approach to crime and crime prevention. The course will apply economic analysis to such areas of interest as deterring crime, the impact of criminal activity, the allocation of crime-fighting resources, crimes against people, property crime, and victimless crimes. Controversial issues such as the desirability of the death penalty and gun control legislation will be featured. *Prerequisite: EC 102*

EC 330. PUBLIC FINANCE THREE CREDITS

Fundamental principles of public finance; government expenditures; revenue; financial policies and administration; taxation; principles of shifting and incidence of taxation; public debts and the budget; fiscal problems of federal, state, and local government; the relation of government finance to the economy. *Prerequisites: Ec 101 and 102.*

EC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a full-time faculty member. A research paper at a level significantly beyond a term paper is required. *Prerequisites: Ec 101 and 102.*

EC 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EC 198/298/398. TOPICS VARIABLE CREDIT

Lectures on current issues and developments in economics.

EDUCATION COURSES

ED 190. EFFECTIVE TEACHING WITH FIELD EXPERIENCE THREE CREDITS

This course emphasizes concepts and skills for effective teaching. These skills include instructional techniques, library research, writing, and field experience. Students will be involved in their first 30-hour practicum experience. *Departmental permission is required.*

ED 200. EDUCATIONAL PSYCHOLOGY

This course has been replaced with ED 180. See Course Description for ED 180.

ED 210. TEACHING STUDENTS WITH SPECIAL NEEDS

This course is now offered as EDSP 210. See course description for EDSP 210.

ED 215. INTEGRATING TECHNOLOGY INTO THE CLASSROOM

This course has been replaced by ED 191. See Course Description for ED 191.

ED 220. TEACHING CULTURALLY AND LINGUISTICALLY DIVERSE LEARNERS (OPO COURSE) THREE CREDITS

This course will address the urgent need for multicultural education by covering topics such as racism, bias, and cultural information in order to help students develop strategies for creating within their classrooms knowledge of, appreciation of, and respect for diversity. Teaching strategies for English Language Learners and issues relevant to ELLs, particularly immigration and globalization, will be discussed. The course will also help students develop the knowledge base and instructional skills necessary to teach their future students basic world geography in order to understand the cultural/political effects that geography has had on the diverse cultural groups included in the American educational system. *Prerequisite: ED 190. Effective Teaching.*

ED 263. CHILD DEVELOPMENT
TWO CREDITS

This course is designed for students to understand developmental patterns of change: physical, cognitive, and psychosocial areas for each stage of development (birth to age 5). Multiple influences on the development and learning will be studied, including biological, psychological, and sociological, cultural, familial, environmental, gender, family, and community, language differences, brain development, and health, nutrition, and safety. Students will observe and record children's behavior in their field experience. *Prerequisite: Completion of ED 190. Effective Teaching. Departmental permission is required.*

ED 310. HEALTH, PHYSICAL EDUCATION AND SAFETY
THREE CREDITS

This course is a study of methods and materials appropriate for teaching health, physical education, and safety. Emphasis is on understanding the developmental levels, needs, and interests of children in these areas from infancy to early adolescence. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 321. LITERACY FOUNDATIONS I
THREE CREDITS

This course will provide students with basic concepts of literacy instruction: emphasis on the nature of literacy development; the nature of the learner; and literacy development as an interactive process. This course requires completion of a 30-hour field experience. Departmental permission is required. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program. Departmental permission is required.*

ED 322. LITERACY FOUNDATIONS II
THREE CREDITS

The course is designed to investigate and analyze major instructional methods for teaching literacy. The material is based upon current research theories and findings and includes topics recognized by theorists and practitioners as being most critical to developing effective school literacy programs. The course will include literature based on reading programs, classroom organization, and assessment. The class will also require students to become more familiar with Pennsylvania standards and anchors and apply that knowledge to their planning. *Prerequisite: ED 190. Effective Teaching, admission to the Teacher Education Program, and successful completion of Ed 321.*

ED 323. DIFFERENTIATED READING
THREE CREDITS

The purpose of this course is to develop knowledge and skill in classroom-based reading assessment to diagnose students' reading strengths and needs. A range of assessment devices and their use in the diagnosis of reading difficulties will be studied. An analysis of data and the determination of instructional interventions will be emphasized. *Prerequisites: Successful completion of Ed 190 Effective Teaching, ED 321, and admission to the Teacher Education Program.*

ED 324. CHILDREN'S AND ADOLESCENT LITERATURE
THREE CREDITS

This course will involve students in actively reading a wide range of children's and adolescent's literature accompanied with an analysis of literary elements and genre. Emphasis will be placed on instructional methods that incorporate the use of literature across the curriculum with attention given to the careful selection of books to match the instructional levels of readers. *Prerequisites: Successful completion of Ed 190. Effective Teaching, ED 321. Literacy Foundations I, and admission to the Teacher Education Program.*

ED 325. APPLIED READING STRATEGIES
THREE CREDITS

This course is designed to extend the foundational knowledge of reading instruction learned in ED 321. Literacy Foundations I with an emphasis on the application of this knowledge in the design of instructional planning and delivery. Application of the course content is demonstrated in the teaching of children enrolled in the Wilkes University Reading Academy or in a regional school. The ability to develop effective reading plans and activities and apply these strategies with children in an interactive setting is the essence of this course. *Prerequisites: Successful completion of ED 321. Literacy Foundations I, admission to the Teacher Education Program, and instructor permission.*

Course Descriptions

ED 330. MATHEMATICS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

This course is designed to present a study of research, concepts, and methodologies pertinent to the teaching of mathematics from the PK through 4th grade levels. In this course emphasis is placed on 1) the knowledge necessary to guide children to become mathematically literate; 2) the implementation of planning and instructional techniques based on the NCTM Curriculum Standards, the PA Academic Standards, and the PDE Assessment Anchors, as well as principles of the NAEYC; 3) the use of concrete manipulatives to facilitate the learning process. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Committee.*

ED 338. TEACHING ESL: MATERIALS AND METHODOLOGY THREE CREDITS

This three-credit course will address the methodology and materials needed for professional educators who wish to teach English as a Second Language to non-native speakers, grades K-12. Students will explore the mechanics involved in second language acquisition and will apply that knowledge in developing instructional strategies appropriate for the ESL classroom. Students will examine cross-cultural information in order to develop an understanding of the richly diverse members of the ESL classroom, with the goal of creating a supportive and safe classroom environment, free from cultural or political bias, in which English usage is developed and acculturation is supported. Students will review current ESL instructional materials and software. All classroom activities are designed to develop the students' knowledge of and respect for diversity while enhancing their instructional skills. A fifteen-hour field experience in ESL is incorporated into this course. *Prerequisite: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 341. LANGUAGE ARTS (OPO COURSE) THREE CREDITS

The purpose of this course is to inform and actively involve prospective teachers in the most developmentally effective methods for teaching language arts at the early childhood and elementary school levels. The course focuses on the language arts skills of writing, speaking, listening, viewing, and reading with emphasis on the writing process, literature-based lesson planning, and integrated language arts approaches. The incorporation of children's literature and the study of various genres are fundamental to this course. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 345. ASSESSMENT IN EDUCATION THREE CREDITS

This course will address a number of different professional areas both of theoretical importance and practical significance. Assessment concepts will provide a framework to critically analyze any assessment, whether commercial or teacher-made. Practical skills will enable the pre-service teacher to assess a wide variety of learning goals and teaching experiences within cognitive, affective, and psychomotor domains. Finally, these assessment concepts and skills will be examined within the context of Pennsylvania Academic Standards and the Pennsylvania mandated assessment (PSSA). *Prerequisites: Completion of ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 350. THE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

This course is designed as an exploration of the importance of the arts in the development of children in the cognitive, affective, and psychomotor domains. Students will discover how the arts are directly related to our natural and manmade environments and learn specific teaching methodologies that foster creativity and the integration of art with other subject areas. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 360. SOCIAL STUDIES IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

In this course, students will gain an understanding for teaching social studies at the early childhood and elementary school levels. Students will develop their personal philosophy of the purpose of social studies, review National curriculum guidelines and Pennsylvania state standards, and explore a variety of teaching strategies. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 370. SCIENCE IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
THREE CREDITS

This course presents a study of the methods and curriculum for teaching science to young children. Emphasis is placed on instruction that is activity oriented and leads to the development of science process skills, problem-solving strategies, and well-developed conceptual frameworks. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 380. CONTENT AREA LITERACY
THREE CREDITS

This course is designed to provide literacy instruction theory and skills for teaching content area subjects in grades 4 through 12. The course's strategy-based approach includes developing vocabulary, evaluation reading materials, constructing meaning in texts, developing comprehension skills, and learning techniques for the adaptation and development of study materials to address the diverse reading levels of students in middle level and secondary schools. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 385. CLASSROOM MANAGEMENT
THREE CREDITS

This course is designed for students to establish and maintain a positive social context for learning in Pre-K through Grade 4 education by applying developmentally appropriate motivational and management strategies. Researches and theories will be identified, analyzed, evaluated, and demonstrated. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

EDSP 388 INCLUSIONARY PRACTICES
THREE CREDITS

This course is designated for student teachers in ED 390 to apply knowledge of accommodations and adaptations for students with disabilities in an inclusive academic setting. Emphasis will be placed on literacy and cognitive skill development for students with various exceptionalities. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program. Corequisite: will be completed in conjunction with ED 390.*

ED 390. STUDENT TEACHING WITH SEMINAR [PK-4], [4-8], [7-12], AND [K-12] (OPO COURSE)
TWELVE CREDITS

Student teaching is the capstone learning experience for prospective teachers. Student teachers are assigned to work with experience classroom teachers. Under supervision, they assure responsibility for teaching and for managing a classroom. Conference are regularly scheduled with cooperating teachers and college supervisors. In addition to fieldwork, students attend regularly scheduled seminars designed to facilitate the integration of theory and practice.

As a part of the seminar experience the student teachers receive workshop training in areas as follows: classroom management strategies and techniques; health and emergency guidelines; legal, ethical, and professional issues; and career and certification procedures. In addition, the Gardners' *Issues in Education Forum Series* offers candidates workshops and lectures based on current topics in teaching and learning. Fee: \$70. *Prerequisites: ED 190. Effective Teaching, admission to the Teacher Education Program, and completion of ED course requirements. Corequisite: will be completed in conjunction with EDSP 388. Departmental permission is required.*

ED 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Approval of department chairperson is required.*

ED 198/298/398. TOPICS IN EDUCATION
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses.

SECONDARY METHODS IN EDUCATION
FOUR CREDITS

A study of instructional methodology in concentration areas at the secondary level. 30 hours practicum.
ED 300—Foreign Languages (G 7-12)

Course Descriptions

ED 351—Communication (G 7-12)
ED 371—Sciences (G 7-12)
ED 381—Social Studies (G 7-12)
ENG 393—English (G 7-12)
MTH 303—Mathematics (G 7-12)

Departmental permission is required.

SPECIAL EDUCATION COURSES

EDSP 225. SPECIAL EDUCATION METHODOLOGY I WITH FIELD EXPERIENCE (OPO COURSE) THREE CREDITS

This course is designed to address the development, implementation, and monitoring of individualized management, instruction, curricular, and environmental strategies and adaptations for students with special needs. Pedagogical recommendations and research-based effective teaching practices are reiterated from prerequisite courses. Emphasis is placed on a needs based model incorporating the cognitive, language, attentional, affective, physical, and sensory needs of higher incident populations (learning disabilities, mild mental retardation, speech disorders, and behavioral challenges) within included settings, resource room, segregated, and learning support environments. A field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content. All education students will take this class. *Prerequisites: ED 190. Effective Teaching and EDSP 210. Teaching Students with Special Needs. Departmental permission is required.*

EDSP 226. SPECIAL EDUCATION METHODOLOGY II WITH FIELD EXPERIENCE THREE CREDITS

This three-credit course is designed to address the development, implementation, and monitoring of individualized management, instructional, curricular, and environmental strategies and adaptations for students with special needs. Pedagogical recommendations and research based effective teaching practices are reiterated from prerequisite courses. Emphasis is placed on a needs based model incorporating the cognitive, language, attentional, affective, physical, and sensory needs of lower incident populations (multiple disabilities, autism, hearing and vision impairments, and orthopedic and health conditions) within included settings, resource room, learning support, and segregated environments. A field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content. *Prerequisites: ED 190. Effective Teaching and EDSP 210. Teaching Students with Special Needs. Departmental permission is required.*

EDSP 227. BEHAVIORAL MANAGEMENT IN SPECIAL EDUCATION WITH FIELD EXPERIENCE THREE CREDITS

This three-credit course will assist pre-service teachers in developing a working framework of social, behavioral, environmental, individualized, and collective management techniques. Techniques practiced in the course will focus on approaches for classroom organization, constructive discipline, and proactive responses to intervention, including applied behavior analysis and functional behavioral assessments. A field experience component facilitates direct interaction with learners with special needs, supplemented by cooperative discussions of experiential applications to course content. *Prerequisites: ED 190. Effective Teaching and EDSP 210. Teaching Students with Special Needs. Departmental permission is required.*

EDSP 300. SPECIAL EDUCATION ASSESSMENT AND EVALUATION THREE CREDITS

This three-credit course will provide direct experience with selecting, administering, and interpreting formal and informal assessment measures for analysis of student learning profiles. Assessments will include ecological inventories, norm-referenced, performance-based, and curriculum-based testing, standardized achievement and intelligence measures, and vocational and transition-related evaluations. Cooperative discussions and use of case studies will focus on instructional decision-making based upon student learning profiles.

Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.

ELECTRICAL ENGINEERING COURSES

EE 211. ELECTRICAL CIRCUITS AND DEVICES

THREE CREDITS

Various techniques for circuit analysis of resistive networks. Inductance and capacitance. Sinusoidal steady-state analysis and power calculations. Introductory principles of three-phase circuits, electronic circuits, operational amplifiers, filters, digital logic circuits, transient circuits, and energy conversion schemes. *Corequisites: EE 283, Mth 112.*

EE 241. DIGITAL DESIGN

THREE CREDITS

The electronics of digital devices, including Bipolar TTL and CMOS; digital logic functions, such as AND, OR, INVERT; Boolean algebra; combinational logic; minimization techniques; digital storage devices; synchronous sequential design; state machines; programmable logic. Three one-hour lectures and one two-hour lab per week. Fee: \$80.

EE 251. ELECTRONICS I

THREE CREDITS

Circuit concepts involving nonideal dependent and constant voltage and current sources. Operational amplifiers. Development of physics, operating principles, and terminal characteristics of diodes, bipolar and field-effect transistors. Development of typical design applications and other considerations like conception, analysis, simulation, interference, small and large signal modeling, power, temperature, and frequency effects. Three hours lecture per week. *Prerequisite: EE 211.*

EE 252. ELECTRONICS II

FOUR CREDITS

Multi-transistor amplifiers. Building blocks of an operational amplifier. Frequency response and bandwidth of BJT, FET, and operational amplifiers. Filters. Power amplifiers. Feedback circuits. Three one-hour lectures and one three-hour lab per week. Fee: \$80. *Prerequisite: EE 251.*

EE 271. SEMICONDUCTOR DEVICES

THREE CREDITS

Basic properties of semiconductors and their conduction processes, with special emphasis on silicon and gallium arsenide. Physics and characterizations of p-n junctions. Homojunction and heterojunction bipolar transistors. Unipolar devices including MOS capacitor and MOSFET. Microwave and photonic devices. *Prerequisites: Physics 202, Chm 115.*

EE 283. ELECTRICAL MEASUREMENTS LAB

ONE CREDIT

A laboratory for the development of measurement techniques and use of electrical instruments for the measurement of various electrical quantities. One two-hour laboratory per week. Fee: \$80. *Corequisite: EE 211.*

EE 298. TOPICS IN ELECTRICAL ENGINEERING

ONE TO THREE CREDITS

Selected topics in the field of electrical engineering. *Prerequisite: Sophomore standing and permission of instructor.*

EE 314. CONTROL SYSTEMS

THREE CREDITS

Laplace transforms and matrices. Mathematical modeling of physical systems. Block diagram and signal flow graph representation. Time-domain performance specifications. Stability analysis; Routh-Hurwitz criterion. Steady state error analysis. Root-locus and frequency response techniques. Design and compensation of feedback systems. Introductory state space analysis. Two hours lecture and one two-hour laboratory per week. *Prerequisite: EE 211 and EGR 214.*

EE 325. ENERGY CONVERSION DEVICES

THREE CREDITS

Magnetic circuit calculations. Principle of operation and applications of transformers, DC machines, synchronous machines, and induction motors. Applications of power electronics. Direct energy conversion schemes. *Prerequisite: EE 251*

Course Descriptions

EE 337. ENGINEERING ELECTROMAGNETICS I FOUR CREDITS

Waves and phasors; concepts of flux and fields; transmission line, Smith chart, and impedance matching; vector calculus; Maxwell's equations for electrostatic and magnetostatic fields. Three hours of lecture and one two-hour laboratory per week. Fee: \$80. *Prerequisites: EGR 214, PHY 202.*

EE 339. ENGINEERING ELECTROMAGNETICS II FOUR CREDITS

Maxwell's equations for time-varying fields; boundary conditions and boundary value problems; plane wave propagation; reflection, refraction and wave guides; stripline; s-parameters and microwave devices; directional coupler, attenuator; radiation and antennas; satellite communication systems and radar sensors. Three hours of lecture and one three-hour laboratory per week. Fee: \$75. *Prerequisite: EE337*

EE 342. MICROCOMPUTER OPERATION AND DESIGN THREE CREDITS

Microprocessor architecture, microcomputer design, and peripheral interfacing. Microprogramming, software systems, and representative applications. Associated laboratory experiments consider topics such as bus structure, programming, data conversion, interfacing, data acquisition, and computer control. Two hour lecture and one two-hour laboratory a week. Fee: \$80. *Prerequisite: EE 241.*

EE 345. COMPUTER ORGANIZATION THREE CREDITS

Number representation, digital storage devices and computational units, bus structures; execution sequences and assembly language concepts; control units with horizontal and vertical microcoding; addressing principles and sequencing; microprocessors; basic input and output devices; interrupts; survey of RISC principles including pipelined execution. *Prerequisite: EE 241.*

EE 346. COMPUTER ARCHITECTURE THREE CREDITS

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest "supercomputers." (Same as CS 330) *Prerequisite: CS 230 or EE 342.*

EE 373. CAD FOR MICROFABRICATION ONE CREDIT

Simulation tools in transistor process design and extraction of device parameters. Examples covered include the following technologies Bipolar, NMOS, CMOS, and BICMOS. Process design project for a bipolar junction transistor. One two-hour lecture laboratory a week. *Prerequisite: Junior engineering standing. Corequisite: EE 381.*

EE 381. MICROFABRICATION LAB THREE CREDITS

The theoretical and practical aspects of techniques utilized in the fabrication of bipolar junction transistors (BJTs). Includes crystal characteristics, wafer cleaning, oxidation, lithography, etching, deposition, diffusion, metallization, process metrics, and device characterization. One-and-a-half hour lecture and one, four-hour lab a week. Fee: \$80. *Prerequisite: Junior engineering standing.*

EE 382. MODERN COMMUNICATION SYSTEMS FOUR CREDITS

Introduction to probability and statistics and their use in communication systems. Fundamental properties of signals, principles of signal processing, multiplexing, modulator/demodulator design, noise and its effects. Sampling theorem and Nyquist's criteria for pulse shaping; signal distortion over a channel; line coding, signal to noise ratios, and performance comparison of various communication systems. Three hours lecture and one three-hour laboratory a week. Fee: \$80. *Prerequisite: EE 252, EE 337, EGR 214*

EE 391. SENIOR PROJECTS I ONE CREDIT

Design and development of selected projects in the field of electrical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in*

*engineering.*EE 392. SENIOR PROJECTS II
TWO CREDITS

Design and development of selected projects in the field of electrical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of the EE 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EE 391.*

EE 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS EACH

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson is required.*

EE 398. TOPICS IN ELECTRICAL ENGINEERING
THREE CREDITS

Selected topics in the field of electrical engineering. These may include one or more of the following: control systems; information theory; signals and noise measurements; communication systems; network design and synthesis; magnetic and non-linear circuits; digital and analog systems; computer systems; medical engineering; power systems and generation. May be repeated for credit. *Prerequisite: Junior engineering standing.*

ENGINEERING COURSES

EGR 140. COMPUTER UTILIZATION IN ENGINEERING
THREE CREDITS

An introduction to computer techniques for engineering design and analysis of components, mechanisms, systems, and processes. Utilization of computer software packages in problem solving, performance evaluations, demonstration, trouble shooting, and determination of the interrelationships among system components as well as processes. Two hours lecture and one two-hour laboratory per week. Fee: \$75.

EGR 200. INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING
THREE CREDITS

Application of materials properties to engineering design. Introduction to atomic arrangements, crystal structures, imperfection, phase diagrams, and structure-property relations. Fundamentals of iron, steel, and non-ferrous materials. The behavior of materials in environmental conditions.

EGR 201. PROFESSIONALISM AND ETHICS
ONE CREDIT

Responsibility of an engineer as a professional; ethics in science and engineering; role of professional societies; recent trends in technological innovations; career planning. Review of professional exam. *Prerequisite: Junior engineering standing.*

EGR 214. LINEAR SYSTEMS
THREE CREDITS

Modeling of physical systems. Engineering applications of Laplace transforms, Fourier series, matrices, statistics and probability, and related topics to solve problems in electromagnetics, heat and mass transfer, control systems, fluid mechanics, robotics, engineering management, and communication systems. Emphasis on the use of simulation packages. Two hours lecture and one two-hour laboratory per week. *Prerequisites: EE 211, MTH 112.*

EGR 222. MECHATRONICS
THREE CREDITS

Introduction to mechatronics system design with emphasis on using sensors to convert engineering system information into an electrical domain, signal conditioning and hardware integration, programming, and using actuators to effect system changes. Two one-hour lectures and one three-hour laboratory per week. Fee: \$80. *Prerequisites: EE 211, EE 283.*

Course Descriptions

EGR 327. THIN FILM PROCESSING

THREE CREDITS

Nucleation and growth theory; crystalline, amorphous, epitaxial growth morphology. Deposition techniques like DC, RF, magnetron sputtering, ion beam sputtering, evaporation, chemical vapor deposition, physical vapor deposition. Structure, properties and applications for specific thin film processing techniques. Two hours lecture and two hours laboratory a week. Fee: \$80. *Prerequisite: EGR 200, Phy 203.*

EGR 391. SENIOR PROJECTS I

ONE CREDIT

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in engineering.*

EGR 392. SENIOR PROJECTS II

TWO CREDITS

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of the EGR 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EGR 391.*

EGR 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENGINEERING MANAGEMENT COURSES

EGM 320. ENGINEERING PROJECT ANALYSIS

THREE CREDITS

Economic analysis of evaluating cash flows over time. Depreciations: techniques and strategies. Replacement analysis, break even analysis, benefit-to-cost ratio evaluation. Evaluating a single project: deterministic criteria and techniques. Multiple projects and constraints. Risk analysis and uncertainty. Models of project selection. Project selection using capital asset pricing theory. *Prerequisite: Junior engineering standing.*

EGM 321. QUANTITATIVE ANALYSIS AND PROGRAMMING METHODS

THREE CREDITS

Discussion of various quantitative analysis and optimization methodologies. Analytical numerical approaches are used in solving linear and nonlinear optimization problems. Emphasizes the development of ability in analyzing problems, solving problems by using software, and post solution analysis. *Prerequisite: Junior standing or consent of instructor.*

EGM 336. ENGINEERING AND MANAGEMENT MODELS

THREE CREDITS

Discussion of the techniques in and the art of modeling practical problems encountered by engineers and managers. *Prerequisite: Junior standing or consent of instructor.*

EGM 391. SENIOR PROJECTS I

ONE CREDIT

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required.

EGM 392. SENIOR PROJECTS II

TWO CREDITS

Design and development of selected projects in the field of engineering management under the direction of a staff member. Technical as well as economic factors will be considered in the

design. A professional paper to be presented and discussed in an open forum is required.
Prerequisite: EE/EGM/ME 391.

ENGLISH COURSES

ENG 101. COMPOSITION FOUR CREDITS

Practice in writing for specific purposes and audiences to develop a coherent voice for engaging in academic and professional discourse; practice in writing with the support of computer technology; study of primary texts, models, and principles of expository and argumentative writing to develop critical reading, writing, and thinking skills; introductory bibliographic instruction and practice in writing that incorporates library research.

ENG 120. INTRODUCTION TO LITERATURE AND CULTURE THREE CREDITS

An introduction to literature through critical reading, writing, and discussion of the major forms of literary and cultural expression. Students will explore works in Western and Non-Western literary traditions. Major subtopic areas for the course will include: Reading Classical Traditions; Reading Great Works; Reading Cultural Crossroads; and Reading American Experience:

Reading Classical Traditions

Study of major works from the ancient world to the Renaissance, emphasizing the impact these texts have had on our literary tradition and our culture.

Reading Great Works

Study of major works since the Renaissance, emphasizing the principal modes of literary expression (poetry, drama, fiction and film).

Reading Cultural Crossroads

Study of works emphasizing a variety of cultural values, intercultural relationships, global perspectives, and aesthetic experiences.

Reading American Experience

Study of works from American literature, emphasizing the multicultural heritage and nature of American writers and American culture.

Prerequisite: Eng 101

ENG 190. PROJECTS IN WRITING AND EDITING ONE TO THREE CREDITS

Independent projects in writing, editing, and/or peer consulting connected to the English program newsletter, student literary magazine, and university Writing Center.

ENG 201. WRITING ABOUT LITERATURE AND CULTURE FOUR CREDITS

Introduction to conventions, theoretical approaches, research methods, and practice of literary and cultural studies. Application of contemporary critical perspectives and research methodology in reading and writing about literary and cultural texts. *Prerequisite: Eng 101.*

ENG 202. TECHNICAL AND PROFESSIONAL WRITING THREE CREDITS

Practice in "real world writing." Students write on subjects associated with their major or intended careers. Students learn to perform as self-aware writers who have something to say to someone, to adapt their roles and voices to various audiences, and to marshal and present persuasively data that is relevant to a particular purpose and context. *Prerequisite: Eng 101.*

ENG 203. INTRODUCTION TO CREATIVE WRITING THREE CREDITS

Analysis and practice of various forms of creative writing. Study of the writer's tools and choices in creating poetry, short fiction, and dramatic scenes. *Prerequisite: Eng 101.*

ENG 218. WRITING PRACTICUM AND COMPOSITION THREE CREDITS

An integration of writing and composition theory and practice for particular audiences.
Prerequisite: Eng 101.

Course Descriptions

ENG 225. COMPARATIVE GRAMMAR THREE CREDITS

A comparative and critical study of traditional, structural, and transformational-generative grammar. *Prerequisite: Eng 101.*

ENG 228. PROFESSIONAL AND WORKPLACE WRITING THREE CREDITS

Study and practice of effective writing techniques related to writing at work for the professional world that focuses on producing polished documents, enhancing research techniques, and fine-tuning oral communication skills. *Prerequisite: Eng 101.*

ENG 233. SURVEY OF ENGLISH LITERATURE I THREE CREDITS

A study of the major works and movements in English literature from the Anglo-Saxon period through the eighteenth century. *Prerequisite: Eng 101.*

ENG 234. SURVEY OF ENGLISH LITERATURE II THREE CREDITS

A study of the major works and movements in English literature from the Romantic movement to the present. *Prerequisite: Eng 101.*

ENG 281. SURVEY OF AMERICAN LITERATURE I THREE CREDITS

Overview of writers, works, and movements represented in indigenous and European colonial writers in North and Central America from the 1490s to the Civil War. *Prerequisite: Eng 101.*

ENG 282. SURVEY OF AMERICAN LITERATURE II THREE CREDITS

Study of the major writers, works, and movements from the Civil War to the present. *Prerequisite: Eng 101.*

ENG 303. ADVANCED WORKSHOP IN CREATIVE WRITING THREE CREDITS

Seminar experience where students write and critique poetry, fiction, nonfiction, or scripts. Specific genre designated in each course. *Prerequisite: Eng 203 or permission of instructor.*

ENG 308. RHETORICAL ANALYSIS AND NONFICTIONAL PROSE WRITING THREE CREDITS

The study and practice of strategies for producing responsibly written public information, including persuasive and argumentative propositions for particular audiences. *Prerequisite: Eng 101.*

ENG 324. HISTORY OF THE ENGLISH LANGUAGE THREE CREDITS

A chronological study of the origins of the English language and the systematic changes that have made it the language we speak and write today. *Prerequisite: Eng 101.*

ENG 331. STUDIES IN MEDIEVAL ENGLISH LITERATURE THREE CREDITS

A study of English literature to 1500, exclusive of Chaucer. *Prerequisite: Eng 101.*

ENG 332. STUDIES IN SIXTEENTH-CENTURY LITERATURE THREE CREDITS

The study of texts produced by the English Renaissance, focused on the evolution of literary, dramatic, and cultural works from about 1485 to 1603. *Prerequisite: Eng 101.*

ENG 333. STUDIES IN SEVENTEENTH-CENTURY LITERATURE THREE CREDITS

The study of seventeenth-century texts, focused on literary, dramatic, and cultural works from about 1603 to 1660. *Prerequisite: Eng 101.*

ENG 334. STUDIES IN EIGHTEENTH-CENTURY LITERATURE THREE CREDITS

Study of eighteenth-century authors and culture. *Prerequisite: Eng 101.*

- ENG 335. STUDIES IN ROMANTIC LITERATURE
THREE CREDITS
Study of chief poets and prose writers of the Romantic Period. *Prerequisite: Eng 101.*
- ENG 336. STUDIES IN VICTORIAN LITERATURE
THREE CREDITS
Study of major writers, works, and topics of the Victorian Age. *Prerequisite: Eng 101.*
- ENG 340. STUDIES IN CHAUCER
THREE CREDITS
A study of selected major and minor works by Chaucer. *Prerequisite: Eng 101.*
- ENG 342. STUDIES IN SHAKESPEARE
THREE CREDITS
A study of selected plays by Shakespeare. *Prerequisite: Eng 101.*
- ENG 344. STUDIES IN MILTON
THREE CREDITS
A study of Milton's selected poetry and prose. *Prerequisite: Eng 101.*
- ENG 350. STUDIES IN THE ENGLISH NOVEL
THREE CREDITS
Study of the novel in English, excluding American writers. *Prerequisite: Eng 101.*
- ENG 351. STUDIES IN POSTMODERNISM
THREE CREDITS
A study of the major postmodern writers from the 1960s to the present. *Prerequisite: Eng 101.*
- ENG 352. STUDIES IN THE AMERICAN NOVEL
THREE CREDITS
Study of the American novel from its eighteenth-century beginnings to the present. *Prerequisite: Eng 101.*
- ENG 353. STUDIES IN POSTCOLONIAL LITERATURE
THREE CREDITS
Study of colonial and postcolonial literature that examines the effects of British imperial pursuits and provides an overview of major issues within postcolonial studies. *Prerequisite: Eng 101.*
- ENG 355. STUDIES IN THE MODERN NOVEL
THREE CREDITS
Study of twentieth-century texts focused on a particular theme or movement, as determined by instructor. *Prerequisite: Eng 101.*
- ENG 358. STUDIES IN CONTEMPORARY FICTION
THREE CREDITS
A study of fiction, including the novel, short story, and novella, written since World War II. Works from English, American, and world literature may be included to reflect the diversity of contemporary literature and the emergence of post-modernist themes and forms. *Prerequisite: Eng 101.*
- ENG 361. STUDIES IN EARLY ENGLISH DRAMA
THREE CREDITS
Study of the drama from the tenth century to 1642; reading of plays by medieval and early modern dramatists exclusive of Shakespeare. *Prerequisite: Eng 101.*
- ENG 365. STUDIES IN MODERN DRAMA
THREE CREDITS
Studies in major theatrical genres, themes, and playwrights of modern world drama through the mid-twentieth-century. *Prerequisite: Eng 101.*
- ENG 366. STUDIES IN AMERICAN OR BRITISH DRAMA
THREE CREDITS
A study of major American and/or British playwrights and movements, focus to be determined by instructor. *Prerequisite: Eng 101.*

Course Descriptions

ENG 368. STUDIES IN CONTEMPORARY DRAMA THREE CREDITS

A study of major playwrights and theatrical movements in contemporary world drama from the mid-twentieth-century to today. *Prerequisite: Eng 101.*

ENG 370. STUDIES IN MODERN BRITISH POETRY THREE CREDITS

Study of major British poetry of the twentieth century. *Prerequisite: Eng 101.*

ENG 376. STUDIES IN MODERN AMERICAN POETRY THREE CREDITS

Study of major movements and representative figures in modern American poetry. *Prerequisite: Eng 101.*

ENG 390. PROJECTS IN WRITING ONE TO THREE CREDITS

Independent projects in writing for advanced students. *Prerequisite: Six credits in advanced writing courses and permission of department chair.*

ENG 391-392. SENIOR PROJECTS ONE CREDIT EACH

An independent project in the area of the student's concentration culminating in a formal written and oral presentation. The project serves as a capstone experience demonstrating the student's learning in the major. *Prerequisite: Open only to senior English majors.*

ENG 393. THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS FOUR CREDITS

The course deals with the theory and practice of teaching composition, literature, and English language studies on the secondary school level (grades 7 through 12). Topics include planning, methodology, presentation, and assessment of lessons. The course includes 40 hours of field experience. *Prerequisites: Junior standing in English and admission to the Teacher Education Program.*

ENG 394. LITERARY CRITICISM THREE CREDITS

A study of literary theory and the techniques of analysis. *Prerequisite: Eng 101.*

ENG 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chair is required.*

ENG 397. SEMINAR THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chair is required.*

ENG 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENG 198/298/398. TOPICS VARIABLE CREDIT

The study of a special topic in language, literature, or criticism. *Prerequisite: Eng 101.*

ENTREPRENEURSHIP COURSES

ENT 151. INTEGRATED MANAGEMENT EXPERIENCE I
THREE CREDITS

Same as ACC 151 and BA 151. See BA 151 for course description.

ENT 152. INTEGRATED MANAGEMENT EXPERIENCE II
THREE CREDITS

Same as ACC 152 and BA 152. See BA 152 for course description. *Prerequisite: ACC 151 or BA 151 or ENT 151.*

ENT 201. NATURE AND ESSENCE OF ENTREPRENEURSHIP
THREE CREDITS

An introduction to entrepreneurs and self-career creation in small and large entrepreneurial organizations. The importance of entrepreneurs in the local, national and world economies and personal characteristics of successful entrepreneurs will be studied. Guest speakers and a case study are included.

ENT 203. OPPORTUNITY IDENTIFICATION: INNOVATION AND CREATIVITY
THREE CREDITS

An introduction to the creative and innovative processes. Emphasis on forms of creativity and how they are interrelated, psychology and behavioral aspects of creativity, recognizing creativity, and the practice of managing innovation and creativity in different environments. Direct experience with two or more forms of creativity.

ENT 252. THE ENTREPRENEURIAL LEADER
THREE CREDITS

Examines leadership characteristics and behaviors of entrepreneurs. Emphasis on authentic and integrity-based leadership, role of emotional intelligence, and effective leadership strategies in entrepreneurial environments.

ENT 321. ANALYZING MARKETS AND COMPETITION
THREE CREDITS

In-depth study of identification and assessment of markets and competition. Sources of information, key analytical techniques, and evaluation strategies are examined. *Prerequisite: BA 321.*

ENT 342. ENTREPRENEURIAL FINANCE
THREE CREDITS

The study of the financial dimensions of launching and growing ventures. Topics include financial characteristics and requirements of growth, venture capital, angel capital and private investment, equity markets and public offerings, and specialized funding programs. *Prerequisite: BA 341.*

ENT 361. PRACTICING ENTREPRENEURSHIP
THREE CREDITS

Advanced essentials and elements of becoming an entrepreneur, or intrapreneur, will be examined through current classic "real life" entrepreneurial case readings and entrepreneur and guest faculty lectures. Students will create their own entrepreneurial enterprise as a team project. *Prerequisites: Senior standing, ENT 201, or permission of instructor.*

ENT 362. ENTREPRENEURIAL INTERNSHIP
THREE CREDITS

The course content provides on-the-job multi-discipline experience assisting a working local entrepreneur in the development and operation of a business enterprise.

ENT 384. SMALL BUSINESS CONSULTANCY
THREE CREDITS

Teams of students diagnose, analyze, and recommend solutions for problems defined by small business clients. Course requires students to apply a range of classroom skills in a real situation and present oral and written reports to the client firm. *Prerequisites: Senior standing and instructor permission.*

ENT 385. OPPORTUNITY ASSESSMENT: TECHNICAL, ECONOMIC AND MARKET FEASIBILITY
THREE CREDITS

Theory and practice of assessing market, economic, and technical feasibility. Use of project

Course Descriptions

management techniques to develop an in-depth feasibility analysis plan for expected outcomes.

ENT 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

ENT 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENT 198/298/398. TOPICS

VARIABLE CREDIT

Special offerings designed to introduce students to subjects of current interest in entrepreneurship.

ENVIRONMENTAL ENGINEERING COURSES

ENV 305. SOLID WASTE MANAGEMENT

THREE CREDITS

Assessment of the scope of the solid waste problem and engineering and management strategies. Lecture topics include: solid waste sources, characterization and generation rates; collection and transportation technologies and management options; sanitary landfill design and operation and recycling strategies and technologies. Three hours lecture. *Prerequisites: EES 240, CHM 116 or EES 202, or permission of instructor.*

ENV 315. SOILS

THREE CREDITS

Study of the structure, properties, and classification of soils. Fundamental concepts of soils science are applied to the environmental management of terrestrial ecosystems. Topics include soil genesis, classification and physical properties of soils; soil chemistry; and soil moisture relationships. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 211, CHM 116 or EES 202.*

ENV 321. HYDROLOGY

FOUR CREDITS

A quantitative analysis of the physical elements and processes which constitute the hydrologic cycle. Topics include precipitation, infiltration, evaporation, runoff, streamflow, and ground water flow. Ground water modeling and advanced treatment of Darcy's Law is presented within the context of migration of ground water pollutants. Three hours lecture and three hours laboratory. Fee: \$95. *Prerequisite: EES 211.*

ENV 322. WATER RESOURCES ENGINEERING

THREE CREDITS

Engineering aspects of hydrologic systems including flood control, reservoir systems, open channel design, surface and groundwater development. Three hours lecture/demonstration. *Prerequisite: ENV 321.*

ENV 330. WATER QUALITY

FOUR CREDITS

The physical, chemical and biological processes that affect the quality of water in the natural environment. The measurement of water quality parameters in water and wastes. The behavior of contaminants in ground and surface water. Three hours lecture and three hours lab per week. Fee: \$95. *Prerequisites: CHM 116 or EES 202, EES 240.*

ENV 332. AIR QUALITY

THREE CREDITS

Study of atmospheric pollutants, their sources and effects; measurement and monitoring techniques for air pollutants; atmospheric chemical transformations; regulatory control of air pollution; meteorology of air pollution; transport and dispersion of air pollutants; and introduction to indoor

air pollution. Lab work includes both problem-oriented and hands-on exercises. Exercises include basic gas concepts; volume measuring devices; flow, velocity and pressure measuring devices; calibration of such devices; various sampling techniques. Three hours lecture and a three hour-lab per week. Fee: \$95. *Prerequisites: CHM 116 or EES 202, EES 240, or permission of instructor.*

**ENV 351. WATER AND WASTEWATER TREATMENT
FOUR CREDITS**

Design of water and wastewater treatment systems. Estimation of demands. Physical, chemical, biological and land-based treatment processes. Sludge handling and disposal. Three hours lecture and three hours lab. Fee: \$95. *Prerequisite: ENV 330.*

**ENV 352. ENVIRONMENTAL ENGINEERING HYDRAULICS
THREE CREDITS**

Water distribution, sewage collection, pipe network models, piping materials, pumps and pumping stations, valves and tanks. Design and operation. *Prerequisite: ME 321.*

**ENV 353. AIR POLLUTION CONTROL
THREE CREDITS**

This course provides the philosophy and procedures for design of air pollution control systems. Methods used for controlling air-borne emissions of gases, aerosols, and organic vapors are covered. Designs are carried out based on data for typical systems. Evaluations of alternatives with cost comparisons are also presented. Three hours lecture/ demonstration. *Prerequisite: ENV 332, or permission of instructor.*

**ENV 354. HAZARDOUS WASTE MANAGEMENT
THREE CREDITS**

An overview and application of engineering principles to management of hazardous wastes and the remediation of contaminated sites. Introduction to regulatory compliance and environmental laws. Three hours lecture. *Prerequisite: ENV 351 or permission of instructor.*

**ENV 373. OCCUPATIONAL HEALTH
THREE CREDITS**

Appraisal of environmental health hazards, sampling techniques, instrumentation and analytic methods. Principles of substitutions, enclosure and isolation for the control of hazardous operations in industry. Three hours lecture/demonstration. *Prerequisite: Junior or senior standing in engineering or science.*

**ENV 391. SENIOR PROJECTS I
ONE CREDIT**

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in environmental engineering.*

**ENV 392. SENIOR PROJECTS II
TWO CREDITS**

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of ENV 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: ENV 391.*

**ENV 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students in the field of their major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

**ENV 397. SEMINAR
ONE TO THREE CREDITS**

Presentations and discussions of selected topics and projects. *Prerequisite: Senior environmental engineering standing.*

Course Descriptions

ENV 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENV 198/298/398. TOPICS IN ENGINEERING

VARIABLE CREDIT

Selected topics in the field of engineering and related areas. These may include: mechanical engineering; civil engineering; engineering management; geotechnology; radiation, etc. *Prerequisite: Permission of instructor.*

FIRST-YEAR FOUNDATIONS COURSES

FYF 101. FIRST-YEAR FOUNDATIONS

The mission of the First-Year Foundations Program is to provide rigorous learning experiences that challenge first-year students to develop the strategies essential for a successful transition into the Wilkes campus community. Each section of FYF is unique and constitutes a special topics course, in which faculty members are encouraged to explore topics that are of special interest to them.

All sections of FYF, regardless of topic, share a common core of objectives that facilitate significant learning experiences (inside and beyond the classroom) through which first-year students develop self-knowledge and intellectual curiosity, openness to diversity, and a commitment to lifelong learning and civic responsibility. Activities designed to foster and develop effective writing, critical thinking, and information literacy skills are integral components of all FYF sections.

In addition, the FYF Program connects students to a wide variety of University resources, including the exceptional advising and tutoring services of University College, the extensive resources of the Eugene S. Farley Library, and the rich array of cultural events sponsored by the University.

HISTORY COURSES

HST 101. THE HISTORICAL FOUNDATIONS OF THE MODERN WORLD

THREE CREDITS

A thematic survey of the forces shaping the modern world. Topics studied include: world religions, science, rationalism, industrial capitalism, liberalism, socialism, global discovery, imperialism, nationalism and totalitarianism.

HST 102. EUROPE BEFORE 1600

THREE CREDITS

A survey of European history from Ancient times through the Reformation.

HST 125. AMERICAN HISTORY I

THREE CREDITS

A survey of North American/U.S. history from European-Native American contact to the Civil War.

HST 126. AMERICAN HISTORY II

THREE CREDITS

A survey of U.S. history from the Civil War to the present

HST 297 HISTORICAL RESEARCH AND METHODS SEMINAR

THREE CREDITS

An introduction to the skills and methods needed for successful research and writing about history. Enrollment is limited to history majors and minors except by permission of instructor.

**HST 321. AMERICAN CULTURAL AND SOCIAL HISTORY (A)
THREE CREDITS**

An examination of differences and divisions within American society through such topics as social movements, demographic trends, gender, ethnicity and class, effect of industrialization and immigration, cultural expressions, religion, and the family.

**HST 324. AMERICAN ECONOMIC HISTORY (A)
THREE CREDITS**

A survey of the evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the development of the United States as an industrial world power since about 1850.

**HST 325. DIVERSITY IN PENNSYLVANIA HISTORY (A)
THREE CREDITS**

A study of the history of the Commonwealth with particular focus on ethnic and racial diversity.

**HST 328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES (A)
THREE CREDITS**

A selective treatment of major themes in American foreign policy from the founding of the Republic to the present.

**HST 329. AMERICAN WOMEN'S HISTORY (A)
THREE CREDITS**

A study of the role, status, and culture of women in America beginning with the First Americans and European contact up to the present time.

**HST 331. COLONIAL AMERICA (A)
THREE CREDITS**

Discovery, exploration, and settlement; development of social, political, religious, and intellectual institutions; independence and political reorganization.

**HST 332. THE NEW NATION (A)
THREE CREDITS**

A study of America's social, cultural, economic and political development in the first generations of nationhood, 1783-1840.

**HST 333. VICTORIAN AMERICA (A)
THREE CREDITS**

A study of the development of the United States from the end of the Civil War through the end of World War I. Special attention will be paid to urbanization and industrialization and their effects on everyday life.

**HST 334. THE UNITED STATES, 1900-1945 (A)
THREE CREDITS**

The emergence of the United States as a world power and the corresponding development of its political, economic, social, and religious institutions.

**HST 335. THE UNITED STATES SINCE 1945 (A)
THREE CREDITS**

An examination of the political, social, and economic changes in the United States since World War II. Special attention is paid to America's dominant role in the immediate post-war world and how changing conditions over the past forty years have altered this role.

**HST 341-342. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH (N)
THREE CREDITS EACH**

A study of British history from the Neolithic period to present times. The first semester will cover social, economic, and political developments to 1783, including expansion overseas. The second semester will cover the consequences of the industrial revolution and the evolution of the Empire into the Commonwealth.

**HST 345. HISTORY OF NORTHEASTERN EUROPE (N)
THREE CREDITS**

A study of the cultural, political and intellectual history of the Poles, Czechs, Slovaks, Croats, Slovenes and Hungarians, who occupy the northern tier of Eastern Europe. Special attention is given

Course Descriptions

to the roles of the Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences of the forces of nationalism in the region.

HST 346. HISTORY OF THE BALKANS (N) THREE CREDITS

A study of the cultural, political and intellectual history of the Bulgarians, Serbs, Croats, Slovenes, Albanians, Greeks, Romanians and Turks, who occupy the southern, or Balkan, tier of Eastern Europe. Special attention is given to the roles of the Ottoman Turkish, Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences in the region of such forces as Christian-Muslim cultural interrelationships and nationalism.

HST 348. HISTORY OF RUSSIA (N) THREE CREDITS

A study of the political, social, and intellectual history of Russia. Emphasis is placed upon the emergence of Russia as a major power after 1700.

HST 352. THE RENAISSANCE AND REFORMATION (N) THREE CREDITS

Within the political and economic framework of the period, study will be made of the culture of the Renaissance, the religious reforms and conflicts resulting from the crisis in the sixteenth century.

HST 353. AGE OF ABSOLUTISM (N) THREE CREDITS

The political, social, economic, intellectual, and cultural development of Europe and dependencies from 1600 to about 1750.

HST 354. THE ERA OF THE FRENCH REVOLUTION AND NAPOLEON (N) THREE CREDITS

A study of the structure of the Ancien Regime and an examination of the causes, events, and consequences of the French Revolution culminating in the Napoleonic Empire.

HST 355. EUROPE IN THE NINETEENTH CENTURY (N) THREE CREDITS

A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

HST 356. EUROPE, 1900–1960 (N) THREE CREDITS

Against a background of the internal and international developments of the leading powers, students will study the origins and results of the two World Wars.

HST 357. THE WORLD SINCE 1945 (N) THREE CREDITS

This course examines many important events and developments in the modern world since 1945. It considers incidents of largely historical significance, such as the Cold War between the United States and the Soviet Union, and those of continuing relevance, like the globalization and privatization of the economy.

HST 367. HISTORY OF MODERN INDIA (N)

HST 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

HST 397. SEMINAR THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of instructor is required.*

HST 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are

required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

HST 198/298/398. TOPICS
VARIABLE CREDIT

Special topics in history. This course will be offered from time to time when interest and demand justify it.

INTEGRATIVE MEDIA COURSES

IM 101. INTEGRATIVE MEDIA FOUNDATIONS I
THREE CREDITS

This course is an introduction and multiple media survey of artists, styles and techniques, influential in the development of contemporary media. Through this exposure and readings, a creative process will be developed and absorption will stimulate, motivate and inspire a personal aesthetic vision. In addition, through intensive thought, analysis and critique we will explore media as it affects our society and our responsibility as media content generators.

IM 201. INTEGRATIVE MEDIA FOUNDATIONS II
THREE CREDITS

This course is an introduction to the foundational design principles as they apply to digital new media applications. Students will produce digital projects through the introductory application of various digital tools with a continued focus on the constant evolution of a personal aesthetic vision. A survey of new media applications, terminology and techniques will be researched and discussed along with our responsibility as communicators to mass media markets. *Prerequisite: IM 101*

IM 255. INTEGRATIVE MEDIA PRACTICUM
ONE TO TWO CREDITS

The Department Practicum may be taken for one to two credits per semester. Students may earn credit for major roles and positions of major responsibility in the cocurricular activities in the Creative Production Studio, Studio020. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Credits earned are applicable toward graduation, but do not count toward the requirements of the IM core. Written approval for credit must be by advisor or Department Chairperson.

IM 301. INTEGRATIVE MEDIA PRINCIPLES OF MOTION AND LAYERING
THREE CREDITS

This course will address the foundational concepts of assembling digital imagery; relational to short format projects, focusing on historical and contemporary principles of montage, timing and pacing. In addition, the technical and aesthetic principles of compositing will be covered producing multi-layered projects for a variety of mediums. *Prerequisite: IM 201.*

IM 302. INTEGRATIVE MEDIA PRINCIPLES OF INTERACTIVITY
THREE CREDITS

Technical and aesthetic principles of interactivity will be conveyed and practiced to produce a range of interactive mediums. Addressing issues of human static and dynamic interactive ergonomics as they apply to contemporary commercial and artistic applications. *Prerequisite: IM 201.*

IM 320. INTEGRATIVE MEDIA CONCEPT DEVELOPMENT AND PRACTICES
THREE CREDITS

Through research, writing and example, students will gain an advanced understanding of the creative generating processes in a new media environment. These processes will be used to formulate solid, cohesive concepts and present storyboards that are visually communicative and professional. With discussion, critique and reiteration, the concepts are refined and reinforced. *Prerequisite: IM 201.*

IM 350. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION
THREE CREDITS

This course will explore the foundations of 3 dimensional animation processes as they apply to

Course Descriptions

multiple mediums. Students will build computer-based models and environments, texture, light, animate and render content for Integrative Media projects, stand-alone projects or 3D foundations used within the CS gaming track. (Cross-listed with CS 366). *Prerequisite: IM students - IM 301; CS students - CS 125.*

IM 355. DIGITAL AUDIO PRINCIPLES AND EDITING THREE CREDITS

The foundational concepts behind music theory, sound design and digital audio editing techniques will be addressed in this course. This knowledge can then be applied to creating and adapting sound components for use within the variety of Integrative Media projects. *Prerequisite: IM 201.*

IM 368. 3 DIMENSIONAL GAME DEVELOPMENT THREE CREDITS

An overview of simulation, engine-based, and real-time game systems with a focus on theory, creation and animation of three-dimensional models used within a game context. (Cross-listed with CS 368). *Prerequisites: IM 350 (CS 366) or CS 367.*

IM 391. INTEGRATIVE MEDIA PROJECT I THREE CREDITS

This project-based course will begin to assemble production teams to produce project(s) from concept to completion. Students will develop storyboards, and through creative and organizational work sessions define a completion plan and production schedule. All phases of the production process will be addressed under creative, financial and deadline benchmarks. *Prerequisite: IM 320.*

IM 392. INTEGRATIVE MEDIA PROJECT II THREE CREDITS

Students will initiate new or continue team oriented integrative media productions. The production process will be optimized to continue the experience of industry scenarios. Expanded business practices and production techniques will build upon prior skill-sets. *Prerequisite: IM 391.*

IM 399. COOPERATIVE EDUCATION ONE-SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) Integrative Media majors will be required to complete a minimum of 3 credit hours of Cooperative Education.

IM 400. INTEGRATIVE MEDIA PORTFOLIO CAPSTONE THREE CREDITS

As the capstone of the IM curriculum, this course will focus on the compilation of visual materials produced throughout the set of courses, as necessary in the job submission process. Creating a self "brand" will be a concentration along with the compilation of written works, flatbook and reel. Understanding the perspective of the employer will be heavily discussed and the various positions, procedures and environments that produce IM products. *Prerequisite: IM 391.*

INTERCOLLEGIATE ATHLETICS COURSES

IA 101. INTERCOLLEGIATE ATHLETICS NO CREDIT

This course is limited to students participating in intercollegiate athletics during their sport season. This course may be repeated.

INTERNATIONAL STUDIES COURSES

IS 380. INTERNATIONAL STUDIES SENIOR PROJECT THREE CREDITS

This course is the capstone experience for International Studies majors. Students will coordinate the writing of a capstone with a faculty member from an International Studies content area. Throughout the semester, the student will work closely with that faculty member to gather data and write a formal paper. The student will present the findings in a public forum to content-area faculty and

students. *Prerequisites: Senior standing, permission of instructor.*

MATHEMATICS COURSES

MTH 84. COLLEGE PREPARATORY MATHEMATICS THREE CREDITS*

Designed for students who need to review basic mathematics skills before taking Mth 94, 101 or 103. Topics include a review of arithmetic, introductory algebra, and quantitative reasoning. Only P (passed) or F (failed) grades are given. **Credits in this course will not be counted toward the graduation requirement in any degree program at Wilkes.*

MTH 94. COLLEGE ALGEBRA THREE CREDITS

Designed for students who need to review basic algebra before taking Mth 100 or Mth 150. Topics include polynomials, solution of equations and inequalities, exponents and radicals, graphing, and solution of systems of equations. *Offered every fall.*

MTH 100. PRECALCULUS THREE CREDITS

A course in advanced algebra and trigonometry designed to prepare students for calculus. Topics include functions, inverse functions, logarithms, exponentials, and trigonometry. *Prerequisite: Mth 94 or meet Department of Mathematics and Computer Science criteria.*

MTH 101. SOLVING PROBLEMS USING MATHEMATICS THREE CREDITS

An introduction to the methodology of mathematical modeling as a technique in working towards the solution to real world problems. In an effort for the nonspecialist to gain an appreciation of the use of mathematics in our society, topics are selected from among the following: basic voting theory, fair division schemes, routing problems, population growth, and descriptive statistics and probability.

MTH 103. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS THREE CREDITS

A study of the theory of arithmetic, structure of the number systems, and other topics relevant to the teaching of mathematics in elementary schools. *Prerequisite: Admission to the Teacher Education Program or consent of instructor. Offered every fall.*

MTH 104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS II THREE CREDITS

A continuation of Mth 103. Topics include elementary probability, statistics, and geometry. *Prerequisite: Admission to the Teacher Education Program or consent of instructor. Offered every spring.*

MTH 105. CALCULUS FOR LIFE SCIENCES I FOUR CREDITS

Topics include: algebra review, limits, differentiation, and integration. Students cannot enroll for credit if credit for Mth 111 has been earned. *Prerequisites: Student must have completed Mth 100 or meet Department of Mathematics and Computer Science placement criteria.*

MTH 106. CALCULUS FOR LIFE SCIENCES II FOUR CREDITS

A continuation of Mth 105. Topics include: partial differentiation, differential equations, and probability. Major credits cannot be granted for both Mth 106 and Mth 112. *Prerequisite: Mth 105.*

MTH 107. BUSINESS MATHEMATICS THREE CREDITS

Designed for business and accounting majors. Emphasis on mathematical modeling in the business environment. Topics include algebraic functions; mathematics of finance; systems of linear equations; linear programming; average and instantaneous rates of change. *Prerequisite: MTH 94 or meet the Math/CS Department's placement criteria.*

Course Descriptions

MTH 111. CALCULUS I

FOUR CREDITS

Calculus of functions of one variable. Topics include: functions, limits and continuity, derivatives and their applications, and definite integrals. Students cannot enroll for credit if credit for Mth 105 has been earned. *Prerequisites: Student must have completed Mth 100 or meet Department of Mathematics and Computer Science placement criteria.*

MTH 112. CALCULUS II

FOUR CREDITS

A continuation of Mth 111. Topics include inverse functions, techniques of integration, applications of the integral, and infinite sequences and series. Not open to students with credit in Mth 106. *Prerequisite: Mth 111.*

MTH 150. ELEMENTARY STATISTICS

THREE CREDITS

Elementary statistical inference, with an emphasis on ideas, techniques, and applications in the life, physical, and social sciences. Topics include descriptive statistics, confidence intervals, hypothesis testing, contingency tables, multiple regression, and analysis of variance. Not open to mathematics majors or students with credit in Mth 351. *Prerequisite: Mth 94 or two years of high school algebra.*

MTH 202. SET THEORY AND LOGIC

FOUR CREDITS

Provides a foundation in logic and set theory for upper-level courses in mathematics and computer science. Topics include the logic and language of proofs, the axiomatic method, sets, relations, and functions. *Prerequisite: Mth 106 or Mth 112 or consent of instructor. Offered every fall.*

MTH 211. INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS

FOUR CREDITS

First-order and linear higher-order differential equations; matrices, determinants, and systems of differential equations; numerical and power series methods of solution; the Laplace transform. *Prerequisite: Mth 112. Offered every fall.*

MTH 212. MULTIVARIABLE CALCULUS

FOUR CREDITS

Differential and integral calculus of real and vector valued functions. Topics include continuity, partial differentiation, implicit functions, Taylor's Theorem, gradient, curl, line, surface and multiple integrals, inverse functions, theorems of Green and Stokes. *Prerequisite: Mth 112. Offered every spring.*

MTH 214. LINEAR ALGEBRA

THREE CREDITS

An axiomatic approach to vector spaces, linear transformations, systems of linear equations, Eigen values and Eigen vectors. *Prerequisite: Mth 112 or consent of instructor. Offered every spring.*

MTH 231. DISCRETE MATHEMATICS

THREE CREDITS

Designed to provide background in discrete mathematics for upper-level courses in computer science. Topics include: basic counting principles; introduction to recurrence relations and their application in analyzing algorithms; basic properties of graphs, trees, and networks; AND, OR, and NOT gates and designing combinatorial circuits, finite-state automata, transducers and Turing machines *Prerequisites: Mth 202 and CS 125 or consent of the instructor. Offered every spring.*

MTH 303. THE TEACHING OF MATHEMATICS IN MIDDLE LEVEL AND SECONDARY SCHOOLS

FOUR CREDITS

This course deals with educational perspectives which pertain to the teaching of mathematics at the middle and secondary levels (grades 4 through 12). Topics of discussion include recommendations by the National Council of Teachers of Mathematics (NCTM) regarding instructional methods, assessment techniques, and curricular issues. 40 hours practicum. *Prerequisites: Junior standing in mathematics and admission to the Teacher Education Program. Offered in the fall semester of odd years.*

MTH 311. REAL ANALYSIS
FOUR CREDITS

A rigorous study of the topology of the real line, limits, continuity, differentiation, integration, and series of functions. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of even years.*

MTH 314. COMPLEX ANALYSIS
THREE CREDITS

Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues. *Prerequisite: Mth 212 or consent of instructor. Offered when demand warrants.*

MTH 331. ABSTRACT ALGEBRA I
FOUR CREDITS

A rigorous study of elementary number theory, groups, rings, and fields. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of odd years.*

MTH 343. GEOMETRY
THREE CREDITS

A study of selected topics from Euclidean and non-Euclidean geometry. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of even years.*

MTH 351. PROBABILITY AND MATHEMATICAL STATISTICS I
THREE CREDITS

Random variables, probability distributions, expectation and limit theorems, introduction to confidence intervals and hypothesis testing. *Prerequisite: Mth 106 or 112 or consent of instructor. Offered every fall.*

MTH 352. PROBABILITY AND MATHEMATICAL STATISTICS II
THREE CREDITS

Hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models. *Prerequisite: Mth 351 or consent of instructor. Offered in the spring semester of odd years when demand warrants.*

MTH 354. STATISTICAL METHODOLOGY
THREE CREDITS

This course emphasizes applications, using statistical computer packages (such as BMDP, SPSS, and JMP) and real data sets from a variety of fields. Topics include estimation and testing; stepwise regression; analysis of variance and covariance; design of experiments; contingency tables; and multivariate techniques, including logistic regression. *Prerequisite: Mth 150 or Mth 351 or consent of instructor. Offered in the spring semester of even years when demand warrants.*

MTH 360. LINEAR PROGRAMMING
THREE CREDITS

Graphical linear programming, simplex algorithm and sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with CS 360). *Prerequisites: CS 125, and either MTH 105 or MTH 111.*

MTH 361. APPLIED MATHEMATICS I
THREE CREDITS

Intended for physical science and engineering students. Topics include inner product spaces, operator algebra, Eigen value problems, Sturm-Liouville theory, Fourier series and partial differential equations. *Prerequisites: Mth 211 and 212, or consent of instructor. Offered in the fall semester of odd years when demand warrants.*

MTH 362. APPLIED MATHEMATICS II
THREE CREDITS

Intended for physical science and engineering students. Topics include systems of linear differential equations, nonlinear differential equations; qualitative, numerical, and finite difference methods; theorems of Green and Stokes and the Divergence Theorem. *Prerequisites: Mth 211 and 212, or consent of instructor. Offered in the spring semester of even years when demand warrants.*

Course Descriptions

MTH 363. OPERATIONS RESEARCH

THREE CREDITS

A survey of operations research topics such as decision analysis, inventory models, queuing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with CS 363). *Prerequisites: Mth 106 or Mth 112 and CS 125 (or equivalent programming experience), or consent of instructor. Offered in the spring semester of odd years when demand warrants.*

MTH 364. NUMERICAL ANALYSIS

THREE CREDITS

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science, and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with CS 364). *Prerequisites: Mth 112 and CS 125 (or equivalent programming experience), or consent of instructor. Offered when demand warrants.*

MTH 391-392. SENIOR SEMINAR

ONE CREDIT, TWO CREDITS

Presentations and discussions of selected topics in mathematics, conducted by students and faculty. *Prerequisite: Senior standing in mathematics and either Mth 311 or Mth 331.*

MTH 395-396. INDEPENDENT STUDY IN MATHEMATICS

VARIABLE CREDITS

Individual study in a chosen area of mathematics under the supervision of a faculty member. May be repeated for credit. *Prerequisite: Approval of department chairperson.*

MTH 397. SEMINAR

ONE TO THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson.*

MTH 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

MTH 413. FUNCTIONS OF SEVERAL VARIABLES

THREE CREDITS

A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration on manifolds leading to the classical theorems of Green and Stokes. *Prerequisites: Mth 214 and 311. Offered when demand warrants.*

MTH 432. ABSTRACT ALGEBRA II

THREE CREDITS

A continuation of Mth 331. Polynomial rings, ideals, field extensions, and Galois Theory. *Prerequisite: Mth 331. Offered when demand warrants.*

MTH 442. TOPOLOGY

THREE CREDITS

Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces. *Prerequisite: Mth 311 or consent of instructor. Offered when demand warrants.*

MTH 470. READING COURSE

ONE TO THREE CREDITS

Advanced study of special topics under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics. May be repeated for credit. *Prerequisites: Senior standing and approval of department chairperson.*

MTH 198/298/398/498. TOPICS IN MATHEMATICS

VARIABLE CREDITS

A study of topics of special interest. It may be a continuation and intensive study of topics begun in

the upper-level courses in analysis, topology, algebra, and probability. May be repeated for credit.
Prerequisite: Varies with selected topics. Offered when demand warrants.

MECHANICAL ENGINEERING COURSES

ME 175. INTRODUCTION TO MANUFACTURING AND MACHINING

ONE CREDIT

Familiarizing with traditional machining processes and measuring equipment used in manufacturing. Hands-on experience with traditional and numerical control (NC) machines; various manufacturing processes and fundamentals of metrology. Three-hour lab per week. Fee: \$75.

ME 180. CADD LAB

ONE CREDIT

An introduction to the symbolic and visual languages used in the various engineering fields. The use of the computer in design and drafting, and familiarization with various software packages in the CADD (Computer Aided Design and Drafting) laboratory. Blueprint reading and printed circuit layouts. Emphasis will also be placed on the representation and interpretation of data in graphical form as well as the fundamentals of 2-dimensional and 3-dimensional graphic formats. Two hours lecture/laboratory per week. Fee: \$75.

ME 215. INTRODUCTION TO MANUFACTURING PROCESSES

THREE CREDITS

An introduction to manufacturing that examines traditional processes such as metal forming and casting, and advanced manufacturing processes associated with thin film deposition, microfabrication, and piezoelectric devices. Quality assurance and quality control issues in manufacturing. *Prerequisites: EGR 200, ME 180, ME 232.*

ME 231. STATICS AND DYNAMICS I

THREE CREDITS

Statics of particles; including resolution of forces into components, vector sums, concurrent force systems. Statics of rigid bodies and the study of moments. Equilibrium of bodies in two and three dimensions and determination of reactions. Analysis of trusses and frames. Determination of centroids and moments of inertia. Kinematics of particles; including displacement; velocity; and acceleration. *Prerequisite: Phy 201. Corequisite: Mth 112.*

ME 232. STRENGTH OF MATERIALS

THREE CREDITS

Analysis of statically determinate and indeterminate structural systems; computation of reactions, shears, moments, and deflections of beams, trusses, and frames. Bending and torsion of slender bars; buckling and plastic behavior. *Prerequisite: ME 231.*

ME 234. STATICS AND DYNAMICS II

THREE CREDITS

This course continues the development of Newtonian mechanics with application to the motion of free bodies and mechanisms. Topics include: rectilinear motion, vector calculus, particle motion, inertial and rotating reference frames, rigid body motion, rotational dynamics, linear and rotational momentum, work and kinetic energy, virtual work and collision. *Prerequisite: ME 231.*

ME 298. TOPICS IN MECHANICAL ENGINEERING

ONE TO THREE CREDITS

Selected topics in the field of mechanical engineering. *Prerequisite: Sophomore standing and permission of instructor.*

ME 312. MANUFACTURING SYSTEM ENGINEERING

THREE CREDITS

Fundamentals of manufacturing processes and systems. Analytical models of manufacturing processes including: metal removal rate, tool wear, setup and tool change times. Analysis and optimization of manufacturing productivity and throughput. Automation and computer control of manufacturing processes. *Prerequisite: Junior standing in ME.*

Course Descriptions

ME 317. ROBOTICS

THREE CREDITS

The analysis and design of robots. Class covers the mechanical principles which govern the kinematics of robotics. Course topics include forward kinematics and the determination of the closed form kinematic inversion, as well as workspace and trajectory generation. Class also covers the formation and computation of the manipulator Jacobian matrix. *Prerequisites: Senior standing in ME.*

ME 321. FLUID MECHANICS

THREE CREDITS

Thermodynamics and dynamic principles applied to fluid behavior and to ideal, viscous, and compressible fluids under internal and external flow conditions. (same as Phy 213) *Prerequisite: ME 231. Corequisite: ME 322.*

ME 322. ENGINEERING THERMODYNAMICS

THREE CREDITS

The fundamental concepts and laws of thermodynamics, thermodynamic properties of perfect and real gases, vapors, solids and liquids. Applications of thermodynamics to power and refrigeration cycles, and flow processes. Development of thermodynamic relationships and equations of state. Review of the first and second laws. Reversibility and irreversibility. *Prerequisites: Math 112.*

ME 323. FLUID MECHANICS LABORATORY

ONE CREDIT

Experiments with and analysis of basic fluid phenomena, hydrostatic pressure, Bernoulli theorem, laminar and turbulent flow, pipe friction, and drag coefficient. One three-hour lab a week. Fee: \$75. *Prerequisite: Concurrent with or after ME 321.*

ME 324. HEAT AND MASS TRANSFER

THREE CREDITS

Fundamental principles of heat transmission by conduction, convection and radiation; application of the laws of thermodynamics; mass transfer; application of these principles to the solution of engineering problems. *Prerequisites: ME 322 and Mth 211.*

ME 325. ENERGY SYSTEMS

THREE CREDITS

Fundamental principles of energy transmission and energy conversion. Comprehension of the physical systems in which the conversion of energy is accomplished. Primary factors necessary in the design and performance analysis of energy systems. *Prerequisites: ME 322.*

ME 326. HEAT TRANSFER LABORATORY

ONE CREDIT

Basic heat transfer modes are demonstrated experimentally. This includes conduction, convection, and radiation of heat as well as fin and heat exchanger. One two-hour lab a week. Fee: \$75. *Prerequisite: Concurrent with or after ME 324.*

ME 328. COMBUSTION ENGINES

THREE CREDITS

Investigation and analysis of internal and external combustion engines with respect to automotive applications. Consideration of fuels, carburetion, combustion, detonation, design factors, exhaust emissions, and alternative power plants. *Prerequisite: ME 322.*

ME 332. VIBRATION OF DYNAMIC SYSTEMS

THREE CREDITS

An introductory course in mechanical vibration dealing with free and forced vibration of single and multi-degrees of freedom for linear and nonlinear systems. Two hours lecture and two hours lab per week. *Prerequisites: ME 234, Mth 211.*

ME 333. MACHINE DESIGN I

THREE CREDITS

A first course of a two-course sequence in design of machine elements dealing with theories of deformation and failure, strength and endurance limit, fluctuating stresses, fatigue and design under axial, bending, torsional, and combined stresses. A study of fasteners, welds, gears, ball roller bearings, belts, chains, clutches, and brakes. *Prerequisites: ME 232.*

**ME 335. ENGINEERING MODELING AND ANALYSIS
THREE CREDITS**

Introduction to finite element method for static and dynamic modeling and analysis of engineering systems. Finite element formulation and computer modeling techniques for stress, plane strain, beams, axisymmetric solids, heat conduction, and fluid flow problems. Solution of finite element equation and post processing of results for further use in the design problem. Two hours lecture and two hours lab per week. *Prerequisite: ME 232. Corequisite: Mth 211.*

**ME 337. MICRO-ELECTRO-MECHANICAL SYSTEMS ENGINEERING
THREE CREDITS**

This course explores the principles of MEMS by understanding materials properties, micro machining, sensor and actuator principles. The student will learn that MEMS are integrated micro-devices combining mechanical and electrical systems, which convert physical properties to electrical signals and, consequently, detection. This course provides the theoretical and exercises the hands-on experience by fabricating a micro-pressure sensor. Two hours lecture; three hours lab each week. Fee: \$75. *Prerequisite: Junior standing in engineering. Corequisite: EGR 222.*

**ME 338. MACHINE DESIGN II
THREE CREDITS**

The second course of a two-course sequence in design of machine elements dealing with theories of deformation and failure, strength and endurance limit, fluctuation stresses, fatigue and design under axial, bending, torsional, and combined stresses. A study of fasteners, welds, gears, ball roller bearings, belts, chains, clutches and brakes. *Prerequisite: ME 333.*

**ME 340. HEATING, VENTILATION AND AIR CONDITIONING
THREE CREDITS**

Introduction of fundamentals of HVAC design and construction. Study of the psychometric process and fundamental calculations and layout of HVAC systems. Calculations of heat loss and heat gain in commercial and residential structures. *Prerequisite: ME 322.*

**ME 384. MECHANICAL DESIGN LABORATORY
THREE CREDITS**

A laboratory for the development of hands-on experience dealing with open-ended problems in mechanical engineering applications. Topics include engineering mechanics, thermal sciences, and mechanical systems. Emphasis on experimental performance, data collection, evaluations, analysis, and design. Two hours lecture and four hours lab per week. Fee: \$75. *Prerequisite: Junior standing and ME 232.*

**ME 391. SENIOR PROJECTS I
ONE CREDIT**

Design and development of selected projects in the field of mechanical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required. *Prerequisite: Senior standing in mechanical engineering.*

**ME 392. SENIOR PROJECTS II
TWO CREDITS**

Design and development of selected projects in the various fields of mechanical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress reports are required. This is a continuation of ME 391. An open-forum presentation and discussion of the professional paper is required. *Prerequisite: ME 391.*

**ME 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students in the field of mechanical engineering under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Senior standing and approval of department chairperson is required.*

**ME 397. SEMINAR
ONE TO THREE CREDITS**

Presentations and discussions of selected topics. Prerequisite: Senior standing or by special departmental permission.

Course Descriptions

ME 398. TOPICS IN MECHANICAL ENGINEERING

ONE TO THREE CREDITS

Selected topics in the field of mechanical engineering. These may include one or more of the following: control systems, automation, robotics, manufacturing systems, solid mechanics, energy systems, fluid flow, acoustics, computer systems, bio-mechanics. May be repeated for credit.

Prerequisite: Junior or senior engineering standing.

MILITARY SCIENCE (ARMY ROTC) COURSES

MIL 100. PHYSICAL FITNESS TRAINING

ONE CREDIT

U.S. Army Master Fitness trainers supervise a modern fitness program based on the latest military fitness techniques and principles. The classes are conducted on Monday, Wednesday and Friday at the King's College Scandlon Fitness Center and are one hour each.

MIL 211/212. CONCEPTS OF LEADERSHIP I AND II

ONE CREDIT EACH

Instruction focuses on providing a basic understanding of the Army and general military knowledge and skills while concentrating on leadership skills and civic responsibilities important to everyone. Classes are one hour each week.

MIL 221/222. DYNAMICS OF LEADERSHIP I AND II

TWO CREDITS EACH

Instruction is designed to familiarize students with basic military leadership at the junior leader and immediate supervisor level. Classes are two hours each week.

MIL 231/232. BASIC MILITARY LEADERSHIP I AND II

TWO/ONE CREDITS

Instruction focuses on continued leadership development. Students are trained and evaluated on developing, managing and presenting training to the MS I and II cadets. The goal of the MS III year is to prepare students for the Leadership Development Assessment. Classes are two hours each week.

Prerequisite: Advanced placement credit.

MIL 241/242. ADVANCED MILITARY LEADERSHIP I AND II

TWO/ONE CREDITS

Instruction focuses on teaching students to function as a member of a staff and continues to develop leadership skills. This course covers public speaking, military briefing, and effective writing as well as training management and administrative and logistical support. Classes are two hours each week.

MIL 251/252. LEADERSHIP APPLICATION LABORATORY

NO CREDIT

This class focuses on hands-on application and reinforcement of classroom instruction as well as teaching weapons, first aid, land navigation and tactical leadership. This class meets at the University of Scranton for two hours each week; it is highly encouraged for students in the basic course and is required for students in the advanced course.

MUS 101. INTRODUCTION TO MUSIC I

THREE CREDITS

An introduction to the materials of music and their interrelationships, with an emphasis on developing active listening skills, recognizing and comparing the elements of differing musical styles, and exploring cultural contexts and differing functions of music in diverse groups. Three subtopic areas are offered: Western Art Music, Music in the United States, and The History of American Popular Music.

Western Art Music - An exploration of the traditional Western classical music canon.

Music in the United States - A broad approach that examines both American vernacular music (blues, jazz, folk, rock, pop, etc.) and the Western classical music canon.

The History of American Popular Music - An in-depth exploration of American popular music.

MUS 103 MUSIC THEORY I

THREE CREDITS

This course presents fundamental materials and structures of music theory. Theoretical, aural, and

keyboard skills are developed through practice and study of music examples. Prerequisite: Familiarity with music notation.

MUSIC COURSES

MUS 100-400. APPLIED PERFORMANCE ONE CREDIT OR TWO CREDITS

Instruction offered in all keyboard, band and orchestral instruments, guitar and voice. Individual instruction. Select areas conduct a weekly master class for discussion and performance. Participation is required. Additional fees apply. *Prerequisite: Consent of instructor.*

MUS 100. FRESHMAN LEVEL

MUS 200. SOPHOMORE LEVEL

MUS 300. JUNIOR LEVEL

MUS 400. SENIOR LEVEL

MUS 104. MUSIC THEORY II THREE CREDITS

A continuation of MUS 103: Music Theory I. This course presents materials and structures of music theory. Theoretical, aural, and keyboard skills are developed through practice and study of music examples. *Prerequisites: Successful completion of MUS 103 or placement by a diagnostic exam.*

MUS 110. MUSIC, THE ARTS, SOCIETY AND IDEAS THREE CREDITS

This course presents a multicultural study of music in the context of the humanistic tradition.

MUS 121. WILKES CIVIC BAND ZERO OR THREE CREDITS

Large symphonic band and small wind ensemble experience. The Wilkes Civic Band presents a minimum of two concerts per year with programming focusing on standards of the band repertoire, which may include contemporary and non-Western literature for large symphonic band. Students acquire and refine skills in the areas of reading musical notation, good tone production on his/her chosen instrument, and precision in all aspects of musical performance appropriate to a large instrumental ensemble setting. Membership open to all members of the University and surrounding community. May be repeated for credit.

MUS 125. UNIVERSITY CHORUS ZERO OR THREE CREDITS

The Wilkes University Chorus is a large mixed choral ensemble in which students develop musical skills and artistry through the regular rehearsal, discussion, and performance of a wide variety of choral repertoire. Membership is open to all members of the University and surrounding community, by audition. May be repeated for credit. *Prerequisite: Permission of instructor.*

MUS 126. CHAMBER SINGERS ONE-HALF CREDIT

The Wilkes University Chamber Singers provides students an opportunity to practice advanced ensemble skills through the regular rehearsal and performance of a wide variety of primarily *a cappella* choral repertoire. Membership is open to any student member of the University Chorus. May be repeated for credit. *Prerequisite: Permission of instructor.*

MUS 127. JAZZ ENSEMBLE ZERO OR THREE CREDITS

Open to all members of the University community. The ensemble rehearses and presents performances of literature encompassing a wide range of jazz styles and techniques.

MUS 128. CHAMBER PERFORMANCE ONE CREDIT

Students will study and publicly perform chamber literature appropriate to their instruments. Coaching and supervision by faculty members, as assigned. *Prerequisites: Permission of instructor.*

Course Descriptions

MUS 131. UNIVERSITY ORCHESTRA

ZERO OR THREE CREDITS

Open to all members of the University community, by audition. The orchestra performs concerts of chamber and symphonic literature throughout the year. May be repeated for credit. *Prerequisite: Permission of instructor.*

MUS 210. MUSIC HISTORY I: ANCIENT THROUGH BAROQUE

THREE CREDITS

A study of the history of music and the genres, styles, and forms of the stylistic periods of musical composition, Ancient through Baroque, and the movements, eras, and themes associated with these periods. *Prerequisites: MUS 103 or permission of the instructor.*

MUS 211. MUSIC HISTORY II: CLASSICAL THROUGH TWENTIETH CENTURY

THREE CREDITS

A study of the history of music and the genres, styles, and forms of the stylistic periods of musical composition, Classical through 21st Century, and the movements, eras, and themes associated with these periods. *Prerequisites: MUS 103 permission of instructor.*

MUS 298. TOPICS

THREE CREDITS

A study in topics of special interest not extensively treated in regularly offered courses.

MUS 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in music under the direction of a staff member. A research paper at a more substantial level beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

NURSING COURSES

NSG 171. HEALTH CARE TERMINOLOGY

ONE CREDIT

This course is designed to have students study terms common to the health care professions. The emphasis is on analysis and understanding rather than on memorization.

NSG 200. PRINCIPLES OF NORMAL NUTRITION

THREE CREDITS

An introduction of the basic science of human nutrition; principles of normal nutrition, meal planning, computation of diets, physiological, psychosocial, and social effects of food and its constituents; and some contemporary local, national, and international nutrition problems. *Corequisite: NSG 210.*

NSG 210. PRINCIPLES OF NURSING: INDIVIDUAL, FAMILY, AND COMMUNITY

SIX CREDITS

This course introduces the student to the profession of nursing. Use of the nursing process is emphasized in meeting the basic human needs of clients within families and their communities. Nursing theory is correlated with clinical practice in the Clinical Nursing Simulation Center and selected clinical agencies. Hours weekly: 4 hours class, 6 hours clinical practice. Fee: \$90.

Prerequisites:

BIO 113, BIO 115-116, ENG 101, NSG 171. Corequisites: NSG 200, PHY 170.

NSG 220. NURSING CARE OF THE CHILD-BEARING FAMILY

FOUR CREDITS

The nursing process is utilized in assisting child-bearing families within their communities to meet their human needs. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45 *Prerequisites: NSG 200, 210. Corequisites: EES242, PSY 101, SOC 101/ANT 101.*

NSG 230. NURSING CARE OF THE CHILD-REARING FAMILY

FOUR CREDITS

The nursing process is utilized in assisting child-rearing families within their communities to meet their human needs. Nursing theory is correlated with clinical practice in a variety of health care

settings. Hours weekly: 2 hours class, 6 hours clinical.

**NSG 240. NURSING CARE OF THE ADULT CLIENT I: INDIVIDUAL, FAMILY, AND COMMUNITY
EIGHT CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$90. *Prerequisite: NSG 220, NSG 230.*

**NSG 250. NURSING CARE OF THE ADULT CLIENT II: INDIVIDUAL, FAMILY AND COMMUNITY
FOUR CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected medical-surgical problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45. *Prerequisite: NSG 240.*

**NSG 260. NURSING CARE OF THE PSYCHIATRIC MENTAL HEALTH CLIENT, INDIVIDUAL, FAMILY,
AND COMMUNITY
FOUR CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45. *Prerequisite: NSG 240.*

**NSG 268. PATHOPHYSIOLOGY FOR THE PROFESSIONAL NURSE
THREE CREDITS**

This course focuses on altered cell functioning resulting in deviations from homeostasis. Topics of study include principles of homeostasis, and the immune, cardiopulmonary, renal, nervous, gastrointestinal, hematological, musculoskeletal, and endocrine systems. The student's ability to relate this to the individual's need for care is emphasized. Pathological alterations in health at the systems level and implications for nursing care are emphasized. *Prerequisite: Junior Nursing majors*

**NSG 270. RECENT TRENDS IN CLINICAL NUTRITION
THREE CREDITS**

This elective course is an introduction to diet therapy, with a discussion of the contemporary issues in clinical nutrition. Deals with the popular myths about nutrition and health and substantiates or refutes these claims with research evidence. *Prerequisite: NSG 200 or RN status.*

**NSG 272. PHARMACOTHERAPEUTICS AND CLINICAL DECISION-MAKING IN NURSING
THREE CREDITS**

This course is designed to assist students to understand the multidisciplinary science of pharmacology based on human systems. Content includes drug classifications, indications, adverse effects and contraindications, age-related variables, dosages, and nursing implications. Using critical thinking skills related to drug therapy, clinical decision-making is developed. *Prerequisite: NSG 220, NSG 230.*

**NSG 273. PHYSICAL ASSESSMENT
THREE CREDITS**

This course is designed to facilitate the integration of physical assessment skills as an essential element of the nursing process. The components of physical assessment, including the health history and physical examination, are organized to allow the student to proceed from an assessment of the overall functions of a client to the more specific functions of each body system. *Prerequisite: Sophomore Nursing majors*

**NSG 274. DIMENSIONS IN HEALTH AND WELLNESS
THREE CREDITS**

This elective course provides a framework for the exploration of the concepts of holistic health, wellness, and alternative health care modalities through experiential exercises, reading, journaling and lectures. During the course the student will assess his/her personal health and wellness status, develop a plan to modify a specified health behavior, implement the plan using a variety of holistic modalities, and evaluate the outcome of the plan. This is a wellness elective appropriate for any

Course Descriptions

student at any level. Lecture, discussion, class participation. No prerequisites. No corequisites. No fees.

NSG 299. NURSING FORUM SEVEN CREDITS

This course is designed to facilitate the transition of RN students from other educational routes into baccalaureate nursing education. Use of the nursing process is applied throughout the growth and development of clients. Nursing theory is correlated with clinical practice in community settings. Upon successful completion of NSG 299 (7 credits), 36 additional credits, (N171, N220, N 230, N 240, N 250, N 260, N 272, N 310), will be assigned in recognition of work completed. Hours weekly: 5 hours class, 3 hours clinical practice. Fee: \$90. *Prerequisites: RN status or NCLEX eligibility, Eng 101. Corequisites: Nsg 200 or challenge examination.*

NSG 303. CONTEMPORARY ISSUES AND TRENDS IN NURSING THREE CREDITS

This seminar course explores current issues and trends in nursing and health care. Designated oral presentation option (OPO). *Prerequisites: Nsg 250, 260 or RN students who have completed Nsg 299.*

NSG 305. INTRODUCTION TO NURSING RESEARCH THREE CREDITS

The research process is examined in this course. Emphasis is placed on studies in nursing which provide a foundation for critical reflection on research reports and application of findings to practice. Designated oral presentation option (OPO). Offered fall semester only. *Prerequisites: Mth 150, Nsg 250, Nsg 260, and RN students who have completed Nsg 299.*

NSG 310. NURSING CARE OF THE OLDER ADULT CLIENT: INDIVIDUAL, FAMILY, AND COMMUNITY EIGHT CREDITS

The nursing process is utilized in the care of older adult clients and their families within their communities in a variety of settings. Nursing theory is correlated with clinical practice. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 250, Nsg 260, Nsg 272.*

NSG 320. SENIOR PRACTICUM EIGHT CREDITS

This course prepares the student for professional role development in emerging health care delivery systems. The student synthesizes knowledge from all previous nursing and supportive courses to manage care in an area of clinical practice consistent with career goals. Hours weekly: 2 hours class, 19 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 310.*

NSG 395-396. INDEPENDENT STUDY ONE TO THREE CREDITS

Independent study for advanced students in nursing under the direction of a staff member. *Prerequisites: By arrangement with an instructor. Candidates for independent study must have a minimum cumulative and nursing G.P.A. of 3.00 and be of senior class standing.*

NSG 198/298/398. TOPICS IN NURSING VARIABLE CREDIT

A study in topics of special interest that are not exclusively treated in regularly offered courses.

NSG 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by School dean.*

PERSONAL AND PROFESSIONAL DEVELOPMENT COURSES

PPD 101. PERSONAL AND PROFESSIONAL DEVELOPMENT I

ONE CREDIT

Personal and Professional Development I is the first course in a required 7-course sequence of Personal and Professional Development opportunities in the Business Curriculum at Wilkes University. The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation.

PPD 102. PERSONAL AND PROFESSIONAL DEVELOPMENT II

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. *Prerequisite: PPD 101.*

PPD 201. PERSONAL AND PROFESSIONAL DEVELOPMENT III

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PPD 201 continues the Life Plan and prepares students for development of a Personal Learning Plan. *Prerequisite: PPD 102.*

PPD 202. PERSONAL AND PROFESSIONAL DEVELOPMENT IV

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 202 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 201.*

PPD 301. PERSONAL AND PROFESSIONAL DEVELOPMENT V

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 301 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 202.*

PPD 302. PERSONAL AND PROFESSIONAL DEVELOPMENT VI

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 302 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 301.*

PPD 401. PERSONAL AND PROFESSIONAL DEVELOPMENT VII

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 401 continues the Life Plan and prepares students for development of a Personal Learning Plan. Emphasis will be on continued portfolio and resume development, interview skills, and job search strategies. *Prerequisite: PPD 302.*

PHARMACEUTICAL SCIENCE COURSES

PHS 301. ADVANCED PHARMACEUTICS

THREE CREDITS

An overview of the various dosage forms used in the pharmaceutical industry and their manufacture. Particular emphasis will be placed on the excipients used and the manufacturing process and how these affect the physical and chemical nature of the dosage form. *Prerequisite: CHM 351 & 352.*

Course Descriptions

PHS 331. MEDICAL ANATOMY AND PHYSIOLOGY I
FOUR CREDITS
Same as PHA 331. See PHA 331 for course description.

PHS 332. MEDICAL ANATOMY AND PHYSIOLOGY II
FOUR CREDITS
Same as PHA 332. See PHA 332 for course description.

PHS 365. MEDICAL BIOCHEMISTRY
FOUR CREDITS
Same as PHA 365. See PHA 365 for course description.

PHS 408. CLINICAL RESEARCH DESIGN
THREE CREDITS
Same as PHA 310. See PHA 310 for course description.

PHS 413. HETEROGENEOUS PHARMACEUTICAL SYSTEMS
TWO CREDITS
An introduction to the design of heterogeneous systems as dosage forms. Emphasis will be placed on the physical and chemical evaluation of creams, lotions, emulsions, suspensions, semisolids and aerosols. *Prerequisite: CHM 351 & 352, & PHS 301.*

PHS 414. PHARMACEUTICAL REGULATORY AFFAIRS
TWO CREDITS
An introduction to the regulation of the pharmaceutical industry by the Food and Drug Administration. It will focus on the requirements for product approval by the FDA and for the establishment of Good Manufacturing Practices and Good Laboratory Practices. *Prerequisite: Permission of Instructor.*

PHS 415. SOLID DOSAGE FORMS
TWO CREDITS
An introduction to the design and manufacture of traditional oral solid dosage forms and the design of sustained/controlled release dosage forms. *Prerequisite: CHM 351 & 352, PHS 301.*

PHS 416. OPERATION OF QUALITY CONTROL SYSTEMS
TWO CREDITS
An introduction to the design and operation of quality control or quality assurance systems. *Prerequisite: CHM 351 & 352, PHS 301.*

PHS 417. BIOPHARMACEUTICS AND PHARMACOKINETICS
THREE CREDITS
An introduction to the principles of biopharmaceutics and pharmacokinetics. The focus is on understanding the effect of dosage form design and selection on the therapeutic outcomes. The selection of the correct mathematical model to describe the fate of a drug substance in the body will also be covered. *Prerequisite: PHS 301, PHA 331 & 332.*

PHS 418. EXTERNSHIP IN PHARMACEUTICAL MANUFACTURE
EIGHT CREDITS
This is the capstone course for the BS in Pharmaceutical Sciences in which the classroom experiences are integrated and applied to a drug development project in a pharmaceutical company or a quality assurance testing laboratory at the Food and Drug Administration. *Prerequisite: PHS 301, 413, 414, 415, 416 & 417.*

PHS 498. SENIOR RESEARCH PROJECT
THREE CREDITS
The planning and execution of a formulation project under the direction of a faculty mentor. It is expected that students will search the literature and patent records, design a series of experiments and eventually develop a formula and method of manufacture that will be commercially viable. *Prerequisite: PHS 301, 413, 414, 415, 416 & 417.*

PHARMACY COURSES

INTRODUCTORY PHARMACY PRACTICE EXPERIENCE (IPPE)

PHA 335. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE I TWO CREDITS

This course will provide introductory practice experience to students in the community setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to community pharmacy. The student will take an independent learning approach under the supervision of a practicing community pharmacist. The course is two full-time weeks (80 hours) of experience.

Prerequisite: Successful completion of P-1 year.

PHA 440. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE II ONE CREDIT

This course will provide introductory practice experience to students in two health care settings: prescriber's clinics and a faculty practice site. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play.

Prerequisite: P-2 standing.

PHA 445. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE III TWO CREDITS

This course will provide introductory practice experience to students in the health-system setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to this area of practice. The student will take an independent learning approach under the supervision of a practicing pharmacist. The course is two full-time weeks (80 hours) of experience. *Prerequisite: Successful completion of P-2 year.*

PHA 555. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE IV ONE CREDIT

This course will provide introductory practice experience to students in two health care settings: home health and long-term care. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play. *Prerequisite: P-3 standing.*

PHARMACY GENERAL COURSES

PHA 301 & PHA 304. FOUNDATIONS OF PHARMACY PRACTICE TWO CREDITS EACH

The purpose of this course sequence is to provide the student with the foundational concepts and skills needed to practice pharmacy in the 21st century as the role of the pharmacist expands and continues to change. In addition to one's knowledge of the scientific basis of practice, the ability to communicate and be an effective team member is critical to the pharmacist's role as an educator, clinician, and member of the health-care team. As such, the student will experience the processes of self- and group-assessment, team development, and the use of effective communication strategies through discussions, assignments, role-playing, and case studies. A unique feature of this course sequence is the interdisciplinary faculty team. The expertise and perspective of each faculty member contribute to the development and teaching of this course. Furthermore, this approach demonstrates the relevance and importance of other disciplinary subject matter to the development and maturation of a pharmacy practitioner. *Prerequisite: P-1 standing.*

PHA 302, 401, 501, 502. PHARMACY CARE LAB I - IV ONE CREDIT EACH

This four-semester sequence is designed to develop the student's ability to integrate and apply information as well as practice skills that are taught throughout the curriculum. The use of case studies, role-plays, presentations and other active-learning strategies engages students in the learning process and requires them to synthesize information at increasing levels of complexity as the student moves through the course sequence. Fee: \$30. *Prerequisite: P-1, P-2 or P-3 standing as appropriate for each laboratory.*

Course Descriptions

PHA 308. PHARMACEUTICAL AND HEALTH CARE DELIVERY

THREE CREDITS

Examination of health and pharmaceutical delivery in the U.S. conducted from a societal perspective. Emphasis is on public policy, economic behavior and outcomes. Application will be made to various pharmaceutical sectors (e.g., retail, health systems, manufacturing). Students should gain an understanding of the factors driving transformation of health care delivery and the implications for future pharmacy practice. Lecture: Three hours per week. *Prerequisite: P-1 standing or consent of instructor.*

PHA 310. CLINICAL RESEARCH AND DESIGN

THREE CREDITS

Application of research design concepts and statistical techniques to design, critically analyze and interpret preclinical, clinical and economic studies of pharmaceuticals and treatment plans. Lecture: Three hours per week. *Prerequisite: MTH 150 or equivalent and P-1 standing or consent of instructor.*

PHA 311 & PHA 312. PHARMACEUTICS I & II

FOUR CREDITS EACH

The study and application of physico-chemical principles that are necessary for the design, development and preparation of pharmaceutical dosage forms. The study of quantitative skills necessary for an understanding of the basic and clinical pharmaceutical sciences, including skills in pharmaceutical calculations and extemporaneous preparation of dosage forms. Lecture: Three hours per week. Laboratory/Recitation: Three hours per week. Fee: \$80 *Prerequisite: P-1 standing or consent of instructor. PHA 311 is a prerequisite for PHA 312.*

PHA 313. PHARMACY CALCULATIONS

ONE CREDIT

The common mathematical processes that a pharmacist may encounter in professional practice are covered. Interpretation of the prescription, including Latin abbreviations, will be discussed. Medical terminology and the generic name, trade name, manufacturer and classification of the top 100 drugs will also be presented. Lecture one hour per week. *Prerequisite: P-1 standing or consent of instructor.*

PHA 327. MEDICAL MICROBIOLOGY

FOUR CREDITS

An overview of microbiology with special emphasis on pathogenic microbiology. Lecture: Three hours per week. Laboratory: Three hours per week. Fee: \$80. Cross listed with BIO 327. *Prerequisite: P-1 standing or consent of instructor.*

PHA 331 & PHA 332. MEDICAL ANATOMY AND PHYSIOLOGY I & II

FOUR CREDITS EACH

In-depth principles of human anatomy and physiology as well as an introduction to pathophysiology will be presented. Lecture: Two hours per week. Laboratory/Recitation: Three hours per week. Discussion/Recitation: two hours per week. Fee: \$80. *Prerequisite: P-1 standing or consent of instructor. PHA 331 is a prerequisite for PHA 332.*

PHA 405. PHARMACEUTICAL CARE SYSTEMS: DESIGN AND CONTROL

TWO CREDITS

Examines delivery of pharmaceutical products and services from a systems perspective in a variety of patient care settings. Focus is upon effectiveness, efficiency and quality. Covers design of systems, establishment and monitoring of key indicators, total quality management and quality assurance agencies (e.g., JCAHO, NCQA). Lecture: Two hours per week.

PHA 410. IMMUNOLOGY/BIOTECHNOLOGY

THREE CREDITS

A discussion of nonspecific host defense mechanisms and a detailed description of specific immunity. Products that impart artificial active and passive immunity are presented. The concept of biotechnology is discussed together with the currently available products of genetic engineering that relate to immunology. The various immunological disorders and the immunology of cancer and HIV are discussed. Lecture: Three hours per week. *Prerequisite: PHA 331, 332, 365 or consent of instructor.*

**PHA 411. BIOPHARMACEUTICS AND CLINICAL PHARMACOKINETICS
FOUR CREDITS**

The fundamentals of biopharmaceutics and pharmacokinetics are presented. The physical and chemical properties of the drug and dosage form and the impact of the route of administration and patient characteristics and disease state will be related to the absorption, distribution, metabolism and elimination in the body. Individual drugs and patient case histories will be used to familiarize the student to practice. Lecture: Three to four hours per week. Recitation: zero to three hours per week. *Prerequisite: PHA 311, PHA 312 or consent of instructor.*

**PHA 412. MANAGEMENT OF PHARMACY OPERATIONS
THREE CREDITS**

The principles of management, including personnel and financial management, will be covered as they apply to management of pharmacy operations in a variety of settings (e.g., community, health system, managed care). Lecture: Three hours per week. *Prerequisite: PHA 308 or consent of instructor.*

**PHA 503 AND PHA 504. LONGITUDINAL CARE LAB I & II
ONE CREDIT EACH**

Students will follow a patient or patients over an extended period of time in a medical or home setting. Pharmaceutical knowledge and skills will be applied in communications, health assessment, monitoring of pharmacotherapy, evaluation of both humanistic and clinical outcomes. Issues of health care, cost access and quality as revealed through each patient's interaction with health and pharmaceutical care systems will be addressed. Three hours per week. Students are responsible for transportation to and from all off-campus experiential sites. *Prerequisite: PHA 503 is prerequisite to PHA 504.*

**PHA 505. PHARMACY LAW
TWO CREDITS**

The study of federal and state statutes, regulations and court decisions which control the practice of pharmacy and drug distribution. Civil liability in pharmacy practice and elements of business and contract law will be covered. Lecture: Two hours per week.

**PHA 509 ECONOMIC EVALUATION OF PHARMACEUTICAL PRODUCTS AND SERVICES
THREE CREDITS**

Introduction to commonly used economic evaluation methods (e.g., cost-minimization, cost-utility, cost-benefit, cost-effectiveness) as applied to pharmaceutical products and services. Quality of life and outcomes research will also be explored. Emphasis is on understanding evaluation methods and research design and interpreting the relevant literature for practice applications. Lecture: Three hours per week. *Prerequisite: PHA 308 and PHA 310 or consent of instructor.*

**PHA 532. ALTERNATIVE MEDICINE AND NUTRITION
THREE CREDITS**

This course gives an overview of various alternative/contemporary medicine practices: homeopathy, herbal therapy, chiropractic, acupuncture, acupressure, body massage, ayurvedic, and shamanic practices. This course will also give an overview on the concept and practice of nutrition: parenteral and enteral nutrition. Lecture: Three hours. *Prerequisite: PHA 331, 332, 365 or consent of instructor.*

PHARMACY ELECTIVE COURSES

**PHA 395–396. INDEPENDENT STUDY
ONE TO SIX CREDITS**

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

**PHA 450. NEUROPHARMACOLOGY OF DRUGS OF ABUSE
THREE CREDITS**

In-depth analysis of drugs of abuse, including pharmacokinetics, pharmacodynamics, tolerance, sensitization, physical dependence, and effects of drug use during pregnancy. Drug testing and substance abuse treatment strategies will also be discussed. Lecture: Three hours. *Prerequisite: PHA 421 or consent of instructor*

Course Descriptions

PHA 452. EXTEMPORANEOUS COMPOUNDING

THREE CREDITS

Students will achieve basic and advanced skills in compounding pharmaceutical dosage forms for individualized patient therapy to replace a lack of commercially available products, and enhance therapeutic problem-solving between the pharmacist and physician to enhance patient compliance. Students will work independently on research assignments and compounding preparations. Lecture one hour, laboratory six hours per week. Fee: \$80. *Prerequisites: PHA 311 and PHA 312 and permission of instructor.*

PHA 495–496. INDEPENDENT STUDY

ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 595–596. INDEPENDENT STUDY

ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 534. INTRODUCTION TO HOSPITAL PHARMACY PRACTICE

TWO CREDITS

This course introduces a student to the practice of pharmacy within a hospital setting. The student will be introduced to the history of, management of, clinical services within, and career options in a hospital pharmacy. The student will need to complete a hospital site visit, a formulary evaluation, and a Drug-Use Evaluation (DUE). Didactic and active learning techniques will be employed throughout the course.

PHA 536. PRINCIPLES OF ADVANCED COMMUNITY PHARMACY MANAGEMENT

TWO CREDITS

This course is designed to provide a foundation for students interested in pursuing the development and implementation of advanced clinical programs in a community pharmacy. The student will be introduced to principles in pharmacy and fiscal management, professional development, and the management and legal issues relating to clinical pharmacy services. Didactic and active learning techniques will be employed throughout the course and the student will be required to develop a business plan.

PHA 538. PEDIATRIC PHARMACOTHERAPY

TWO CREDITS

This course is designed to expand the student's current knowledge base regarding the pediatric population and to introduce the core concepts involved in the care of this special population. The course prepares students to identify and address drug-related problems in pediatric patients and to demonstrate competency within those areas. This will be accomplished by completion of case scenarios, actual patient presentations, and a take-home examination. An on-site visit to the Children's Hospital of Philadelphia (CHOP) is required. *Prerequisite: P-3 Standing*

PHA 540. COMPREHENSIVE DIABETES MANAGEMENT

TWO CREDITS

This course provides a multidisciplinary foundation for health professionals in the principles of diabetes management. Students who successfully complete the course will have knowledge and the basic skill set that is needed to begin practicing diabetes management. The majority of this course is independent self-study of online lectures, but there are mandatory on-campus discussions/exams.

Prerequisite: P-3 standing or permission of instructor.

PHA 550. PRINCIPLES OF EXPERIMENTAL PHARMACOLOGY

THREE CREDITS

This course is designed to increase the student's appreciation of the science of pharmacology. The student will be exposed to principles and theories that are currently used to interpret pharmacological data about new drug products and physiological systems in both humans and animals. A series of articles will be used to demonstrate application of pharmacological techniques, and the student will be asked to suggest additional techniques to further clarify published hypotheses. The student will conduct experiments to apply pharmacological theories and techniques and to use the scientific method to gain data to support a hypothesis. Fee: \$80.

PHA 551. VETERINARY PRODUCTS

THREE CREDITS

Veterinary Products is designed to introduce pharmacy students to Veterinary Pharmacology and Therapeutics and the role of the pharmacist in the care of animals. The students will evaluate the most commonly used drugs in veterinary care and relate that evaluation to the use of these drugs in humans. The student will learn fundamental concepts that will allow the student to provide pharmaceutical care to animals and assist the veterinarian and owner in the care of pets and domestic animals. There will be a field trip to a zoo on one Saturday during the course.

Prerequisites: PHA 424 and 426.

PHA 552. PRINCIPLES OF BIOORGANIC AND MEDICINAL CHEMISTRY

THREE CREDITS

This will be an introductory course whose aims are to provide the principles of bioorganic and medical chemistry, including an understanding of drug structure-activity relationships, prediction of the physicochemical properties of a drug, basic knowledge of the major pathways of drug metabolism and factors that can contribute to drug-drug interactions. *Prerequisites: CHEM 231-232, PHA 327, 365.*

PHARMACOTHERAPEUTIC MODULES

A four-semester, twelve-module sequence (three modules per semester) that integrates pharmacology, medicinal chemistry, pathophysiology, and pharmacotherapy. This team-taught, interdisciplinary course provides students with the opportunity to learn and apply concepts from these four disciplines. Prerequisites: PHA 310, 327, 331, 332, 365.

PHA 421 PHARMACOTHERAPEUTICS I: PRINCIPLES OF PHARMACOLOGY & MEDICINAL CHEMISTRY

TWO CREDITS

PHA 423 PHARMACOTHERAPEUTICS II: PRINCIPLES OF PHARMACOTHERAPEUTICS

TWO CREDITS

Prerequisite: PHA 421.

PHA 425 PHARMACOTHERAPEUTICS III: SELF-CARE AND DERMATOLOGY*

THREE CREDITS

PHA 426 PHARMACOTHERAPEUTICS IV: GASTROINTESTINAL DISORDERS*

TWO CREDITS

PHA 428 PHARMACOTHERAPEUTICS V: INFECTIOUS DISEASES*

FOUR CREDITS

PHA 430 PHARMACOTHERAPEUTICS VI: HEMATOLOGY, JOINT DISORDERS, SURGERY*

TWO CREDITS

PHA 521 PHARMACOTHERAPEUTICS VII: PULMONARY DISORDERS*

TWO CREDITS

PHA 523 PHARMACOTHERAPEUTICS VIII: CARDIOVASCULAR DISORDERS*

FOUR CREDITS

PHA 525 PHARMACOTHERAPEUTICS IX: RENAL DISORDERS*

TWO CREDITS

PHA 526 PHARMACOTHERAPEUTICS X: ENDOCRINE DISORDERS & WOMEN'S HEALTH ISSUES*

TWO CREDITS

PHA 528 PHARMACOTHERAPEUTICS XI: NEOPLASTIC DISEASES*

TWO CREDITS

PHA 530 PHARMACOTHERAPEUTICS XII: CENTRAL NERVOUS SYSTEM DISORDERS*

FOUR CREDITS

** PHA 423 is prerequisite to PHA 425-530.*

Course Descriptions

ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE)

PHA 510. GENERAL MEDICINE

FIVE-SIX CREDITS

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in general medicine practice. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 511. AMBULATORY CARE ADVANCED PHARMACY PRACTICE EXPERIENCE

FIVE-SIX CREDITS

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in ambulatory care settings. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 512. COMMUNITY ADVANCED PHARMACY PRACTICE EXPERIENCE

FIVE-SIX CREDITS

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in community practice settings. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 513. HEALTH SYSTEM ADVANCED PHARMACY PRACTICE EXPERIENCE

FIVE-SIX CREDITS

Integration of advanced pharmacy related concepts to the delivery of pharmaceutical care in the health system setting. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 599 A, B AND C. ELECTIVE ADVANCED PHARMACY PRACTICE EXPERIENCE ROTATIONS

FIVE-SIX CREDITS

Advanced pharmacy practice experience involved in different aspects of pharmaceutical care. (Courses to be determined.) Clinical practice 40 hours per week for a total of five weeks. *Prerequisites: P-4 standing.*

PHILOSOPHY COURSES

PHL 101. INTRODUCTION TO PHILOSOPHY

THREE CREDITS

An introduction to some of the major figures, problems, and concerns of philosophical thought. Students in this course typically examine a variety of philosophical questions and problems such as: the existence of God, human nature and the good life, freedom and responsibility, skepticism and the nature of knowledge, and theories of reality.

PHL 110. INTRODUCTION TO ETHICAL PROBLEMS

THREE CREDITS

An exploration of a series of basic ethical problems. Topics to be covered include basic ethical theories, how to evaluate ethical theories and moral arguments, the relationship between religion and ethics, and a selection of current moral problems such as abortion, capital punishment, affirmative action, animal rights, etc. Specific moral problems covered will vary. Other ethical questions such as "How should we live?" may also be covered in the course.

PHL 122. INTRODUCTION TO SYMBOLIC LOGIC

THREE CREDITS

An introduction to the nature of logical systems and deductive reasoning. The study of the syntax and semantics of formal languages; testing arguments for validity; and an examination of other important logical notions, such as proof and consistency.

PHL 214. MEDICAL ETHICS

THREE CREDITS

A selection of important issues facing health care providers, patients, and society in general are examined. Topics include euthanasia, abortion, doctor-patient relationships, the use and misuse of information, research on human and non-human animals, informed consent, patients' rights, truthfulness and the right to know, conflicts of obligations, the right to health care, the allocation of resources, mandatory testing for AIDS, and the use of genetic and reproductive technologies.

Prerequisite: PHL 101 or permission of instructor.

**PHL 216. PHILOSOPHIES OF NONVIOLENCE
THREE CREDITS**

An examination of the concept of nonviolence and arguments supporting nonviolence as a way of life. Historical and modern theories as well as applications of nonviolence will be considered including ideas from the Buddha, Jesus, Gandhi, Tolstoy, Martin Luther King, Jr., Thoreau, the Dalai Lama, Thich Nhat Hanh, and others. Students will be expected to consider the importance and relevance of these ideas for their own lives. *Prerequisite: PHL 101, 110 or permission of instructor.*

**PHL 217. THE QUESTION OF ANIMAL RIGHTS
THREE CREDITS**

An exploration of arguments supporting a wide variety of conclusions regarding our ethical obligations to nonhuman animals. We will examine standard moral theories, theories about the nature of current social practices, the history of our attitudes toward nonhuman animals, feminist arguments that our attitudes toward nonhuman animals are connected to negative views of female humans, and more. *Prerequisite: PHL 101, 110 or permission of instructor.*

**PHL 218. ENVIRONMENTAL ETHICS
THREE CREDITS**

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as EES 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

**PHL 236. AMERICAN POLITICAL PHILOSOPHY
THREE CREDITS**

See description under Political Science Department listing. (Same as PS 262). May not be used to meet Area I of the General Education Requirements.

**PHL 242. THE MEANING OF LIFE
THREE CREDITS**

A selection of culturally diverse classic and contemporary answers to the question of the meaning of life will be examined and the implications for our lives will be explored. Perspectives to be addressed include those of Epicurus, Epictetus, Aristotle, Lao-tzu, Buddha, Viktor Frankl, Albert Camus, A.J. Ayer, Peter Singer, and more. *Prerequisites: PHL 101, PHL 110, or permission of instructor.*

PHL 244. BUDDHIST THOUGHT

THREE CREDITS

An exploration and examination of basic ideas in Buddhist philosophy, considering all three main "vehicles" of Buddhist thought-Theravada, Mahayana, and Vajrayana schools. Comparisons to Western philosophical thought will be made and some Buddhist practices explored. *Prerequisites: PHL 101 or permission of instructor.*

**PHL 272. PHILOSOPHY OF RELIGION
THREE CREDITS**

An examination of various problems that arise when religion is made the object of philosophical reflection: the nature and forms of religious experience, the relationship between faith and reason, arguments for the existence of God, the problem of evil, arguments for immortality, the concepts of worship and miracle, the nature of religious language, and the possibility of religious knowledge. *Prerequisite: PHL 101 or permission of instructor.*

**PHL 298. TOPICS
THREE CREDITS**

The study of a topic of special interest not extensively treated in other courses. Topics chosen according to interest of instructor. Because of its variable content, this course may be repeated for credit. *Prerequisite: PHL 101 or permission of instructor.*

Course Descriptions

PHL 301. ORIGINS OF WESTERN THOUGHT THREE CREDITS

The development of Western philosophical thought from its beginnings in the Greek world to early Christian thought. Philosophers to be studied include the Pre-socratics, Plato, Aristotle, Plotinus, the Stoics, Epicurus, Sextus Empiricus, and St. Augustine. *Prerequisite: PHL 101 or permission of instructor.*

PHL 310. ETHICAL THEORY Three Credits

A study of classical and contemporary ethical theories, the problems that they raise and the problems they are intended to solve. The theories of Plato, Aristotle, Kant, Hume, and Mill will be examined as well as recent contributions by Ross, Harman, Moore, Ayer, Stevenson, and Hare. Questions addressing ethical relativism, the relationship of religion to ethics, skepticism, moral realism, egoism, and value judgments will also be discussed. *Prerequisite: PHL 101 or permission of instructor.*

PHL 314. ADVANCED TOPICS IN BIOETHICS THREE CREDITS

An in-depth exploration of the ideas of a selection of philosophers known for their often radical contributions in the field of bioethics. Topics include the appropriate and inappropriate use of moral principles and theories, public policies to change or maintain in the area of bioethics, and whether our attitudes toward personhood and life and death are defensible. *Prerequisite: PHL 214 or permission of instructor.*

PHL 316. MORAL PSYCHOLOGY THREE CREDITS

An analysis of some current questions in moral psychology, an area of philosophy that addresses normative issues regarding human psychology including motives, emotions, psychological reactions, etc. Questions to be addressed include questions about moral luck (whether it is possible for an agent to be caught in a situation, through no fault of her own, in which it is impossible to act rightly), about whether one's moral character may be subject to luck in important ways, about whether there are reasons to act morally if one does not care about reputation or morality, and questions about when judgments of responsibility for actions and character are appropriate. *Prerequisites: PHL 310 or permission of instructor.*

PHL 332. SOCIAL AND POLITICAL PHILOSOPHY THREE CREDITS

Social and political institutions as seen by such classic critics as Plato, Aristotle, Hobbes, Locke, Hume, Rousseau, Bentham, and others. More recent views such as those of Marx, Rawls, and Nozick will also be covered. Special attention is paid to the related questions of the role of the state and the relationship between the individual and the state. (Same as PS 263) *Prerequisite: PHL 101 or permission of instructor.*

PHL 344. ADVANCED TOPICS IN BUDDHIST THOUGHT THREE CREDITS

An examination of the history of Buddhist philosophy and the issues it raises with particular emphasis on Shunyata. *Prerequisite: PHL 244 or permission of instructor.*

PHL 350. PHILOSOPHY OF SCIENCE THREE CREDITS

A critical examination of various issues concerning scientific thought. Topics may include the nature of science, distinguishing science from pseudo-science, the nature of theories, scientific explanation, space and time, causality, the problem of induction, laws of nature, and the reality of theoretical entities. *Prerequisite: PHL 101 or permission of instructor.*

PHL 372. ADVANCED TOPICS IN PHILOSOPHY OF RELIGION THREE CREDITS

An intensive examination of a major problem or figure in the philosophy of religion. Because of its variable content, this course may be repeated for credit. *Prerequisite: PHL 272 or permission of instructor.*

PHL 390. SENIOR PROJECTS: CAPSTONE
ONE CREDIT

An independent project culminating in a formal essay and presentation. The project serves as a capstone experience demonstrating the student's learning in the major. *Open only to senior Philosophy majors.*

PHL 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS

Independent study and research for advanced students. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

PHL 397. SEMINAR
ONE TO THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson is required.*

PHL 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

PHYSICS COURSES

PHY 105. CONCEPTS IN PHYSICS
THREE CREDITS

Basic concepts of physical science, including the scientific method, will be studied. Theories, laws, and experiments from mechanics, electricity and magnetism, thermodynamics, optics, and atomic and nuclear physics may be included. Viewpoints will be classical and modern, including quantum and relativistic. Class meets four hours a week: two hours of lecture and one two-hour lab per week. Fee: \$75. *Prerequisite: No previous background in science or college-level mathematics is required.*

PHY 170. CONCEPTS IN PHYSICS AND CHEMISTRY
FOUR CREDITS

An overview of Classical Mechanics, Thermodynamics, and the elementary principles of modern physics, including selected topics in basic chemistry and applications to human health. Emphasis is placed on basic physical and chemical principles and on algebraic calculations, scaling, units conversions, Cartesian graphing, acid and base reactions, and numerical problem solving. Three hours of lecture/discussion, one three hour lab per week. Fee: \$75. *Prerequisite: Previous courses in Chemistry, Algebra, Geometry.*

PHY 171. PRINCIPLES OF CLASSICAL AND MODERN PHYSICS
FOUR CREDITS

An introductory course designed to promote an understanding of the more important fundamental laws and methods of mechanics and electricity and magnetism. Laboratory work to emphasize basic principles and to acquaint the student with measuring instruments and their use, as well as the interpretation of experimental data. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$75. *Corequisite: Mth 105 or Mth 111.*

PHY 174. APPLICATION OF CLASSICAL AND MODERN PHYSICS
FOUR CREDITS

An introductory course designed to promote an understanding of the more important fundamental laws and methods of heat, optics and modern physics. Laboratory work to emphasize basic principles and to acquaint the student with measuring instruments and their use, as well as the interpretation of experimental data. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$75. *Corequisite: Mth 105 or Mth 111.*

Course Descriptions

PHY 201. GENERAL PHYSICS I

FOUR CREDITS

A thorough grounding in the concepts, principles, and laws of mechanics, thermodynamics, and wave motion. Instruction by demonstration-lecture, recitation, problem solving, and experimental work. Demonstration-lecture three hours a week, recitation one hour per week, and laboratory two hours a week. Fee: \$75. *Corequisite: Mth 111.*

PHY 202. GENERAL PHYSICS II

FOUR CREDITS

Electricity and magnetism, optics and light. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$75 *Prerequisite: Phy 171 or 201. Corequisite: Mth 112.*

PHY 203. GENERAL PHYSICS III

THREE CREDITS

Modern physics including the experimental basis, concepts, and principles of atomic and nuclear physics. Demonstration-lecture three hours a week. *Prerequisite: Phy 202.*

PHY 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of physics under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisites: Senior standing and approval of department chairperson.*

PHY 198/298/398. TOPICS IN PHYSICS

VARIABLE CREDIT

Selected topics in the field of physics. These may include one or more of the following: astronomy; geophysics; biophysics; nuclear power & waste; relativity; quantum mechanics; semi-conductors; cryogenics; health physics. May be repeated for credit. *Prerequisite: Varies with topic studied.*

POLITICAL SCIENCE COURSES

PS 111. INTRODUCTION TO AMERICAN POLITICS

THREE CREDITS

A descriptive and analytical study of the theory and practice of American government, its constitutional basis, organization, powers, functions, and problems. *Offered every semester.*

PS 141. INTRODUCTION TO INTERNATIONAL POLITICS

THREE CREDITS

An introduction to the field of international relations. Attention is given to basic theories of international relations as well as the issues and problems that confront contemporary world politics. Factors that determine a nation's foreign policy are also examined. *Offered every spring.*

PS 151. GOVERNMENTS OF THE WORLD

THREE CREDITS

This course is an introduction to the study of the politics and government of selected foreign countries. The course will begin with the examination of the various structures and concepts of government around the world and their regional variations. Progressing from the study of a number of alternative structures of politics and government, the course will examine several countries in detail providing a specific introduction to the political structures of a number of countries.

PS 212. URBAN GOVERNMENT AND POLITICS

THREE CREDITS

An examination of the structure and operation of urban governments. Metropolitan politics is also considered. Special attention is given to the politics and policy problems confronting American cities. (Same as SOC 263) Counts as Criminology elective.

PS 213. POLITICAL PARTIES AND POLITICAL PARTICIPATION

THREE CREDITS

An introduction to the role and function of political parties in democratic regimes, with particular attention given to the U.S. Extensive discussion of the political activities of the American electorate

in forms other than parties, such as interest groups, as well as grass roots movements. *Offered in fall semester in even years.*

PS 221. INTRODUCTION TO PUBLIC ADMINISTRATION
THREE CREDITS

An introduction to the principles and problems of public administration in an increasingly complex society. Attention to such topics as leadership, informal organizational processes (infrastructure), the relation of administration to its cultural context, and the question of administrative responsibilities. Survey of the technical problems of personnel, finance, and administrative law.

PS 224. PUBLIC POLICY ANALYSIS
THREE CREDITS

This course is an introduction to the study of public policy at the national level. It will examine approaches to public policy and the operation of the "policy process." A range of public policy examples will be employed from social welfare to foreign and defense issues.

PS 232. CRIMINAL LAW
THREE CREDITS

An introduction to the study of criminal law. The principles of criminal law are presented using the case method. The structure and operation of the criminal justice system are also reviewed. *Offered every fall.*

PS 233. LAW AND SOCIETY
THREE CREDITS

An introduction to the study of law and its role in social and political systems. Attention is given to theories of law, and the structure of the legal system. Students are given the opportunity to engage in hypothetical dispute resolutions using common law methods. *Offered every spring.*

PS 242. INTERNATIONAL LAW AND ORGANIZATION
THREE CREDITS

The study of the nature, application, and sources of international law and how it relates to the evolution of global and regional organizations and alliances, including international non-governmental organizations and other non-state factors. *Prerequisite: PS 141 or consent of instructor.*

PS 251. EUROPEAN POLITICS
THREE CREDITS

Comparison of the development, institutions, problems and prospects of democratic systems in Europe, both west and east. Attention is given to the European Community and its role in the transformation of Europe as well as the development of the former communist states in eastern Europe.

PS 260. INTRODUCTION TO POLITICAL THINKING
THREE CREDITS

An introduction to the study of politics through an examination of the crucial issues with which political scientists grapple: justice, equality, freedom, power, and the good life, to name a few. *Offered every fall.*

PS 261. CONCEPTS AND METHODS IN POLITICAL SCIENCE
THREE CREDITS

A survey of the major concepts, theories and methods of political science as a discipline. Preparation of a research design and a review of quantitative methods also included. *Offered every fall.*

PS 262. AMERICAN POLITICAL THOUGHT
THREE CREDITS

The study of the political ideas, ideals and ideologies which contributed to and developed from the American experience. An analysis of the ideas which underlie our political institutions and practices. (Same as PHL 236) May not be used to meet Area I of the General Education Requirements.

PS 263. SURVEY OF POLITICAL PHILOSOPHY
THREE CREDITS

See description under Philosophy Department listing. (Same as PHL 230). *Prerequisite: Phl 101 or*

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permission of instructor.

PS 264. SURVEY RESEARCH METHODS THREE CREDITS

See description under Sociology Department listing. (Same as SOC 371).

PS 265. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES THREE CREDITS

This course is an introduction to quantitative analysis for the social sciences using SPSS, one of the most frequently and widely used statistical packages in the world. Students will learn how to enter and manipulate data in SPSS, apply and interpret statistics from descriptive through multiple regression, and test hypothesis using statistical methods (same as SOC 373). *Prerequisites: PS 111 or 141, PS 261 or SOC 371, or approval of instructor.*

PS 311. THE AMERICAN PRESIDENCY THREE CREDITS

An exploration and analysis of the development and powers of the American President as political leader, chief executive, and world leader. Special attention is given to the selection process and the effect of the process on the Presidency. *Prerequisite: PS 111 or consent of instructor. Offered in fall semester in odd years.*

PS 312. LEGISLATIVE BEHAVIOR THREE CREDITS

An analysis of the theory and practice of representative institutions in political systems with emphasis given to the American Congress. Legislative elections, floor procedures, committee functions, and ethics are all considered as well as their collective impact upon the formation of public policy. *Prerequisite: PS 111 or consent of instructor. Offered in spring semester in even years.*

PS 331. THE CONSTITUTION AND THE FEDERAL SYSTEM THREE CREDITS

The study of the growth and change of the American Constitution through analysis of the Continuation of the study of the meaning of the Constitution as interpreted by the Supreme Court. Analysis of the landmark decisions regarding free speech and press, separation of church and state, rights of persons accused of crimes, equal protection of the laws, voting rights. *Prerequisite: PS 111 or PS 233, or consent of instructor. Offered in spring semester in odd years.*

PS 332. CIVIL RIGHTS AND LIBERTIES THREE CREDITS

leading cases decided by the U.S. Supreme Court. Analysis of the powers of the three branches of government and of the relations between the states and the federal government. *Prerequisite: PS 111 or PS 233, or consent of instructor. Offered in fall semester in even years.*

PS 345. AMERICAN NATIONAL SECURITY POLICY THREE CREDITS

This course analyzes U.S. National Security Policy, the combination of foreign and defense policies. Using theories of international politics and foreign policy, students learn about the evolution of U.S. national Security from the War of Independence to the contemporary period. Theoretical approaches, such as geopolitics, balance of power, and force doctrines, are examined. The agencies and personnel that develop and implement security policy are also studied. *Prerequisite: PS 141 or permission of instructor.*

PS 350. COMPARATIVE POLITICS: THEORY AND ANALYSIS THREE CREDITS

This course is an introduction to the study of politics and governments from a comparative perspective. It is not a survey course of the governmental institutions of particular countries, but rather an examination of types of governments and regimes, the transitions that may occur between types of government, and approaches to studying these topics. We will also examine the ways that ethnicity and cultural ideas affect governments and regime transition. *Prerequisite: Sophomore Standing.*

**PS 380. POLITICAL SCIENCE SENIOR PROJECT
THREE CREDITS**

This course is the capstone experience for political science majors. During the semester, the student will complete the research project begun during PS 261 (i.e. data and/or information will be gathered and analyzed.), and the results written in a formal paper. The student will present the findings in public forum in which the department's faculty and students are present. *Prerequisite: Senior Standing. Offered every semester.*

**PS 394. PRACTICUM
ONE TO THREE CREDITS**

Educational experiences associated with faculty research, club activities, experiential learning are available to the student for credit depending upon the amount of time the student invests in the experience. Students may work in the University's Survey Center, assist in a major research project with a faculty member, or participate in the Model UN or some other educational simulation. (Maximum of nine credits can be accumulated by a student over four years). *Prerequisite: No course prerequisites but the permission of the instructor/faculty member is required in advance. Offered every semester.*

**PS 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students in the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson. Offered every semester.*

**PS 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS**

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

**PS 198/298/398. TOPICS IN POLITICAL SCIENCE / TOPICS IN POLICY ANALYSIS
VARIABLE CREDIT**

A study of topics of special interest not extensively treated in regularly offered courses. Examples of possible topics would be: film and politics; minorities in the political process; American conservatism; the First Amendment in law and practice; war in the ancient era; Marxism, etc. May be repeated when topics differ. A topics course in a specific field of public policy, such as Energy, Environmental Science, Health Policy and Politics, etc., may be offered also. *Prerequisite: Permission of department chairperson, criterion depending on topic.*

PSYCHOLOGY COURSES

**PSY 101. GENERAL PSYCHOLOGY
THREE CREDITS**

An introduction to the field of psychology with emphasis on objective and systematic methods of inquiry. Extensive treatment of major psychological topics including sensation, perception, learning, motivation, intelligence, personality development, frustration, conflict, and mental health.

**PSY 200. RESEARCH DESIGN AND STATISTICS I
THREE CREDITS**

An introduction to the use of statistical procedures in the analysis of psychological data. Topics include descriptive statistics and inferential statistics. Techniques such as t-tests, correlation, regression, and chi-square will be used for hypothesis testing. *Prerequisites: PSY 101 and Math competency (MTH 101 or higher)*

**PSY 221. DEVELOPMENTAL PSYCHOLOGY
THREE CREDITS**

The course provides a general view of human growth and development from conception through the life span. Physical, cognitive, personal, and social development of the various stages of life will be presented. Discussions will include issues such as the influence of heredity versus environment and

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how these issues can be studied using various developmental research techniques. *Prerequisite: Psy 101.*

PSY 222. ADOLESCENT PSYCHOLOGY THREE CREDITS

This course is designed as a study of the adolescent stage of life. Emphasis will be placed on the following areas of development: physical, emotional, cognitive, and social. *Prerequisite: Psy 101.*

PSY 242. PERSONALITY THREE CREDITS

An examination of the major theoretical perspectives on personality development and functioning, with additional emphasis on the assessment of personality and the treatment of disorders of personality. *Prerequisite: Psy 101.*

PSY 300. RESEARCH DESIGN AND STATISTICS II THREE CREDITS

A lecture and laboratory course designed to familiarize the student with the methods of psychological research. Hands-on experimental participation will give the student direct experience with research design and statistical analyses using SPSS. The student will prepare a formal APA style research proposal to be used for the capstone experience. *Prerequisite: PSY 101 and PSY 200. To be taken by psychology majors only.*

PSY 311. BEHAVIORAL NEUROSCIENCE FOUR CREDITS

A study of the physiological mechanisms mediating behavior and cognition. Emphasis on the structure and function of the nervous system and the neurophysiological bases of sensory processes, emotion, abnormal behavior, sleep, learning and memory, pain, and drug abuse. Laboratory experience includes brain dissection and psychophysiological techniques employed in human behavioral neuroscience research. Fee: \$30. *Prerequisites: Psy 101; junior or senior standing.*

PSY 312. SENSORY AND PERCEPTUAL PROCESSES FOUR CREDITS

Principles and phenomena of human sensory and perceptual processes are studied within the visual, auditory, olfactory, gustatory, proprioceptive and cutaneous systems. Students are familiarized with techniques used in the investigation of sensory and perceptual phenomena. *Prerequisite: Psy 101; junior or senior standing.*

PSY 331. COGNITION THREE CREDITS

A survey of human cognitive processes such as attention, pattern recognition, memory, language, and problem solving as well as other selected aspects of human cognition. The course includes historical as well as current perspectives on cognitive issues and emphasis on the research techniques used. *Prerequisite: Psy 101.*

PSY 333. CRITICAL THINKING IN PSYCHOLOGICAL SCIENCE THREE CREDITS

This course provides an opportunity to learn and practice the basic skills of critical thinking within the context of psychological science. Students will evaluate claims and theories in psychology, generate alternative explanations of psychological findings, identify common fallacies in thinking, construct and evaluate arguments, and learn how to become a more intelligent consumer of information. Additional topics include the interface of politics and the media with science, and the dangers of pseudoscience. *Prerequisite: Psy 101.*

PSY 341. INTRODUCTION TO SOCIAL PSYCHOLOGY THREE CREDITS

A general survey of the field of social psychology. Social factors in human nature; psychology of individual differences; social interaction; collective behavior, psychology of personality; social pathology. (Same as Soc 341) *Prerequisites: Soc 101 or Ant 101 or Psy 101.*

PSY 351. BEHAVIORAL MEDICINE THREE CREDITS

This course provides a survey of the basic theoretical concepts and major issues in Behavioral Medicine. Specifically, this course examines how the areas of health, illness and medicine can be

studied from a psychological perspective. Topics of emphasis include: the psychological aspects of wellness and illness, preventive medicine, stress, chronic and terminal diseases (such as cancer and AIDS), and the use of alternative medicine. *Prerequisites: Psy 101; junior or senior standing.*

**PSY 352. PSYCHOPATHOLOGY
THREE CREDITS**

A general survey of psychological disorders in children and adults with emphasis on symptomatology, etiology, and assessment. Forensic and classification issues are also examined. *Prerequisite: Psy 101, Psy 242.*

**PSY 353. CLINICAL METHODS IN PSYCHOLOGY
THREE CREDITS**

A survey of the clinical methods in psychology including general therapeutic models and specific clinical techniques. Issues of assessment and diagnosis of psychological disorders are examined. *Prerequisite: Psy 101, Psy 352.*

**PSY 354. THE EXCEPTIONAL INDIVIDUAL
THREE CREDITS**

A study of the psychological, physical, and social challenges and needs of exceptional individuals with an emphasis on etiology, assessment, impact and educational interventions. *Prerequisites: Psy 101, Psy 221.*

**PSY 355. FORENSIC PSYCHOLOGY
THREE CREDITS**

A survey of the role that psychology has played in the legal system from issues of morality and theories of crime, to eyewitness testimony, the evaluation of criminal suspects, and jury selection. The application of the methods and theories of psychology to the legal system will be emphasized. *Prerequisite: Psy 101; junior or senior standing.*

**PSY 356. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY
THREE CREDITS**

A survey of the applied areas of personnel, organizational, human factors, and consumer psychology. *Prerequisite: Psy 101.*

**PSY 357. NEUROPSYCHOLOGY
THREE CREDITS**

A survey of the relationship between nervous system physiology and human behavior with emphasis on neurological disorders, neuropsychological assessment, head injury, cerebral asymmetry, and rehabilitation. *Prerequisite: Psy 101.*

**PSY 358. PSYCHOLOGICAL TESTS AND MEASURES
THREE CREDITS**

A survey of the psychometric properties of various instruments and measures of psychological phenomena (especially intelligence and personality). a variety of group and individual tests are studied as to their reliability, validity and utility. *Prerequisite: Psy 101, Psy 200.*

**PSY 359. PSYCHOPHARMACOLOGY
THREE CREDITS**

A study of the effects and mechanisms of the action of psychoactive drugs on behavior. Focus will be placed on drugs used to treat psychopathological disorders and drugs of abuse. Topics of emphasis include a survey of: stimulants, depressants, antipsychotics, antidepressants, psychedelics, legal drugs such as caffeine, nicotine and alcohol. *Prerequisite: Psy 101.*

**PSY 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research under the direction of a faculty member. *Prerequisite: PSY 300; Approval of department chairperson is required.*

**PSY 198/298/398. TOPICS IN PSYCHOLOGY
VARIABLE CREDIT**

A study in topics of special interest not extensively treated in regularly offered courses.

Course Descriptions

PSY 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

PSY 400. SENIOR CAPSTONE

THREE CREDITS

This course is designed to provide a capstone experience for senior Psychology majors. Students will run an experiment, conduct the appropriate statistical analysis and present the results formally in an APA manuscript, a poster, and in an oral presentation. Issues related to the field, including careers and graduate school, will also be discussed. *Prerequisites: Senior status and departmental permission.*

SOCIOLOGY COURSES

SOC 101. INTRODUCTION TO SOCIOLOGY

THREE CREDITS

A systematic view of sociology, providing essentials for an approach to questions about man in society; analysis of social processes, structures, and functions.

SOC 211. THE FAMILY

THREE CREDITS

History and ethnological studies of family. Role of family in the development of the individual. Interrelation of church, state, and family. Social conditions and changes affecting the American family. Family stability and disorganization. *Prerequisite: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 212. HUMAN SEXUALITY

THREE CREDITS

A balanced and thoughtful introduction to what is currently known about human sexuality. Research in sexuality comes from a variety of disciplines including Psychology, Sociology, Biology, Medicine, Physical Education and Human Education. Without assuming that the student has an extensive background in any of these fields, this course draws liberally on all of them and works hard to show how the biology, psychology and sociology of sex are interrelated. *Prerequisite: Soc 101 or approval of instructor.*

SOC 214. SEX ROLES

THREE CREDITS

This course deals with the origins of sex roles, the historical changes in sex roles, the consequences of sex roles to the individual and to society, and the outlook for sex roles in the future. *Prerequisites: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 215. FAMILY VIOLENCE

THREE CREDITS

It is customary to think of violence between family members as infrequent and, when it does occur, as being the result of some mental defect or aberration. Research evidence shows that neither of these views is correct. This course examines the prevalence, experience, causes, and prevention of family violence. *Prerequisites: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 222. CRIMINOLOGY

THREE CREDITS

An analysis of the nature and extent of crime and the causes and prevention of criminality. Topic areas include the history of criminology, criminological research methods, the extent and patterns of crime, and theories of criminal behavior, and criminal law and its functions. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 223. DRUGS AND ALCOHOL IN AMERICAN SOCIETY
THREE CREDITS**

An examination of drugs and alcohol in American society as a major social problem. *Prerequisite: Soc 101 or approval of instructor. Offered every other year.*

**SOC 224. SOCIAL GERONTOLOGY
THREE CREDITS**

Considers major findings about the social organization of aging and dying. Reviews history, present and future implications of the rapidly expanding population of elderly. *Prerequisites: Soc 101 or Ant 101 or permission of the instructor.*

**SOC 225. JUVENILE DELINQUENCY
THREE CREDITS**

An examination of the nature and extent of juvenile delinquency, its causes, and its prevention. Topics include the similarities and differences between juvenile and adult justice systems; trends in juvenile delinquency; theories of delinquency; gangs; and the roles of family, schools, and legal institutions as well as community-based programs and their role in delinquency prevention and control. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 226. CORRECTIONS, PROBATION AND PAROLE
THREE CREDITS**

A study of the agencies devoted to the correction and treatment of convicted offenders with a special focus on adult and juvenile probation, parole agencies supervising offenders in the community, as well as residential correction facilities including jails, prisons and juvenile institutions. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 228. DEVIANCE AND SOCIAL CONTROL
THREE CREDITS**

This course examines the nature of deviant behavior and the social responses to it. Topics covered are: what constitutes deviance, theories of deviance, varieties of deviant behavior, and the types of social responses to deviant behavior. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 231. FIELDS OF SOCIAL WORK
THREE CREDITS**

A survey of the main problems of social work and of agencies and methods that have developed to cope with them. The nature and requirements of the different fields of social work. *Prerequisite: Soc 101 or Ant 101 or 102 or Psy 101 or approval of instructor.*

**SOC 234. GROUP COUNSELING
THREE CREDITS**

Students enrolled in this course will learn about different types of group counseling services. Students will acquire knowledge of group practice issues for each phase in the evolution of groups. Students will develop initial competence in beginning work as a group leader/facilitator. *Prerequisite: Soc 101.*

**SOC 235. CORRECTIONS COUNSELING
THREE CREDITS**

Interviewing and intervention strategies in dealing with the criminal offender population in both prison and community settings as well as the social services available for this population. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 236. INDIVIDUAL COUNSELING
THREE CREDITS**

Students enrolled in this course will gain knowledge of the counseling process including values, goals, methods, and limitations. Students will learn about various client characteristics that impact the counseling relationship. Students will develop initial competence in delivering counseling services. *Prerequisite: Soc 101.*

**SOC 251. SOCIOLOGY OF MINORITIES
THREE CREDITS**

A theoretical analysis of inter-group tensions and processes of adjustment with special reference to modern racial, national, and religious conflicts. *Prerequisite: Soc 101 or Ant 101 or 102 or approval of instructor.*

Course Descriptions

SOC 261. SOCIOLOGY OF SPORT THREE CREDITS

An examination of sport from a social and cultural perspective. Emphasis is placed on examining how the institution of sport is a microcosm of American society, reflecting society's major cultural beliefs, and how the organization of sport reflects that of society. *Prerequisite: Soc 101 or approval of instructor. Offered every other year.*

SOC 263. THE URBAN ENVIRONMENT THREE CREDITS

See description under Political Science listing, PS 212. (Same as PS 212).

SOC 341. INTRODUCTION TO SOCIAL PSYCHOLOGY THREE CREDITS

A general survey of the field of social psychology. Social factors in human nature; psychology of individual differences; social interaction; collective behavior; psychology of personality; social pathology. (Same as PSY 341) *Prerequisite: Soc 101 or Ant 101 or 102 or Psy 101 or approval of instructor.*

SOC 352. SOCIAL STRATIFICATION THREE CREDITS

A survey of the structure and dynamics of social inequality in American life. Attention is focused on the institutionalization of power arrangements that perpetuate intergenerational patterns of economic, political, and prestige inequalities among collectivities. A special effort is made to compare the consequences of structured social inequality for the very wealthy and the very poor. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of instructor.*

SOC 361. MEDICAL SOCIOLOGY THREE CREDITS

Surveys findings and methods in current applications of sociology to medicine. Includes a consideration of large and small scale social influences on the organization of medical institutions and practices. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of the instructor.*

SOC 371. METHODS OF RESEARCH IN SOCIOLOGY THREE CREDITS

Introduction to sociological research; selected problems of research in social relations; interviewing techniques; questionnaire design and case studies. *Prerequisite: Soc 101 or approval of instructor.*

SOC 373. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES THREE CREDITS

This course is an introduction to quantitative analysis for the social sciences using SPSS, one of the most frequently and widely used statistical packages in the world. Students will learn how to enter and manipulate data in SPSS, apply and interpret statistics from descriptive through multiple regression, and test hypotheses using statistical methods. (Same as PS 265). *Prerequisite: Soc 101, Soc 371 or PS 261, or approval of instructor.*

SOC 381. SOCIOLOGICAL THEORY THREE CREDITS

The aim of the course is to provide the student majoring in sociology, or in one of the related fields, with a historical background necessary for understanding of the current trends in sociology as well as for clarification of its distinct subject matter, problems, and methods. *Prerequisite: Soc 101 or approval of instructor.*

SOC 390. SENIOR CAPSTONE THREE CREDITS

This course is intended for senior sociology majors. In this course you will complete an empirical research paper, quantitative or qualitative, and present the results to an audience of faculty and peers. *Prerequisites: Soc 371, Soc 381.*

SOC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: By arrangement with an instructor.*

SOC 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

SOC 198/298/398/498. TOPICS
THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

SOC 491. SEMINAR
THREE CREDITS

Presentations and discussions of selected themes and issues in sociology. *Prerequisite: Criteria will vary according to content of seminar.*

SPANISH COURSES

SP 101-102. ELEMENTARY SPANISH
THREE CREDITS EACH

Fundamentals of spoken and written Spanish, and introduction to Spanish culture. Emphasis is placed on communicative proficiency. Work in language laboratory required.

SP 203-204. INTERMEDIATE SPANISH
THREE CREDITS EACH

Continuation of development of communicative skills in Spanish. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Work in language laboratory required. *Prerequisite: Sp 102 or permission of instructor.*

SP 205. CONVERSATION
THREE CREDITS

Practice in spoken Spanish, including discussions, oral presentation, and role-playing. Includes written exercises. *Prerequisite: Sp 204 or permission of instructor.*

SP 206. ADVANCED GRAMMAR, STYLISTICS, AND COMPOSITION
THREE CREDITS

Practice in written and oral skills with an emphasis on the refinement of grammatical and stylistic abilities. *Prerequisite: Sp 204 or permission of instructor.*

SP 208. CULTURE AND CIVILIZATION
THREE CREDITS

Systematic introduction to the political, social, economic, and cultural characteristics of Spain from the Middle Ages to Modern Times. Readings from a variety of sources including the Spanish press. *Prerequisite: Sp 204 or permission of instructor.*

SP 209. LATIN AMERICAN CULTURE AND CIVILIZATION
THREE CREDITS

Systematic study of the historical, cultural, economic, and political development of the countries of Latin America (Spanish-speaking countries and Brazil). Pre-Columbian cultures (Maya, Aztec, and Inca) will be examined. Use of audio-visual material and other activities included. *Prerequisite: Sp 204 or permission of instructor.*

SP 210. SPANISH FOR BUSINESS
THREE CREDITS

Introduction to language use in the contemporary Spanish business world, including practice in reading, understanding, and writing business communications. *Prerequisite: Sp 204 or permission of instructor.*

Course Descriptions

SP 211. CONVERSATIONAL SPANISH FOR HEALTH AND SOCIAL SERVICES

THREE CREDITS

Designed to provide the students with the basic terminology and conversational skills in Spanish for the health care field, and the social services area. Work on special problems of grammar and idiomatic expression. *Prerequisite: Sp 204 or permission of instructor.*

SP 212. NON-LITERARY TRANSLATION

THREE CREDITS

In "Non-literary Translation" students will learn some translation strategies by practicing with actual data taken from documents in a variety of professional fields including medical, commercial and legal. Students will learn how to solve problems in technical translations: terminology, idiomatic expressions, verb usage and false cognates. The course will use a workshop approach and focus on practical issues in various professional fields. Includes a community service component. *Prerequisite: Sp 203-204 or equivalent.*

SP 220. SPANISH LISTENING AND COMPREHENSION

THREE CREDITS

"Listening and Comprehension" develops a better understanding of spoken, colloquial Spanish. Students will work with audio and audio-visual materials that engage cultural topics connected to language use in Hispanic countries. *Prerequisite: SP 204 or permission of instructor.*

SP 301. INTRODUCTION TO LATIN AMERICAN LITERATURE

THREE CREDITS

An examination of literary language, genre conventions, and critical approaches, as well as an introduction to Spanish literary history. *Prerequisite: Sp 204 or permission of instructor.*

SP 307. SURVEY OF SPANISH LITERATURE I

THREE CREDITS

Spanish 307 is a systematic survey of peninsular (Spanish) literature from the Middle Ages through the "Ilustración" or Neoclassicism literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history. *Prerequisite: Sp 203-204 or equivalent.*

SP 308. SURVEY OF SPANISH LITERATURE II

THREE CREDITS

Spanish 308 is a systematic survey of Spanish literature from Romanticism through the contemporary literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history. *Prerequisite: Sp 203-204 or equivalent.*

SP 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research in the field of the major under the direction of a staff member. *Prerequisite: Approval of department chairperson.*

SP 397. SEMINAR

ONE TO THREE CREDITS

Presentations and discussions of selected topics. Prerequisite: Approval of department chairperson. Maximum of three credits per student.

SP 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

SP 198/298/398. TOPICS

VARIABLE CREDIT

Examination of a special topic in Spanish language, culture, or literature. Possible topics include literature of exile, pre-and post-Franco literary works, Latin-American twentieth-century writings, Hispanic women writers, literature and art, social-protest literature, Latino issues through Hispanic

films, Hispanic literature in translation, aspects of bilingualism, problems in Spanish grammar, and history of the Spanish language.

STUDY TOUR EXPERIENCE COURSES

STE 300. STUDY TOUR EXPERIENCE THREE CREDITS

This course, intended for use by all departments, is designed to offer students the opportunity to experience another culture through an intensive period of study and travel abroad under the guidance of a knowledgeable instructor. The Study Tour Experience has four components: a pre-travel orientation, the concentrated group travel experience, a writing emphasis, and a post-travel follow-up session. Students will be expected to keep a journal during the entire experience that will serve as a reference for the post travel discussions and paper or project assignment. The travel itself ranges from ten to fourteen days and is scheduled during winter break intersession, spring break, or summer sessions. Scheduling is specifically intended to provide expanded travel opportunities for those students who might not otherwise be free to travel abroad within a semester due to the constraints of tightly sequenced courses within their majors. (10 classroom hours, 10-14 days of field work).

THEATRE ARTS COURSES

THE 100. APPROACH TO THEATRE THREE CREDITS

Attention will be directed to the importance of the dramatic imagination in reading and viewing plays, with the objective of developing a critical appreciation of the theatre. Lecture, discussion, demonstration, films, college and professional theatre performances.

THE 111. FUNDAMENTALS OF PLAY STRUCTURE AND CRITICISM THREE CREDITS

A study of critical techniques in interpreting plays and the application of such techniques to evaluating plays for stage presentation. *Prerequisite: Eng 101.*

THE 112. SCRIPT ANALYSIS THREE CREDITS

The cultivation of interpretative skills as an approach to dramatic literature for the purposes of production. Classical Literature. *Prerequisite: THE 111.*

THE 121. STAGECRAFT THREE CREDITS

An exploration of the many physical facets of theatrical production by introducing the student to the process of translating the concept of a design into physical actuality and of adapting a production to the requirements of a stage. Class and workshop.

THE 131. ACTING I THREE CREDITS

Basic acting techniques. Creating a variety of characters for the stage through the use of vocal interpretation, physical movement, improvisation, and theatre games.

THE 132. SPEECH FOR THE STAGE THREE CREDITS

Instruction and exercises in vocal development for the stage, including diction, delivery, and interpretation. Laboratory sessions.

THE 141. ORAL INTERPRETATION THREE CREDITS

Instruction in vocal delivery of prose, poetry, drama, and archaic language for the purposes of oral communication of the written text. *Prerequisite: THE 131 or permission of instructor.*

THE 190. THEATRE LABORATORY ONE TO THREE CREDITS

A study, through the application of various techniques of different facets of theatre such as auditioning, costuming, fencing, make-up, masks, mime, scene study, soliloquy, stage combat, textual

Course Descriptions

analysis, and voice. Guest lecturers, master classes, workshops. Required of all Theatre Arts majors every semester.

THE 191. DEPARTMENT PRACTICUM IN THEATRE PRODUCTION ONE TO THREE CREDITS

The Department Practicum in theatre production may be taken for one to three credits per semester with the total not to exceed six. Students may earn credit for major roles and positions of major responsibility in cocurricular activities. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Approval of credit must be by advisor and Department Chairperson.

THE 211. THEATRE HISTORY I THREE CREDITS

A survey of the historical development and background of theatrical art from ancient times through the seventeenth century.

THE 221. SCENE DESIGN THREE CREDITS

The nature and function of scenic art with emphasis on contemporary theories and techniques.
Prerequisite: THE 121.

THE 223 COSTUME DESIGN THREE CREDITS

Introduction to approach, methods and basic techniques for designing costumes for the Theatre.

THE 232. ACTING II THREE CREDITS

An introduction to the major theories, aims, and styles of acting through performing various roles and monologues in selected dramatic scenes. *Prerequisite: THE 131.*

THE 234. DIRECTING I THREE CREDITS

An introduction to the principles of directing including play selection, composition, casting, blocking, and rehearsing. Class and workshop. *Prerequisite: THE 131 or departmental permission.*

THE 312. THEATRE HISTORY II THREE CREDITS

A survey of the historical development and background of theatrical art from the eighteenth century to the present. *Prerequisite: THE 211.*

THE 331. ACTING III THREE CREDITS

Attention to special problems in acting in terms of classical style. Continued self-discovery through improvisation, kinesthetic awareness, and other basic acting techniques learned in THE 232 are expanded upon. *Prerequisites: THE 131, 132, 232 or permission of instructor.*

THE 335. DIRECTING II THREE CREDITS

A study of special problems in directing. Students will prepare a prompt book, critique productions, and direct a one-act play. *Prerequisite: THE 234.*

THE 393. SENIOR CAPSTONE ONE TO THREE CREDITS

Individual performance project intended to inspire students to take on responsibility for self governance and through effort create a meaningful expression of their aesthetic.

THE 394. THE BUSINESS OF THEATRE ONE TO THREE CREDITS

Discussion of information and preparation to navigate the theatrical and entertainment industries

THE 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in theatre under the direction of a staff

member. A research paper at a level significantly beyond a term paper is required.

**THE 431. ACTING IV
THREE CREDITS**

Scene study, analysis, and development of acting theories for a sophisticated preparation of audition material and rehearsal technique for the working actor. *Prerequisites: THE 131, 132, 232, 331 or permission of instructor.*

**THE 198/298/398. TOPICS
ONE TO THREE CREDITS**

A study of topics of special interest not extensively treated in regularly offered courses.

**THE 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS**

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

WOMEN'S STUDIES COURSES

**WS 101. INTRODUCTION TO WOMEN'S STUDIES
THREE CREDITS**

Introduction to Women's Studies is a lecture/discussion course. It introduces students to the theoretical assumptions and historical development of feminist thought. It examines a variety of contemporary issues related to race, gender, class, culture, sexuality, the family, reproduction, language and discourse in the light of these theoretical assumptions. *Offered every spring semester.*

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Harvard Graduate School of Education

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B.A., M.S. Wilkes, Ph.D. Pennsylvania

TBD, Vice President for Finance and Support Operations

B.S., M.B.A. St. Martin's University

TBD, Vice President for Human Resources and Diversity

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B.A., Alderson-Broaddus College

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B.A. College of Wooster, M.P.A. Princeton, D.B.A., Harvard

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BRIAN BOGERT (2000), Director of Information, Analysis, and Planning

B.A. York, M.S. Indiana State

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B.M. Virginia Commonwealth, M.M. Rice, Ph.D. Maryland, College Park

BERNARD W. GRAHAM (1994), Dean, Nesbitt College of Pharmacy and Nursing and Dean, School of Pharmacy

B.S. Albany, M.S., Ph.D. Purdue

HARVEY A. JACOBS (1996), Assistant Dean, School of Pharmacy

B.A. Wilkes, B.S., Ph.D. Utah

RHONDA A. WASKIEWICZ (2009), Assistant Dean for Academic Affairs and Assessment, Nesbitt College

B.S. Tufts, M.S. King's, Ed.D. Temple

VERNON B. HARPER Jr. (2009), Assistant Provost

B.A. Penn State, M.A. West Chester, Ph.D. Howard

SUSAN HRITZAK (1983), Registrar

B.S., M.B.A. Wilkes

ANNE PELAK (1999), Director of Grant Support

University Personnel

B.A. Marywood, M.S. Wilkes
LOREN D. PRESCOTT (2008), Dean for Law School Initiative
B.A. University of Washington, LL.M. Florida College of Law, J.D. Willamette University
College of Law
**MICHAEL J. SPEZIALE (2004), Dean of the College of Graduate and Professional Studies
and Dean, School of Education**
B.A. King's, M.S. Wilkes, Ed.D. Lehigh
**KATHLEEN HOULIHAN (2006), Director of Graduate and Part-Time Undergraduate
Enrollment Admissions**
B.A., M.B.A. Wilkes
WILLIAM JONES (2006), Assistant Dean of Graduate Studies
B.A. Pennsylvania, M.A., M.S. Indiana
MARIA ROMAN (2007), Recruitment and Retention Specialist
B.S. King's, M.B.A. Bloomsburg
MARGARET PETTY (2002), Assistant Director of Continued Learning
B.A. King's College, M.B.A. Bloomsburg
JOSHUA SAVITSKI (2009), Recruitment and Retention Coordinator
B.B.A. Wilkes, M.B.A. Wilkes
**ERIN DREW SUTZKO (2006), Director of the Sovereign Center for Leadership and
Management Development**
B.A. SUNY, Albany, M.A. Columbia
**JOANNE A. THOMAS (2008), Coordinator of the Sovereign Center for
Leadership and Management Development & Graduate Teacher Education**
B.S. Scranton
JOHN STACHACZ (2008), Dean of Library Services
B.A. New Mexico, M.A., M.S.L.S. Kentucky
KRISTIN PITT (2009), Electronic Resources & Serials Librarian
B.A. SUNY Geneseo, M.S., University at Albany
GISELE ROMANACE (2000), Computer Systems Librarian
B.A., M.L.S. SUNY, Albany
BRIAN SACOLIC (1987), Head of Reference & Public Services
B.S. Penn State, M.S.L.S. Clarion
HEIDI SELECKY (1973), Technical Services Librarian
B.A. Marywood, M.S.L.S. Villanova
LINDA A. WINKLER (2010), Dean, College of Arts, Humanities, and Social Sciences
B.A. Midland Lutheran, M.A., M.P.H., Ph.D. Pittsburgh

OFFICE OF THE VICE PRESIDENT FOR STUDENT AFFAIRS

PAUL S. ADAMS (1979), Vice President for Student Affairs
B.A., M.S. Wilkes, Ph. D. Pennsylvania
MARK R. ALLEN (1986), Dean of Students
B.S., M.A. SUNY, Oneonta
SUSAN BISKUP (2006), Counselor, Campus Counseling
B.A. Penn State, M.A. Marywood
MEGAN A. BOONE (2007), Coordinator, Community Service
B.A., M.S. Shippensburg
SHARON CASTANO (2005), Coordinator, Internships and Mentoring
B.S. Bloomsburg
MELISSA GAUDIO (2008), Counselor, Campus Counseling
B.A. Scranton, M.A. Syracuse, M.A. Marywood
GAIL HOLBY (2002), Health and Wellness Coordinator, Health Services
B.S., R.N. Wilkes
JAMIE MILLER (2009), Coordinator, Student Development
B.A. New York, M.S. Mansfield
DIANE O'BRIEN (1989), Director, Health Services
B.S. Wilkes, M.S.N. Misericordia
ELIZABETH ROVEDA (2006), Assistant Director, Residence Life
B.S., M.B.A. Wilkes

PHILIP RUTHKOSKY (1999), Associate Dean, Student Development
 B.S., M.B.A. Scranton
 BARBARA E. KING (1980), Associate Dean of Student Affairs
 B.S. Wilkes
 THOMAS J. THOMAS (1982), Executive Director, University College
 B.S. East Stroudsburg, M.S. Wilkes
 KATY BETNAR (2005), Learning Specialist
 B.A. Penn State, M.A. George Mason
 CAROL A. BOSACK-KOSEK (1989), Director, Career Services
 B.A. Wilkes, M.S. St. John's
 MARGARET ESPADA (2004), Program Director, Upward Bound
 B.A. SUNY, Brockport, M.A. Canisius
 BLAKE MACKESY (2002), Director, University College
 B.A. Russell Sage, M.A. Rollins College
 MARY BETH MULLEN (2003), Advising Coordinator, College of Science and
 Engineering
 B.S., Sc.D. Pittsburgh GSPH
 LISA MULVEY (2000), Coordinator, Career Development, Career Services
 B.S. Kings, M.A. Marywood
 ALBERTO PRADO (2005), Coordinator, Academic Services
 B.S. East Stroudsburg, M.S. McDaniel
 SANDRA RENDINA (1989), Coordinator, Academic Services
 B.S., M.S. Wilkes
 KAREN RILEY (2000), Coordinator, Academic Services
 B.A. Misericordia, M.S. Scranton
 CHARLES RIPA (2006), Academic Coordinator, Upward Bound
 B.S. Bloomsburg, M.S. Scranton
 STEPHANIE SHANDRA (2005), Guidance Coordinator, Upward Bound
 B.A., M.S. Clark
 GRETCHEN YENINAS (1998), Advising Coordinator, College of Arts, Humanities
 and Social Sciences
 B.A. Elizabethtown, M.S. Scranton, M.A. Wilkes

Athletics

ADELENE MALATESTA (1989), Director of Athletics
 B.S. Slippery Rock, M.Ed. East Stroudsburg
 NEAL BISCALDI (2007), Administrative Staff, Coordinator of Intramural Program,
 Assistant Coach Men's Basketball
 B.S. Rowan University
 TOM DUNSMUIR (1982), Facilities and Equipment Coordinator
 RACHAEL EMMERTHAL (2005), Administrative Staff, Women's Basketball Coach
 B.S. DeSales, M.Ed. East Stroudsburg
 KEITH KLAHOLD (2003), Administrative Staff, Fitness Facilities Coordinator
 B.S. Slippery Rock, M.S. California U. of Pennsylvania
 JON LAUDENSLAGER (2003), Administrative Staff, Wrestling Coach
 B.S. Wilkes
 CHRISTOPHER LEICHT (2002), Administrative Staff; Manager, Recreational and
 Athletic Center, Men's and Women's Tennis Coach
 B.S., M.B.A. Bloomsburg
 WILL LUCA (2008), Administrative Staff, Assistant Football Coach
 B.S. Kutztown
 MICHAEL McCREE (2002), Administrative Staff, Assistant Football Coach
 B.S. Wilkes
 FRANK MATTHEWS (2000), Administrative Staff, Women's Softball Coach
 B.S. Bloomsburg
 CRAIG MERRIMAN (2008), Sports Information Director
 B.A. Texas A&M
 SARA MYERS (2005), Administrative Staff, Senior Woman Administrator,

University Personnel

Field Hockey Coach

B.A. Susquehanna, M.Ed. Goucher

JERRY RICKRODE (1992), Administrative Staff, Men's Basketball Coach,

Fitness Supervisor

B.A. Skidmore, M.S. Ithaca

FRANK SHEPTOCK (1990), Administrative Staff, Head Football Coach

B.S. Bloomsburg University

KAMMIE STUDLEY (2006), Administrative Staff, Head Women's Lacrosse Coach

B.A. Pfeiffer University

JOHN SUMOSKI (2002), Administrative Staff, Women's Soccer Coach

B.A. Pittsburgh at Johnstown, M.A. Central Michigan

PHILIP L. WINGERT (1982), Associate Director of Athletics, Men's Soccer Coach

SUNY, Cortland, M.S.Ed. Virginia Tech

OFFICE OF THE VICE PRESIDENT FOR UNIVERSITY ADVANCEMENT AND ALUMNI RELATIONS

MICHAEL J. WOOD (2006), Vice President for Advancement and Alumni Relations

B.A., Alderson-Broaddus College

JANICE BROYAN (1997), Gift Coordinator

ANGELA BUCKLEY (2007), Director, Donor Relations

Keystone

SANDRA SARNO CARROLL (2005), Executive Director, Alumni Relations

B.A. Hartwick College

BRIDGET GIUNTA '05 (2009), Associate Director, Alumni Relations

B.A. Wilkes

AMY HETRO (2009), Manager, Annual Giving

B.S. King's

SUSAN DANTONA JOLLEY (2007), Director, Donor Relations

B.A. Dickinson College, M.A. Bloomsburg

LAUREN PLUSKEY (2006), Director, Annual Giving

B.S. Wilkes, M.B.A. Wilkes

EVELYNE TOPFER (2002), Director, Advancement Operations

B.S. Zurich (Switzerland)

MILDRED URBAN (2006), Manager, Special Events

REBECCA VAN JURA (2003), Director, Special Events

B.A. East Stroudsburg

NANCY A. WEEKS (2004), Assistant Director, Advancement Operations

B.S. Penn State, M.S. Wilkes

MIRKO WIDENHORN (2008), Director, Alumni Relations

B.A. Drew University, M.A. College of Europe (Belgium)

OFFICE OF THE VICE PRESIDENT FOR FINANCE AND SUPPORT OPERATIONS

TBD, Vice President for Finance and Support Operations

B.S., M.B.A. St. Martin's

GLORIA M. BARLOW (2009), Chief Information Officer

B.A. Montclair State, M.S.Ed. CUNY

JOSEPH HOUSENICK (2008), Director of Human Resources

B.S. King's

JANET KOBYLSKI (2009), Controller

TBD, Executive Director of Facilities

B.S. Penn State

JOHN PESTA (1981), Director for Capital Planning and Projects
B.A. East Stroudsburg

OFFICE OF THE VICE PRESIDENT FOR ENROLLMENT

MELANIE O'DONNELL MICKELSON (1995), Interim Vice President for Enrollment
B.A. Wilkes, M.A. SUNY, Binghamton
ALFONSO ESPADA (2005), Assistant Director of Admissions
B.S. Maryland
MICHAEL FOX (2006), Assistant Director of Admissions
B.A., Wilkes
CHERYL GIBSON (1999), Associate Director of Admissions
B.A., M.S. Wilkes
MATTHEW McCAFFREY (2003), Associate Director of Admissions
B.A., M.S. Wilkes
JULIAN MORALES (2007), Assistant Director of Admissions
B.A. Wilkes
AMY PATTON (2002), Associate Director for Transfer Students
B.S. King's College, M.B.A. Wilkes
HENRY STEUBEN (1974), Director of Part-Time Programs
B.S. Penn State, M.S. Wilkes
MICHELE ZALNO (2004), Assistant Director of Admissions
B.S. St. Francis
JANINE BECKER (2008), Director, Student Services Center
B.S. Toledo, M.B.A. Wilkes
PAMELA HOFFMAN (2006), Director, Financial Aid, Student Services Center
B.S. Penn State, M.B.A. Lebanon Valley
SUSAN A. HRITZAK (1983), Registrar, Student Services Center
B.S., M.B.A. Wilkes
MARGARET ZELLNER (1993), Enrollment Specialist, Student Services Center
B.A. Wilkes

ACADEMIC STRUCTURE

JOSEPH E. GILMOUR	President
C. REYNOLD VERRET	Provost
THE COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES	
LINDA A. WINKLER	Dean
<i>Chairpersons/Directors</i>	<i>Departments/Divisions</i>
ERIC A. RUGGIERO	Integrative Media Arts
ROBERT C. TUTTLE	Behavioral and Social Sciences
MARK D. STINE	Communication Studies
LAWRENCE T. KUCHAR	Humanities
JOSEPH DAWSON	Performing Arts
<i>Coordinators/Directors</i>	
GRETCHEN YENINAS	Coordinator for Advising
STEVEN THOMAS	Director of Choral Activities; Coordinator of Music
KRISTIN DEGNAN	Director of Dance
BRUCE E. PHAIR	Director of the Dorothy Dickson Dart Center for Performing Arts
PHILIP G. SIMON	Director of Instrumental Music

University Personnel

TBA	Director of the Sordoni Art Gallery
TERESA FALLON	Director of Theatre
CARL N. BRIGIDO	Chief Engineer and Manager of the Thomas P. Shelbourne Telecommunications Center
TBA	Director of the Wilkes Community Conservatory
EBONIE STRINGER	Director of the Women's Studies Program
W. CHAD STANLEY	Director of the Writing Center

THE COLLEGE OF SCIENCE AND ENGINEERING

DALE A. BRUNS	Dean
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<i>PRAHLAD N. MURTHY</i>	<i>Associate Dean</i>
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Chairpersons/Directors

TODD PEACHEY
MICHAEL A. STEELE
THERESE M. WIGNOT
RODNEY S. RIDLEY, Sr.
BRIAN E. WHITMAN
V. MING LEW

Departments/Divisions

Aerospace Studies
Biology and Health Science Programs
Chemistry
Engineering and Physics
Environmental Engineering and Earth Sciences
Math and Computer Science

Coordinators/Managers

JAMAL GHOREISHI	Study Abroad Coordinator
MARYBETH MULLEN	Coordinator for Advising
BRIAN F. ORAM	Manager of the Environmental Quality Center
EILEEN M. SHARP	Coordinator for Health Sciences and Professional Programs

THE SCHOOL OF EDUCATION

MICHAEL J. SPEZIALE	Dean
<i>Chairperson</i>	<i>Department</i>
CAROLINE MAURER	Undergraduate Education
<i>Coordinators/Directors</i>	
KRISTINE PRUETT	Director of Operations, Graduate Education
MARY KROPIEWNICKI	Coordinator of Doctorate in Educational Leadership

THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

PAUL C. BROWNE	Dean
<i>Business and Leadership</i>	
<i>Chairperson</i>	<i>Academic Programs</i>
THEODORE J. ENGEL	Accounting, Business Administration and Entrepreneurship
<i>Directors</i>	
JEFFREY R. ALVES	Director of The Allan P. Kirby Center for Free Enterprise and Entrepreneurship
TROY ADAIR	Director of Educational Initiatives
MATTHEW J. SOWCIK	Director of Leadership Programs
ANTHONY L. LIUZZO	Director of the Master of Business Administration Program
RUTH HUGHES	Director of the Small Business Development Center

THE NESBITT COLLEGE OF PHARMACY AND NURSING

BERNARD W. GRAHAM	Dean
RHONDA A. WASKIEWICZ	Assistant Dean for Academic Affairs and Assessment

School of Pharmacy

BERNARD W. GRAHAM	Dean
HARVEY A. JACOBS	Assistant Dean

School of Nursing

MARY ANN MERRIGAN	<i>Dean</i>
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Department Chairs

ARTHUR H. KIBBE	Pharmaceutical Science
EDWARD F. FOOTE	Pharmacy Practice

Professional Staff

BARBARA NANSTIEL	Pharmacy Librarian
SHELLI HOLT-MACEY	Director of Experiential Programs
KRISTEN BILLEK	Experiential Coordinator

Department of Nursing

Department Chair

MARY ANN MERRIGAN	Chair
-------------------	-------

Directors

JOYCE CHMIL	Director of the Nursing Simulation Center
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University Personnel

LORI DROZDIS

Director of Experiential Learning

FACULTY

In alphabetical order, with date of appointment following the name.

- C. REYNOLD VERRET (2007), Provost**
B.A. Columbia College, Columbia University, Ph.D. Massachusetts Institute of Technology, MDP
Harvard Graduate School of Education
- HIRO ABABON (2009), Assistant Professor of Air and Space Studies**
B.B.A. Campbell, M.B.A. Troy State
- JEFFREY R. ALVES (1997), Allan P. Kirby, Jr., Distinguished Professor of Free Enterprise
and Entrepreneurship**
B.S. Air Force Academy, M.B.A. Southern Illinois, Ph.D. Massachusetts (Amherst)
- MISCHELLE B. ANTHONY (2003), Associate Professor of English**
B.A. Central State University, M.A. Central Oklahoma, Ph.D. Oklahoma State
- VIJAY K. ARORA (1985), Professor of Electrical Engineering**
B.Sc., M.Sc. Kurukshetra University (India), M.S. Western Michigan, M.S., Ph.D. Colorado
- NAOMI HATSFELT BAKER (2006), Assistant Professor of Acting**
B.A. McNeese State, M.F.A. Ohio State University
- THOMAS J. BALDINO (1991), Professor of Political Science**
B.A. La Salle, M.A. Illinois, Ph.D. Pennsylvania
- ANNE HEINEMAN BATORY (1987), Professor of Marketing**
B.A. Wilkes, M.S., Ph.D. Maryland
- BARBARA N. BELLUCCI (1996), Assistant Professor of Education and Director of Student
Teaching**
B.S., M.S., M.S. Wilkes, Ed. D. Temple
- LOUISE McNERTNEY BERARD (1980), Professor of Mathematics and Computer Science**
B.S. King's, Ph.D. Brown
- PAOLA BIANCO (1996), Associate Professor of Spanish**
B.A. Wilkes, M.A. SUNY-Binghamton, Ph.D. North Carolina (Chapel Hill)
- WILLIAM J. BIGGERS (2003), Associate Professor of Biology**
B.S., M.S. North Carolina State, Ph.D. Connecticut
- KARENBETH H. BOHAN (2003), Associate Professor of Pharmacy Practice**
B.C.P.S. Maryland (Baltimore County), Pharm. D. Maryland
- ROBERT W. BOHLANDER (1979), Professor of Psychology**
B.A. Lebanon Valley, M.A., Ph.D. Rochester
- SCOTT BOLESTA (2005), Assistant Professor of Pharmacy Practice**
B.S., Pharm. D. Wilkes
- AJAY BOMMAREDDY (2009), Assistant Professor of Pharmaceutical Sciences**
B.Pharm. Osmania University, Ph.D. South Dakota State
- BARBARA BRACKEN (1998), Associate Professor of Computer Science**
B.S., M.S., Ph.D. SUNY-Binghamton
- AMY L. BRADLEY (2004), Associate Professor of Chemistry**
B.A., Ph.D. University of New Orleans
- DALE A. BRUNS (1991), Professor of Earth and Environmental Sciences and Dean, College
of Science and Engineering**
B.S. Xavier, M.S. Arizona State, Ph.D. Idaho State
- GENE A. CAMONI (2007), Assistant Professor of Education**
B.A. Wilkes College, M.S. Scranton, Ed.D. Widener
- JAMES MICHAEL CASE (1978), Professor of Earth and Environmental Sciences and Biology**
B.S. Duke, M.S., Ph.D. Dalhousie, Halifax
- HENRY J. CASTEJON (2003), Associate Professor of Chemistry**
B.S., M.S. Simon Bolivar, Ph.D. Yale
- CARL J. CHARNETSKI (1976), Professor of Psychology**

University Personnel

B.A. Wilkes, M.A., Ph.D. Temple

CYNTHIA J. CHISARICK (1981), Associate Professor of Accounting

B.S. Wilkes, C.P.A. Commonwealth of Pennsylvania, M.B.A. Scranton

SHARON COSGROVE (1990), Associate Professor of Art

B.A. Shepherd College, B.F.A., M.A., M.F.A. New Mexico

BONNIE CULVER (1990), Associate Professor of English

B.A. Waynesburg, M.A., Ph.D. SUNY, Binghamton

EBONIE CUNNINGHAM-STRINGER (2006), Assistant Professor of Sociology/Criminology

B.A. Missouri-Columbia, M.A., Ph.D. Purdue

SUSAN BENSINGER DARBY (2005), Assistant Professor of Nursing

B.S. Lycoming, M.S. Syracuse

MICHAEL R. DAVIDSON (2007), Assistant Professor of History

B.S. Bates, Ph.D. Edinburgh

HELEN HOLTZCLAW DAVIS (2008), Assistant Professor of English

B.A. Duke, M.A. Wake Forest, Ph.D. CUNY

JOSEPH DAWSON (1994), Associate Professor of Theatre

B.A. Seton Hill, M.F.A. Catholic

ADRIANA DINESCU (2009), Assistant Professor of Chemistry

B.Eng. Polytechnic University of Bucharest, M.Sc., Ph.D. North Texas

JENNIFER EDMONDS (2004), Assistant Professor of Business Administration

B.S. Michigan, M.B.A., Ph.D. Rutgers

JANE M. ELMES-CRAHALL (1985), Professor of Communication Studies

B.A. Bloomsburg, Ph.D. Pittsburgh

THEODORE J. ENGEL (1966), Associate Professor of Business Administration

B.B.A., M.A. Miami

EVENE S. A. ESTWICK (2005), Assistant Professor of Communication Studies

B.A., M.A. Howard, Ph.D. Temple

DAVID EVERITTE (2009), Assistant Professor of Air and Space Studies

B.A. Valdosta, M.B.A. University of Colorado

MARCIA FARRELL (2006), Assistant Professor of English

B.A. Mercyhurst, M.A. Gannon, Ph.D. Tulsa

JON FERENCE (2008), Assistant Professor of Pharmacy Practice

Pharm.D., Wilkes

KIMBERLY FERENCE (2008), Assistant Professor of Pharmacy Practice

Pharm.D., Wilkes

ELLEN R. FLINT (1990), Associate Professor of Music

B.M. Virginia Commonwealth, M.M. Rice, Ph.D. Maryland, College Park

EDWARD F. FOOTE (2000), Professor of Pharmacy Practice

B.S., Pharm.D. University of the Sciences of Philadelphia

DEAN FREAR, SR. (2006), Assistant Professor of Business Administration

B.A. Bloomsburg, M.B.A. Scranton, Ph.D. Capella

HOLLY FREDERICK (2008), Visiting Professor of Mechanical Engineering and Environmental Sciences

B.S. Wilkes, M.S., Ph.D. Penn State

ROBERT S. GARDNER (2007), Assistant Professor of Education

B.A., M.S. Wilkes, Ed.D. Temple

MICHAEL S. GARR (1984), Professor of Sociology and Anthropology

B.A., M.A. Ohio, Ph.D. Indiana

JAMAL GHORIESHI (1984), Professor of Mechanical Engineering

B.S., M.S., Ph.D. SUNY, Buffalo

JOHN B. GILMER, JR. (1991), Professor of Electrical Engineering

B.S. United States Naval Academy, M.S.E.E., Ph.D. Virginia Polytechnic Institute

- GARY GORDON (2008), Assistant Professor of Business Administration**
 B.A. Loyola College (Montreal, Canada), M.B.A. Syracuse, Ph.D. Syracuse
- BERNARD W. GRAHAM (1994), Professor of Pharmaceutical Sciences and Dean,**
Nesbitt College of Pharmacy and Nursing and School of Pharmacy
 B.S. Albany, M.S., Ph.D. Purdue
- JACK B. GRIER (2002), Visiting Instructor of English**
 B.A. Penn State, M.S. Wilkes
- LINDA S. GUTIERREZ (2002), Assistant Professor of Biology**
 M.D. Universidad de Carabobo, Venezuela
- ROBERT B. HAINES (2007), Professor of Military Science (Army)**
 B.S. Columbus State, M.S. Webster University
- SID HALSOR (1987), Professor of Geology**
 B.S. Oregon, M.S., Ph.D. Michigan Technological University
- THOMAS A. HAMILL (2002), Associate Professor of English**
 B.A. Loyola College (Maryland), M.A., Ph.D. Delaware
- QIAN HAO (2007), Assistant Professor of Accounting**
 B.S. Xi'an Institute of Posts & Telecommunications, M.S., B.A. Washington University in St. Louis,
 Ph.D. Southern Illinois
- MARK HARRIS (2006), Assistant Professor of Spanish**
 B.A. Penn State, M.A., Ph.D. SUNY, Binghamton
- JOHN W. HARRISON (1994), Associate Professor of Mathematics and Computer Science**
 B.S. Wilkes, M.A., Ph.D. SUNY, Binghamton
- EMILY SISCO HAVRILLA (2006), Assistant Professor of Nursing**
 B.S., M.S.N. Misericordia
- JOHN HEPP (1999), Associate Professor of History**
 B.A. Temple, M.A., Ph.D. North Carolina-Chapel Hill, J.D. Pennsylvania
- DENNIS P. HUPCHICK (1990), Professor of History**
 B.A., M.A., Ph.D. Pittsburgh
- HARVEY JACOBS (1996), Associate Professor of Pharmaceutical Sciences and Assistant
 Dean, School of Pharmacy**
 B.A. Wilkes College, B.S., R.Ph., Ph.D. University of Utah
- JOHN J. JANECEK (1982), Assistant Professor of Materials Engineering**
 B.S. Wisconsin, M.S. Illinois
- LISA KADLEC (2005), Assistant Professor of Biology**
 B.A. Haverford, Ph.D. Duke
- S. M. PERWEZ KALIM (1988), Professor of Mechanical Engineering**
 B.S. Mamachi, M.S., Ph.D. Kansas
- VALERIE G. KALTER (1991), Associate Professor of Biology**
 B.A. Northwestern, Ph.D. University of Iowa
- M. ANTHONY KAPOLKA, III (1996), Associate Professor of Computer Science**
 B.S. Lebanon Valley, M.S., Ph.D. Pittsburgh
- MARK KASTER (2006), Professor of Air and Space Studies**
 B.S. Iowa State, M.S. Troy University, M.S. St. Louis University
- SEAN J. KELLY (2008), Assistant Professor of English**
 B.A. Tennessee, M.A. Pittsburgh, Ph.D. SUNY, Buffalo
- ARTHUR H. KIBBE (1994), Professor of Pharmaceutical Sciences**
 B.S., R.Ph. Columbia, M.S., Ph.D. Florida
- BRADFORD L. KINNEY (1973), Professor of Communication Studies**
 B.A. Florida Southern, M.A. Indiana, Ph.D. Pittsburgh
- KENNETH M. KLEMOW (1982), Professor of Biology and GeoEnvironmental Sciences and
 Engineering**
 B.S. Miami, M.S., Ph.D. SUNY, Syracuse

University Personnel

- JOHN A. KOCH (1976), Professor of Computer Science**
B.S. Bucknell, M.S., Ph.D. Illinois
- FANHUI KONG (2005), Assistant Professor of Statistics**
B.S., M.A. Northeast Normal University, P.R. China, Ph.D. Binghamton University
- KYLE L. KREIDER (2004), Assistant Professor of Political Science**
B.A., Millersville, M.A., Ph.D. Temple
- JUDITH KRISTELLER (2002), Associate Professor of Pharmacy Practice**
B.S., Pharm.D. Kentucky
- MARY KROPIEWNICKI (2003), Associate Professor of Education**
B.S. Bloomsburg, M.S. Scranton, Ed.D. Temple
- LAWRENCE T. KUCHAR (1989), Associate Professor of English**
B.A., M.A. Duquesne, Ph.D. Maryland
- V. MING LEW (1993), Associate Professor of Mathematics**
B.S. UC Santa Barbara, M.S., Ph.D. Cornell
- ANTHONY L. LIUZZO (1990), Professor of Business and Economics**
B.S. Fordham, J. D. St. John's, M.B.A., M.Phil., Ph.D. New York University
- DANIEL S. LONGYHORE (2004), Associate Professor of Pharmacy Practice**
Pharm. D. Wilkes
- SUSAN SOWA MALKEMES (2003), Assistant Professor of Nursing**
B.S. Misericordia, M.S. Wilkes, D.N.P, Case Western Reserve
- JENNIFER MALINOWSKI (1998), Associate Professor of Pharmacy Practice**
B.S., R.Ph. Philadelphia College of Pharmacy and Science, Pharm.D. Temple
- DANA MANNING (2008), Assistant Professor of Pharmacy Practice**
M.S. Cornell, Wilkes Pharm.D., Wilkes
- JIN MAO (2008), Assistant Professor of Education**
B.S. Xi'an Foreign Language University, M.S., Ph.D. Pennsylvania State University
- JUSTIN C. MATUS (2005), Assistant Professor of Business Administration**
B.S. King's, M.B.A. Golden Gate University, Ph.D. Old Dominion
- DAN F. McCUNE (2004), Associate Professor of Pharmaceutical Sciences**
B.S. Butler, Ph.D. Kentucky
- MARY F. McMANUS (2000), Associate Professor of Pharmaceutical Sciences**
B.S., Ph.D. St. John's
- CHRISTINE E. MELLON (2008), Visiting Instructor of Communication Studies**
B.A. Scranton, M.S. Neumann
- DONALD E. MENCER, Jr. (2001), Associate Professor of Chemistry**
B.S. Frostburg State, Ph.D. Texas A&M University
- MARY ANN MERRIGAN (1987), Associate Professor of Nursing**
B.S. SUNY, Binghamton, M.S. Pennsylvania State University, Ph.D. Adelphi
- JAMES L. MERRYMAN (1989), Professor of Anthropology**
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Wilkes University

2010 – 2011

UNDERGRADUATE BULLETIN

BACCALAUREATE STUDIES

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ARCHIVED BULLETINS

2008-2009 Undergraduate Bulletin

POLICY STATEMENT OF NONDISCRIMINATION

Wilkes University provides equal employment, admission and educational opportunities to all persons without regard to race, color, religion, gender, gender identification and expression, sexual orientation, national origin, age, disability, marital status, domestic partnership status or status as a veteran in accordance with applicable federal, state, and local laws. This policy applies to all terms and conditions of employment and admission to and educational experiences at the University. Inquiries about this policy statement may be directed to the Special Assistant to the President for Diversity and Global Education, the Director of Human Resources or designee(s).

FEDERAL AND STATE ACT COMPLIANCE

The Office of Public Safety at Wilkes University prepares and distributes the "For Your Safety" annual safety and security report. This document is prepared in compliance with Act 73 of 1988 of the Commonwealth of Pennsylvania and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, 20 USC §1092(f). This report is available in hard copy format upon request, during normal business hours, at the Office of Public Safety, 148 S. Main Street, UCOM Garage; the Office of Admissions, Chase Hall's Reception Area; and the Office of Student Affairs, Passan Hall, second floor. Additionally, an electronic copy of this report is available on the University website at: www.wilkes.edu/campuslife/safety/disclose.asp. In addition, daily logs and crime logs are available for review during normal business hours at the Office of Public Safety. Any questions regarding this report and the specific requirements of the Acts that govern its production can be addressed to Gerald C. Rebo, Manager of Public Safety, ext. 4984.

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INTRODUCTION

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Wilkes University:

Mission, Vision, and Values

A Guide to Learning

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Introduction

MESSAGE FROM THE PROVOST

Wilkes University's faculty and staff are dedicated to the future success of our students. That dedication is reflected in the quality of mentorship, skillful advising, and excellent teaching of the University faculty and staff. It emerges in the challenging internships and undergraduate research experiences, exciting extracurricular activities, and interactive team-projects that support the Wilkes curriculum. Mostly that dedication is reflected in the integrated learning journey we have mapped for all students.

As an undergraduate at Wilkes University, you will develop your many gifts and refine them for a rich life engaged in profession, community, nation, and world. The Wilkes University undergraduate experience is a learning journey that integrates your intellectual, professional, cultural, social, and personal growth and infuses a commitment to and capacity for lifelong learning. The journey, which is grounded in high academic standards and guided by innovative teaching methodologies, links strong academic programs with abundant extracurricular activity and provides a variety of opportunities for experiential and collaborative learning. Community engagement, citizenship, ethics, leadership, and the development of effective communication skills are integral components of the Wilkes undergraduate experience. You will receive individualized advising and guidance that encourage you to both understand and broaden your individual learning styles. Your work ethic, passion for personal excellence, and a desire to contribute responsibly to society will lead you to success at Wilkes University and beyond.

The professional world you will enter after graduation is ever changing. Throughout your course of study at Wilkes, with the guidance of instructors and mentors in your major field, you will gain the depth of knowledge and skill to lead and excel in your chosen profession and to adapt to the changes in your professional world. Your general education in the liberal arts and sciences will afford you a great breadth of learning that will support the work in your chosen field of study and which you will find essential as you navigate and advance through your career. At graduation, you will have earned far more than a diploma; you will have acquired the capacity for self-knowledge and personal growth, an abiding understanding and respect for diverse perspectives, exceptional career preparation, and the passion to learn continually, well beyond your years with us.

C. Reynold Verret, Ph.D.
Provost
Wilkes University

WILKES UNIVERSITY

WILKES UNIVERSITY MISSION, VISION, AND VALUES

MISSION

To continue the Wilkes tradition of liberally educating our students for lifelong learning and success in a constantly evolving and multicultural world through a commitment to individualized attention, exceptional teaching, scholarship and academic excellence, while continuing the university's commitment to community engagement.

VISION

To be a nationally recognized independent university where intense personal engagement in exceptional academic and professional programs cultivates a lifelong commitment to learning, ethics, civic responsibility, and openness to cultural diversity.

VALUES

- Mentorship: Nurturing individuals to understand and act on their abilities while challenging them to achieve great things;
- Scholarship: Advancing knowledge through discovery and research to better educate our constituents;
- Diversity: Embracing differences and uniqueness through sincerity, awareness, inclusion and sensitivity;
- Innovation: Promoting creative scholarly activities, programs, ideas, and sustainable practices; and
- Community: Appreciating and collaborating with mutual respect to foster a sense of belonging.

Introduction

GUIDE TO LEARNING

Wilkes University is a dynamic community of learners that encourages students to take an active part in their education. Within the framework of a carefully considered and integrated curriculum, the University provides a broad variety of learning experiences designed to place individual learning at the center of academic life. Students will be challenged to think critically and creatively, invited to read and write extensively, and expected to become adept in quantitative reasoning and the use of contemporary technology as they prepare to become productive and responsible citizens. Mindful of the rapidly expanding body of knowledge and the wide variety of learning and teaching styles in this academic community, the University remains committed to the values articulated by Dr. Eugene S. Farley, Wilkes' founding President, and adopted by the Wilkes University faculty as a guide to learning.

An educated person:

- *seeks truth, for without truth there can be no understanding;*
- *possesses vision, for we know that vision precedes all great attainments;*
- *is aware of the diversity of ideas and beliefs that exists among all people;*
- *has faith in the power of ideals to shape the lives of each of us;*
- *knows that mankind's progress requires vigor, moral courage, and physical endurance;*
- *cultivates inner resources and spiritual strength, for they enrich our daily living and sustain us in times of crisis;*
- *has ethical standards by which to live;*
- *respects the religious convictions of all people;*
- *participates constructively in the social, cultural, and political life of the community;*
- *communicates ideas in a manner that assures understanding, for understanding unites us all in our search for truth.*

These values are supported by our University Mission, Vision, and Values, and are projected in the Institutional Student Learning Outcomes, which guide all learning opportunities and experiences at Wilkes University.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

(Adopted by faculty November 1, 2007)

The students will develop and demonstrate through course work, learning experiences, co-curricular, and extracurricular activities

- the knowledge, skills, and scholarship that are appropriate to their general and major field areas of study;
- effective written and oral communication skills and information literacy using an array of media and modalities;
- practical, critical, analytical, and quantitative reasoning skills;
- actions reflecting ethical reasoning, civic responsibility, environmental stewardship, and respect for diversity; and
- interpersonal skills and knowledge of self as a learner that contribute to effective teamwork, mentoring, and lifelong learning

Introduction

STUDENT LIFE AT WILKES: AN INCLUSIVE COMMUNITY

Creating and nurturing diversity of thought, culture, and belief are among the key values upon which Wilkes University was founded. These values are acknowledged in our motto, "Unity Amidst Diversity." Thus, Wilkes welcomes and supports a diverse campus community and invites students of all races, ethnicities, religions, and other diverse backgrounds to join our University family. The members of the Wilkes faculty and staff are committed to providing mentorship and support to all Wilkes students in order to empower them to meet their full potential and to ensure student academic and personal success.

In an effort to provide a welcoming and supportive environment for students of all backgrounds, we offer a range of programs, services, and activities as diverse as our campus community:

- an established and interconnected system of peer, faculty, and staff mentorship programs;
- a rich and varied schedule of extra-curricular activities and opportunities, including social events, multicultural activities for students, faculty, and staff, concerts, recitals, and lectures;
- specialized and individualized support for international and minority students;
- extensive list of opportunities for community service, internships, service-learning, and leadership;
- individualized academic advising;
- career advising and counseling;
- personal counseling and advising;
- academic support services;
- health and counseling services;
- a variety of housing options, including the Multicultural Residence Hall and First-Year Student Living-Learning Communities;
- accommodation for special dietary needs that includes attentiveness to religious and personal diet requirements;
- a comprehensive resources library; and
- a variety of merit- and need-based financial aid options.

Resources, services, and activities pertaining to Student Life are outlined in the following section of this Bulletin. Academic resources and support services are described in the "Academic Information" section of this Bulletin.

CAMPUS RESOURCES, SERVICES, AND PROGRAMS

Wilkes University is a community of learning in which co-curricular and extra-curricular activities complement academic life. Students, faculty, and staff work together to promote individual student development by means of a variety of activities, programs, organizations, and cultural opportunities. All campus organizations are open to all students, and all function in collaboration with faculty advisors and the Student Affairs staff.

THE OFFICE OF STUDENT AFFAIRS

The Student Affairs staff works with students in a holistic manner, providing guidance and support in students' pursuit of their educational goals and in their development as persons preparing to assume the responsibilities of maturely educated persons. The Office of Student Affairs works actively to coordinate the various aspects of student life and development at Wilkes. The Offices of Residence Life, Career Services, Student Development, Health and Wellness Services, Campus Counseling, Cooperative Education, University College, Upward Bound, ACT 101, Community Service, Athletics, and Campus Interfaith report to the Vice President for Student Affairs.

Wilkes takes seriously its commitment and responsibility to encourage students to discover their own abilities and potential and to assist them in making sound and independent decisions. Students are expected to consult regularly with academic instructors, faculty advisors, the Student Affairs Deans, department chairpersons, or academic deans regarding academic matters. Recognizing that students sometimes need additional guidance in resolving personal, social, or academic problems, however, the University has institutionalized within the Office of Student Affairs a variety of programs to assist and support students, individually and in groups. Staff members are specially trained and available to help students resolve problems, coordinate emergency situations, and handle referrals from members of the University community. The Vice President and Deans of Student Affairs, having familiarity with University resources, serve as ombudsmen, as well as "sounding boards," for student concerns.

Wilkes takes equally seriously its role in the development of the whole person and provides a wealth of programs for the social, cultural, and civic engagement of its students. Many of the programs offered or advised by units within the Office of Student Affairs contribute to the holistic nature of a Wilkes education.

The campus resources, services, and activities described in brief in this *Bulletin* are discussed more extensively in the online *Wilkes University Student Handbook*, which explains the University student governance system, outlines University regulations, and provides a directory of student activities.

RESIDENCE LIFE

The Residence Life Program at Wilkes is committed to providing a living environment that is supportive of academic pursuits while contributing significantly to personal growth.

The residence hall staff serves to help students enjoy and benefit from their on-campus living experience. Each residence hall is staffed by one or more Resident Assistants, each of whom has been selected on the basis of character, demonstrated qualities of leadership, and the ability to interact effectively with students. Throughout the year, the residence hall staff sponsors various educational and social programs for their residents. The Resident Assistants are also responsible for crisis management, discipline, maintenance requests, and ensuring that the University policies are upheld.

The Residence Life Program offers students a wide variety of residential options. Each residence hall has its own unique style, whether it is a traditional residence hall such as Evans, one of the older Victorian mansions such as Weiss, or an apartment-style residence hall like University Towers. Some residential spaces are reserved exclusively for students enrolled in the University Living-Learning Communities. Each residence hall has a full kitchen and laundry facilities. Single-sex or coed facilities are available. Rooms are equipped with cable television access, data ports, telephones, single beds, dressers, desks, desk chairs, and closet space.

Introduction

All resident students participate in the University Meal Plan. A variety of meal-plan and dining options are offered by the University and are described on the Dining Services Web site: <http://www.wilkesdining.com>.

STUDENT DEVELOPMENT

The Student Development Office enhances student life by offering leadership programs, experiential education opportunities, and a variety of extracurricular and social activities designed to complement students' classroom education. A few of the programs offered include the Cultural Series, Experiential Adventure Series, and the Weekend Entertainment Series. The Cultural Series introduces students to the world of art and performance by providing opportunities for students to experience visual art, music, theatre, and dance, both locally and in larger metropolitan areas such as New York City, Philadelphia, and Washington, D.C. The Experiential Adventure Series provides an alternative learning experience designed to challenge students to engage in physically demanding activities such as hiking, rock climbing, and white water rafting, which emphasize wellness and provide practical leadership tools and lessons on teamwork. The Weekend Entertainment Series gives students a variety of low-cost entertainment options to choose from each weekend.

An active Student Government, together with campus clubs and special-interest organizations, also provides an array of activities to enrich student life outside the classroom. More than 60 clubs and organizations are recognized by Student Government and the University. The University requires that all campus organizations be open to all students; consequently, groups that are exclusive do not exist on the Wilkes campus. Volunteer action and community service are a cornerstone of the Wilkes Mission and of the University's rich student life tradition, and, thus, eligibility for Student Government funding requires that all recognized clubs and organizations be involved actively in community service. Community Service activities are coordinated by the Office of Community Service, which maintains a current list of community partners.

An Inter-Residence Hall Council, an Off-Campus Council, and a Commuter Council organize activities for undergraduate students, and the Student Programming Board oversees a full schedule of social and cultural events at the University.

Student publications include the *Beacon*, a weekly student newspaper published during the academic year, the *Manuscript*, an annual journal of original student art, poetry, and fiction, and the *Ammicola*, the University student yearbook.

The University also maintains a television station and WCLH, an FM radio station that is operated by students; WCLH broadcasts daily at 90.7 MHz.

INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

Wilkes sponsors an active intramural sports program as well as intercollegiate competition in sixteen varsity sports. Varsity sports for women include basketball, cross-country, field hockey, lacrosse, soccer, softball, tennis, and volleyball. Men compete at the varsity level in baseball, basketball, cross country, football, golf, soccer, tennis, and wrestling. Varsity teams compete at the Division III level. Wilkes University is a member of the Middle Atlantic Conference (MAC), the Metropolitan Conference for Wrestling (MCW), the Eastern Collegiate Athletic Conference (ECAC), and the National Collegiate Athletic Association (NCAA).

The goal of the intramural program is to provide a comprehensive set of recreational and fitness activities throughout the academic year for the University community. Students, faculty, and staff participate in individual, dual, and team competitions in traditional sports as well as in innovative activities like plyometrics, free-throw competition, and aerobics. Events are organized in structured tournament competition and in one-day special events, using the indoor facilities of the Marts Center, the UCoM Recreation and Athletic Center, and the spacious grounds of the Ralston Field Complex.

Wilkes places the highest priority on the overall quality of the educational experience and on the successful completion of the student's academic program. The University, therefore, seeks to

establish and maintain an environment in which a student's athletic activities are conducted as an integral part of the entire educational experience. The varsity and intramural programs function, then, in an environment that provides for the health and welfare of the student-athletes and values cultural diversity, gender equity, principles of fair play, and amateur athletic competition throughout the University community.

CULTURAL AFFAIRS

A variety of programs, including lectures, exhibits, workshops, and performances, is provided to enhance life in the Wilkes community and to help individuals attain educational and career goals. The Sordoni Arts Gallery brings programming in the fine arts to both the campus and the Wilkes-Barre communities. The Center for Global Education and Diversity sponsors programming and activities that foster cross cultural and multicultural understand and provides space for people of different cultures to interact and learn from one another. Throughout the year, the Division of Performing Arts offers a regular schedule of dance performances, concerts and recitals, and dramatic and musical productions in the Dorothy Dickson Darte Center for the Performing Arts.

UNIVERSITY ACTIVITIES

In addition to the curricular and co-curricular activities sponsored by specific organizations and academic units, a number of all-campus and campus-community events is held each year. Family Visitation Day, Homecoming, Winter Weekend, and the Annual Block Party are typical of the social events that help to promote an active and involved study body. The University joins area cultural groups each year for the annual Cherry Blossom Festival and for the Fine Arts Fiesta, a four-day festival of music, drama, and the arts presented each spring on the Public Square in downtown Wilkes-Barre. A series of University sponsored concerts and lectures is presented throughout the academic year at the Dorothy Dickson Darte Center for the Performing Arts and in other venues on or close to campus. These University sponsored events are open to University students, faculty, and staff, and to members of the surrounding communities; admission for most events is free of charge. Consult the Events Calendar on the University Web site for schedules of events and admission information.

STUDENT SERVICES

Wilkes University provides a rich array of programs and services designed to support students, academically and personally, throughout their time at the University. Following are brief descriptions of these services and programs. Additional information about each program or service may be obtained from the Office of Student Affairs or by consulting the University Web site.

BOOKSTORE

Wilkes University and King's College, through Barnes & Noble College Booksellers, Inc., operate a joint bookstore facility on South Main Street, equidistant between the two campuses just off Public Square in downtown Wilkes-Barre. The "academic superstore" is designed to meet the specific needs of students at Wilkes and King's as well as those of the community at large. In addition to the standard Barnes & Noble bookstore stock, the Wilkes-King's Bookstore offers comprehensive textbook services, lounge chairs, tables, and a full service Starbucks Café, where students, faculty, staff, and community members regularly meet. The bookstore also houses a "spirit" shop that features logo merchandise for Wilkes University.

NEW STUDENT ORIENTATION PROGRAM

The transition from the directed work of the high school environment to the independent and more intensive work of the university environment is eased by introducing new students to the University and its services before classes formally begin. Two orientation periods—one during the summer and another in the days immediately preceding the start of the academic term—are set aside to assist new students in planning their academic programs and learning about the curriculum, available student activities, and about the campus and its many resources. Orientation sessions provide opportunities

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for each new student to meet with his or her academic advisor, to discuss personal and professional goals, and to begin to plan an academic course of study.

HEALTH AND WELLNESS SERVICES

The Office of University Health and Wellness Services maintains regular hours while the University is in session for the fall and spring semesters and is staffed by a Nurse Practitioner and a Registered Nurse. A physician is available at specified hours during the week. Appropriate referrals are made as necessary to community physicians and hospitals. The Office of University Health and Wellness Services does not provide clinic hours during the summer months.

In these times of escalating health care costs, all students enrolled at Wilkes University are required to have health insurance coverage and to provide proof of coverage.

CAMPUS COUNSELING

The Office of Campus Counseling assists students in resolving personal concerns or problems. Appointments are available throughout the day, and during the evenings and on weekends, if needed. Referrals to community agencies and other professionals are made as necessary. The Coordinator of Counseling works closely with student groups and the professional staff of the University to provide workshops and group sessions on areas of interest or concern. Testing services are also available to Wilkes students.

INTENSIVE ENGLISH PROGRAM

The mission of the Intensive English Program (IEP) at Wilkes University is to provide quality academic instruction in English as a second language (ESL) to both international and English-language learning students planning to pursue university studies in the United States. To this end, the IEP provides a curriculum, certified faculty, classroom materials, and teaching methods that are well grounded in both theory and practice and based on the latest research findings in the field of second language learning and teaching. This fully accredited program provides

- quality academic English language instruction for students whose native language is not English;
- preparation for further academic study in the U.S.;
- learner-centered instruction;
- advising for successful attainment of academic or professional goals;
- opportunities for intercultural experiences and cooperation;
- services relating to admission, counseling, academic life, and the general success of international students attending Wilkes University;
- English language instruction for personal growth; and
- instruction in accordance with Wilkes University's Writing Across the Curriculum (WAC) program.

All policies and governances found within this *Bulletin* apply to all students participating in the IEP at Wilkes University.

INTERNATIONAL STUDENT SERVICES

For international students, the Center provides immigration and visa information and assistance, as well as advice on academic, cultural, and personal issues. The Center also provides orientation to life in the United States and the American educational system, assists students in dealings with a variety of offices and constituencies, including U.S. and foreign government agencies, other campus offices and departments, and the community, and serves as advisor to the International Student Organization. These services are available to all international students, non-immigrants and immigrants alike.

ADVISING AND COUNSELING SERVICES FOR SPECIAL ACADEMIC AND STUDENT DEVELOPMENT PROGRAMS

Due to the intricacies of certain programs or requirements imposed by professional and graduate schools and external accrediting agencies, the University has identified advisors in a number of areas of interest. Specially trained Pre-Medical Advisors serve all students interested in professional or graduate school opportunities in medical or health-related fields. The Pre-Law Advisors work with students from any discipline who wish to go on to law school. The International Studies Advisors counsel students in matters pertaining to studying abroad and to career and professional opportunities in this field. The Office of Student Development counsels and advises students interested in a variety of internship possibilities. Information on any of these services is available in the Office of the Registrar, the Office of Student Affairs, and the Student Development Office.

UNIVERSITY COLLEGE

University College, housed in Conyngham Hall at 130 South River Street, is the point of entry and home for all undeclared students until they select their major field of study. The College provides academic support services and supplemental instruction for all enrolled and prospective students, administers the University's precollege enrichment programs, coordinates with the academic departments to provide an effective program of academic advisement for undeclared students, and houses the Disability Support Services of the University. The programs and services offered by University College are described in the following subsections.

Act 101 Program

A special program for students from Pennsylvania who need academic and financial support, the Act 101 Program allows educationally underprepared students to improve their skills in verbal and written communication, reading comprehension, mathematics, and problem solving, all in an effort to acquaint these students with and help them adjust to the many new experiences associated with a college education. The program provides for tutoring and counseling to enhance the student's potential for success in the college environment. Inquiries about Act 101 should be directed to the Act 101 Office in Conyngham Hall or to the Office of Admissions.

Career Services

The Office of Career Services is the liaison between the University and potential employers in business, industry, government, and educational institutions. Various services and workshops are offered to assist students at all stages of their career development. Students are encouraged to participate in the many programs offered by the Office of Career Services by registering at Conyngham Hall, located at 130 South River Street.

Day Care Service

The University provides partially subsidized day care service for children of full-time Wilkes students. The program offers regular day care services, which are provided by a specified group of approved local providers and available at a reduced fee to students enrolled full-time at Wilkes. Children must attend on a regular, scheduled basis in order to be eligible for the reduced fee. The Day Care Service Program is coordinated through University College.

Disability Support Services

If a student has a disability that qualifies under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act and requires accommodations, he or she should contact the Disability Support office in University College for information about applicable policies and procedures. The Disability Support office is located on the third floor of Conyngham Hall, Room 311.

Student Advisement

University College coordinates the Freshman Advising Program and regularly collaborates with and provides training for academic advisors throughout the academic year to ensure student success.

Specially selected faculty members and administrators have been designated as Freshman Advisors on the basis of their knowledge of curricular matters and, more generally, their knowledge of the

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University and its resources and services. Each freshman is assigned to a Freshman Advisor during the Summer Orientation period and will meet with this advisor regularly during the Orientation period and throughout the academic year to arrange schedules, discuss academic and career plans, and deal with problems or concerns as they arise. These faculty advisors add the special expertise of their disciplines to the advising process.

If the student has indicated a preferred major upon admission to the University, he or she will be assigned a Freshman Advisor from the relevant department or program at the beginning of his or her studies. Students who have not identified a major field of study at the time of admission to the University work with advisors from University College who have a special expertise in advising undeclared students. University College Advisors work with undeclared students until a major field of study has been selected; once a major field of study has been declared, the student is assigned to a departmental advisor in his or her chosen field of study.

Upward Bound Program

A federal program at Wilkes since 1967, the Upward Bound Program provides disadvantaged high school students with a college preparatory program of curricular and extracurricular activities designed to improve academic skills and self-confidence and to deepen curiosity and human understanding. Students attend weekly classes and tutoring and counseling sessions on campus. In the summer, the six-week residential program prepares students for fall classes and provides intensive career guidance.

UNDERGRADUATE ADMISSIONS

RECOMMENDED HIGH SCHOOL PREPARATION

In order to best prepare for the academic demands of collegiate study, undergraduate applicants to Wilkes University are strongly encouraged to follow a rigorous, college preparatory curriculum throughout their secondary educational experience. Such a curriculum generally includes four years of progressive course work in English, three years of mathematics, two years of science (including, at least, one laboratory component), three years of social studies, and an introduction to computing. While this schedule of progressive course work is not required, it is recommended strongly as a foundation for collegiate level study and for admission to the University. Many undergraduate degree programs at Wilkes University have additional college preparatory course requirements. General and special requirements for secondary course work are described more fully in the Admissions section of the Wilkes University Web site at

<http://www.wilkes.edu/pages/124.asp>.

Elective courses in the secondary educational experience should be drawn from academic subject areas and chosen with care to reflect individual interests and proposed college major areas of study. High school electives supportive of college academic majors include computer science, foreign language, communications, the fine and performing arts, and specialized technical courses.

Applicants whose collegiate preparation curriculum does not follow the pattern described may still qualify for admission to Wilkes University if there is other strong evidence of the student's readiness to engage in college-level work.

STANDARDIZED TESTS

The Scholastic Aptitude Test (SAT) of the College Entrance Examination Board or the Achievement College Test (ACT) is generally required of all applicants planning to enter Wilkes University directly from high school. Students should take one of these examinations before the second semester of the senior year in high school.

Wilkes is a member of the College Entrance Examination Board. Students communicating with the Educational Testing Center in Princeton, New Jersey, or in Los Angeles, California, should refer to the Wilkes University code number (CEEB): 2977.

APPLICATION FOR ADMISSION

Applications for admission to Wilkes University may be completed and submitted online or sent directly to the Wilkes University Office of Admissions. Information and instructions regarding secondary school transcripts and records, letters of recommendation (which are required for admittance to some programs), standardized test reports and entrance examinations may be obtained by contacting the Office of Admissions.

NOTE: Separate application must be made for the Pharmacy Program. Printed applications for the Pharmacy Program will be mailed to qualified applicants who are admitted to Wilkes University. Pre-Pharmacy applicants must also submit three letters of recommendation and successfully complete an interview with the School of Pharmacy's Admissions Committee to gain early admission to this program. A successful interview is also required for admission to Wilkes' nursing program. Qualified nursing applicants will receive an acceptance letter asking them to schedule an interview with the Nursing Admissions Committee. Applicants for the Pre-Medical Scholars programs as well as the Wilkes-Widener Ph.D. in Psychology and the Wilkes-Widener Doctor of Physical Therapy programs must note their interest on the application for admission and successfully complete an interview with the selection committee to qualify for acceptance into these programs. Applicants for the degree programs in Musical Theatre and Theatre must successfully complete an audition for the program and must complete an interview with the department faculty to gain admission into these programs. *In all cases, invitations to interview or audition are extended by the academic department(s) at their discretion.*

ACCEPTANCE FOR ADMISSION AND ADVANCED DEPOSIT

All applicants for admission to the University must submit 1) a completed and signed application for admission to the University, 2) an official copy of the most recent high school or college transcript or both, 3) SAT or ACT scores (either official copies or scores recorded on the official high school transcript), and 4) the \$35 application fee (\$15 for online applications).

After the application file is complete, the Office of Admissions will review the file, render a decision, and notify the applicant of that decision. Admissions decisions are made on a "rolling" basis, and notification is generally made within two to four weeks from the date the file is complete. A student may be required to complete an evaluative interview prior to the rendering of a final decision.

All students guarantee their place in the entering class by forwarding a \$300 tuition deposit to the Office of Admissions. May 1st is the priority deadline for receipt of deposits.

Wilkes University also accepts applications for the spring semester and summer session. Procedures are similar to those for students entering in the fall semester.

While Wilkes practices "rolling" admissions, the University reserves the right to close admission with a two-week notification.

ADMISSION OF TRANSFER STUDENTS

Wilkes University welcomes transfer students from other accredited colleges and universities for both the fall and spring semesters. Transfer students must submit an application for admission and a transcript from every post-secondary institution attended (even if no credits were earned). SAT or ACT scores may be required, and some transfer students may be asked to complete assessment tests prior to admission or registration for courses.

Admission of transfer students is conducted on a "rolling" basis. In addition to an admissions decision, transfer students will receive a free transcript evaluation

Applicants must be in good academic standing and must hold a minimum cumulative grade point average of 2.00 (C) at their current or most recently attended institution in order to be considered for admission to Wilkes University. All courses with a grade of 2.00 (C) or higher that are comparable to those in the curriculum at Wilkes and from recognized accredited institutions will be accepted for transfer. Enrollment in the life science majors (biology, chemistry, biochemistry, nursing, and pharmacy) is limited, and admission to programs in these areas is competitive. A successful interview is required for admission to Wilkes' nursing program. Qualified nursing transfer students will receive an acceptance letter asking them to schedule an interview with the Nursing Admissions Committee.

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Transfer students applying directly to the School of Pharmacy for entry into the professional school must additionally complete a School of Pharmacy application and forward three letters of recommendation to the School Admissions Committee. The applicant must also sit for the PCAT examination and submit official scores from the examination. After the file is complete, the School of Pharmacy may schedule a personal interview, as the School deems appropriate.

Transfer students from two-year institutions must complete a minimum of 60 credits at a baccalaureate degree-granting institution.

To graduate, all transfer students must complete a minimum of 30 credits (exclusive of advanced placement credit awarded by Wilkes) and a minimum of 50% of their major field (and any minor field) credits at Wilkes University.

All transfer students must satisfy the University's General Education Requirements. (See bulletin section entitled "General Education: The First Curricular Component" for an explanation of these requirements and associated student learning outcomes.) In order to accommodate the large number of incoming transfer students, the University makes every effort to recognize course work and apply credits that are transferred into the institution in satisfaction of the General Education Requirements or to make other accommodations to ease the transition from one institution to another. For example, students who transfer certain science courses or sequences of science courses into Wilkes may, with the approval of the appropriate Dean, be permitted to apply these courses or sequences to the requirements for Area II of the General Education Requirements. Approval of application of courses or sequences of courses to satisfy specific requirements in the General Education Curriculum is not automatic and is dependent upon a complete review and analysis of submitted transcripts (and other pertinent documentation, as requested). Transfer students and potential transfer students are, therefore, encouraged to consult with the Office of Admissions on these matters.

While course credits may be transferred to the University, grades earned in those courses accepted for transfer are not included in the computation of the cumulative grade point average earned at Wilkes University.

Transfer students should consult the section of this bulletin on Graduation Requirements for an explanation of institution-wide requirements for graduation.

University policy prohibits the Office of Admissions from knowingly admitting any Student who has been dismissed from any other college or university for any reason until a period of one year has elapsed from the time of dismissal. Students who have been placed on probation by another college or university will be considered on a case-by-case basis.

ADMISSION OF INTERNATIONAL STUDENTS

International students are defined as those who do not hold U.S. citizenship, who are not permanent residents of the U.S., or who do not hold resident alien status in the U.S.

International students must submit the following to be considered for admission to Wilkes University: 1) a completed application; 2) official results of the Test of English as a Foreign Language (TOEFL, STEP, Eiken, IELTS) or evidence of the successful completion of an accredited intensive English language program, or English must have been the language of instruction for the student; 3) Declaration of Finances Letter; 4) a letter of financial support; 5) official transcripts of all secondary or post-secondary work completed to date (all transcripts should also be accompanied with a translation if in a language other than English); and 6) and a copy of the secondary or post-secondary diploma or leaving certificate. International transfer students are encouraged to have a credit evaluation conducted by World Education Service (WES) or a similar agency.

Students should complete their application file by June 15 for admission in the fall semester and by November 15 for admission in the spring semester.

An I-20 form will only be issued after the application process is complete and the student has been admitted to the institution.

EARLY ADMISSION OF HIGH SCHOOL STUDENTS

Wilkes University will consider admission for exceptionally gifted and motivated students who wish to enter the University without completing the requirements for a high school diploma. In order to be considered for admission to the University, applicants must provide all the materials listed under the Acceptance for Admission and Deposit section of this bulletin and at least one letter from a high school official granting approval for early admission. Applicants must also successfully complete an interview with the Office of Admissions.

ADMISSION OF PART-TIME STUDENTS

Those who wish to enroll as part-time students must contact the Office of Admissions to discuss their plans and to obtain an Application for Admission. Students who have completed college-level work at another institution must submit an official transcript of their work as part of the admission process. Those who have completed no college work must submit an official high school transcript as evidence of high school graduation or GED. All documentation should be sent to the Admissions Office.

PART-TIME TO FULL-TIME STATUS

Part-time students who wish to enroll as full-time students must consult with the Director of Part-time Programs as the first step in this process. Students who have completed 30 or more credits and have maintained a cumulative grade point average of 2.00 (C) or higher will be accepted as full-time students. Students who have completed fewer than 30 credits will be required to provide high school transcripts and appropriate test scores in support of their petition to enroll full-time before a decision will be made. Requests for change of status must be made through the Office of Admissions.

READMISSION TO THE UNIVERSITY

Students who have been enrolled full-time at Wilkes University and have terminated their studies for one semester or more, and who wish to return as full-time students, must contact the Student Affairs Office and arrange an interview with one of the deans as the first step in the readmission process.

CAMPUS VISITS

A campus visit and an interview are strongly recommended for all students interested in studying at Wilkes University. Students and family members may schedule an interview by calling or writing the Office of Admissions. Campus visits may include an interview with an admissions professional, appointments with faculty members, sessions with coaches and co-curricular leaders, campus and residence hall tours, attendance in selected classes, and financial aid counseling.

In addition to individualized campus visits, the office of Admissions hosts a number of Open Houses throughout the academic year. These visitation days usually include a general meeting with the admissions staff, panel discussions with current students and administrators, academic departmental meetings, campus tours, financial aid sessions, and a complimentary meal. Specific information about the agenda and dates for these days is available from the Office Admissions and on the Wilkes university Web site: <http://www.wilkes.edu>.

FINANCIAL AID, TUITION, AND FEES

General Information

Types of Financial Aid

Veterans' Assistance (VA Programs)

Financial Aid for Part-time Students

Financial Aid for Students Seeking a Second Degree

Financial Aid for Pharmacy Students in Years Five and Six

Summary of Financial Assistance Programs: Scholarships, Grants, Loans, Employment

Financial Aid Application Procedures

Renewal of Financial Aid

Withdrawal - Return of Financial Aid Funds

Student Expenses

Payment of Charges

Fall and Spring Full-time Tuition

Summer, Fall, and Spring Part-time Tuition

Intersession Tuition

Alternative Payment Options: Deferred (employer reimbursed) & Third-Party Payment
Policy; Installment Payment Plan

Tuition Exchange

Refunds

STUDENT EXPENSES

The following chart summarizes student expenses for the 2009-10 academic year, which officially begins with the Summer Session, 2010. Students are referred to the course descriptions in this *Bulletin* for laboratory and other fees associated with specific courses. Inquiries about particular charges should be addressed to the Controller's Office.

STUDENT EXPENSES FOR 2010-11

Full-time Undergraduate Tuition & Fees	Assessment	Per Semester	Annual Total
Tuition (12 - 18 credits)*	Per Semester	\$12,901	\$25,802
General University Fee	Per Semester	\$368	\$736
Technology Fee	Per Semester	\$141	\$282
Student Center Fee	Per Semester	\$26	\$52
Recreation Fee	Per Semester	\$31	\$62
Student Activity Fee	Per Semester	\$122	\$244
Total Full-time Undergraduate Tuition & Fees		\$13,589	\$27,168

School of Pharmacy First Professional Tuition & Fees	Assessment	Per Semester
Tuition (12-18 credits)*	Per Semester	\$13,711
General University Fee	Per Semester	\$355
Pharmacy Experiential Fee (Begins P-1)	Per Semester	\$480
Technology Fee	Per Semester	\$141
Student Center Fee	Per Semester	\$26
Recreation Fee	Per Semester	\$31
Student Activity Fee	Per Semester	\$122
Total School of Pharmacy First Professional Tuition & Fees		\$14,899

* Credits above 18 will be assessed at the rate of \$715 per credit hour.

Part-time Undergraduate Tuition & Fees	Assessment	Rate
Summer Study (all sessions)	Per Credit Hour	\$495 per credit
Fall & Spring Sessions (1 - 11 credit hours)	Per Credit Hour	\$715 per credit
Excess Credit Hours	Per Credit Hour	\$715 per credit
Accelerated BBA Degree	Per Credit Hour	\$350 per credit
General University Fee	Per Credit Hour	\$31 per credit
Technology Fee	Per Credit Hour	\$31 per credit
Tuition (Senior Citizens)	Per Credit Hour	\$357.50 per credit

Audit Fees (Undergraduate Courses):	Assessment	Rate
Full-time Undergraduate and Pharmacy Students	No charge	---
Part-time Undergraduate Students	Per Credit	\$357.50
Senior Citizens	Per Credit	\$20
Other Mandatory Fees		
Applied Music Fees @ \$330 per credit		

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1 credit (14 30-minute private lessons)	Per credit	\$330
2 credits (14 60-minute private lessons)	Per credit	\$660
Graduation Fee	One Time	\$160
Matriculation Fee	One Time	\$135
Undergraduate Application & Admission Fees	One Time	\$40
Application Undergraduate		
Online Application Undergraduate	One Time	\$20
Online International Undergraduate	One Time	\$40
Online Transfer Admission	One Time	\$20
Online Freshman Admission	One Time	\$20

Miscellaneous University Fees

	Assessment	Rate
Acceptance Tuition Deposit	One Time	\$300
Challenge Exams	Credit Hour	\$90
Field Masters Double	3 Weeks	\$1045
Field Masters Single	3 Weeks	\$1045
Liability Insurance	Annual	\$50
Medical Technology	Semester	\$1360
Medical Insurance (Student)	Insurance coverage required for both semesters; students must show proof of coverage.	
Nursing Testing (6 semesters; Soph-Sr)	Semester	\$70
Nursing Transfer of Credits	Credit Hour	\$90
Replace Lost ID Card	Each	\$30
Returned Check Charge	Each	\$50
Room Reservation Deposit	Annual	\$100
Study Abroad	Per Semester	\$75
Summer Room Rental	Per Week	\$200
Televideo Fee	Per Course	\$50
Transcript/Verification - Same Day	Each	\$20
Transcript Fee	Each	\$15
Transcript Surcharge - Fax	Each	\$20
John Hopkins (No Lab or University Fees Apply)	Credit Hour	\$70
Young Scholars (Dual Enrollment billing School Districts)	Credit Hour	\$210
Young Scholars	Credit Hour	\$70

Exceptions

Senior Citizen Audit, no attached fees	Per Credit	\$20
Senior Citizens Discount (62 and older)	Per Credit	\$357.50

Summer Co-op and Internship (all attached fees full price)	Per Credit	\$357.50	
Audit Courses	Per Credit	\$357.50	
Bais Uri Perlman - Bais Menachem School - plus fees	Per Credit	\$357.50	

Residence Hall Rates

Dorm Style	Per Semester	\$ 3,440	\$ 6,880
Single Room	Per Semester	\$ 3,615	\$ 7,230
Apartment Style	Per Semester	\$ 3,815	\$ 7,630

Meal Plans

Colonel Blue	Per Semester	\$ 1,955	\$ 3,910
Colonel Blue Plus	Per Semester	\$ 2,055	\$ 4,110
Colonel Gold	Per Semester	\$ 2,245	\$ 4,490
Medallion Gold Plus	Per Semester	\$ 2,295	\$ 4,590
Senior Plan	Per Semester	\$ 1,000	\$ 2,000
25 Meal Plan	Per semester only	\$160	
40 Meal Plan + \$100 Dining Dollars		\$360	
50 Meal Plan		\$310	
Summer Meal Plan (Creative Writing: 10- Meal Block and Residency Meals)	Per Week	\$140	
10 Block Summer Meal Plan	Per semester only	\$62.50	
25 Block Summer Meal Plan	Per semester only	\$150.00	

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PAYMENT OF CHARGES

Prior to the beginning of each semester, invoices listing all current semester charges and approved financial aid are mailed to all registered students. All payments may be mailed directly to

Wilkes University - Student
P.O. Box 8500-54693
Philadelphia, PA 19178-4693

Visa, Discover, and MasterCard payments can be made on the Wilkes University web site (www.wilkes.edu) or by calling the Student Services Center at (570) 408-2000. Any questions concerning charges or payments should be directed to (570) 408-2000 or onestop@wilkes.edu. Payments may also be made in person at the Student Services Center located on the first floor of University Center on Main (UCoM).

Students who fail to pay all indebtedness to the University shall not be permitted to receive any degree, certificate, or transcript of grades, nor shall they participate in Commencement activities.

Fall and Spring Full-time Tuition

The unfunded cost of full-time tuition and fees will be paid or satisfactory arrangements made with the Office of the Controller two weeks before the day on which classes begin. Unfunded costs are defined as the total of all appropriate charges for tuition, fees, room and board, etc., less the total of all approved financial aid awarded or credited to the student account for each semester or other instructional period. Satisfactory arrangements are defined as

- a. enrollment in the Installment Payment Plan (call the Office of the Controller at 570-408-4658 for more information);
- b. participation in the Deferred Employer Reimbursement plan;
- c. enrollment in one of the third-party, sponsored tuition coverage plans (ROTC Scholarship, Bureau of Vocational Rehabilitation, Office of the Blind, etc.).

If the payment in full or satisfactory arrangements are not made two weeks before the first day of class each semester, the registration for that semester may be cancelled and the student may not be allowed to attend classes. Also, a financial hold will be placed on any tuition account with an open balance. In order to be re-enrolled and re-registered, the student may be required to pay a late registration fee of \$50 in cash before registering.

Summer, Fall, and Spring Part-time Tuition

Charges for summer and part-time tuition and fees must be paid within full two weeks from the first day of classes unless covered by the Deferred Employer Reimbursement policy. The deferred payment policy is described on the next page.

Intersession Tuition

Tuition charges for intersession semesters must be paid in full two weeks before the first day of class. The deferred payment option does not apply to intersession charges.

Deferred Payment Policy (Employer Reimbursed) & Third Party Payment Policy

Deferred payments for employer reimbursement and third party payer arrangements will be permitted, provided the student makes application, receives approval, and delivers the completed documents two full weeks before classes begin. Graduating seniors are not eligible for the deferred payment option.

Monthly Payments

Wilkes has developed an interest-free, semester-based Installment Payment Plan to help ease the burden of financing an education. Arrangements may be made to finance the total unfunded cost of tuition and fees.

The following are some of the financial institutions that provide educational loans for parents and students:

Key Education Resource Group for information, call 1-800-key-lend
 PNC Bank Resource Loan for information, call 1-800-762-1001
 First Union Bank of Delaware for information, call 1-800-504-4097

VISA/MasterCard

Wilkes University accepts VISA and MasterCard for tuition and fee payments at our web site, www.wilkes.edu.

Tuition Exchange

Wilkes University is a member of The Tuition Exchange and CIC tuition-exchange plans, which provide limited opportunities for children of employees from one college or university to enjoy tuition remission benefits at another institution. Students who are dependents of employees of other colleges and universities should consult the Tuition Exchange Liaison Officer at their home institutions to determine if they qualify for this program.

Refunds

Students who officially withdraw from courses may be eligible for a partial refund of tuition charges (see section in this *Bulletin* on Official Withdrawal). Resident students who withdraw from the University may also qualify for a prorated refund of room and board charges. Refunds are based on the official date of withdrawal as noted by Student Services and the Registrar.

Financial aid received by students who withdraw may also be adjusted. See the section in this *Bulletin* on Financial Aid regarding adjustment to financial aid based on withdrawals.

Students suspended from the University for disciplinary reasons will forfeit all refunds.

Students who withdraw from the University or from specific classes during the semester will be entitled to an adjustment of tuition, fees, and room and board charges according to the following refund schedule.

Refund Schedule*

Circumstance	Time of Withdrawal	Refund
Cancellation of Enrollment	The University will cancel 100% of the tuition charges, less a deposit of \$300, if written notice of cancellation is received by Student Services and the Office of the Registrar on or before the first day of classes. Failure to submit proper written notification will result in the assessment of full charges.	
Total Withdrawal	Policy guidelines for refunds processed after the first day of classes are as follows: Beginning with the 2008-2009 academic year, students who withdraw from Wilkes will be entitled to an adjustment of tuition, fee, and room and board charges according to the following refund schedule:	
	First week	100%
	Second week	85%
	Third week	80%
	Fourth week	75%
	Fifth week	70%
	Sixth week	60%
	Seventh week	55%
	Eighth week	50%
	Ninth week	40%
	After ninth week	no adjustment
Summer Sessions	First week of first or second sessions and first two weeks of evening session	50%
	After stated period	No refund
Weekend College	Through second weekend	50%

Introduction

	After second weekend	No refund
Change from Full-time to Part-time Status and Reduction of Part-time Load	Above time-schedule applies for courses dropped	Charges based on the number of credits after the withdrawal

Room and Board:

Room

The institution will refund housing rental charges, less a deposit of \$100, so long as written notification of cancellation is made to the Director, Residence Life Office, on or before the first day of classes each semester. After the first day of classes, charges will be adjusted in accordance with the above schedule.

Board

The institution will refund board charges in full if written notification of cancellation is made to the Director, Residence Life Office, on or before the first day of classes each semester. After the first day of classes, charges will be adjusted in accordance with the above schedule.

** Deposits are non-refundable. Refunds for special sessions (i.e. sessions that do not correspond to the calendar outlined above) will be calculated by the Office of the Controller upon student request.*

FINANCIAL AID

Wilkes University subscribes to the belief that the primary responsibility for financing the cost of higher education rests with the student and his or her family, and Wilkes is committed to providing resources to make that cost affordable. Toward that end, the University maintains an extensive program of need-based and merit-based financial assistance in the form of scholarships, grants, loans, and part-time employment to assist qualified students. This program is made possible by substantial annual gifts from generous friends and alumni of the University, which are combined with a variety of funding types provided by the federal and state governments.

Financial assistance for qualified students is awarded in the form of financial aid packages consisting of a combination of grants, scholarships, loans, and employment opportunities. All students are encouraged to apply for both need-based and merit-based financial assistance.

Students with questions about financial aid or students seeking applications for financial aid should contact the Student Services Center or Admissions Office. More detailed information regarding the financial aid programs and requirements is included in the Consumer's Guide to Financial Aid available on the Wilkes University Web Site at

<http://www.wilkes.edu/Include/admissions/20102011CONSGUIDFA.pdf>

Types of Financial Aid

Financial aid packages are developed for students on an individual basis and usually consist of one or more of the following types of aid. The financial aid options described in this section are available to qualified full-time students who are identified as "making progress toward degree completion" (i.e., students who successfully complete a minimum of 24 credits within a calendar year and who are declared "in good standing" at the University). For information about financial aid for part-time students, see the section "Financial Aid for Part-time Students."

Scholarships: Outright gift assistance that is not repayable by the recipient and is usually based on factors other than demonstrated financial need, although some scholarships are a combination of need and merit. Several academic areas at the University, including Biology, English, Music, Nursing, Sociology, and Theatre, have scholarships available for qualified students.

Grants: Outright gift assistance that is not repayable by the recipient and based on demonstrated financial need of the applicant and the family. Many states in addition to Pennsylvania provide financial assistance in the form of grants for residents of their states. Residents of states other than Pennsylvania should contact their high school guidance office for information pertaining to an individual state's aid program. These states include Connecticut, Delaware, Maryland, Massachusetts, Ohio, Rhode Island, Vermont, and West Virginia.

Loans: Financial Assistance for which the recipient assumes the obligation to repay the amount of the funds received. Most education loans provide for payment of principal and interest to begin sometime after the student graduates or stops attending an approved institution on at least a half-time basis. Repayment of the Federal Direct PLUS Loan may be deferred or will begin within a short time after the funds are disbursed. Loan amounts vary and are determined according to class standing, which is defined by Wilkes University as follows:

Freshman	any student in good academic standing who has completed 0 - 29 credits
Sophomore	any student in good academic standing who has completed 30 - 59 credits
Junior	any student in good academic standing who has completed 60 - 89 credits
Senior	any student in good academic standing who has completed 90 credits or more.

See "Academic Standing, Probation, and Ineligibility" in this bulletin for a definition of academic standing.

Introduction

Employment: Financial assistance that a student may earn by working on campus in part-time or full-time positions and for which the student is paid in the form of a monthly check. On campus jobs are listed on line at <http://www.wilkes.edu/pages/1672.asp>. Eligibility for participation in the Wilkes University work-study program is not a guarantee of employment; employment and job placement will depend upon the type and number of jobs available.

The Office of Career Services also operates a Job Location Development (JLD) program to help students obtain employment opportunities off-campus. Students participating in the JLD program are paid by the employer for whom they work.

Financial Aid Application Procedures

NOTE: Students applying for financial aid must be currently enrolled or accepted for admission to Wilkes University before their application for financial aid will be considered.

All applicants for financial aid must

1. complete the Free Application for Federal Student Aid (FAFSA): <http://www.fafsa.ed.gov/index.htm>;
2. complete the appropriate state application for financial aid;
3. if applying for University administered aid, complete applications for Federal Pell Grant and a State Grant or Scholarship (if available); and
4. if applying for the Federal Direct Stafford Loan, or the Federal Direct PLUS Program, or both, complete the appropriate promissory note application.

Renewal of Financial Aid

Need-based financial aid is awarded on an annual basis. The renewal of need-based financial aid is not automatic and failure to submit renewal applications may result in the loss of financial aid. Students must, therefore, reapply for financial assistance each year, and renewal of awards is based on the timely completion of all required documents and on the student's continued eligibility for assistance.

The deadline for requests for renewal of financial aid is May 1. In addition to demonstrating continued financial need, students must also meet specific academic progress requirements to qualify for renewal. These requirements are explained in detail in the *Consumer's Guide to Financial Aid*.

Merit-based scholarships are renewable for four years, provided that all terms and conditions are met.

Types of Financial Aid

Financial aid packages are developed for students on an individual basis and usually consist of one or more of the following types of aid. The financial aid options described in this section are available to qualified full-time students who are identified as "making progress toward degree completion" (i.e., students who successfully complete a minimum of 24 credits within a calendar year and who are declared "in good standing" at the University). For information about financial aid for part-time students, see the section "Financial Aid for Part-time Students."

Scholarships: Outright gift assistance that is not repayable by the recipient and is usually based on factors other than demonstrated financial need, although some scholarships are a combination of need and merit. Several academic areas at the University, including Biology, English, Music, Nursing, Sociology, and Theatre, have scholarships available to qualified students.

Grants: Outright gift assistance that is not repayable by the recipient and based on demonstrated financial need of the applicant and the family. Many states in addition to Pennsylvania provide financial assistance in the form of grants for residents of their states. Residents of states other than Pennsylvania should contact their high school guidance office for information pertaining to that particular state's aid program. These states include Connecticut, Delaware, Maryland, Massachusetts, Ohio, Rhode Island, Vermont, and West Virginia.

Loans: Financial assistance for which the recipient assumes the obligation to repay the amount of the funds received. Most educational loans provide for payment of principal and interest to begin sometime after the student graduates or stops attending an approved institution on at least a half-time basis. Repayment of the Federal Direct PLUS Loan may be deferred or will begin within a short time after funds are disbursed. Loan amounts vary and are determined according to *class standing*, which is defined by Wilkes University as follows:

- Freshman any student in good standing who has completed 0-29 credits
- Sophomore any student in good standing who has completed 30-59 credits
- Junior any student in good standing who has completed 60-89 credits
- Senior any student in good standing who has completed 90 credits or more

See "Academic Standing, Probation, and Ineligibility" section of this *Bulletin* for an explanation of academic standing.

Employment: Financial assistance that a student may earn by working on campus in part-time or full-time positions and for which the student is paid in the form of a monthly check. On campus jobs are listed on line at <http://www.wilkes.edu/pages/1672.asp>. Eligibility for participation in the Wilkes University work-study program is not a guarantee of employment; employment and job placement will depend upon the type and number of jobs available.

The Office of Career Services also operates a Job Location Development (JLD) program to help students obtain employment opportunities off-campus. Students participating in the JLD program are paid by the employer for whom they work.

Withdrawal - Return of Financial Aid Funds

In accordance with federal regulations, those students who receive federal financial aid and who withdraw from the University during the first 60% of a semester will have their federal financial aid (Pell Grants, Supplemental Educational Opportunity Grants, Academic Competiveness Grant, SMART Grant, Perkins Loans, Nursing Loans, Stafford Loans and PLUS Loans) adjusted based on the percentage of the semester completed prior to the withdrawal. That is, students will be entitled to retain the same percentage of the federal financial aid received as the percentage of the semester completed. This percentage is calculated by dividing the number of days in the semester (excluding breaks of five days or longer) into the number of days completed prior to the withdrawal (excluding breaks of five days or longer). The date of withdrawal will be the date the student begins the withdrawal process at the Registrar's Office unless attendance in class is documented after that date; in that case, the last date of documented attendance will be the official date of withdrawal. (See section on Withdrawals in this Bulletin.)

Students who do not follow the official withdrawal procedure but who stop attending classes for all of their courses will be considered to have withdrawn at the 50% point of the semester unless attendance is documented after that time. There will be no adjustment to federal financial aid after the completion of at least 60% of the semester.

Once the amount of the federal fund to be returned has been calculated, the funds will be returned in the following order:

- Unsubsidized Stafford Loans
- Subsidized Stafford Loans
- PLUS Loans
- Perkins Loans
- Pell Grant
- Supplemental Educational Opportunity Grants (S.E.O.G.)
- Academic Competitiveness Grant (ACG)
- SMART Grant
- Nursing Loans

Pennsylvania and other state grants will be adjusted in accordance with the agency's stated guidelines. It is expected that PHEAA Grant funds will be reduced by the same percent reduction in tuition received by a student when withdrawing from a course or courses.

Wilkes University grant and scholarship funds will be adjusted based on the percentage of reduction of tuition received by a student when withdrawing from the University.

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Please note that students who receive a refund of financial aid prior to withdrawing from the University may owe a repayment of federal financial aid funds received. Students will be contacted by the Student Services Center in such situations and will be given 30 days to repay the funds to the University. Students who fail to return the unearned portion of federal financial aid funds given to them will become ineligible for continued receipt of financial aid until such time as the repayment is made.

Veterans' Assistance Programs (VA)

This special program provides a wide range of benefits to those who have served in the armed forces and, in some cases, to the dependent children of veterans. Interested persons should contact their local VA Office to obtain information concerning GI Education Assistance, Veterans Education Programs, Veterans Rehabilitation, Veteran Educational Loans, the Veteran Work-Study Program, and other sources of Veterans Assistance. All questions pertaining to the VA Assistance Program at Wilkes University should be directed to the Student Services Center.

Financial Aid for Part-time Students

The Pell Grant, Supplemental Educational Opportunity Grants (S.E.O.G.), Academic Competitiveness Grants (ACG), SMART Grant, PHEAA Grant, College Work-Study, Nursing Loan, Federal Direct Stafford Loan, and the Federal Direct Parent Loan for Undergraduate Students (Direct PLUS Loan) are available to part-time students. Interested students must complete the Free Application for Federal Student Aid (FAFSA) and the appropriate loan applications in order to apply for these programs. In addition to financial need, eligibility is based on enrollment status. Limited funds from the S.E.O.G. Program are available to part-time students who demonstrate exceptional financial need. Except for the Pell Grant program, students must be enrolled at least half-time to qualify for financial aid. In addition, there are various private educational loans available to part-time students. Contact the Student Services Center for more information.

Financial Aid for Students Seeking a Second Degree

Only the Federal Direct Stafford Loan is available to students seeking a second degree. The Free Application for Federal Student Aid (FAFSA) and the appropriate promissory notes must be completed to determine eligibility for these programs. In addition, there are various private educational loans available to students who are seeking a second degree. Information is available on the Wilkes Web site.

Financial Aid for Pharmacy Students in Years Five and Six

Years five and six of the pharmacy program entail course work that is considered to be at the post-baccalaureate level; this means that, for financial aid purposes, years five and six of the program are identified as "professional or graduate level." Therefore, students enrolled at this level of study in the Pharmacy Program are considered "independent" for financial aid purposes and qualify only for financial aid available to graduate and professional students. This financial aid includes the subsidized and unsubsidized Direct Stafford Loans (with an annual loan maximum of \$20,500), Graduate Direct PLUS Loans, and private loans only. Fifth- and sixth-year Pharmacy students do not qualify for any federal, state, or institutional grants or scholarships.

Financial Assistance Programs - Summary*

SCHOLARSHIPS		
Scholarship	Criteria, Qualifications, Requirements, Application(s), & Information	Filing
Wilkes University Scholarship Wilkes Presidential Scholarship Wilkes Deans' Scholarship Wilkes Commitment Award	Admission to the University SAT or ACT scores Class rank for incoming freshmen Continued eligibility for undergraduate upperclassmen Questions? Contact Wilkes Office of Admissions or Wilkes Student Services Center	Inco

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Wilkes University Transfer Student Scholarship	Admission to the University Transfer credit evaluation Continued eligibility for undergraduate upperclassmen Questions: Contact Wilkes Office of Admissions or Wilkes Student Services Center	
Wilkes Leadership Scholarship	Based on appointment to or achievement of leadership roles in student organizations Contact specific student organizations regarding application for leadership roles	
Wilkes Named Scholarships	Awarded by various academic and administrative departments based on criteria set by scholarship donor For a complete listing of Named Scholarships contact the Development Office Incoming students contact Wilkes Office of Admissions	
Performance Award	Determination of merit eligibility and audition required Limited to Theatre Arts or Musical Theatre majors and participants in music ensembles Questions? Contact Wilkes Office of Admissions.	
Room & Board Scholarship	Awarded to Residence Assistants. For Resident Assistant Application, contact Residence Life Office.	
ROTC Scholarship	Apply for ROTC through the Wilkes ROTC Office Questions? Contact the Wilkes ROTC Office.	
<p>GRANTS</p> <p>All students applying for Federal, State, and Wilkes grants must first complete an Free Application for Federal Student Aid (FAFSA) The FAFSA must be filed prior to application for all grants For information and a copy of the application form, go to: http://www.fafsa.ed.gov</p>		
Grant	Criteria, Qualifications, Requirements, Application(s), & Information	
Federal Academic Competitiveness Grant (ACG)	FAFSA http://www.fafsa.ed.gov/index.htm Pell eligible freshmen and sophomores who meet grant criteria Questions? Contact Wilkes Student Services Center.	
Federal Pell Grant	FAFSA http://www.fafsa.ed.gov/index.htm Questions? Contact Wilkes Student Services Center.	
PHEAA Grant	FAFSA http://www.fafsa.ed.gov/index.htm Application and Information available at http://www.pheaa.org/ Questions? Contact PHEAA.org or Wilkes Student Services Center	
Federal Supplemental Education Opportunity Grant (SEOG)	FAFSA http://www.fafsa.ed.gov/index.htm Questions? Contact Wilkes Student Services Center	
Federal SMART Grant	FAFSA http://www.fafsa.ed.gov/index.htm	

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	<p>Pell eligible juniors and seniors who meet criteria</p> <p>Questions? Contact Wilkes Student Services Center</p>	
Wilkes Need-Based Grant	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>For information, contact Wilkes Student Service Center</p>	Upp Inco 1
Office of Vocational Rehabilitation Grant	<p>FAFSA http://www.fafsa.edu.gov/index.htm</p> <p>Application required through Office of Vocational Rehabilitation</p> <p>Questions? Contact the Office of Vocational Rehabilitation</p>	Prio
<p>LOANS</p> <p>All students applying for loans <i>must first complete and file the Free Application for Federal Student Aid (FAFSA)</i></p> <p>The FAFSA must be filed <i>prior to</i> application for Federal loans</p> <p>For information and a copy of the application form, go to: http://www.fafsa.ed.gov/</p>		
LOAN	Criteria, Qualifications, Requirements, Application(s), & Information	Filin
Federal Nursing Student loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>No additional application required.</p> <p>Based on major and extreme financial need.</p> <p>Limited funds available.</p> <p>Questions? Contact Wilkes Student Services Center</p>	Upp Inco 1
Gulf Oil Loan	<p>FAFSA http://www/fafsa.ed.gov/index.htm</p> <p>No additional application required.</p> <p>Based on extreme financial need.</p> <p>Limited funds available.</p> <p>The Gulf Oil Loan is offered at the discretion of the Financial Aid Director.</p> <p>Contact Wilkes Student Service Center</p>	Upp Inco 1
Rullison Evans Loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>No additional application required.</p> <p>Based on extreme financial need.</p> <p>Limited funds available.</p> <p>The Rullison Evans Loan is offered at the discretion of the Financial Aid Director.</p> <p>Contact Wilkes Student Service Center</p>	Upp Inco 1
Federal Direct Stafford Loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Online Student Loan Entrance Counseling: First time borrowers must complete Federal Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action</p> <p>First time borrowers must complete the loan application process and Master Promissory Note (MPN) through the Federal Direct Loan Program. The MPN is good for ten years as long as lender participates in the program and student remains enrolled.</p> <p>Online Student Loan Entrance Counseling</p>	Six t proc

	<p>Contact Wilkes Student Services Center</p>	
Federal Direct Unsubsidized Stafford Loan	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Online Student Loan Entrance Counseling: First time borrowers must complete Federal Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action</p> <p>First time borrowers must complete the loan application process and Master Promissory Note (MPN) through the Federal Direct Loan Program. The MPN is good for ten years as long as lender participates in the program and student remains enrolled.</p> <p>Contact Wilkes Student Service Center</p>	
Federal Direct Parent Loan for Undergraduate Students (PLUS)	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Federal Direct PLUS Loan Application to be completed annually.</p> <p>Online Student Loan Entrance Counseling - First-time borrowers must complete Federal Direct Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action</p> <p>First time borrowers must complete a Master Promissory Note the Federal Direct Loan Program.</p> <p>For information and loan application go to http://www.aesuccess.org/find_aid_for_school/parent_plus/index.shtml</p> <p>Contact Wilkes Student Service Center</p>	
Federal Direct Graduate PLUS Loan (Graduate level loan for independent students)	<p>FAFSA http://www.fafsa.ed.gov/index.htm</p> <p>Online Student Loan Entrance Counseling - First-time borrowers of Graduate PLUS must complete Federal Student Loan Entrance Counseling at https://www.studentloans.gov/myDirectLoan/index.action</p> <p>Federal Direct Graduate PLUS Loan application must be completed annually. First-time borrowers must complete a Master Promissory Note (MPN) through the Federal Direct Loan Program.</p> <p>For information and loan application go to http://www.aesuccess.org/fin_aid_for_school/graduate_plus/index/shtml</p> <p>Contact the Wilkes Student Services Center.</p>	
<p>STUDENT EMPLOYMENT</p> <p>All students applying for Federal or State College Work-Study Programs <i>must first</i> Free Application for Federal Student Aid (FAFSA)</p> <p>The FAFSA must be filed <i>prior to</i> application for Federal or State Work-Stu</p> <p>For information and a copy of the application form, go to http://www.fafsa.ed.</p>		
PROGRAM	CRITERIA, QUALIFICATIONS, REQUIREMENTS, APPLICATION(S), & INFORMATION	

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Federal College Work-Study Program	FAFSA http://www.fafsa.ed.gov/index.htm Wilkes Position Hiring Form to be completed during the hiring process Verified Employment documents: I9, W4 forms Questions? Contact the Wilkes Student Services Center	Prio
State College Work-Study Program	FAFSA http://www.fafsa.edu.gov/index State Work-Study Program Application Verified Employment documents: I-9; W-4 forms Questions? Contact the Wilkes Student Services Center	Prio
Institutional Employment Program	Limited positions available based on funding for those students who do not qualify for Federal Work-Study funds Wilkes Position Hiring Form to be completed during the hiring process Verified Employment documents: I-9; W-4 forms Questions? Contact the Wilkes Student Services Center	Prio

ACADEMIC INFORMATION

GENERAL INFORMATION

Wilkes' commitment to developing and nurturing a passion for lifelong learning in students of all ages is reflected throughout the academic undergraduate degree programs of the University and in the flexible scheduling and enrollment options and robust roster of special cultural and educational programs that serve both full-time undergraduate students and degree- and non-degree-seeking non-traditional students.

ACCREDITATION

Wilkes University offers degrees and programs approved by the Department of Education of the Commonwealth of Pennsylvania and accredited by the Commission on Higher Education of the Middle States Association of Colleges and Secondary Schools (3624 Market Street/Philadelphia, PA 19104-2680).

Certain academic programs are also individually accredited by the respective professional organizations. The Chemistry curriculum is approved by the American Chemical Society. The baccalaureate program in Nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by the Commission on Collegiate Nursing Education (Commission on Collegiate Nursing Education/One Dupont Circle, N.W., Suite 530/Washington, DC 20036-1120). Programs in Electrical Engineering, Environmental Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board of Engineering and Technology (ABET). The Bachelor of Science in Accounting and the Bachelor of Business Administration degree programs are accredited by the Association of Collegiate Business Schools and Programs. The School of Pharmacy was fully reaccredited to grant the Doctor of Pharmacy degree (Pharm.D.) by the Accreditation Council for Pharmacy Education in January 2006. For further information on the School of Pharmacy, please see the discussion under School of Pharmacy elsewhere in this bulletin.

UNIVERSITY CALENDAR

The academic year consists of two fifteen-week semesters, each of which includes a final examination period. The fall semester normally begins in late August and concludes with final examinations in December. The spring semester begins in mid-January and closes with a final examination period in May. An optional Intersession is offered in January.

The University also provides a broad range of courses, workshops, mini-courses, and programs with outdoor activities during the summer months. The summer schedule includes a three-week Pre-Session, two five-week Day Sessions, and a nine-week Evening Session, plus special mini-sessions. The first regular summer Day Session begins in early June and concludes in mid-July; the second regular summer Day Session begins in mid-July and ends in late August. The nine-week Evening Session, which begins in early June and ends in early August, complements these two day-school summer sessions. Students interested in the summer programs should contact the College of Graduate and Professional Studies for specific course and scheduling information. Please request special summer discount information through the College of Graduate and Professional Studies at (570) 408-4235

Commencement exercises are held at the close of the spring semester as well as at the close of the Summer Sessions.

[Click here for 2010-2011 Academic Calendar](#)

COURSE NUMBERING

Courses are designated by a course number code comprising two or letters and three digits. The letter codes identify specific fields of study (e.g., ACC = Accounting, BIO = Biology, IM = Integrative Media, and THE = Theatre). The three-digit numeric codes identify the course level (first digit: 1, 2, 3, 4, or 5), subfields within a specific discipline, as defined by each department or program (second

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digit), and, when appropriate, the course sequencing or time of year when the course is offered (third digit). Course levels are denoted as follows:

1xx	Introductory courses
2xx	Intermediate courses
3xx	Advanced undergraduate courses
4xx	Advanced undergraduate courses and courses for graduate students
5xx	Courses for graduate students only (except with special permission)

COURSE SCHEDULING AND ENROLLMENT

A full schedule of day classes is offered during the regular fall and spring semesters. Evening, summer, intersession, and accelerated classes accommodate schedules of traditional and non-traditional full- and part-time students who cannot attend day classes or classes offered during the regular semester periods. A number of online courses and hybrid courses, which combine online learning with periodic classroom meetings and discussions, provide additional scheduling flexibility for traditional and non-traditional students.

Wilkes University welcomes part-time undergraduate students into all of its regular sessions and has established the Evening schedule to maximize scheduling possibilities for students who are not able to attend day classes. Evening courses generally meet one or two nights per week during the academic year and two nights per week during the nine-week summer Evening Session. Evening course work is available in Accounting, Art, Business Administration, Communication Studies, Computer Science, Economics, Education, Electrical Engineering, Environmental Engineering, History, Mathematics, Nursing, Political Science, Psychology, and Sociology.

If seating is available, non-degree students may be admitted to classes for which they are qualified by reason of their maturity, educational background, or work experience. Secondary school training is desirable, but not required, provided the student is qualified to meet the requirements for enrollment and the rigors of the academic course work involved. Inquiries pertaining to continued learning opportunities should be directed to the College of Graduate and Professional Studies at (570) 408-4235.

These flexible campus classroom and online offerings in a variety of disciplines provide the greatest possible flexibility of scheduling for full-time undergraduate students and enable graduates of accredited two-year institutions and returning non-traditional students to complete baccalaureate degrees in certain majors by taking courses beyond the regular daytime class meeting hours.

Full- and part-time undergraduate students should consult with their academic advisors concerning the various course formats and scheduling options and review the Schedule of Courses published each semester by the Office of the Registrar. Returning, non-degree seeking, and non-traditional students should direct inquiries to the College of Graduate and Professional Studies at (570) 408-4235. Complete information about graduate, professional, post-baccalaureate, and continued learning opportunities is available on the Wilkes University Web site at <http://www.wilkes.edu/graduatestudies>.

ACADEMIC POLICIES AND PROCEDURES

REGISTRATION

Incoming freshman and transfer students register during the orientation sessions that precede each semester. All continuing students are expected to preregister with their advisors and to register on the dates specified in the University Calendar; a late registration fee may be assessed for failure to register during the official registration period (see "Student Expenses" in this *Bulletin*.) Additional information on registration procedures and the exact dates of the orientation sessions can be found online or obtained from the Office of Admissions or from the Student Services Center.

ATTENDANCE

Attendance at all scheduled classes is expected and required. Repeated absences are a sufficient cause for failure.

Instructors are expected to 1) inform students in writing of their attendance policy at the beginning of the semester; 2) take attendance and report excessive absences to the Dean of Student Affairs; and 3) discourage absence from classes prior to the beginning of a holiday period.

After five consecutive instructional hours of unexcused absences from a class, students may be readmitted to the class only by action of the Office of Student Affairs and the department chairperson concerned.

Any absence beyond that permitted in the course is a matter between the student and the instructor. Absences due to illness, religious holidays, or participation in athletic or University sponsored activities are usually considered to be acceptable reasons for absences, but notification of such absences and arrangements to make up missed work should be made with the instructor by the student.

In the unfortunate event of a death in the family, students are asked to contact the Office of Student Affairs so that notification can be sent to faculty members and arrangements can be made with them to assist students with make-up work.

If students are ill and will be missing a test, examination, or presentation, it is their responsibility to contact the instructor by phone the day of the test.

When students are going to be absent for a period of two days or more, if they notify the Office of Student Affairs, written notification of their absence will be sent to the students' instructors.

It should be understood, however, that the Student Affairs Office is not responsible for granting excuses for class absence.

STUDENT LOAD

Full-time students may register for 12-18 credits in a semester. No student shall be allowed to carry more than 18 credits without the written approval of his or her advisor and the Dean of Students. Students who register for, attempt, or complete fewer than 12 credits in any one semester shall be considered "part-time" students. Students should be aware that student load status (full- or part-time) affects eligibility for financial aid.

WILKES-MISERICORDIA-KING'S CROSS-REGISTRATION

Wilkes University, Misericordia University, and King's College offer their students an opportunity to cross-register for courses at the other institutions. Students register through the Office of the Registrar of the institution at which they are enrolled as degree candidates. Interested Wilkes students should confer with the University Registrar for further details.

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AUDITING COURSES

Auditing courses is a practice designed primarily to allow students to expand their educational opportunities. Courses may be taken on an audit basis only if formal registration is completed prior to the end of the first week of the semester. Permission of the course instructor will be required. Students who withdraw from a course but who wish to attend additional class sessions in that course may do so with the permission of the instructor; in all cases, however, these students will receive a grade of "W" (withdrawal).

Students auditing courses will comply with all stated course policies and meet all stated course standards, and requirements, including attendance. Students who fail to comply with course standards, requirements, and policies will not be awarded "Audit" recognition. All relevant fees will be charged.

CHANGE OF MAJOR

Students who wish to change their majors must obtain the approval of the academic advisor and of the chairperson of the department of current enrollment and of the chairperson of the department in which the proposed major resides. The student shall satisfy the curricular requirements of the bulletin in force at the time of the change. Change-of-major forms are available in the Student Services Center.

TRANSFER OF CREDITS

Wilkes students who wish to enroll in courses at another accredited institution (except Misericordia University and King's College; see "Wilkes-Misericordia-King's Cross-Registration") must complete the "Request for Transfer of Credit" form prior to enrolling for course work at the other institution. "Request for Transfer of Credit" forms are available at the Student Services Center.

Students should consult the "Admission of Transfer Students" section of this Bulletin for policies and rules governing transfer credits and transfer students.

The student must earn a grade of 2.00 or higher for the work to be credited toward graduation. All students must complete at least 30 credits and a minimum of 50% of their major field credits (and minor field credits, if applicable) in residence at Wilkes University.

NOTE: Grades earned for transfer credits are not included in the calculation of grade point averages.

WITHDRAWAL FROM COURSES

It is presumed that a student will complete the courses for which he or she has registered. *Students must pay careful attention to the official withdrawal policy approved by the faculty.* A grade of "W" is given for approved withdrawal; unofficial withdrawal will result in a grade of "0.000".

A student who wishes to withdraw from a course should first discuss the matter with the instructor. During the first three weeks of the semester the student may withdraw from a course by informing the instructor and his or her advisor and returning the completed and signed withdrawal form to the Student Services Center. After this initial three-week period, withdrawal is allowed through the tenth week of the semester and requires the approval of both the instructor and the advisor. Thereafter, the student may withdraw only for medical reasons, supported by a written excuse from a physician, or other extremely serious circumstances.

Poor academic progress, in and of itself, will not be considered sufficient reason for permission to withdraw from a course following the allowed withdrawal period. Withdrawals after the tenth week must be approved by both the course instructor and the Unit Dean in which the course is being taught. The Dean of Students will provide consultation regarding this decision as deemed appropriate by the course instructor, the Unit Dean in which the course is being taught, or both.

It is the student's responsibility to initiate withdrawal from a course by obtaining the withdrawal form from the Student Services Center, gathering all required signatures, and returning the completed form to the Registrar within the ten-week period. A grade of "0.000" is assigned by the instructor and recorded for all courses in which no official withdrawal, as specified above, has been completed by the student.

Students who are considering withdrawal from a course should be reminded that state and federal regulations for financial aid mandate that a student must earn 24 credits within the period of August to August or January to January and maintain the appropriate grade point average for his or her class standing. Such students should also be mindful of the University Refund Schedule, which allows for adjustments to tuition, fee, and room and board charges through the ninth week of the semester, but affords no adjustments to these charges after the ninth week.

Guidelines for Implementation

1. If a student is permitted to withdraw from a course after the ten-week period, the signatures and approval of the Unit Dean in which the course is being taught and the course instructor are required. It is the student's responsibility to initiate withdrawal by obtaining the official form designed for this purpose from the Student Services Office, having it signed by the instructor and submitting it to the Unit Dean in which the course is being taught. A student may seek assistance from the Dean of Students in facilitating this process, including such cases in which the instructor cannot be reached. Written notification of the signed form designed for this purpose will be sent by the Unit Dean to the Registrar for processing, who will in turn, notify the student, the course instructor, the student's advisor, and the Unit Dean immediately. If both the course instructor and the Unit Dean agree with the withdrawal, a grade of "W" will be assigned by the instructor and posted by the Registrar. If the course instructor and the Unit Dean disagree with the withdrawal, then the student will be assigned a grade as determined by the course instructor.

2. Disagreements between course instructor and the Unit Dean on course withdrawal cases will be automatically forwarded by the Registrar to the Academic Standards Committee of the University. A subcommittee consisting of at least two faculty and one member from the Office of Student Affairs will review the withdrawal and reasons for disagreement within one academic week. The decision of this subcommittee will be recorded by the Registrar and forwarded to the student, the course instructor, and the Unit Dean.

3. If an official withdrawal, including proper paperwork, has not been initiated and completed by the student, the instructor will assign and record the grade of "0.000" for the course.

4. It should be noted that from the fourth through the tenth week of the semester a student must request and receive permission from the course instructor and the advisor in order to withdraw from a course.

5. Appeals will follow the Academic Grievance Procedure.

THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974

In accordance with the provisions of "The Family Educational Rights and Privacy Act of 1974" (FERPA), students, upon request, will be given access to all of their evaluative records that have been established by Wilkes University, with at least one day's advance notice to the office responsible for the records to which the student seeks access.

ACADEMIC REQUIREMENTS AND REGULATIONS

ACADEMIC HONESTY

Academic honesty requires that students refrain from all forms of cheating and provide clear and accurate citations for assertions of fact, as well as for the language, ideas, and interpretations of others that have contributed to the student's written work. Failure to acknowledge indebtedness to the work of others constitutes plagiarism, a serious academic offense that cannot be tolerated in a

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community of scholars. All instances of academic fraud will be addressed in accordance with the policies of the faculty and student handbooks of the University.

Statement on Intellectual Responsibility and Plagiarism (adapted from the *Wilkes University Student Handbook*)

At Wilkes the faculty and the entire University community share a deep commitment to academic honesty and integrity. The following are considered to be serious violations and will not be tolerated:

1. **Plagiarism:** the use of another's ideas, programs, or words without proper acknowledgment

Students assume responsibility for submitting original work in their courses and for refraining from all acts of plagiarism. The University considers the following to be three separate forms of plagiarism:

Deliberate plagiarism centers on the issue of intentionality. If students deliberately claim as their own another's language, ideas, or other intellectual or creative work, they are engaged in a form of intellectual theft. Similarly, submitting the work of another person, in whole or in part, or submitting a paper purchased from another person or agency is a clear case of intentional plagiarism for which students will be subject to the severest penalties. Acts of intellectual theft are not tolerated in academic, business, and professional communities, and confirmed instances of plagiarism usually result in serious consequences.

Unintentional plagiarism often results from a misunderstanding of proper and conventional forms of documentation, oversight, or inattentive scholarship. Unintentional plagiarism includes, but is not limited to, forgetting to give authors credit for their ideas, transcription from inaccurate and poorly crafted notes, failure to use appropriate forms of citation, and omission of relevant punctuation.

Self-plagiarism occurs when students submit papers prepared and presented for another course, whether for the English department or another department or school. Students may submit the same paper for more than one course *only if all instructors involved grant permission for such simultaneous or "recycled" submissions.*

Penalties for plagiarism may range from failure for the specific assignment involved to failure for the course. In accordance with the academic grievance procedures of Wilkes University, cases of plagiarism will be addressed first by the instructor. Any appeal by the student of sanctions imposed by the instructor should be directed to the department chairperson.

2. **Collusion:** improper collaboration with another in the preparation of assignments, projects, papers, and computer programs, or in the completion of quizzes, tests, and examinations.

3. **Cheating:** giving improper or unauthorized aid to another in the completion of academic tasks or receiving such aid from another person or other source.

(For further information, consult the *Wilkes University Student Handbook*)

Instructors are expected to report violations to both the Dean of Students and the Provost. Penalties for violations may range from failure in the particular assignment, program, or test, to failure for the course. The instructor may also refer the case for disposition to the Student Affairs Cabinet. The academic sanctions imposed are the purview of the Faculty; the Student Affairs Cabinet determines disciplinary sanctions. The appeal of a failing grade for academic dishonesty will follow the academic grievance policy. The appeal of a disciplinary sanction will follow the disciplinary action policy.

The University "Statement on Intellectual Responsibility and Plagiarism" may be found in full in the *Wilkes University Student Handbook*. Students are responsible for being fully cognizant of the content of this statement. Questions pertaining to Intellectual Responsibility and Plagiarism or any facet of Academic Honesty should be directed to the student's professors, academic advisor, the Dean of Students, and the University Writing Center.

GRADES

The primary purpose of any grading system is to inform the student of his or her academic progress in a specific course and within a specific academic program. Final grade reports are posted online on the Wilkes Student Portal at the end of each term. Mid-term grades reflecting attendance and academic performance are recorded by course instructors at the end of the seventh week of the semester and prior to pre-registration advising for the following term. Mid-term grades of "unsatisfactory" in attendance or performance or both are sent electronically to students and to their academic advisors.

Wilkes recognizes eight numerical grades for academic achievement as follows:

Grade	Interpretation
4.00	Academic achievement of outstanding quality
3.50	Academic achievement above high quality
3.00	Academic achievement of high quality
2.50	Academic achievement above acceptable quality in meeting requirements for graduation
2.00	Academic achievement of acceptable quality in meeting requirements for graduation
1.50	Academic achievement above the minimum quality required for course credit
1.00	Academic achievement of minimum quality for course credit

The following letter grades may be assigned, as appropriate:

P	Passing, no credit
W	Withdrawal
N	Audit, no credit
X	Incomplete

A grade of "X" indicates that the student has not completed the course requirements as specified by the course instructor. Grades of incomplete ("X") will be granted to students who, because of illness or reasons beyond their control, have been unable to satisfy all course requirements, including the final examination, by the end of the term. When such a grade is recorded, all work must be completed and all course requirements satisfied by or before the end of the fourth week following the last day of the examination period; failure to complete course work and meet course requirements within this four-week period, will result in a grade of "0.00" for the course, unless a special extension has been filed by the course instructor and approved by the Registrar.

COURSE CREDIT AND GRADE POINT AVERAGES**Course Credit**

Each course at the University is assigned a specific number of credits. For example, History (HST) 101 is a three-credit course, and Mathematics (MTH) 111 is a four-credit course. In most cases, credits assigned to a particular course are determined according to the number of hours per week that the class meets; credits may also be defined by the number of hours that the class meets per semester. During the course of the semester, a credit hour is equivalent to

- 15 hours of classroom contact, plus appropriate outside preparation; OR
- 30 hours of supervised laboratory work, plus appropriate outside preparation; OR
- 45 hours of internship or clinical experience; OR
- a combination of the foregoing.

Grade Point Averages

The grade point average (gpa) is calculated according to a formula by which the total number of quality points (qp) earned is divided by the total number of credit hours attempted. Quality points are calculated by multiplying the course credit by the grade earned in the course. Below is an example illustrating the method used to compute grade point averages:

Course	Credit Hours Attempted	Grade	Quality Points Earned	Credit Hours Passed
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COM	101	3.0	x	4.00	=	12.0	3.0
FR	101	3.0	x	3.00	=	9.0	3.0
HST	101	3.0	x	1.50	=	4.5	3.0
MUS	101	3.0	x	2.50	=	7.5	3.0
PSY	101	3.0	x	0.00	=	0.0	0.0
		15.0		---		33.0	12.0
		Total credit hours attempted		15.0			
		Total credit hours passed				12.0	
		Total quality points earned				33.0	
		GPA (33qp/15 hrs. attempted)				2.20	

Note that the student has accumulated 12 credits toward graduation. The "0.00" grade in Psychology (PSY) means that the student must repeat that course in order to earn credit for the course. The student may repeat the course at Wilkes University or at another accredited institution.

IMPORTANT: Transfer credits are not included in the calculation of grade point averages at Wilkes University. If a course is repeated and successfully completed at an accredited institution other than Wilkes University, the credit for that course may transfer to Wilkes in fulfillment of graduation requirements; the course grade earned at another institution, however, will not transfer, and the "0.00" earned at Wilkes in PSY 101 shown in the sample grade report will remain in effect for the calculation of the student's gpa. *Grades earned at another institution will not be included as factors in the calculation of a student's grade point average, even in the event that the course credit is transferred to Wilkes.* In order to exclude a low grade (1.0 or 1.5) or a failing grade (0.0) and substitute a higher earned grade to be used in the calculation of the grade point average, the student must repeat and successfully complete the course at Wilkes University. Degree seeking students enrolled at Wilkes University who wish to take or repeat courses at another accredited institution must complete a "Request for Transfer of Credit" form and submit this form to the University Registrar for approval *before enrolling in the course.* "Request for Transfer of Credit" forms are available at the Student Services Center.

Grade point averages are cumulative; the work of each semester is added to the total. In order to graduate from Wilkes University, a student must have achieved, at the end of the senior year, a minimum overall grade point average of 2.00 and a minimum major field grade point average (mfa) of 2.00.

IMPORTANT: Some degree programs including, but not limited to, Nursing and Education require grade point averages and major field averages of greater than 2.00. See the grade point average requirements for specific degree programs described in this *Bulletin*, and consult with your academic advisor concerning grade point average requirements for your specific degree program.

ACADEMIC HONORS AND AWARDS

The Deans' List

The faculty of Wilkes University grants recognition for work of the highest quality. Students who earn a semester gpa of 3.40 or higher for all courses taken are accorded special recognition by being named to the Dean's List in the college of their major degree program. The Dean's List is published at the end of each fall and spring term. Students who attempt fewer than 12 credit hours in any semester are not eligible for nomination to the Dean's List.

Honor Societies

Chapters of many national and international honor societies have been established at Wilkes University. Students are invited to join these societies on the basis of their academic achievement, service to the University, service to the community, or a combination of such activities. Honor societies at Wilkes University include

ALPHA CHI (Upper Division Students)
ALPHA KAPPA DELTA (Sociology)
ALPHA SIGMA LAMBDA (Part-time Students)

BETA BETA BETA (Biology)
CHI ALPHA EPSILON (Act 101 Students)
DELTA MU DELTA (Business and Accounting)
ETA KAPPA NU (Electrical Engineering)
KAPPA DELTA PI (Education)
LAMBDA PI ETA (Communications)
OMICRON DELTA EPSILON (Economics)
PI KAPPA DELTA (Forensics)
PI SIGMA ALPHA (Political Science)
PHI ALPHA THETA (History)
PSI CHI (Psychology)
RHO CHI (Pharmacy)
SIGMA PI SIGMA (Physics)
SIGMA TAU DELTA (English)
SIGMA THETA TAU (Nursing)
SIGMA XI (Scientific Research)

ACADEMIC STANDING, PROBATION, AND INELIGIBILITY

It is expected that students at Wilkes University will work to their full capacity and potential in all courses. Academic standing reflects progress toward degree completion and is determined according to minimum semester grade point averages achieved.

For the purposes of determining academic standing, *freshmen* are defined as students who have attempted up to 36 credits; *freshmen* must maintain a minimum cumulative grade point average of 1.70 in order to be considered "in good standing" at the University. *Sophomores*, *juniors*, and *seniors* must maintain a minimum cumulative grade point average of 2.00 overall and a minimum grade point average in their major course work to be considered "in good standing" at the University. (Sophomores are defined as students who have completed 30 - 59 credits, juniors as students who have completed 60- 89 credits, and as students who have completed 90 credits or more.)

A student who fails to achieve the required minimum grade point average(s) will automatically be placed on academic probation or declared "academically ineligible." Academic probation serves as a warning to the student that he or she is not making satisfactory progress toward degree completion. Students placed on academic probation may, based upon the recommendation of the student's academic advisor and action by the Academic Standards Committee, be restricted in the number of credits that they may attempt in the following semester. The Academic Standards Committee may impose additional restrictions and requirements in individual cases, if it is determined that such restrictions and requirements are in the best interest of the student. Such restrictions may affect the student's participation in extra-curricular and co-curricular activities.

Students who remain on academic probation for two consecutive semesters are subject to declaration as "academically ineligible" to continue at the University. Students who are declared academically ineligible are not permitted to enroll in any course work at Wilkes for a period of one semester and must, following the semester of mandated leave, apply in writing to the Academic Standards Committee for readmission to the University. The application for readmission must include evidence of the student's prospects for academic success in subsequent semesters. If readmission to the University is approved by the Academic Standards Committee, the student will be readmitted on a probationary basis.

A decision of the Academic Standards Committee may be appealed by the student at the designated meeting for appeals at the conclusion of the fall and spring semesters. Appeals must be presented to the Committee, either in person or by letter, at the appropriate appeals meeting and should include good and sufficient reasons for the appeal.

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ACADEMIC CREDIT FOR DEMONSTRATED COMPETENCY

Wilkes University encourages students to work to their full capacity and to advance in their academic work as rapidly as is appropriate. A number of opportunities to demonstrate competencies beyond those normally associated with graduation from high school are open to qualified high school juniors and seniors, as well as to adults returning to school after an interval of work or military experience. Academic credit may be granted for such demonstrated competencies through a variety of channels including Advanced Placement tests, military educational and training programs, challenge examinations, the College-Level Examination Program (CLEP), Excelsior Exams, DANTES Subject Standardized Tests, and experiential learning portfolios. Each of these opportunities to earn academic credit for demonstrated competencies is described in detail in the sections that follow. (Nursing students are referred to the Nursing section of this Bulletin for detailed information on accelerated programs for LPN and RN students.)

Advanced Placement Program

Students who have passed one or more of the Advanced Placement (AP) Tests administered by the College Entrance Examination Board may request advanced placement in the University, the awarding of academic credit for course work, or both. Advanced Placement means that the student may enroll in a course at a level more advanced than the introductory level; a decision regarding advanced placement is made after review by the academic department concerned of the examination and applicant's scores. The awarding of credit by virtue of qualifying AP test scores means that the student receives academic credit toward the hours required for graduation. Generally, academic credit will be granted for scores of 3, 4, or 5 on the Advanced Placement examination. Occasionally, a personal interview may be required before advanced placement or academic credit is awarded. No grades are assigned to the courses for which the student receives advanced placement credit. Information about specific course examinations and credit may be found by going to www.wilkes.edu and searching on "Advanced Placement."

Credit for Military Experience

Students who have completed the special educational and training programs offered by branches of the American armed services may be awarded academic credit for these programs. Students requesting academic credit for completion of such special programs should submit an official transcript of their work as part of the admissions process. Transcripts will be evaluated according to the guidelines provided by the American Council on Education (ACE), and credits awarded will be applied to the degree program as appropriate. For more information about the awarding of credit for military experience, contact the Admissions Office at (570) 408-4400.

Challenge Examinations

After admission to Wilkes University, a student may request permission to take an examination demonstrating competence in a particular course. The interested student should apply to the appropriate department chairperson for permission to take a challenge examination. The chairperson will approve the student's application in writing only if there is clear evidence that the student has adequate background in the field to attempt the examination. If denied a challenge examination, the student may appeal to the appropriate academic dean. The student may not challenge a course that he or she has previously failed.

A fee of \$90 per credit will be assessed by the Financial Management Office for each approved challenge examination (see "Student Expenses"). The student must present a receipt from the Financial Management Office to the chairperson of the department in which the examination is to be administered; the receipt must be presented at least thirty days prior to the examination date. If the student successfully completes the challenge examination, credit for the course is awarded and posted to the student's transcript. No grade or credit is recorded if the student does not pass the examination.

College-Level Examination Program (CLEP)

Wilkes University awards academic credit on the basis of satisfactory performance on the Subject Examinations, not the General Examinations, of the College-Level Examination Program (CLEP) administered by the College Entrance Examination Board. CLEP scores are evaluated according to the guidelines provided by the American Council on Education (ACE), and credits awarded will be applied to the degree program as appropriate. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek academic credit through the College-Level Examination Program. Inquiries about CLEP should be directed to the Office of Admissions by calling (570) 408-4400. Official scores on CLEP Subject Examination scores should be forwarded directly to the Office of Admissions.

Experiential Learning

Credit for life experience may be granted for documented college-level learning that a student acquired by way of non-collegiate experiences. *Credit is awarded for the learning derived from life experiences, not for the experiences themselves.* Experiential learning is evaluated and credit awarded by the Academic Standards Committee of Wilkes University, based upon the recommendation(s) of the unit dean(s) in which the experiential learning most clearly belongs.

Soon after admission to the University, students who plan to petition for experiential learning credit must inform their academic advisor of their intent. *All other means of securing credit for demonstrated competencies must have been exhausted before applying for experiential learning credit.*

Credit awarded for experiential learning is based exclusively on Wilkes' evaluation of the demonstrated knowledge, which is presented in the student's petition to the Academic Standards Committee. The Academic Standards Committee of the Faculty maintains the guidelines and procedures of the Policy on Experiential Learning and renders the final decision on the awarding of credit. Specific guidelines and procedures for the petitioning and awarding of experiential learning credits are available to interested students in the Office of the Registrar.

GRADUATION REQUIREMENTS

It is the student's responsibility to meet all graduation requirements. Students are expected to be fully familiar with all academic requirements published in the Wilkes University *Undergraduate Bulletin* and to ensure that they are meeting the degree requirements of the University (as specified in the General Education Requirements) and of their major program. Students may elect to follow the degree requirements as stated in the *Undergraduate Bulletin* published when they entered the University, or they may elect to follow the degree requirements published in any subsequent *Bulletin*.

The Faculty of Wilkes University has approved the following requirements that all students must satisfy in order to earn a baccalaureate degree and be eligible for graduation. All students must

- complete a minimum of 120 credit hours;
- satisfy all requirements in the major(s); (requirements for graduation vary among degree programs; see the appropriate section(s) of this Bulletin for the number of credit hours and other requirements for specific majors);
- complete all subjects required for the degree as stated in the *Bulletin* in force at the time of admission to the program or in any subsequent *Bulletin*;
- achieve a minimum cumulative grade point average of 2.00 for all courses;*
- achieve a minimum cumulative grade point average of 2.00 for all subjects in the major(s);*
- achieve a minimum cumulative grade point average of 2.00 for all subjects within the chosen minor(s);*
- demonstrate competence in written and spoken English; and
- satisfy mathematics and computer literacy and other curricular skills and knowledge requirements by participation in assessment procedures.

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*NOTE: Some degree programs require minimum cumulative grade point averages above 2.00 in general course work and in course work in the major. See the appropriate sections of this Bulletin for specific grade point average requirements for each degree.

No student shall be graduated until financial obligations to the University have been fulfilled.

No student shall be allowed to participate in a Commencement ceremony unless all of the above-mentioned graduation requirements have been met.

All candidates for degrees are expected to be present at Commencement. If circumstances prevent their attendance, students must apply to the Vice President for Student Affairs for permission to take the degree or certificate *in absentia*.

DEGREE HONORS

The granting of honors at Commencement is based upon the entire academic record achieved by the student at Wilkes University. Transfer students must have completed a minimum of 60 credits at Wilkes in order to be eligible to be considered for honors.

The minimum requirements for Degree Honors are

<i>Summa cum laude</i> (with highest honors)	3.800
<i>Magna cum laude</i> (with high honors)	3.600
<i>Cum laude</i> (with honors)	3.400

Grade point averages are not rounded for Degree Honors.

ACADEMIC RESOURCES AND SUPPORT SERVICES

CENTER FOR GLOBAL EDUCATION AND DIVERSITY

The Center for Global Education and Diversity was created in 2008 to better prepare students for success in a multicultural world. The Center provides institutional and regional leadership and programming in global education and diversity issues. Most importantly, the Center houses essential services for underrepresented and international students, faculty and staff, and for those seeking an international experience as part of the Wilkes education. Services provided include:

- support for students from underrepresented groups such as women, ethnic and religious minorities, gay/lesbian/transsexual/transgender, and individuals with disabilities;
- support for international students, faculty and staff;
- Study Abroad experiences for students and faculty;
- support for faculty and students interested in the globalization of higher education;
- the Intensive English Program (IEP) for individuals wishing to improve their English language skills;
- multicultural programming; and
- booking of the Multicultural Lounge in the Henry Student Center.

The Center is located in the Max Roth Center at the corner of South Franklin and West South Streets. The Center's staff may be reached by calling (570) 408-7854 (or ext. 7854 from a campus phone).

INTERNATIONAL STUDENT SERVICES

For international students, the Center provides immigration and visa information and assistance, as well as advice on academic, cultural, and personal issues. The Center also provides orientation to life in the United States and the American educational system, assists students in dealings with a variety of offices and constituencies, including U.S. and foreign government agencies, other campus offices and departments, and the community, and serves as advisor to the International Student Organization. These services are available to all international students, non-immigrants and immigrants alike.

INTENSIVE ENGLISH PROGRAM

The mission of the Intensive English Program (IEP) at Wilkes University is to provide quality academic instruction in English as a second language (ESL) to both international and English-language learning students planning to pursue university studies in the United States. To this end, the IEP provides a curriculum, certified faculty, classroom materials, and teaching methods that are well grounded in both theory and practice and based on the latest research findings in the field of second language learning and teaching. This fully accredited program provides

- quality academic English language instruction for students whose native language is not English;
- preparation for further academic study in the U.S.;
- learner-centered instruction;
- advising for successful attainment of academic or professional goals;
- opportunities for intercultural experiences and cooperation;
- services relating to admission, counseling, academic life, and the general success of international students attending Wilkes University;
- English language instruction for personal growth; and
- instruction in accordance with Wilkes University's Writing Across the Curriculum (WAC) program.

All policies and governances found within this *Bulletin* apply to all students participating in the IEP at Wilkes University.

LIBRARY SERVICES

Eugene S. Farley Library

The Eugene S. Farley Library, named in honor of the first president of Wilkes University, is located on the corner of South Franklin and West South Streets. It is one of the largest resource libraries in the region, with more than 200,000 volumes of books and bound journals, over 430 journals and newspaper subscriptions, 10,000 full text online journals, microforms, instructional audio-video materials, and a growing collection of classic films on DVD. The library has fine collections in English and American literature, history, the sciences, mathematics, and sizable collections in other academic disciplines reflected in the University curriculum.

Also housed in the library are the University Archives, four special collections rooms, and a SMART classroom. Students have access to 68 desktop computers and fourteen wireless laptops that can be used anywhere within the library's wireless environment. Farley Library is home to the newly constructed Alden Learning Commons, a technology rich learning environment that has four enclosed group study rooms, twenty open group study areas that can accommodate groups of one to six students, the University Writing Center, and the University Teaching Commons.

Library hours during the academic year are from 8:00 am to 12:00 midnight, Monday through Thursday, 8:00 am to 5:00 pm on Friday, 11:00 am to 6:00 pm on Saturday, and 11:00 am to 12:00 midnight on Sunday. Summer sessions and holiday hours, as well as any changes to the regular library schedule, are posted at the library entrance and on the library Web site. Library services are available online 24/7 at www.wilkes.edu/library.

Telephone: (570) 408-4250.

Farley Library Regulations:

1. Use your valid Wilkes University I.D> card to obtain library privileges.
2. You are responsible for all materials charged out on your identification card. A valid Wilkes I.D. enables Wilkes University students to borrow books year-round at Misericordia University, Keystone College, King's College, Luzerne County Community College, Marywood University, and the University of Scranton.
3. Books circulate for one month. Renewals may be made in person, by telephone, or online from the patron access area of the Farley Library catalog. A book may be renewed once. DVDs circulate for three days (no renewal). Charges are levied for all overdue and damaged materials.

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Failure to pay fines or to return borrowed materials will result in denial of transcripts until fines are paid and materials returned.

4. Periodicals, journals, reference materials, and microform materials do not circulate. Reference materials, periodicals, and journal articles in print and microfilm format may be photocopied in accordance with the provisions of the U.S. copyright law.
5. To provide an optimum environment for study, all cellular phones and pagers must be kept on silent alert (vibration or visible flash) while in the library.
6. The University reserves the right to refer for disciplinary action patrons who have violated Library policy.

Farley Library Services

1. Reference Assistance: Professional staff is available for assisting students in their research endeavors.
2. Library Orientation: Group library orientation can be arranged for students upon request.
3. Bibliographic Instruction: Specific instruction in the use of library collections and reference tools is available for students upon request of the instructor.
4. Interlibrary Loan: This service is provided for students, faculty, and staff to supplement research needs. Inquire at the Reference Department for details.
5. Media Services: Media staff will have audiovisual equipment needed for classroom usage delivered to sites on campus. At least a 24-hour notice is required. Videos and DVDs may be reserved one week in advance of the expected need. The Library Media Room (Room 002) is also available, on a first-come, first-served basis, for classes or events.
6. Reserve Materials: Collateral course reading materials placed on reserve by faculty are maintained at the Circulation Desk.
7. Photocopying facilities for printed materials and micro materials are available in the library. A color copier is located on the first floor. Users are reminded to observe the restrictions placed on photocopying by the U.S. copyright law. The law and interpretative documents are available at the Circulation Desk.
8. Online searching of auxiliary databases is available by appointment through the Reference Department to support faculty research.

Music Collection

Darte Hall, on the corner of South River and West South Streets, houses a separate collection of music scores and recordings. For information about accessing materials housed in the music collection, call (570) 408-4420.

Pharmacy Information Center (PIC)

The Pharmacy Information Center provides resources and services for student and faculty of the Nesbitt School of Pharmacy. It houses an up-to-date collection of drug information materials in print and electronic forms and provides a means for pharmacy students to become more proficient in the selection, evaluation, and use of drug information. The collection in the PIC is non-circulating; however, many additional books that support the pharmacy curriculum are housed in the Farley Library and non-reference titles may be borrowed from there. All School of Pharmacy journals are housed in the PIC. In addition to these print sources, students have access to a number of computerized resources, both on and off campus.

The PIC is generally open Monday - Thursday from 8:00 am to 5:30 pm and Friday from 8:00 am to 4:00 pm. The PIC follows the University holiday schedule. The library is available only until 4:00 pm.

Telephone: (570) 408-4286

PIC Regulations:

1. Books, periodicals, and reserve materials may not be taken from the center.
2. Smoking and food and beverages other than water are prohibited in the PIC.

3. Students will respect others' need for quiet and refrain from behavior that can be regarded as disruptive or a detriment to a positive learning environment.
4. Cell phones must be turned off or set to vibrate while in the PIC. Calls must be answered outside.

PIC Services:

1. Reference Assistance: The librarian will assist students in locating materials and using library resources.
2. Bibliographic Instruction: The librarian will give individual or group instruction in the use of specific reference tools.
3. Interlibrary Loan: Needed books or journal articles that are not owned by Wilkes University may be obtained through Interlibrary Loan at no charge. Most article requests are filled within a few days.
4. Photocopying: A card-operated photocopier is available in the PIC. Please see the librarian to purchase or add money to a debit card.

WRITING CENTER

The University Writing Center, located in the Learning Commons (lower level of the Farley Library), is available to all Wilkes students who seek personal assistance with writing. Instructors may refer students to the Center for help in honing their writing skills.

Introduction

DEGREE PROGRAMS & CURRICULA

Wilkes offers undergraduate programs leading to the Bachelor of Arts, Bachelor of Business Administration, and Bachelor of Science degrees. It also offers a first professional degree program leading to the Doctor of Pharmacy degree. All programs have been carefully designed to prepare graduates to meet the rigorous entrance requirements of graduate and professional schools and to ensure that all Wilkes undergraduates acquire a broad general education essential for responsible contribution to human affairs. Each degree program assures multiple and varied opportunities for students to achieve educational objectives particular to that field of study. All baccalaureate programs also share a set of distinctive goals and Institutional Student Learning Outcomes that derive from the Wilkes University Mission and define the Wilkes baccalaureate educational experience.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

(Adopted by the faculty November 1, 2007)

The students will develop and demonstrate through course work, learning experiences, co-curricular and extracurricular activities

- the knowledge, skills, and scholarship that are appropriate to their general and major field areas of study.
- effective written and oral communication skills and information literacy using an array of media and modalities.
- practical, critical, analytical, and quantitative reasoning skills.
- actions reflecting ethical reasoning, civic responsibility, environmental stewardship, and respect for diversity.
- interpersonal skills and knowledge of self as a learner that contribute to effective team work, mentoring, and life-long learning.

THE CURRICULUM

The Institutional Student Learning Outcomes are addressed and assessed in the academic courses of study by way of a University curriculum comprising three components: the General Education Curriculum; the major area of study; and the elective area or areas of study. These curricular components are interconnected and interdependent and provide meaningful opportunities for each student to meet the requirements of the Institutional Student Learning Outcomes and develop the knowledge, skills, sensibilities, and qualities that, in the words of the founding President of Wilkes University, Dr. Eugene S. Farley, distinguish an educated person.

The *General Education Curriculum* is the central component of all degree programs at Wilkes University. It lies at the heart of every Wilkes baccalaureate degree and defines for all students, regardless of major, a common liberal education experience in the arts and sciences. The General Education Curriculum serves as the foundation for specialized study in a specific academic area or professional field.

The *major degree area* requires in-depth and extended course work and learning experiences in a specialized field of study. Major degree programs prepare students to pursue a chosen career, or meet the entrance requirements for graduate and professional schools, or both. Requirements for each major area of study offered at Wilkes are listed in the appropriate departmental descriptions in this bulletin.

The *elective area of study* enables each student to pursue topics of personal interest, explore new areas of learning, or complete a minor degree or a second major degree.

It is the responsibility of each student to ensure that all degree requirements, including the General Education requirements, are satisfied.

GENERAL EDUCATION: THE FIRST CURRICULAR COMPONENT

The General Education Curriculum is an affirmation of the strong belief of the Wilkes faculty in the value of study in the arts and sciences for all students and includes a broad spectrum of courses designed to stimulate the intellectual, personal, and social development of our students. The requirements of this curriculum are intended to serve as the foundation upon which all degree programs are based.

The General Education Curriculum requirements for all programs follow. Students are urged to use this outline of the requirements as an explanation of the "Recommended Course Sequence" provided for each major degree program described in this bulletin. With the exception of English (ENG) 101, English (ENG) 120, History (HST) 101, and First-Year Foundations (FYF) 101, which are required of all undergraduate students at Wilkes University, the designated "Distribution Requirements" in the "Recommended Course Sequence" for each major is a reference to the following statement of the General Education Curriculum requirements.

General Education Curriculum Requirements

The University faculty has approved the following set of requirements for the General Education Curriculum, which comprises four components: Skill Requirements (0 - 13 credits); First-Year Foundations (3 credits); Distribution Areas (24 credits); and Senior Capstone (variable credit). All undergraduate students must satisfy these requirements in order to be eligible for graduation.

SKILL

REQUIREMENTS

0 - 13 credit hours

All students pursuing the baccalaureate degree at Wilkes University must develop and demonstrate proficiency in five identified Skill Areas~Written Communication, Oral Communication, Quantitative Reasoning, Critical Thinking, and Computer Literacy~as follows:

**WILKES UNIVERSITY GENERAL EDUCATION CURRICULUM
STUDENT LEARNING OUTCOMES**

Written Communication: Students will use written communication to

- create both simple and complex verbal constructs in written formats and multiple genres that conform to the grammatical and syntactical rules and principles of standard American English;
- synthesize and evaluate learned and acquired information and give proper attribution for sources;
- communicate thoughts, ideas, and acquired information clearly, effectively, and purposefully, with diverse audiences.

Oral Communication: Students will use oral communication skills to

- conform to the grammatical and syntactical rules of standard American English;
- convey information, thoughts, and ideas clearly, clearly, effectively, and purposefully, with diverse audiences;
- argue a point persuasively.

Quantitative Reasoning: Students will use quantitative reasoning to

- create, construct, and present data graphically (simply stated, to make a graph)
- solve problems using algebraic methods;
- summarize and evaluate data using simple statistics;
- analyze non-numerical problems to develop numerical solutions.

Critical Thinking: Students will use critical thinking to

- recall relevant information accurately;
- paraphrase relevant information to explain concepts;
- apply information to new contexts;

Introduction

- analyze information;
- synthesize new information from multiple sources;
- evaluate information to formulate and support a position.

Computer Literacy: Students will use computer technology in a responsible manner to

- create a document;
- solve a numerical problem;
- query information;
- present information;
- communicate effectively.

Four of these Skill Areas—Computer Literacy, Written Communication, Oral Communication, and Quantitative Reasoning—are addressed and assessed within the context of specific academic experiences as described below. The development and assessment of Critical Thinking is embedded throughout all components and academic learning experiences of the Wilkes University curriculum.

All students will be tested in skills areas and placed at the appropriate proficiency level. Students may opt or test out of each skill requirement by demonstrating competency through means designated by the department responsible for each skill area. Departments also will offer diagnostic test(s) for each skill area as well as offer guidelines for practice courses in each skill area. Please see your academic advisor for more information on program designated courses that will satisfy these requirements.

Students will develop and demonstrate mastery of the outcomes for Computer Literacy, Written Communication, Oral Communication, and Quantitative Reasoning by means of the following academic experiences:

- I. Computer Literacy
Completion of CS 115 (Computers and Applications) or higher
OR
Completion of 2 "Computer Intensive" courses
minimum 3 credit hours

Students who do not complete CS 115 or test out of this skill area can satisfy the computer literacy requirement by completing courses that appear on the "Computer Intensive (CI) List. The list of computer-literacy skills, as well as a list of available CI courses, is available from the Office of the Registrar.

- II. Written Communication
ENG 101 (English Composition)
4 credit hours

Writing Across the Curriculum: Each undergraduate degree program and the First-Year Foundations Program incorporates writing and the progressive development of written communication skills into its program curriculum. Courses throughout each degree program emphasize writing techniques and styles that are specific to that program of study. Most senior capstone courses have a significant writing component that requires proficiency in writing in order to complete the course.

- III. Oral Communication
Completion of COM 101 (Fundamentals of Public Speaking)
OR
Completion of 2 Oral Presentation Option (OPO) Courses
minimum 3 credit hours

The Registrar's Office maintains a list of OPO courses. OPO courses enable a specified number of students (or all students) in an approved course to complete the requirements for an

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OPO course. Satisfaction of the OPO requirement will not add credits to most students' programs.

- IV. Quantitative Reasoning
Completion of MTH 101 (Solving Problems Using Mathematics)
or higher
minimum 3 credit hours

First-Year
0/3 credit hours*

Foundations

Completion of a First-Year Foundations (FYF) course
3 credit hours

*NOTE: Students who have completed twenty-three (23) or fewer credit hours earned in a college classroom when they matriculate at the University are required to complete an FYF course during their first semester. All students who have completed more than twenty-three (23) credit hours earned in a college classroom when they matriculate at the University are eligible, but not required to take a FYF course. A student may obtain academic credit toward graduation for only one (1) FYF course.

Distribution
24 credit hours

Areas

Area I. The Humanities
minimum 9 credit hours

Student Learning Outcomes in the Humanities:
Students will

- apply practical and critical reasoning skills when solving problems by identifying key issues and demonstrating consideration of and sensitivity to diverse perspectives before rendering a decision (critical judgment);
- analyze problems by considering diverse and varying forms of evidence and multiple perspectives within historical and sociological contexts (historical perspective);
- identify their own ethical codes and those of others with differing perspectives (ethical awareness);
- demonstrate the ability to frame analyses with sound ethical reasoning and defend their position using persuasive argument (ethical awareness);
- exhibit an awareness of the diversity and complexity of human cultural expression (aesthetic expression);
- demonstrate the ability to speak and write effectively in languages including, but not restricted to, standard American English (linguistic awareness); and
- exhibit critical and analytical thinking in their writing (skills).

Students must complete three (3) of the courses listed below.

ENG 120 Introduction to Literature
HST 101 Historical Foundations of the Modern World
Foreign Language at level of competence *OR*

PHL 101 Introduction to Philosophy

Students may request, through their academic advisors, a course substitution within this Area. For more details on course substitution policies for Area I, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Introduction

Area II. The Scientific World

minimum 6 credit hours

Student Learning Outcomes in the Scientific World:

Students will

- identify and describe how science affects current issues and the environment;
- locate and evaluate scientific literature;
- apply scientific facts in an ethical manner;
- present scientific concepts effectively;
- use data analysis to evaluate physical and natural systems; and
- distinguish between data and speculation and explain how scientific ideas evolve as new data accumulates.

Students must complete two (2) of the courses listed below, from two different sub-areas of study. At least one (1) of the two (2) selected courses must include a laboratory component; credit hours vary according to incorporation of the laboratory component.

Sub-Areas	Course Options
Biology	BIO 105 or BIO 121
Chemistry	CHM 105 or CHM 115
Earth and Environmental Sciences	EES 105, EES 211, EES 230, EES 240, EES 251, or EES 271
Physics	PHY 105, PHY 174, or PHY 201

A number of degree programs satisfy the General Education Curriculum requirements in Area II on the basis of successful completion of the science requirements of the individual degree program. The following programs meet the aforementioned criteria by virtue of the degree curriculum: Applied and Engineering Sciences; Biochemistry; Biology; Chemistry; Computer Science (B.S. degree program only); Earth and Environmental Sciences; Electrical, Environmental, and Mechanical Engineering; Engineering Management; Health Sciences; Mathematics (B.S. degree program only); Nursing; Pre-Pharmacy; and Physics.

Students not enrolled in any of the programs listed above may request, through their academic advisors, a course substitution within this Area. For more details on course substitution policies for Area II, contact the Office of the Dean of the College of Science and Engineering. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Area III. The Social Sciences

minimum 6 credit hours

Student Learning Outcomes in the Social Sciences:

Students will

- explain the relative merits of differing social science theories;
- compare and contrast methods of the social sciences with those of other fields, focusing on how quantitative and qualitative analyses inform these fields;
- identify factors that shape human behavior, how society influences the individual and how the individual influences society; and
- explain the relationship of economic and political institutions in shaping individuals and society.

Students must complete two (2) of the five (5) courses listed below.

ANT 101	Introduction to Anthropology
EC 102	Principles of Economics II
PS 111	Introduction to American Politics
PSY 101	General Psychology

Students may request, through their academic advisors, a course substitution within this Area. For more details on course substitution policies for Area III, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Area IV. The Visual and Performing Arts
minimum 3 credits

Student Learning Outcomes in the Visual and Performing Arts:
 Students will

- create, recreate, or interpret works of art;
- analyze, critique, and evaluate archetypal works of art from a sampling of representative world cultures in written and oral formats, using methodologies and vocabularies appropriate to the specific artistic discipline studied;
- explain, in written and oral formats, the rich and diverse legacy of human thought and creativity in the arts and articulate the role and value of the arts in society and in one's own life.

Students will achieve at least two of the three identified outcomes.

Students must complete one (1) of the four (4) courses listed below.

ART 101	Experiencing Art
DAN 100	Dance Appreciation: Comprehensive Dance Forms
MUS 101	Introduction to Music I
THE 100	Approach to Theatre

By means of a successful presentation (performance audition or artwork portfolio review) and written permission of the Chair of the Division of Performing Arts or the Integrative Media Arts Department, students may substitute three (3) credit hours of performance or studio experience for the above requirement. For more details on course substitution policies for Area IV, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from, and completed forms must be returned to, the Student Services Center.

Senior
credits vary

Capstone

Each student is required to complete a Senior Capstone course or experience in his or her major field of study as specified in the requirements for each degree program. For details about the capstone course or experience, see the degree requirements for the selected academic program. Satisfaction of this General Education Curriculum requirement will not add credit hours to most students' programs of study.

THE MAJOR: THE SECOND CURRICULAR COMPONENT

In addition to satisfying the requirements of the General Education Curriculum, each student must complete a major in an academic discipline or area of concentration in order to graduate from the University. Specific requirements for each major are described in detail in the departmental listings in this *Bulletin*. The major area of study must be declared prior to the first semester of the student's junior year.

Wilkes University offers three baccalaureate degrees—the Bachelor of Arts Degree; the Bachelor of Science Degree; and the Bachelor of Business Administration Degree—and Secondary Education

Introduction

Certification. See each degree listing for a list of subject areas for each degree.

Bachelor of Arts Degree — Majors

Majors in the Bachelor of Arts degree program may be selected from the following subject areas:

Biochemistry	Elementary Education	Musical
Biology	English	Philoso
Chemistry	History	Politica
Communication Studies	Individualized Studies	Psychol
Computer Science	Integrative Media	Sociolo
Criminology	International Studies	Spanish
Earth and Environmental Sciences	Mathematics	Theatre

Bachelor of Science Degree — Majors

Majors in the Bachelor of Science degree program may be selected from the following subject areas:

Accounting	Computer Science	Individualized Stu
Applied and Engineering Sciences	Earth and Environmental Sciences	Mathematics
Biochemistry	Electrical Engineering	Mechanical Engir
Biology	Engineering Management	Medical Technol
Chemistry	Environmental Engineering	Nursing
Computer Information Systems		Pharmaceutical S

Bachelor of Business Administration Degree

Majors in the *Bachelor of Business Administration degree* program may be selected from the following subject areas:

Business Administration
Entrepreneurship

Teacher Education

Students who wish to prepare for a teaching career in secondary schools select an appropriate disciplinary major and use their elective credits to meet teacher certification requirements. Students who wish to prepare for a teaching career in elementary education major in Elementary Education. A list of the courses needed for certification is provided in the departmental description of the Department of Education and in this *Bulletin*. Students planning a teaching career must seek counseling in the Department of Education early in their first semester.

ELECTIVE COURSES: THE THIRD CURRICULAR COMPONENT

The third component of the Wilkes University Curriculum, after the General Education Requirements and the Major, is composed of Elective Courses. Students choose elective courses for a variety of reasons: to complete a minor area of study, a second major, or a second degree; to pursue a special area of interest; to meet requirements for admission to graduate or professional schools; or to enhance, refine, and further develop specific skills.

Minors

Students frequently select elective courses in order to complete a minor in a field other than the major field of study. Although not required for graduation, minor degree study is formally recognized on the student's transcript and may enhance a student's credentials. Students are ineligible for formal recognition of a minor in the same discipline as the major field of study. Students should consult the departmental listing in this bulletin to review the requirements for formal recognition of a minor field in specific disciplines. A minimum of one-half of all minor field credits must be completed at Wilkes. Formal application for an academic minor must be made to the University Registrar; application forms are available in the Student Services Center.

Double Major

Students may choose to use their elective credits to complete a second major. The student must declare intent to graduate with a double major by completing the appropriate form available at the Student Services Center. It is the student's responsibility to secure the approval of the chairpersons of both departments to ensure that all requirements of the two majors are fulfilled.

Second Baccalaureate Degree

Students who hold a bachelor's degree with a major in one discipline from Wilkes University or another accredited institution may earn a second baccalaureate degree at Wilkes by completing a major in another discipline, provided the following conditions are met.

- Candidates for the second degree must earn at least thirty (30) credits at Wilkes beyond those required for the first degree.
- Candidates for the second degree must meet all of the Wilkes requirements for a degree.
- Wilkes students may graduate with two bachelor's degrees simultaneously, but they must complete thirty (30) credits beyond the requirements for the first degree to be eligible for the second degree at the time of graduation.

If students choose to return to the University to earn a second degree, they must complete the requirements for the additional major beyond any majors earned during the pursuit of the first degree.

COLLEGE OF GRADUATE AND PROFESSIONAL STUDIES

The following programs are offered or coordinated through the College of Graduate and Professional Studies. Complete information about the College can be found on the Wilkes University Web site: <http://www.wilkes.edu/graduatestudies> or by phone at (570) 408-4235.

Part-time Studies

The University welcomes part-time undergraduate students into all of its regular sessions. Wilkes has established the Evening schedule to maximize opportunities for students who cannot attend day classes. Evening classes are offered in a variety of disciplines, and students may use this option, in addition to the regular day class offerings, as their commitments and interests permit. Many students complete their degree requirements in one or more of the special formats and scheduling options available through the College of Graduate and Professional Studies.

Non-degree seeking students may be admitted to classes that they are qualified to take by reason of their maturity, previous education, and work experience. Secondary school training is desirable, but not necessary, provided the student is qualified to follow such special courses of instruction. Inquiries about all of these programs should be directed to the Office of Graduate and Professional Studies.

Evening Opportunities

This program is designed to meet the needs of students who cannot attend daytime classes but wish to pursue or complete a degree. Evening courses generally meet one or two nights per week during the academic year and two nights per week during the nine-week evening summer session. Course work is available in Accounting, Art, Business Administration, Communication Studies, Computer Science, Economics, Education, Electrical Engineering, Environmental Engineering, History, Mathematics, Nursing, Political Science, Psychology, and Sociology. These flexible classroom offerings provide upper-division courses on campus and enable graduates of accredited two-year institutions to complete bachelor's degrees in certain majors by taking courses beyond the traditional daytime hours. Many of the above-listed subjects lead to degree completion. Inquiries about these programs should be directed to the College of Graduate and Professional Studies.

Summer Courses

Wilkes offers a variety of summer courses, workshops, mini-courses, and programs with outdoor activities during the summer months. The summer schedule includes a three-week Pre-Session, two five-week Day Sessions, and a nine-week Evening Session, plus special sessions. Students interested in the summer programs should contact the College of Graduate and Professional Studies for

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specific course and scheduling information. Please request special summer discount information through the College of Graduate and Professional Studies at (570) 408-4235.

Graduate, Post-Baccalaureate and Certificate Programs

Wilkes University continues to expand its role in post-baccalaureate offerings. Please call the College of Graduate and Professional Studies to inquire about certificate and post-baccalaureate programs. The University offers doctoral degrees in Educational Leadership (Ed.D.), Nursing (DNP), and Pharmacy Practice (PharmD.). Master's degrees are available in the fields of Business Administration (MBA), Creative Writing (MA and MFA), Education (MS Ed, with various concentrations), Electrical Engineering (MSEE), Engineering Operations and Strategy (MS), Mathematics (MS) and Nursing (MS). A separate Graduate Bulletin, which describes graduate programs in detail, is available upon request from the College of Graduate and Professional Studies.

Advanced Placement Summer Institute

Wilkes University, in cooperation with the College Board, annually hosts the Advanced Placement Summer Institute. This program is designed for people who teach, or wish to teach, AP-Biology, Calculus AB, Chemistry, Computer Science, English, Environmental Science, Physics, Statistics, or US History. Each course will review the latest changes and shifts in emphasis in the AP syllabus. Advanced Placement Summer Institute is a one-week program taken for three (3) graduate credits or audited. Specific questions about the Institute may be directed to the College of Graduate and Professional Studies.

Non-Credit Continuing Education

Wilkes University is committed to providing innovative, lifelong learning opportunities by extending the University's resources to a diverse audience whose educational interests require flexibility and creative delivery. We offer programs for many professionals including Accountants, Engineers, Nurses, Pharmacists, Counselors, AP Teachers, Social Workers, and Psychologists. Learning experiences take the form of non-credit, certificate programs, non-credit courses, conferences, and institutes. To meet the needs of the community, we offer courses on the Wilkes University campus, at various off-site locations and at business locations. Inquiries about offerings should be directed to the College of Graduate and Professional Studies.

COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

INTEGRATIVE MEDIA

DIVISION OF BEHAVIORAL AND SOCIAL SCIENCES

DEPARTMENT OF COMMUNICATION STUDIES

DIVISION OF HUMANITIES

DEPARTMENT OF VISUAL AND PERFORMING ARTS

COLLEGE OF ARTS,
HUMANITIES, AND SOCIAL
SCIENCES

DEAN: DR. LINDA A. WINKLER

MISSION STATEMENT

The College of Arts, Humanities, and Social Sciences prepares students for life and work in a diverse and changing world. In fulfilling its responsibility to the general education core experience for all undergraduate students, the faculty of the College conveys an understanding of the interconnections of human experience through the foundational study of art, expression, culture, and society. Within the college's programs of study, students discover challenging academic preparation for successful professional lives. They benefit from close faculty interaction and attention throughout their learning journey toward becoming intellectually resourceful, civically responsible citizens of the world.

In the College of Arts, Humanities, and Social Sciences students pursue degrees that develop critical and analytical skills to become creative problem solvers and acquire the necessary attitudes, knowledge, and skills to remain lifelong learners in their personal and professional lives. The College fosters pre-professional experiences leading to postgraduate study, and many undergraduate majors offer valuable professional opportunities through field experience and internships. The College is enriched culturally, academically, and professionally through strong connections to the local and regional communities. The Wilkes Community Conservatory, the Sordani Art Gallery, and the Allan Hamilton Dickson Endowment enhance the arts and humanities on campus and in the community.

In addition, the College has many special programs, resources, and state-of-the-art facilities that incorporate professional and practical experiences into the student's learning journey. The Dorothy Dickson Dart Center for the Performing Arts showcases campus performances in music, theatre, and dance. Students may gain professional experience in a variety of media at the radio station, WCLH, the campus newspaper, *The Beacon*, the literary magazine, *Manuscript*, the student-run public relations firm, Zebra Communications, at Studio 20, the student-run design firm, and the professional television studio at the Shelburne Telecommunications Center. In the Writing Center, specially trained student writing

consultants provide assistance in writing to the entire University, engage in research, and present papers at national conferences.

The College includes the following academic departments and divisions:

Behavioral and Social Sciences
Communication Studies
Humanities
Integrative Media Arts
Performing Arts

Bachelor's Degrees—Majors and Minors

Art (minor only)
Communication Studies
Criminology
Dance (minor only)
English
History
Integrative Media
Economics (minor only)
Music (minor only)
Musical Theatre
Neuroscience (minor only)
International Studies
Philosophy
Policy Studies (minor only)
Political Science
Psychology
Sociology
Spanish
Theatre Arts
Women's Studies (minor only)

DIVISION OF BEHAVIORAL & SOCIAL SCIENCES

CHAIRPERSON: DR. ROBERT C. TUTTLE

Faculty: Professors: Baldino, Bohlander, Charnetski, Garr, Merryman

Associate Professors: Kreider, Schicatanano, Seeley, Tindell, Tuttle

Assistant Professors: Cunningham-Stringer, Miller, Selden, J. Thomas

Faculty Emeriti: DeYoung, Farrar, Natzke, Stetten, Tuhy

CRIMINOLOGY MAJOR

COORDINATOR: DR. TUTTLE

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CRIMINOLOGY LEADING TO THE B.A. DEGREE – 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR – 18.

The Division of Social Sciences offers an interdisciplinary major in Criminology. Designed for flexibility and appeal to both the practicing professional and the student seeking admission to graduate school, the program incorporates a variety of carefully chosen courses in sociology, psychology, political science and economics, such as Criminology, Juvenile Delinquency, Psychopathology, Forensic Psychology, Criminal Law, and the Economics of Crime, leading to the Bachelor of Arts degree in Criminology. Internships in the areas of corrections, law enforcement and the administration of justice are readily available to eligible students. Credit hours in internships may not be applied to the 45 hours required in the major.

Information about the program and about career opportunities in the field may be obtained from the advisor to this program.

CRIMINOLOGY MAJOR

A major in Criminology consists of 45 hours, including introductory courses (12 hours), criminology core courses (21 hours), major electives (9 hours), and a capstone course (3 hours):

<i>Introductory Courses (12 hours)</i>		<i>credits</i>
PS 233	Law & Society	3
EC 102	Microeconomics	3
PSY 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
<i>Criminology Core Courses (21 hours)</i>		
EC 320	Economics of Crime	3

PS 232	Criminal Law	3
PSY 242	Personality	3
PSY 352 or PSY 355	Psychopathology or Forensic Psychology	3
SOC 222	Criminology	3
PS 261 or SOC 371	Concepts and Methods in Political Science or Methods of Social Research	3
PS 265 or SOC 373	Quantitative Reasoning in the Social Sciences	3

Major Electives (9 hours)

PS 332	Civil Rights and Liberty	3
PSY 352 or PSY 355	Psychopathology or Forensic Psychology	3
SOC 215	Family Violence	3
SOC 223	Drugs and Alcohol in American Society	3
SOC 225	Juvenile Delinquency	3
SOC 226	Corrections, Probation and Parole	3
SOC 228	Deviance and Social Control	3
SOC 235	Corrections Counseling	3

Capstone (3 hours)

SOC 390	Senior Capstone in Sociology	3
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CRIMINOLOGY MINOR

A minor in Criminology consists of 18 hours, including SOC 222: Criminology, a course that all students must complete. In addition, the Criminology minor must complete at least 1 course from each of the content areas listed below:

Content area I: Economics – 3 Hours

EC 320 Economics of Crime*

Content area II: Political Science – 3 Hours

PS 232 Criminal Law
PS 233 Law & Society
PS 332 Civil Rights & Liberty*

Content area III: Psychology – 3 Hours

PSY 352 Psychopathology*
PSY 355 Forensic Psychology*

Content area IV: Sociology – 3 Hours

SOC 215 Family Violence*
SOC 223 Drugs & Alcohol in American Society*
SOC 224 Corrections, Probation, and Parole
SOC 225 Juvenile Delinquency
SOC 228 Deviance & Social Control

College of Arts, Humanities, and Social Sciences

SOC 235 Corrections Counseling		15
<i>* Students must complete all course prerequisites.</i>		
CRIMINOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE		
First Semester		
Eng 101 Composition or	4	
Distribution Requirement	3	
Soc 101 Introduction to Sociology	3	
Psy 101 Introduction to Psychology	3	
Distribution Requirement	3	
FYF 101 First-Year Foundations	3	
	<hr/>	15-16
Second Semester		
Eng 101 Composition or	4	
Distribution Requirement	3	
Major Elective	3	
Distribution Requirements	6	
Free Elective	3	
	<hr/>	15-16
Third Semester		
Soc 222 Criminology	3	
Psy 242 Personality	3	
Distribution Requirement	3	
Free Elective	6	
	<hr/>	15
Fourth Semester		
Major Elective	3	
Free Electives	3	
EC 102 Microeconomics	3	
PS 233 Law and Society	3	
Distribution Requirement	3	
	<hr/>	15
Fifth Semester		
EC 320 Economics of Crime	3	
PS 232 Criminal Law	3	
Free Elective	3	
Distribution Requirements	6	
	<hr/>	15
Sixth Semester		
Major Electives	3	
Distribution Requirement	3	
Free Electives	3	
Psy 352 Psychopathology or	3	
Psy 355 Forensic Psychology	3	
SOC 371 Methods of Social Research or	3	
PS 261 Concepts & Methods in PS	3	
	<hr/>	

Seventh Semester	
SOC 373/PS 265 Quantitative Reasoning for the Social Sciences	3
Free Electives	12
	<hr/>
	15
Eighth Semester	
SOC 390/PS 390 Senior Capstone	3
Free Electives	11
	<hr/>
	14

ECONOMICS MINOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The Social Sciences Division offers a minor program in Economics. For students who have chosen other majors, a minor in Economics often is a valuable complement. Its ability to bring into sharp focus the economic issues and problems subsumed in such areas as business administration, political science, sociology, history, pre-law, music or engineering make it a valuable career asset. The minor program in Economics requires the completion of EC 101 and EC 102 and at least 12 additional credits in economics courses, chosen in consultation with an academic advisor in the Division of Social Sciences.

INTERNATIONAL STUDIES MAJOR

COORDINATOR: DR. ANDREW MILLER

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN INTERNATIONAL STUDIES LEADING TO THE B.A. DEGREE — 120.

The interdisciplinary major in International Studies (I.S.) provides an excellent liberal arts preparation for a variety of careers and professions. The major is structured to permit concentration in fields leading to specific careers in business, government, international organizations, the military, or any technical or arts field. It is also structured to permit a period of study abroad with easy transfer of credits to the major.

The total number of hours required for graduation with an International Studies major is 120, of which 45 are within the major. For the International Studies major, the following courses at the introductory level are required: History 101; Economics 101-102; Political Science 141, 151, 261; Anthropology 102; Earth and Environmental Sciences 105*; International Studies 380; and Foreign Language at 203-204 competency or equivalent.

Students are also required to take 15 content hours. Students will select three content areas and take a minimum of 6 hours within any two content areas. 9 credits from the content areas must be at the 300 level or above. Specific courses contributing to one of these concentrations and the I.S. requirements will be worked out with the I.S. coordinator and may include courses taken while studying abroad at another institution.

* Only EES 105, "The Global Environment," will count towards the I.S. major.

**INTERNATIONAL STUDIES MAJOR:
CONTENT AREAS AND MAJOR ELECTIVES:**

Content Area I: Political Science

- PS 242 International Law and Organizations**
- PS 251 European Politics**
- PS 350 Comparative Politics**

Content Area II: History

- HST 341-342 History of Great Britain**
- HST 345 History of Northeastern Europe**
- HST 346 History of the Balkans**
- HST 348 History of Russia**
- HST 356 Europe, 1900-1960**
- HST 357 The World Since 1945**
- HST 367 History of Modern India**

Content Area III: International Business and Economics

- BA 358 International Business**
- EC 340 International Trade and Finance**

Content Area IV: Anthropology

- ANT 212 Peoples and Cultures of the World**

Content Area V: Languages

Foreign Language above 204 level.

Content Area VI: Global Environmental Policy

- EES 210 Global Climatic Change**
- EES 218 Environmental Ethics**
- EES 242 Environmental Health**
- EES 261 Regional Geography**
- EES 341 Freshwater Ecosystems**
- EES 343 Marine Ecology**
- EES 344 Ecology**

Classes not listed above, but which are applicable to International Studies, may be approved by the International Studies Coordinator. Additional language classes may be available through the Wilkes-Misericordia-King's Cross-Registration program.

INTERNATIONAL STUDIES MINOR

A minor in International Studies consists of 18 hours, including ANT 102, HST 101, PS 151, which all students must complete.

In addition, the International Studies minor must complete 9 hours from the classes listed below from at least 2 different Content Areas.

Content Area I: Political Science

- PS 141 Introduction to International Politics**
- PS 242 International Law and Organizations**
- PS 251 European Politics**
- PS 350 Comparative Politics**

Content Area II: History

- HST 345 History of Northeastern Europe**
- HST 346 History of the Balkans**
- HST 348 History of Russia**
- HST 356 Europe, 1900-1960**

Content Area III: International Business and Economics

- BA 358 International Business**
- BA 398 International Business Experience**
- EC 102 Principles of Economics II**
- EC 340 International Trade and Finance**

Content Area IV: Anthropology

- ANT 212 Peoples and Cultures of the World**

Content Area V: Languages

Foreign Language at or above the 101-102 level.

Content Area VI: Global Environmental Policy

- EES 105 Planet Earth**
- EES 210 Global Climatic Change**
- EES 261 Regional Geography**

Classes not listed above, but which are applicable to International Studies, may be approved by the International Studies Coordinator. Additional language classes may be available through the Language Institute.

INTERNATIONAL STUDIES MAJOR-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Eng 101 Composition or	4
Distribution Requirement	3
Ec 101 Principles of Economics I	3
PS 151 Governments of the World	3
Distribution Requirements	3
FYF 101 First-Year Foundations	3
	15-16
Second Semester	
Eng 101 Composition or	4

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Distribution Requirement	3
Hst 101 Modern World	3
Ec 102 Principles of Economics II	3
PS 141 Introduction to International Politics	3
COM 101 Public Speaking	3
	<hr/>
	15-16
Third Semester	
EES 105 Planet Earth	3
Ant 102 Cultural Anthropology	3
CS 115 Computers and Applications	3
Foreign Language*	3
Distribution Requirement	3
	<hr/>
	15
Fourth Semester	
Foreign Language*	3
ENG 120 Literature	3
Distribution Requirements	6
Content Hours	3
	<hr/>
	15
Fifth Semester	
Study Abroad or Free Electives**	15
	<hr/>
	15
Sixth Semester	
Study Abroad or Free Electives**	15
	<hr/>
	15
Seventh Semester	
PS 261 Concepts and Methods	3
Content Hours	9
MTH 101 Solving Problems	3
	<hr/>
	15
Eighth Semester	
IS 380 Senior Capstone	3
Content Hours	3
Free Electives	8
	<hr/>
	14

*These courses are required for all International Studies Majors.

**Students may elect to spend their junior year on campus. Courses will be selected in consultation with the International Studies Advisor.

POLITICAL SCIENCE MAJOR

TOTAL MINIMUM NUMBER OF CREDITS FOR A MAJOR IN POLITICAL SCIENCE LEADING TO A B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN POLITICAL SCIENCE — 18.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN POLICY STUDIES — 18.

A major in Political Science requires 120 hours. These include 43 hours in the University's General Education Requirements and 42 hours in political science. All majors must take the following courses that comprise the Core in political science: PS 111, 141, 151, 260, 261, 265, 380, a total of 21 credit hours. Students must then choose an additional 21 credits in political science of which at least 9 credits come from courses at the 300-level or higher.

Students majoring in Political Science may receive a Pennsylvania Teaching Certificate for teaching Social Studies in grades 7-12.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 180, ED 190, ED 191, ED 220, ED 380, ED 381, ED 390, EDSP 210, EDSP 225, and EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses, a cumulative 3.0 to remain in the Teacher Education Program, and pass the appropriate PRAXIS tests in order to be certified.

As a traditional liberal arts discipline, students who choose to major in Political Science are broadly trained and so have a wide variety of career options available. Among the most common fields of employment are government, law, education, social services, media, business, and foreign/international service.

See the Pre-Law section for information on law school advising and admissions.

POLITICAL SCIENCE MINOR

A minor in Political Science requires 18 credits and that the student take PS 111, 141, 151, 260 and an additional 6 credits at least 3 of which must be at the 300 level.

POLICY STUDIES MINOR

A minor in Policy Studies requires that the student take the following 4 Political Science courses and an additional 6 credits in policy courses. These courses may include an offering from outside of the Political Science Department, but it must be approved by an advisor in the Department before the course is taken.

Policy Studies Minor requirements:

PS 111 Introduction to American Politics	3
PS 141 Introduction to International Politics	3
PS 221 Introduction to Public Administration	3
PS 224 Public Policy Analysis	3
PS 298/PS 398 Special Topics (in any policy area)	6

POLITICAL SCIENCE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ENG 101 Composition or Distribution Requirement	4
PS 111 Intro. to American Politics	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	15-16

Second Semester

Eng 101 Composition or Distribution Requirement	4
PS 141 Intro. to International Politics	3
Distribution Requirements	9
	15-16

Third Semester

PS 151 Governments of the World	3
PS 261 Concepts and Methods in PS	3
Distribution Requirements	9
	15

Fourth Semester

PS 260 Intro. to Political Thinking	3
PS 265 Quantitative Reasoning	3
PS 200-Level Elective	3
Distribution Requirements	3
Free Elective	3
	15

Fifth Semester

PS 200-Level Elective	3
PS 200- or 300-Level Elective	3
PS 300-Level Elective	3
Free Electives	6
	15

Sixth Semester

PS 200-Level Elective	3
PS 200- or 300-Level Elective	3
PS 300-Level Elective	3
Free Electives	6
	15

Seventh Semester

PS 380 Senior Research/Capstone*	3
Free Electives	12 or 15
	15

Eighth Semester

PS 380 Senior Research/Capstone*	3
Free Electives	11 or 14
	14

* Seniors must complete only one PS 380 course.

PSYCHOLOGY MAJOR

COORDINATOR: DR. TINDELL

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN PSYCHOLOGY LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN PSYCHOLOGY — 18.

TOTAL MINIMUM NUMBER OF CREDITS FOR A MINOR IN NEUROSCIENCE — 28.

The Psychology major at Wilkes University emphasizes a scientific approach to the content, methods, and theories of human and nonhuman behavior. Wilkes students are prepared to pursue professional careers in psychology or related fields such as medicine or law, obtain employment immediately upon graduation, or attend graduate school in psychology.

The Psychology major must complete a minimum of 120 credit hours. In addition to satisfying the University's General Education requirements, the student majoring in Psychology completes a minimum of 39 credits in psychology. All students must take PSY 101 (General Psychology), PSY 200 (Research Design & Statistics I), PSY 300 (Research Design & Statistics II), and PSY 400 (Senior Capstone). PSY 101 is a prerequisite to all other psychology courses. PSY 200 should be completed prior to the junior year, PSY 300 prior to the senior year, and PSY 400 during the senior year. Students in PSY 400 will run projects proposed in PSY 300. Students will not be allowed to take PSY 400 until they have successfully completed PSY 300, and have proposed an acceptable capstone project. Departmental approval of the project is required prior to enrollment in PSY 400. The student majoring in Psychology must take at least one course each from Content Areas I, II, III, and IV, and at least two courses from Content Area V. The Psychology major must take either BIO 105 (Human Biology) or another biology course approved by the

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department. It is strongly recommended that the student take a foreign language. Students are strongly urged to take CAR 198 during their junior year. Taking this course will waive a career component of the capstone course.

Students are encouraged to consult the *Undergraduate Bulletin* for all information regarding degree requirements. Each student should also meet frequently and work closely with the faculty advisor in order to make the optimal course selections based upon the student's interests and career goals. With numerous free elective credits many Psychology majors choose to major or minor in a second discipline.

The Tracking Program within the major assists students in focusing on more specific career and graduate school goals. Tracks exist in Liberal Arts, Professional, Educational Psychology, and Neuroscience/Behavioral Medicine. Students will select a track, in consultation with the advisor, and complete the course requirements of the track in addition to the general requirements of the Psychology major. Majors are also encouraged to consider the many credit-bearing cooperative education (internship) and independent study opportunities that are available. These experiences enhance the student's employment potential and graduate school opportunities.

The Content Areas with their corresponding courses are as follows:

Content Area I – Biological Foundations

- Psy 311 Behavioral Neuroscience (4 credits)
Psy 312 Sensory and Perceptual Processes (4 credits)

Content Area II – Human Development

- Psy 221 Developmental Psychology (3 credits)
Psy 222 Adolescent Psychology (3 credits)

Content Area III – Cognition/Critical Thinking

- Psy 331 Cognition (3 credits)
Psy 333 Critical Thinking in Psychological Science (3 credits)

Content Area IV – Social/Personality

- Psy 242 Personality (3 credits)
Psy 341 Social Psychology (3 credits)

Content Area V – Applied

- Psy 351 Behavioral Medicine (3 credits)
Psy 352 Psychopathology (3 credits)
Psy 353 Clinical Methods in Psychology (3 credits)
Psy 354 The Exceptional Individual (3 credits)
Psy 355 Forensic Psychology (3 credits)

- Psy 356 Industrial/Organizational (3 credits)
Psy 357 Neuropsychology (3 credits)
Psy 358 Psychological Tests and Measurements (3 credits)
Psy 359 Psycho-pharmacology (3 credits)

All students majoring in Psychology complete a common set of courses in the major.

These courses are as follows:

Course number	Course title	Credits
Psy 101	General Psychology	3
Psy 200	Statistics in Psychology	4
Psy 300	Experimental Psychology	4
Psy 400	Senior Capstone	3

Students majoring in Psychology must also select and complete a Track, a specific area of concentration, within the major. The four Tracks, and the course requirements within each Track, are as follows:

I. Liberal Arts Track

At least one course from each of the following Areas: I, II, III, IV

At least two courses from Area V

Any two psychology elective courses

II. Professional

At least one course from each of the following Areas: I, II, III, IV

At least two courses from Area V

PSY 395-396 Individualized Study

PSY 399 Cooperative Education

III. Educational Psychology Track

Course number	Course title	Credit
PSY 312	Sensory & Perceptual Processes	4
PSY 221	Developmental Psychology	3
PSY 222	Adolescent Psychology	3
PSY 242	Personality	3
PSY 331	Cognition	3
PSY 352	Psychopathology	3
PSY 354	The Exceptional Individual	3
PSY 358	Psychological Tests & Measurements	3
PSY 399	Cooperative Education**	3

**Waived through student teaching

IV. Neuroscience/Behavioral Medicine Track

<i>Course number</i>	<i>Course title</i>
PSY 311	Behavioral Neuroscience
PSY 312	Sensory & Perceptual Processes
PSY 221	Developmental Psychology
PSY 242	Personality
PSY 331	Cognition
PSY 351	Behavioral Medicine
PSY 352	Psychopathology
PSY 353	Clinical Methods in Psychology
PSY 354	The Exceptional Individual
PSY 357	Neuropsychology
PSY 359	Psychopharmacology
PSY 395-396	Independent Research
PSY 399	Cooperative Education

PSYCHOLOGY MINOR

Students who elect to minor in Psychology must complete 18 credits. This includes PSY 101 and PSY 200 and at least 12 additional credits in psychology.

NEUROSCIENCE MINOR

COORDINATOR: DR. SCHICATANO

The Departments of Psychology and Biology offer an interdisciplinary minor in Neuroscience. The Neuroscience minor provides students with a basic science background, emphasizing a broadly based, yet integrated approach to understanding the neural mechanisms controlling human or animal behavior. The program is designed to prepare students who are interested in studying neuroscience, pharmacology, and/or medicine. To earn a minor, students must complete 28 credits in the courses listed below:

List of required courses for the minor

Psy 101 General Psychology

Psy 200 Psychology Statistics (3 credits) or Mth 150 Elementary Statistics (3 credits)
 Psy 311 Behavioral Neuroscience (4 credits)
 Psy 357 Neuropsychology (3 credits)
 Psy 359 Psychopharmacology (3 credits) or Pha 450 Neuropharmacology of Drugs of Abuse (3 credits)
 Bio 121 Principles of Modern Biology I (4 credits)
 Bio 226 Molecular and Cellular Biology (4 credits)
 Bio 116 Human Anatomy & Physiology or Bio 321 Mammalian Physiology (4 credits) or
 Pha 331 and 332 Medical Anatomy & Physiology I & II

PSYCHOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester		
Psy 101 General Psychology	3	
Eng 101 Composition or Distribution Requirement		3-4
Bio 105 Human Biology	3	
Distribution Requirement		3
FYF 101 First-Year Foundations	3	
	<hr/>	15-16
Second Semester		
Major Elective	3	
Eng 101 Composition or Distribution Requirement		3-4
Distribution Requirements		9
	<hr/>	15-16
Third Semester		
Major Elective or Psy 200 Research Design and Statistics I	3-4	
Major Elective	3	
Distribution Requirements		6
Free Elective	3	
	<hr/>	15-16
Fourth Semester		
Major Elective or Psy 200 Research Design and Statistics I	3-4	
Major Elective	3	
Distribution Requirements		6
Free Elective	3	
	<hr/>	15-16
Fifth Semester		
Psy 300 Research Design & Statistics II or Area I Major Requirement	4	
Major Electives	6	
Free Elective	3	
CAR 198 (Strongly Recommended)	1	
	<hr/>	14

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Sixth Semester	
PSY 300 Research Design & Statistics II or Area I Major Requirement	4
Major Elective	3
Free Electives	9
	<hr/> 16
Seventh Semester	
Psy 400 Senior Capstone or Free Elective	3
Free Electives	12
	<hr/> 15
Eighth Semester	
Psy 400 Senior Capstone or Free Elective	3
Free Electives	10
	<hr/> 13

SOCIOLOGY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN SOCIOLOGY LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

A major in Sociology prepares students for a variety of careers. Students who graduate with a major in Sociology find jobs in social services, criminal justice, business, and education. Students who decide to pursue a graduate education can do so in a variety of fields including sociology, law, social work, business and psychology among others.

A unique feature of the program in Sociology is its flexibility. Students have the opportunity to pursue a full range of academic options beyond the major. For example, utilizing existing programs and courses, it is possible for students to achieve a dual major in Sociology and Psychology, Sociology and Criminology, or to finish an MBA in slightly more than one calendar year after completion of their B.A. degree.

A major in Sociology consists of 36 hours, including Soc 101, either Ant 101 or Ant 102, Soc 371, Soc 373, Soc 381 and Soc 390. All anthropology courses may be taken for credit toward the major or minor in Sociology. Also Phl 230 and/or Phl 250 may be taken for credit toward the major. Courses required in the major such as Soc 101 and Ant 101 may also be used to fulfill distribution requirements. The department emphasizes internships in professional settings which integrate academic studies with work experiences such as Soc 393

Practicum and Soc 399 Cooperative Education. The credit hours earned in Soc 393 and Soc 399 may not be applied toward the 36 hours required for the major.

SOCIAL WORK/HUMAN SERVICES

Students interested in careers in drug and alcohol counseling, agency counseling, social work, or other human services occupations are urged to take at least three courses in social work, two courses in psychology, and complete 120 hours of supervised practical field experience in a professional setting (Soc 399). The latter requirement may be completed under the auspices of the Cooperative Education Program.

PRE-LAW

Students interested in law school may major in any field. Sociology provides appropriate preparation for legal studies. See the Pre-Law section in this Bulletin for further details.

ANTHROPOLOGY

Students can choose a concentration in Anthropology. The concentration consists of 12 hours, including Ant 101, Ant 102 and two upper-level courses in Anthropology.

SOCIOLOGY MINOR

A minor in Sociology consists of 18 hours, including Soc 101. At least one of the following courses is required: Social Psychology 341; Sociological Methods 371; Quantitative Reasoning in the Social Sciences 373; Sociological Theory 381.

The department offers Soc 399 (Cooperative Education) and Practicum (Soc 393), a supervised practical field experience designed for Sociology minors, in a professional setting. The hours earned in Cooperative Education or Practicum may not be applied toward the eighteen hours required for the minor.

SOCIOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Soc 101 Intro. to Sociology	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/> 15-16

Second Semester

Ant 101 Intro. to Anthropology	3
Eng 101 Composition or	4

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Distribution Requirement	3	Sixth Semester	
Distribution Requirements	<u>9</u>	Soc 371 Methods of Research	3
	15-16	Major Electives	6
Third Semester		Free Electives	<u>6</u>
Major Elective	3		15
Free Electives	<u>12</u>	Seventh Semester	
	15	Soc 373 Quantitative Reasoning	3
Fourth Semester		Major Elective	3
Major Elective	3	Free Electives	<u>9</u>
Free Electives	<u>12</u>		15
	15	Eighth Semester	
Fifth Semester		Soc 390 Senior Capstone	3
Soc 381 Social Theory	3	Free Electives	<u>11</u>
Major Elective	3		14
Free Electives	<u>9</u>		
	15		

DEPARTMENT OF COMMUNICATION STUDIES

CHAIRPERSON: DR. MARK D. STINE

Faculty: Professors: Elmes-Crahall, Kinney

Associate Professor: Stine

Assistant Professor: Estwick

Visiting Instructors: Mellon

Director of Shelburne Center: Brigido

Radio Station Manager: R. Loftus

COMMUNICATION STUDIES MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMMUNICATION STUDIES LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The major in Communication Studies has concentrations in Rhetoric and Public Communication; Organizational Communication (Public Relations); Broadcast Media (Radio/Television); and Journalism. Each concentration offers a wide choice of career options as well as graduate school preparation. While each concentration has its own unique curricular aspects, the goals are the same — a graduate who is able to write, speak, and think both analytically and creatively. Each concentration offers skills and performance courses and co-curricular activities that can be applied to everyday situations. In addition, the theory, writing and analysis courses enable students to advance beyond the entry level in their chosen fields or even to change fields entirely. We believe the curriculum also affords ample opportunity for the student to explore other disciplines. It is recommended that students who major in Communication Studies take a foreign language.

Departmental Requirements:

All students choosing to major in Communication Studies must fulfill specific department requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows:

- COM 101 Fundamentals of Public Speaking
- COM 102 Principles of Communication
- COM 124 Mass Media in Society

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- COM 202** Interpersonal Communication
- COM 324** Communication Research Methods
- COM 397** Senior Seminar

The Department also has a six-hour writing requirement for all Communication Studies majors.

Concentration Requirements:

Each concentration is described and outlined on the following pages.

Organizational Communication

This concentration introduces students to the theory, skills, and application of face-to-face communication in interpersonal, small group, organizational, and public settings. Its theoretical foundation is primarily in the behavioral sciences. Communication is viewed as an ongoing process, knowledge of which permits the student to apply his or her skills to a variety of contexts.

All students concentrating in Organizational Communication will take the following three courses (9 credits):

- COM 206** Business and Professional Speaking
- COM 302** Fundamentals of Public Relations
- COM 303** Organizational Communication

In addition, Organizational concentrators will complete 9 credits selected from the following courses:

- COM 203** Small Group Communication
- COM 301** Persuasion
- COM 304** Intercultural Communication
- COM 352** Advanced Public Relations Campaigns
- COM 399** or
- CPE 399** Internship (Only three credits of Internship may count in the concentration.)
- BA 322** Advertising (All prerequisites must be met for BA 322)

Writing Requirement (6 credits):

- COM 260** Basic Newswriting and either
- COM 262** Visual Rhetoric *or*
- Eng 202** Technical Writing

PUBLIC RELATIONS TRACK:

The Public Relations Society of America has developed guidelines for undergraduates wishing to enter the field of public relations. Students should consult an advisor within the department to determine what additional courses will be necessary to meet these guidelines.

Rhetoric and Public Communication

This concentration introduces students to the history, principles, and practices of traditional rhetoric. The concentration derives its theoretical foundation from the works of classical rhetoric. It is a performance-centered concentration in which students research, write, deliver, and analyze public discourse. Each course emphasizes adaptation of messages to diverse audiences, usually found in formal, deliberative settings.

All students concentrating in Rhetoric and Public Communication are required to take the following three courses (9 credits):

- COM 204** Argumentation and Debate
- COM 300** Communication Criticism
- COM 301** Persuasion

In addition, Rhetoric concentrators will take 9 credits selected from the following courses:

- COM 201 Advanced Public Speaking
- COM 203 Small Group Communication
- COM 206 Business and Professional
 Communication
- COM 302 Fundamentals of Public Relations
- COM 398 Topics in Presidential Campaign
 Rhetoric *or*
- COM 399
- CPE 399 Internship (Only three credits of
 Internship may count in the
 concentration.)

Writing Requirement (6 credits):

- COM 260 Basic Newswriting
- Eng 202 Technical Writing

POLITICAL COMMUNICATION TRACK:

Students who are interested in careers in political communication must satisfy the twelve-credit concentration requirement and take three political science courses at the 200 level or above. These courses should be chosen in consultation with an advisor.

**ORGANIZATIONAL COMMUNICATION AND RHETORIC & PUBLIC COMMUNICATION
CONCENTRATIONS- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

First Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 101 Fundamentals of Speech	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	15-16

Second Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 102 Principles of Communication	3
COM 124 Mass Media Literacy	3
Distribution Requirements	6
	15-16

Third Semester

COM 202 Interpersonal Communication	3
COM 260 Basic Newswriting	3
Writing Requirement	3
Free Elective	6
	15

Fourth Semester

Concentration Selections	3
Writing Requirement	3
Distribution Requirements	9
	15

Fifth Semester

Concentration Selection	6
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COM 302 Public Relations	3
Free Electives	<u>6</u>
	15
Sixth Semester	
Concentration Selection	3
Free Elective	3
Distribution	6
COM 300 Communication Criticism or	3
COM 303 Organizational Communication	<u>3</u>
	15
Seventh Semester	
COM 324 Research Methods	3
Concentration Selection	3
Free Electives	<u>9</u>
	15
Eighth Semester	
COM 397 Senior Seminar	3
Free Electives	<u>12</u>
	15

BROADCAST MEDIA

This concentration introduces students to the history, economics, regulations, and functions of the radio, television and cable industries. It provides students with a combination of skills, performance, and theory that will enable graduates to seek employment in those industries. In addition, students should be competitive in advertising, marketing, and research firms as well as audio/video media.

All students concentrating in Broadcast Media must take the following three courses (9 credits):

- COM 220 Introduction to Telecommunications
- COM 221 Digital Audio Production
- COM 222 Basic Video Production

In addition, Broadcast Media concentrators will take 9 credits selected from the following courses:

- COM 223 The Art of Film
- COM 300 Communication Criticism
- COM 320 Media Management
- COM 321 Broadcast Journalism
- COM 322 Advanced Video Production
- COM 362 Mass Communication Law
- COM 399 Internship (Only three credits of
or Internship may count in the
CPE 399 concentration.)

Writing Requirement (6 credits):

- COM 260 Basic Newswriting and
- Eng 202 Technical Writing

BROADCAST MEDIA CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Eng 101 Composition or	4
Distribution Requirement	3

COM 101 Fundamentals of Speech	3
Distribution Requirements	6
FYF 101 First-Year Foundations	<u>3</u>
	15-16
Second Semester	
Eng 101 Composition or	4
Distribution Requirement	3
COM 102 Principles of Communication	3
Distribution Requirements	6
COM 124 Mass Media Literacy	<u>3</u>
	15-16
Third Semester	
COM 202 Interpersonal Communication	3
COM 220 Intro. To Telecommunications	3
COM 260 Basic Newswriting	3
COM 221 Digital Audio Production or	
COM 222 Basic Video Production	3
Free Elective	<u>3</u>
	15
Fourth Semester	
Concentration Selection	3
ENG 202 Technical Writing and Professional Writing	3
Distribution Requirements	<u>9</u>
	15
Fifth Semester	
Concentration Selection	3
Free Electives	<u>12</u>
	15
Sixth Semester	
COM 322 Advanced Video Production	3
Free Electives	<u>12</u>
	15
Seventh Semester	
COM 324 Research Methods	3
Concentration Selection	3
Free Electives	<u>9</u>
	15
Eighth Semester	
COM 397 Senior Seminar	3
Free Electives	<u>12</u>
	15

Journalism

This concentration is designed to prepare students to write crisp, concise, lively prose for mass audiences; to utilize, interpret, and analyze primary sources; and to offer thought-provoking commentary on contemporary issues and current events. Students are strongly advised to pursue a minor in English, Political Science, History or another area, with departmental approval.

All students concentrating in Journalism will take the following three courses (9 credits):

College of Arts, Humanities, and Social Sciences

- COM 262 Visual Rhetoric
- COM 360 Advanced Newswriting
- COM 362 Mass Communication Law

In addition, Journalism concentrators will take 9 credits selected from the following courses:

- COM 300 Communication Criticism
- COM 302 Fundamentals of Public Relations
- COM 321 Broadcast Journalism
- COM 361 Feature Writing
- COM 399 Internship (Only three credits of
or Internship may count in the
CPE 399 concentration.)

Writing Requirement (6 credits):

- COM 260 Basic Newswriting and
- Eng 202 Technical Writing

JOURNALISM CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 101 Fundamentals of Speech	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/>
	15-16

Second Semester

Eng 101 Composition or	4
Distribution Requirement	3
COM 102 Principles of Communication	3
Distribution Requirements	6
COM 124 Mass Media Literacy	3
	<hr/>
	15-16

Third Semester

COM 202 Interpersonal Communication	3
COM 260 Basic Newswriting	3
Concentration Selection	3
Free Electives	6
	<hr/>
	15

Fourth Semester

COM 262 Visual Rhetoric	3
Concentration Selection	3
Eng 201 Advanced Composition	3
Distribution Requirements	6
	<hr/>
	15

Fifth Semester

COM 362 Mass Communication Law	3
Distribution Requirements	3
Concentration Selections	6
Free Electives	3
	<hr/>
	15

Sixth Semester	
COM 360 Advanced Newswriting	3
Free Elective	<u>12</u>
	15
Seventh Semester	
COM 324 Research Methods	3
Concentration Selection	3
Free Electives	<u>9</u>
	15
Eighth Semester	
COM 397 Senior Seminar	3
Free Electives	<u>12</u>
	15

COMMUNICATION STUDIES MINOR

Minors are offered in each of the areas of concentration provided by the Department. Minor requirements are as follows:

Organizational Communication Minor

Required: Either COM 101 Fundamentals of Speech or COM 102 Principles of Communication

Electives: Five of the following:

- COM 202 Interpersonal Communication
- COM 203 Small Group Communication
- COM 206 Business and Professional Communication
- COM 301 Persuasion
- COM 302 Fundamentals of Public Relations
- COM 303 Organizational Communication
- COM 304 Intercultural Communication

Rhetoric and Public Communication Minor

Required: Either COM 101 Fundamentals of Speech or COM 102 Principles of Communication

Electives: Five of the following:

- COM 201 Advanced Public Speaking
- COM 203 Small Group Communication
- COM 204 Argumentation and Debate
- COM 206 Business and Professional Communication
- COM 300 Communication Criticism
- COM 301 Persuasion
- COM 302 Fundamentals of Public Relations

Broadcast Media Minor

Required: COM 220 Introduction to Telecommunications *Electives:* Five of the following:

- COM 124 Mass Media Literacy
- COM 221 Digital Audio Production
- COM 222 Basic Video Production
- COM 223 The Art of Film
- COM 321 Broadcast Journalism
- COM 322 Advanced Video Production
- COM 362 Mass Communication Law

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Journalism Minor

Required: COM 260 Basic Newswriting *Electives:* Five of the following:

- COM 124 Mass Media Literacy
- COM 302 Fundamentals of Public Relations
- COM 360 Advanced Newswriting
- COM 361 Feature Writing
- COM 362 Mass Communication Law

DIVISION OF HUMANITIES

CHAIRPERSON: DR. LAWRENCE T. KUHAR

The Division of Humanities comprises the programs in English, History, Philosophy, and Spanish.

English Faculty:

Associate Professors:
Anthony, Hamill, Kuhar, Starner

Assistant Professors: Davis,
Farrell, Kelly, Stanley

Instructor: Grier
Adjunct Faculty: Jones,

Kemmerer, Kovacs, Lampman, Wills
Faculty Emeriti: Fiester,

Gutin, P.Heaman, R. Heaman, Kaska, Karpinich

History Faculty:

Professor: Hupchik

Associate Professors: Hepp,

Wenger

Assistant Professor: Davidson

Adjunct Faculty: Borkowski-

Gunn, Petrasko

Faculty Emeriti: Berlatsky,

Cox, Meyers, Rodechko

Philosophy Faculty:

Associate Professor: Paul

Visiting Assistant Professor:

Reid

Faculty Emeritus: Kay

Spanish Faculty:

Associate Professor: Bianco

Instructor: Harris

Adjunct Faculty: Lepore

(French), Poggi (Spanish), Thackara (Spanish)

ENGLISH MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENGLISH LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18 (BEYOND ENG 101).

Wilkes University requires 120 credit hours for a B.A. degree in English. These include completion of General Education Requirements and 39 credit hours in English including ENG 101, which is a prerequisite for ENG 120.

The English major offers students an opportunity to develop skills in language, rhetoric, and writing, to practice critical and creative thinking, and to establish a foundation of liberal learning through the study of literature. The skills, values, and habits of thought acquired through the study of language and literature prepare students for careers in

teaching, graduate school, law, communications, journalism, business, government service, and other professional areas. The department strongly recommends that students who major in English take a foreign language.

A second major or a minor in English adds an attractive dimension to a student's major preparation in communications, business, theatre, pre-law, and other pre-professional and technical programs in which effective writing, liberal learning, and critical thinking are valued.

Students who major in English may concentrate in literature or writing, or may choose a program leading to certification in secondary teaching.

Non-majors may be admitted to courses numbered 300 and above with the permission of the instructor and department chair.

Literature and Writing Concentrations in English

Students who concentrate in literature are required to take English 120, 201, and three of four survey courses: English 233, 234, 281, and 282. The department strongly recommends that students concentrating in literature take all four survey courses. In addition, students must complete 19 credit hours in English courses numbered above 300, including one course in major author studies, one course in genre studies (fiction, drama, poetry), two courses in a period or movement, English 397, and a senior capstone project.

Students who concentrate in writing are required to take English 201 and an additional nine credit hours in other writing courses numbered above 200. Students must take English 120 and three of four survey courses: English 233, 234, 281, and 282. In addition, students must complete nine credit hours in advanced literature courses numbered above 300, including English 397, and a senior capstone project.

Certifications in Secondary Education, Middle Level Education, and Elementary Education

Students interested in Secondary Education, Middle Level Education, or Elementary Education certification should make appointments as early as possible with the chairpersons of the English program and Education Department to plan their professional studies. Students seeking certification as secondary level, middle level, or

elementary level education public school teachers should refer to the Education Department's undergraduate section of the current *Bulletin* for a complete outline of Pennsylvania Department of Education (PDE) and program requirements.

Students seeking certification as secondary public school teachers (seventh through twelfth grade certification) of English and a minor in Secondary Education must take English 120, 201, 225, 324, 393, and three of four survey courses: English 233, 234, 281, and 282. The department strongly recommends that students seeking certification take all four survey courses. In addition, students must complete twelve hours in English courses numbered above 300, including one course in major author studies, one course in genre studies (fiction, drama, poetry), one course in a period or movement, and English 397. Education courses required are ED 180, 190, 191, 220, 390, EDSP 210, EDSP 225, and EDSP 388.

These students will declare a MINOR in Secondary Education. The requirements for the minor in Secondary Education and certification are contained in the Education section of the *Wilkes Undergraduate Bulletin*. All Teacher Education students must apply for admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

Students seeking certification as middle level public school teachers (fourth through eighth grade certification) in English/Language Arts/Reading should refer to the Education Department's undergraduate section of the Undergraduate Bulletin for a complete outline of Pennsylvania Department of Education (PDE) and program requirements. Students should also consult carefully with their education program and English program advisors in planning their program.

Students seeking certification as elementary public school teachers should consult carefully with their advisors and the education department in planning their program.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The requirements for the minor in Secondary

Education and certification are contained in the Education section of the *Wilkes Bulletin*. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 gpa in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

ENGLISH MINOR

The minor in English requires fulfillment of General Education Requirements in composition and literature and fifteen credits in literature, writing or language studies courses numbered 200 or above.

Honors in English

Qualified students may participate in an honors program, which may lead to graduation with distinction in English. Honors students in English will be recognized upon completion of the following requirements:

1. Achievement of a graduating G.P.A. of 3.25 or higher;
2. Achievement of an average of 3.5 in English courses;
3. Completion of a program of independent study resulting in a thesis or writing project recognized as distinguished by a committee of department faculty;
4. Achievement in English studies indicated by performance on standardized assessment examinations.

The distinction "Honors in English" will be recorded on the student's transcript upon graduation.

ENGLISH MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition	4
Distribution Requirements	9
FYF 101 First-Year Foundations	3
	16

Second Semester

Eng 120 Literature and Culture	3
Distribution Requirements	9
Free Elective	3
	15

Third Semester

Eng 201 Writing about Lit. and Culture	4
Eng Survey Electives (233, 282)	3
Free Electives	9
	16

Fourth Semester

Eng Survey Electives (234, 281)	6
Free Electives	<u>9</u>
	15
Fifth Semester	
Major Electives*	6
Free Electives	<u>9</u>
	15
Sixth Semester	
Major Electives*	9
Free Electives	<u>6</u>
	15
Seventh Semester	
Eng 397	3
Free Electives	<u>12</u>
	15
Eighth Semester	
Major Capstone	1
Free Electives	<u>12</u>
	13

*Students select major electives to meet requirements in their area of concentration.

ENGLISH MAJOR WITH SECONDARY TEACHER CERTIFICATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

Students majoring in English and minoring in Secondary Education should consult with advisors in the English and Education departments to design an effective and efficient course of study that incorporates all requirements of the major and minor degree programs.

SPANISH MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN SPANISH LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

Study of foreign languages and literatures develops competence in another language, leads to a better understanding of international issues, and cultivates an appreciation of the differences among diverse cultures. Command of a foreign language enables students to advance their foreign language studies at the graduate level or pursue a broad range of career opportunities in the fields of education, domestic and international commerce, government service, industry, and many others.

Spanish is offered as a major field of study. A major in Spanish consists of twenty-four credit

hours beyond SP 204. Students seeking public school certification in Spanish and a minor in Secondary Education must take SP 205, 206, 208, 298, 301 (Introduction to Latin American Literature), and another literature course in a major writer, or genre, or period, and SP 397. Students pursuing Spanish certification are required to complete PSY 221 (Developmental Psychology.)

Students interested in K-12 certification in Spanish should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. Education courses required are ED 180, ED 190, ED 191, ED 220, ED 300 (Teaching Foreign Language with Field Experience), ED 380, ED 390 and EDSP 210, EDSP 225, and EDSP 388. All Teacher Education students must apply for admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified. See "Secondary Education Programs of Study and Certification Requirements" in this bulletin for complete details.

In the interest of broadening career options, all Spanish majors are advised to combine their language studies with another discipline. Students who elect a career in education are advised to study an additional language. All majors are strongly urged to spend at least a semester abroad arranged through their Spanish advisor.

Students who plan to major or minor in Spanish are particularly encouraged to consider completing a portion of their program overseas. Wilkes offers Study Abroad opportunities in Spain and Latin America. Students can spend a summer, a semester, or a year in the program of their choice.

SPANISH MINOR

Students may elect to minor in Spanish. A minor in Spanish consists of eighteen credit hours beyond SP 102. Study abroad is encouraged.

Certificate Program

The Spanish Language Certificate Program is designed for students, adult learners, and working professionals who wish to develop proficiency in Spanish to enhance their academic and career opportunities. Students enrolled in the Certificate Program are

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required to complete fifteen (15) credits in the study of Spanish beginning at the intermediate level; students can receive up to six (6) credits towards the Certificate Program through study abroad. The Certificate Program provides students with the flexibility to pursue Spanish at the advanced level without completing the requirements of an academic major or minor.

For more information, please contact Dr. Paola Bianco, Associate Professor of Spanish.

SPANISH MAJOR - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

SP 101 Elementary I	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	6
IFY 101 First-Year Foundations	3
	<hr/> 15-16

Second Semester

SP 102 Elementary II	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	9
	<hr/> 15-16

Third Semester

SP 203 Intermediate I	3
Distribution Requirement	3
Free Electives	9
	<hr/> 15

Fourth Semester

SP 204 Intermediate II	3
SP 205 Conversation	3
Free Electives	9
	<hr/> 15

Fifth Semester*

SP 206 Adv. Grammar, Stylistics & Comp.	3
	3
Free Electives	9
	<hr/> 15

Sixth Semester

SP 208 Culture and Civilization	3
SP 301 Introduction to Literature	3
Free Electives	9
	<hr/> 15

Seventh Semester

SP 301 or 307 or 308	3
SP 298 Topics	3
Free Electives	9
	<hr/>

	<hr/> 15
Eighth Semester	
SP 397 Seminar	3
Free Electives	11
	<hr/> 14

*Study Abroad is strongly recommended for students in the sophomore or junior years. Students may spend a summer, semester, or an academic year in a Study Abroad program.

HISTORY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN HISTORY LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

Wilkes University requires 120 credit hours for the B.A. degree in History. These include 43 credit hours in distribution courses and 33 credit hours in history. History 101-102, History 125-126, History 297, History 397, and 15 additional credit hours in history courses numbered 300 and above are required. The 300-level courses must include a minimum of six hours each in American and non-American topics. Comparative courses count toward these minimum distribution requirements as either an American or a non-American topic. American topics will contain the designation (A) at the end of their titles; non-American topics (N) and comparative topics (C). The Department recommends that students who plan to continue their studies in history at the graduate level take a foreign language.

A variety of career options are open to History majors. Because history is a synthesis of the life experience that examines past economic, social, political, scientific, and religious conditions, a careful selection of history courses and elective credit hours will allow students to pursue career interests in business, government, teaching, communications, law, and social service. The History major includes a considerable number of elective credit hours that students may use to develop career interests. The department strongly recommends that some of these hours be used for internships or field experiences.

Certifications in Secondary Education and Middle Level Education

Students interested in Secondary Education or Middle Level Education (with a specialization in Social Studies) certification should make appointments as early as possible with the Coordinator of the History program and the

chairperson of the Education Department to plan their professional studies. Students seeking certification as secondary level or middle level education public school teachers should refer to the Education Department's undergraduate section of the current *Bulletin* for a complete outline of Pennsylvania Department of Education (PDE) and program requirements.

Students pursuing a History major and seeking secondary certification in Social Studies must take the following courses: HST 102; HST 125 & 126; HST 297; HST 397; and 15 credits of History electives (two American and two non-American topics). The following courses are also required for Social Studies Certification: ANT 101; EC 101; PS 111; PS 141; PSY 101; PSY 222; SOC 101; and 6 credits in Mathematics (MTH 150, Elementary Statistics, is highly recommended). Required Education courses are ED 180, 190, 191, 220, 390, EDSP 210, EDSP 225, and EDSP 388.

Students seeking secondary certification in Social Studies will declare a MAJOR in History and a MINOR in Secondary Education. The requirements for the minor in Secondary Education and certification are contained in the Education section of the Wilkes *Undergraduate Bulletin*. All Teacher Education students must apply for admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses, a 3.0 overall GPA, and pass the appropriate PRAXIS tests in order to be certified.

Students seeking certification as middle level public school teachers (fourth through eighth grade certification) with a specialization in Social Studies will major in Middle Level Education and take a prescribed course of study that incorporates History and the Social Sciences. Refer to the Education Department section of this bulletin for details of the curriculum and other degree requirements. Students should also consult carefully with their education program and English program advisors in planning their program.

HISTORY MINOR

A minor in History shall consist of 18 credit hours in courses offered by the department. The required courses are History 101, History 125, and History 126.

HISTORY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Hst 101 Historical Foundations of the Modern World	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	6
FYF 101 First-Year Foundations	3
	<hr/>
	15-16
Second Semester	
Hst 102 Europe Before 1600	3
Eng 101 Composition or	4
Distribution Requirement	3
Distribution Requirements	9
	<hr/>
	15-16
Third Semester	
Hst 125 American History I	3
Hst 297 Research & Methods Seminar	3
Distribution Requirements	6
Free Electives*	3
	<hr/>
	15
Fourth Semester	
Hst 126 American History II	3
Distribution Requirements	9
Free Elective*	3
	<hr/>
	15
Fifth Semester	
Major Electives	6
Free Electives*	9
	<hr/>
	15
Sixth Semester	
Major Elective	3
Free Electives*	12
	<hr/>
	15
Seventh Semester	
Major Electives**	6
Free Electives*	9
	<hr/>
	15
Eighth Semester	
Hst 397 Seminar**	3
Free Electives*	11
	<hr/>
	14

*Sufficient elective credits are available to allow students to complete a minor in most fields. See Wilkes Bulletin for minor requirements.

**Hst 397 in the seventh semester for students planning to student teach in the eighth semester.

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PHILOSOPHY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN PHILOSOPHY LEADING TO THE B.A. DEGREE — 120 CREDITS, INCLUDING 30 CREDITS IN PHILOSOPHY.

TOTAL MINIMUM NUMBER OF CREDITS IN PHILOSOPHY REQUIRED FOR A MINOR — 18.

The Philosophy program focuses on philosophical issues relevant to “the art of living.” These are questions of life and death, questions about how to live, about whether life has meaning, about what kinds of beings we are and the responsibilities we have to ourselves and others, the significance of death in our lives, etc. These questions represent the core of philosophical exploration. They are not simply theoretical exercises, but rather questions of embodiment; we must consider how to put the answers into practice in our lives. Addressing these questions in the disciplined way that the study of philosophy teaches contributes to the well being of those engaged in the study and those with whom they interact, at present and in the future.

In addition, the study of philosophy, whether one pursues a major in Philosophy or chooses a few courses of particular interest, contributes to the development of the skills and habits of mind essential to educated men and women: clarity of thought, precision in the analysis of conflicting claims, the power to render sound judgments based upon an appreciation of differing perspectives, and the ability to express and to defend one’s views using well-reasoned arguments. Philosophy students find themselves well-prepared for careers in professional areas such as law, medicine, and teaching, as well as in areas such as journalism, government, and business. The skills that are honed in the study of philosophy are of value in virtually any career path.

The major requires 30 credit hours including PHL 101, PHL 122, and at least nine credits at the 300-level, including PHL 301, PHL 310 and a one credit capstone (PHL 390).

PHILOSOPHY MINOR

The minor in Philosophy consists of 18 credit hours, including PHL 101, PHL 122, and at least six credits at the 300-level, including PHL 301.

PHILOSOPHY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition *or* 4/3

Distribution Requirement	
FYF 101 First-Year Foundations	3
PHL 101 Introduction to Philosophy	3
Distribution Requirements	<u>6</u>
	15-16
Second Semester	
Eng 101 Composition <i>or</i>	4/3
Distribution Requirement	
PHL 122 Introduction to Symbolic Logic	3
Distribution Requirements	<u>9</u>
	15-16
Third Semester	
Major Elective	3
Distribution Requirements	<u>12</u>
	15
Fourth Semester	
PHL 301 Origins of Western Thought	3
Free Electives	<u>12</u>
	15
Fifth Semester	
PHL 310 Ethical Theory	3
Major Elective	3
Free Electives	<u>9</u>
	15
Sixth Semester	
Major Electives	6
Free Electives	<u>9</u>
	15
Seventh Semester	
Major Elective	3
Free Electives	<u>12</u>
	15
Eighth Semester	
PHL 390 Capstone	1
Major Elective	3
Free Electives	<u>12</u>
	16

DIVISION OF PERFORMING ARTS

CHAIRPERSON: JOSEPH C. DAWSON

Faculty:

Associate Professors: Dawson, Flint, Thomas

Assistant Professor: Simon

Adjunct Professors: Cross, Driscoll, Harris, C.

Helmacy, R. Helmacy, Insalaco, Lish,

Mariani, Minsavage, Phair, Rasmus,

Smallcomb, Unice, Zipay

Faculty Emeriti: Groh

Director of Dance: Kristin Degnan

Director of Theatre: Teresa Fallon

Coordinator of Music: Steven L. Thomas

DANCE MINOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN DANCE — 18.

As a dimension of its continuing development in the performing arts, Wilkes University provides a comprehensive program in the field of dance. The total minimum number of credits for a minor in Dance is 18 (above DAN 100). An advanced project in dance composition is also required of all students enrolled in the Dance minor; this project will be under the supervision of the minor advisor.

MUSIC MINOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN MUSIC — 18.

The music minor program at Wilkes University offers a range of musical experiences, including participation in performing ensembles, studies in music history, and studies in music theory. Music faculty members will both advise and mentor music minors. The 18 credit hour requirement may be sequenced over eight semesters or less.

The required courses for the minor in music are as follows:

Performance, 6 credits to choose from

MUS 121 Civic Band 0/3 credits
(repeatable)

MUS 125 University Chorus 0/3 credits
(repeatable)

MUS 127 Jazz Ensemble 0/3 credits
(repeatable)

MUS 131 University Orchestra 0/3 credits
(repeatable)

Music Theory, 3 credits

MUS 103 Music Theory I, 3 credits

Music History, 3 credits

MUS 210 Music History I, 3 credits

MUS 211 Music History II, 3 credits

Music Elective, 3 credits

Any non-performance ensemble class at the level of MUS 104 or higher. Possible classes include, but are not limited to

MUS 104 Music Theory II, 3 credits

MUS 198 Topics in Music Theory or Music History, 1 - 3 credits

MUS 298 Topics in Music Theory or Music History, 1 - 3 credits

MUS 395 Independent Research, Music Theory or Music History, 1 - 3 credits

Music Practice Rooms

A limited number of music practice rooms is available in Dart Hall. These rooms are generally reserved for those students majoring in Theatre Arts and those participating in ensembles or taking private music instruction from university or Wilkes Community Conservatory faculty. Because of the heavy enrollment in these courses, the university is unable to make these rooms available to students who are not enrolled in these curricular offerings.

Students who are eligible to use these rooms are assigned a key for the practice room through the Visual and Performing Arts Department Office. Since more than one student is assigned to a practice room it is expected that students will cooperate and work out compatible practice times. Failure to return the key to the practice room at the conclusion of the semester will result in a block being placed that precludes the release of the official transcript of the work done at the university.

MUSICAL THEATRE MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MUSICAL THEATRE LEADING TO THE B.A. DEGREE — 122.

The Musical Theatre Degree Program integrates studies in Theatre, Music and Dance. Establishing a foundational level in all three disciplines, the program also provides opportunities for advanced study in each area.

MUSICAL THEATRE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ENG 101 Composition 4

FYF 101 First-Year Foundations 3

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THE 190 Theatre Laboratory	1	MUS 400 Voice	1
THE 131 Acting I	3	Electives	9
MUS 100 Voice	1		15
MUS 125 Chorus	1	Eighth Semester	
MUS 103 Basic Musicianship or higher	3	THE 190 Theatre Laboratory	1
	16	DAN Dance Elective	3
Second Semester		MUS 400 Voice	1
ENG 120 Intro to Lit./Culture	3	THE or MUS Musical Theatre Elective	3
Distribution Requirements	6	Electives	6
THE 190 Theatre Laboratory	1		14
THE 132 Speech for the Stage (OPO)	3		
MUS 100 Voice	1	THEATRE ARTS MAJOR	
MUS 125 Chorus	1	TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN THEATRE ARTS LEADING TO THE B.A. DEGREE — 121.	
	15	TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.	
Third Semester		The Theatre Arts major is a diverse and balanced program that encourages many kinds of theatre artists: dancers who act, directors who design, actors who play music, and stage technicians who sing. The program combines the liberal arts core curriculum with the required 39 credits of Theatre Arts classes and 45 credits of electives. Theatre Arts majors may opt to use their electives to double major in another field or follow a course sequence in the following concentrations:	
Distribution Requirements	6	<i>Acting/Directing</i>	
THE 232 Acting II	3	<i>Dance</i>	
THE 190 Theatre Laboratory	1	<i>Theatre Design</i>	
THE 121 Stagecraft	3	THEATRE ARTS MINOR	
MUS 200 Voice	1	<i>Required course:</i>	
	14	THE 121 Stagecraft	
Fourth Semester		<i>Electives: Five of the following:</i>	
Distribution Requirements	9	THE 111 Fundamentals of Play Structure and Criticism	
THE 112 Script Analysis	3	THE 131 Acting I	
THE 190 Theatre Laboratory	1	THE 132 Speech for the Stage	
MUS 200 Voice	1	THE 211 Theatre History I	
	14	THE 312 Theatre History II	
Fifth Semester		THE 221 Scene Design	
Distribution Requirements	3	THE 232 Acting II	
THE 190 Theatre Laboratory	1	THE 234 Directing I	
THE 211 Theatre History I	3	THE 335 Directing II	
THE Elective	3		
MUS 300 Voice	1		
Electives	6		
	17		
Sixth Semester			
Distribution Requirements	3		
THE 190 Theatre Laboratory	1		
THE 312 Theatre History II	3		
THE Elective	3		
MUS 300 Voice	1		
Electives	6		
	17		
Seventh Semester			
THE 190 Theatre Laboratory	1		
THE Design Elective	3		
THE 393 Senior Seminar	1		

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THEATRE ARTS MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
THE 121 Stagecraft	3
THE 190 Theatre Laboratory	1
THE 131 Acting I	3
	<u>14</u>
Second Semester	
ENG 120 Intro to Lit. /Culture	3
Distribution Requirements	6
THE 132 Speech for the Stage (OPO)	3
THE 190 Theatre Laboratory	1
Electives	3
	<u>16</u>
Third Semester	
Distribution Requirements	6
THE 232 Acting II	3
THE 190 Theatre Laboratory	1
Electives	3
	<u>13</u>
Fourth Semester	
Distribution Requirements	9
THE 212 Script Analysis	3
THE 190 Theatre Laboratory	1
Electives	3
	<u>16</u>
Fifth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 211 Theatre History I	3
THE Theatre Design Elective	3
Electives	6
	<u>16</u>
Sixth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 312 Theatre History II	3
THE Elective	3
Electives	6
	<u>16</u>
Seventh Semester	
THE 190 Theatre Laboratory	1
THE 393 Senior Seminar	1
Electives	12
	<u>14</u>

Eighth Semester

THE 190 Theatre Laboratory	1
THE Elective	3
Electives	12
	<u>16</u>

Theatre Arts majors may use their elective credits to earn a concentration in Acting/Directing, Dance, Theatre Design

THEATRE ARTS MAJOR WITH AN ACTING/DIRECTING CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
THE 190 Theatre Laboratory	1
THE 131 Acting I	3
THE 121 Stagecraft	3
	<u>14</u>
Second Semester	
ENG 120 Intro to Lit./Culture	3
Distribution Requirements	6
THE 190 Theatre Laboratory	1
THE 132 Speech for the Stage (OPO)	3
Elective	3
	<u>16</u>
Third Semester	
Distribution Requirements	6
THE 232 Acting II	3
THE 190 Theatre Laboratory	1
THE 234 Directing I	3
Electives	3
	<u>16</u>
Fourth Semester	
Distribution Requirements	9
THE 112 Script Analysis	3
THE 190 Theatre Laboratory	1
ENG Dramatic Literature Elective	3
	<u>16</u>
Fifth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 211 Theatre History I	3
THE 331 Acting III	3
THE 335 Directing II	3
Elective	3
	<u>16</u>

	16
Third Semester	
Distribution Requirements	6
THE 232 Acting II	3
THE 190 Theatre Laboratory	1
THE Theatre Design Elective	3
Elective	<u>3</u>
	16
Fourth Semester	
Distribution Requirements	9
THE 112 Script Analysis	3
THE 190 Theatre Laboratory	1
Art Elective	<u>3</u>
	16
Fifth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 221 Theatre History I	3
THE Theatre Design Elective	3
Electives	<u>6</u>
	16
Sixth Semester	
Distribution Requirements	3
THE 190 Theatre Laboratory	1
THE 312 Theatre History II	3
THE Theatre Design Elective	3
Electives	<u>6</u>
	16
Seventh Semester	
THE 190 Theatre Laboratory	1
THE 393 Senior Seminar	1
THE 191 Design Practicum	3
Electives	<u>9</u>
	14
Eighth Semester	
THE 190 Theatre Laboratory	1
Electives	<u>12</u>
	13

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATION

SCHOOL OF EDUCATION

DEAN: DR. MICHAEL SPEZIALE

It is my pleasure, as the Dean of the College of Graduate and Professional Studies and School of Education, to share with you some of the highlights of our continuum of programs, core values and external partnerships, which are the basis for an outstanding array of degree and certification-based offerings. For the most current information on our programs, visit us at the Wilkes web site at www.wilkes.edu.

The Wilkes University School of Education was formed in June of 2008. It brings together, for the first time, the undergraduate Teacher Education Program, masters programs and the doctorate of education program – providing a continuum of study from freshman year through the terminal degree in education. The school is housed in the College of Graduate and Professional Studies.

At the undergraduate level, Wilkes offers degrees and certifications in Elementary Education, Early Childhood Education, Special Education and Secondary Education in several content areas. The department also offers an endorsement in English as a Second Language.

Students entering the undergraduate program can be assured that they will be well prepared to meet the challenges of this rewarding profession through participation in a dynamic, comprehensive program. Prospective teachers learn and apply the most relevant and current educational research and gain valuable experience through varied field experiences in regional school classrooms.

Graduate study in Education is offered primarily to enable teachers to enhance their preparation to become educational leaders. Each program is designed to broaden knowledge in the foundations of education as well as focus on a specific area of advanced training. The master's degree program in Education is offered with 11 majors in a variety of areas.

Wilkes University's Doctorate of Education (Ed.D.) in Educational Leadership is a post-master's program with areas of focus in Educational Technology and K-12 and Higher Education Administration.

Faculty who teach in the undergraduate and graduate programs have strong backgrounds in the field and work to stay abreast of the ever-changing landscape of education. They are

committed to students through continuous mentoring and academic support. At Wilkes you will find faculty who share a belief that education is a critical foundation for life's journey. Faculty believe that each student, no matter what the level, has individual strengths that need to be tapped to provide opportunities for educational success. These beliefs are evident in their teaching. The core values shared by the faculty at both the undergraduate and graduate levels are reflected in the respective mission statements.

The Mission of the Undergraduate Teacher Education Program (TEP) is to provide the educational community and society at large with competent, caring, and ethical educators who are lifelong learners, reflective practitioners, and effective communicators. The Teacher Education program provides opportunities for students to grow academically and professionally. The program promotes an appreciation for diversity, as well as a regard for research-based and innovative practices. The ethic of service and dedication are expected of Teacher Education students to meet the diverse needs of all students within the learning community.

The mission of Graduate Education programs at Wilkes is to provide the educational community with opportunities to become leaders in classroom instruction and in the administration of schools. As such, the Graduate Education Program seeks to promote the highest levels of intellectual growth and career development through a collaborative environment that supports teaching in a diverse learning environment, while valuing commitment to the educational communities it serves.

Recognizing the excellent performance of the graduate programs in leadership, the Pennsylvania Department of Education selected Wilkes as one of seven regional Leadership Centers in 2007-2008. The purpose of the regional centers is to help redefine principal and superintendent preparation guidelines for Pennsylvania.

The School of Education is also committed to engaging in partnerships to provide unique opportunities to all of our students, including: Learning Sciences International, which has partnered with Wilkes to develop and offer programs in 21st Century Teaching and Learning, Early Childhood Literacy and a letter of endorsement in Teacher Leadership and Instructional Coaching; Performance Learning

School of Education

Systems, which has partnered with Wilkes to develop and offer a program in Educational Development and Strategies; and Discovery Education, which in the most recent and unique endeavor, has partnered with Wilkes University to develop and offer a nationally based program in Instructional Media.

Collectively, these partnerships represent the entrepreneurial spirit, and the expanding geographical sphere of influence of the School of Education and its overall commitment to be the regional leader in the preparation of highly qualified educators and educational leaders.

As the Dean of the newly formed School of Education, I am extremely proud of the accomplishments of our faculty, staff and students. I look forward to continued successes and milestones as we collectively work to positively shape the future of education.

DEPARTMENT OF EDUCATION

CHAIRPERSON: DR. CAROLINE MAURER

Faculty: Associate Professors: Maurer, Morrison, Polachek

Assistant Professors: Balester, B. Bellucci, Camoni, Gardner, Murray-Galella

Faculty Emeriti: J. Bellucci, Fahmy, Johnson, Meyers

The Teacher Education Program (TEP) information in this 2010-11 *Undergraduate Bulletin* addresses new certification programs mandated by the Pennsylvania Department of Education (PDE) that will be followed by students who start in Fall 2010 or after. The new programs are

1. a new Pre-kindergarten through fourth grade (PK-4) certification will replace the current Kindergarten through sixth grade (K-6) certification;
2. a new choice of special education concentrations that specifies a grade band of Pre-kindergarten through eighth grades (PK-8) OR seventh through twelfth grades (7-12) will replace the current Pre-kindergarten through twelfth grade (PK-12) generalist certificate; and
3. a new Middle Level certification in grades four through eight (4-8).

Students who have started at Wilkes prior to Fall 2010 will in their current programs as listed on their current course requirements checklists for the following programs:

- Elementary Education (grades Kindergarten through 6)
- Special Education (pre-Kindergarten through grade 12)
- Secondary Education grades 7-12, with teacher certification in Biology, Chemistry, English, Earth & Space Science (with a major in Earth and Environmental Sciences), Spanish, and Social Studies (with a major in History or Political Science)

Current students must complete all required coursework and Praxis tests and apply for teaching certification by June 30, 2013. As of September 1, 2013, these programs will no longer be certified by the PA Department of Education.

**Students should regularly consult with their academic advisors and the Education Department for any changes or considerations. The Education Department offers specific

advising checklists and policy documents to help guide students in their respective programs.

ELEMENTARY AND EARLY CHILDHOOD EDUCATION MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ELEMENTARY/EARLY CHILDHOOD EDUCATION LEADING TO THE B.A. DEGREE — 120.*Mission of the Elementary and Early Childhood Program*

The mission of the Elementary and Early Childhood Program is to prepare highly effective teachers who have the knowledge, skills, and competencies to prepare PreK-4 students to achieve academic success, and who are prepared to serve a diverse group of children and families in a variety of educational settings.

Elementary/Early Childhood Education Major

Elementary/Early Childhood Education is a major leading to pre-kindergarten through fourth grade (PK-4) certification. This program incorporates an 18 credit minor in Reading Education. Elementary/Early Childhood Education majors take methods of teaching courses in math, science, social studies, the arts, physical education and health, reading, and language arts as well as courses in educational theory and practice. Students must fulfill all of the following requirements:

1. complete all course work, field experiences, clearances, PRAXIS tests, and student teaching;
2. complete the following General Education Curriculum requirements
 Oral Communications - Fulfilled by OPO courses in Education major
 Computer Literacy - 3 credits CS 115
 English - 7 credits (within the first 48 credit hours as required by the PDE):
 ENG 101—Composition
 ENG 120—Introduction to Literature and Culture
 Foreign Language or Philosophy - 3 credits (Foreign Language highly recommended)
 First-Year Foundations - 3 credits FYF 101
 History - 6 credits
 HST 101
 HST 125—American History I (highly recommended)
 OR HST 126—American History II
 Math - 6 credits (within first 48 credit hours as required by PDE):
 MTH 103—Mathematics for Elementary School Teachers I

School of Education

MTH 104—Mathematics for Elementary School Teachers II
OR two higher numbered courses in mathematics
Psychology - 6 credits
PSY 101—General Psychology
PSY 221—Developmental Psychology
Science - 6 credits (in two different areas with 1 Lab)
Biology —BIO 105 or higher
Earth Environmental Sciences—EES 105 or higher
Chemistry —CHM 105 or higher
Physics —PHY 105 or higher
Social Science - 3 credits
ANT 101, EC 102, PS 111, OR SOC 101
Visual and Performing Arts - 3 credits
ART 101, DAN 100, MUS 101 OR THE 100

3. complete the following Education courses (All courses are 3 credits unless otherwise noted).

NOTE: Departmental permission is required to register for all courses with field experiences.

ED 190 - Effective Teaching with Field Experience (40 hours field experience)

Students must have a minimum GPA of 2.5, Field Experience Placement Form completed, and current Act 34, 151, and FBI clearances submitted to Coordinator of Field Placements before established deadlines to enroll in ED 190. Students must achieve a grade of 2.5 or higher in ED 190 to proceed to other Education courses.

ED 191 - Integrating Technology into the Classroom (formerly ED 215)

Students must have a minimum GPA of 2.5 to enroll in ED 191. Students must achieve a final grade of 2.5 and a cumulative GPA of 2.85 or higher to proceed to 200-level Education courses.

EDSP 210 - Teaching Students with Special Needs (formerly ED 210)

ED 220 - Teaching Culturally and Linguistically Diverse Learners

EDSP 225 - Special Education Methods I with Field Experience (30 hours field experience. OPO course)

ED 263 - Child Development and Cognition (15 hours field experience)

ED 264 - Child Development and Cognition Classroom (30 hours field experience)

Students must take and pass Praxis I Tests in Reading, Writing, and Mathematics and have a 3.0 gpa prior to registering for 300-level

Education courses and content methods course.

ED 310 - Health, Physical Education, and Safety in Early Childhood and Elementary Education

ED 321 - Literacy Foundations I (30 hours of field experience;)

ED 322 - Literacy Foundations II (Prerequisite is ED 321)

ED 323 - Differentiated Reading

ED 324 - Children and Adolescent Literature

ED 325 - Applied Reading Strategies (15 hours field experience)

ED 330 - Mathematics in Early Childhood and Elementary Education

ED 341 - Language Arts (OPO course)

ED 344 - Assessment in Early Childhood and Elementary Education (this course will be replaced by EDSP 300, Assessment in Special Education, for students completing dual certification in PK-4 and SPecial Education PK-8)

ED 345 - Assessment in Education

ED 350 - The Arts

ED 360 - Social Studies

ED 363 - School, Family, and Community (this course will be replaced by all EDSP courses in combination for students completing dual certification in PK-4 and Special Education PK-8)

ED 370 - Science in Early Childhood and Elementary Education

ED 385 - Classroom Management

EDSP 388 - Inclusionary Practices (taken in conjunction with ED 390)

ED 390 - Student Teaching with Seminar (12 credits) (OPO course)

Note: Student must attend a preparation seminar and have departmental permission to register. 40 hours of pre-student teaching field experience is incorporated during the first two weeks of the student teaching semester.

Dual Special Education Certification

Mission

The mission of the Dual Special Education Program is to develop competent, caring, and ethical educators who are able to meet the diverse learning needs of all students across a variety of age, grade, and ability levels. The preparation program will facilitate competence in areas of academic, social, and emotional growth, and methods of maximizing a student's capabilities through diagnostic and instructionally adaptive practices.

The Dual Special Education certification program prepares candidates to work with special needs populations in pre-kindergarten through eighth grades (PK-8) OR seventh through twelfth (7-12) grades. Students will follow the requirements for an initial certification program in Elementary and Early Childhood Education, Middle Level Education, OR Secondary Education with a few course substitutions permitted as noted below, in addition to completing the extra requirements for the Special Education program. Special Education is a CONCENTRATION that students may ADD to their initial program in order to qualify for dual certification.

Students majoring in Elementary and Early Childhood Education with a concentration in Special Education PK-8 will complete the following courses in addition to the afore-cited Elementary and Early Childhood program requirements (note the course substitutions permitted):

ED 180 - Educational Psychology (A student must earn a final course grade of 2.5 in ED 180 and a cumulative GPA of 2.5 before proceeding to ED 190 and ED 191)

EDSP 226 - Special Education Methodology II with Field Experience (20 hours)

EDSP 227 - Behavior Management with Field Experience (20 hours)

EDSP 300 - Assessment in Special Education (this course replaces the PK-4 ED 344 - Assessment in Early Childhood and Elementary Education - course)

EDSP 302 - Special Education Methods
All EDSP courses in combination will substitute for the PK-4 ED 363 (School, Family, & Community) course.

Special Education certification candidates will complete half their student teaching in a special education setting and half in a regular education setting.

Students majoring in Middle Level Education with a concentration in Special Education PK-8 will complete the following courses in addition to the afore-cited Middle Level Education program requirements (note the course substitutions permitted):

EDSP 226 - Special Education Methodology II with Field Experience (20 hours)

EDSP 227 - Behavior Management with Field Experience (20 hours)

EDSP 300 - Assessment in Special Education

EDSP 302 - Special Education Methods (this course replaces the Middle Level ED 375 (Middle Level Methods) and ED 380 (Content Area Literacy) courses)

Special Education certification candidates will complete half their student teaching in a special education setting and half in a regular education setting.

English as a Second Language

The English as a Second Language (ESL) specialist program is a concentration that will prepare elementary or secondary teachers as ESL specialists capable of working with students whose second language is English.

Upon completion of the ESL specialist program, a Teacher Education candidate will be issued a Letter of Eligibility from Wilkes University, which must be retained by the candidate for future application to the PDE. ESL specialist is an "add-on" designation to an existing instructional certificate rather than a "stand-alone" certification.

Students may elect to become an ESL specialist with additional coursework added to their program of study. Elementary Education majors must complete the elementary program of study and their minor requirements as well as the courses listed below. Secondary Education candidates must complete their academic and education program requirements in addition to the following courses listed below. All courses are 3 credits each unless otherwise noted.

ESL Specialist Program Requirements:

9 credit hours in basic Teacher Education courses (or existing teaching certificate):

ED 180 - Educational Psychology
 ED 190 - Effective Teaching with Field Experience (40 hours)

EDSP 210 - Teaching Students with Special Needs

3 credit hours in intensive English language courses:

ENG 225 - Comparative Grammar
 ENG 324 - History of the English Language
 ENG 222 - Linguistics

9 credit hours in ESL instruction, language acquisition, and cultural awareness:

School of Education

- ED 220 - Teaching Culturally and Linguistically Diverse Learners (OPO course)
- ED 338 - Teaching ESL: Materials & Methodologies (15 hour field experience in ESL)
- ED 341 - Language Arts (OPO course)

3 (or more) additional credit hours in language and literacy acquisition:

- ED 321 - Literacy Foundations I (30 hours)
- ED 322 - Literacy Foundations II
- ED 380 - Content Area Literacy
- ENG 393 - The Teaching of English (30 hour field) (4 credits)

3 or more credit hours of a second language (or demonstrated basic language fluency)

SECONDARY EDUCATION PROGRAMS OF STUDY AND CERTIFICATION REQUIREMENTS:

Secondary Education Program - the Minor in Education

The Wilkes University Department of Education offers programs leading to Pennsylvania Department of Education (PDE) secondary (grades 7 - 12) certification in the following areas: **biology, chemistry, earth and space sciences, English, general science, mathematics, social studies, and also Spanish (a K-12 certification)**. Admission to Wilkes University is only the first step in gaining acceptance into the Teacher Education Program (TEP). Requirements for admission to the TEP are in compliance with the mandates of PDE.

Directives for Gaining Admission to the Teacher Education Program to Pursue Secondary Certification

- **Schedule meeting with Coordinator of the Secondary Education Program:** Students should plan to meet with the Education Department Coordinator of the Secondary Education Program as early as possible in their matriculation at Wilkes to ensure completion of the certification program within four years. At that meeting, students will receive an information packet about their program of study in the major and minor that will lead to certification.
- **Study Major and Declare Minor:** Students should begin their studies in an academic major related to certification and declare Secondary Education as a minor.

- **Fulfill English and Mathematics Requirements:** As required by the PDE, within the first 48 credit hours should complete the following courses: English - 7 credits to include ENG 101 (Composition) and ENG 120 (Introduction to Literature and Culture) and Mathematics - 6 credits.
- **Complete ED 180. Earn a 2.5 or higher:** There is no required GPA for ED 180. A grade of 2.5 in ED 180, as well as an overall GPA of 2.5, is required to enroll in ED 190 and ED 191.
- **Comply with Placement Requirements and Secure Proper Clearances:** A *Field Experience Placement Form* must be completed when registering for any course with a field experience. Act 34 (State Police), Act 151 (Child Abuse), and Act 114 (Federal Criminal History) clearances must be applied for and submitted to the Coordinator of Field Placements. These clearances must be clear (no record) and current. These clearances remain valid while the student is continuously enrolled at Wilkes.
- **Apply for Admission to Teacher Education Program:** During ED 190, students must begin the application process for admission to the Teacher Education Program. To be admitted to the TEP, students must achieve an overall GPA of 3.0 and pass all three PRAXIS I exams.
- **Register for and Pass PPST (Pre-Professional Skills Test), also known as Praxis I:** After successfully completing ED 190, students must pass the PRAXIS I (PPST) examinations in reading, writing, and mathematics and have these scores submitted to the Wilkes Education Department. Test bulletins may be obtained from the Education Department; test materials are available at <http://www.ets.org/praxis>. Students may enroll in ED 198, Preparation for PRAXIS I, prior to taking the test. **Students must pass the three PRAXIS I exams to register for any 300-level course related to the minor.**
- **Achieve Required GPA:** Students must earn a minimum of 2.5 in ED 180, ED 190, and ED 191 and achieve an overall GPA of 2.85 to enroll in 200-level education courses beyond these three courses. Then, to enter 300-level courses, students must achieve a 3.0 GPA. Education courses at the 100-, 200-, and 300-level must be passed with a minimum of 2.0. If less than a 2.0 is earned, students

may retake the course only once; the new grade will replace the old.

- **Register for and Pass PRAXIS II:** Preferably prior to student teaching and/or at the conclusion of formal studies in the chosen major field, students should take the appropriate PRAXIS II examination. This is required for certification in Pennsylvania. Complete information about registration, test dates, study guides is available at <http://www.ets.org/praxis>; the Department also provides guidance, resources, and support.
- **Self-Monitor Progress:** Students are responsible to monitor their GPAs each semester; students will be dropped from course(s) if required GPA is not achieved or if all three PRAXIS I tests are not passed before enrolling in 300-level courses.

The Education Minor

The Education minor consists of the following courses:

ED 180 - Educational Psychology (formerly ED 200)

ED 190 - Effective Teaching with Field Experience of 40 hours

Students must have a minimum GPA of 2.5, Field Experience Placement Form submitted, and current Act 34, 151, and FBI clearances submitted to the Coordinator of Field Placements before established deadlines to enroll in ED 190. Students must achieve a final grade of 2.5 or higher in ED 190 to proceed to other Education courses.

ED 191 - Integrating Technology into the Classroom (formerly ED 215)

Students must have a minimum GPA of 2.5 to enroll in ED 191. Students must achieve a final grade of 2.5 or higher and a cumulative GPA of 2.85 or higher to proceed to 200-level Education courses.

EDSP 210 - Teaching Students with Special Needs (formerly ED 210)

Students must have a cumulative GPA of 2.85 or higher to enroll in 200-level Education courses.

ED 220 - Teaching Culturally and Linguistically Diverse Learners (OPO course)

Students must have a cumulative GPA of 2.85 or higher to enroll in 200-level Education courses.

EDSP 225 - Special Education Methods I with Field Experience of 30 hours (OPO course)

Students must have a cumulative GPA of 2.85 or higher to enroll in 200-level Education courses.

ED 380* - Content Area Literacy (*not required for English majors.)

Students must be admitted to TEP prior to enrolling in a 300-level course.

ED 3XX (specific Secondary Methods course) Students must be admitted to TEP prior to enrolling in a 300-level course. These method courses are offered in the fall semester, *except* MTH 303, which is offered every *other* fall semester.

- ED 300 - Special Methods Foreign Languages 7-12 with Field Experience of 40 hours
- ED 371 - Special Methods Sciences 7-12 with Field Experience of 40 hours
- ED 381 - Special Methods Social Studies 7-12 with Field Experience of 40 hours
- ENG 393 - The Teaching of English with Field Experience of 40 hours
- MTH 303 - The Teaching of Mathematics with Field Experience of 40 hours
- EDSP 388 - Inclusionary Practices (3 credits)
- ED 390 - Student Teaching with Seminar (OPO course) (12 credits)

Other recommended courses for secondary education are

- ED 345 - Assessment in Education
- ED 385 - Classroom Management
- PSY 222 - Adolescent Psychology (required course for some majors)
- A foreign language

Candidates must maintain a 2.0 GPA in their secondary major courses and a cumulative 3.0 to remain in the Teacher Education Program.

CERTIFICATION REQUIREMENTS

Biology Certification

Students seeking biology certification should follow the Bachelor of Arts (B.A.) curriculum in Biology. The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking secondary certification in Biology are required to take the following courses:

School of Education

BIO 121 Principles of Modern Biology I
BIO 122 Principles of Modern Biology II
BIO 225 Population & Evolutionary Biology
BIO 226 Cellular & Molecular Biology
BIO 391 Senior Research Project
BIO 392 Senior Research Project
BIO 397 Professional Preparation
Techniques
CHM 113 Elements & Compounds Lab
CHM 115 Elements & Compounds
CHM 114 The Chemical Reaction Lab
CHM 116 The Chemical Reaction
CHM 231 Organic Chemistry I
CHM 233 Organic Chemistry I Lab
CHM 232 Organic Chemistry II
CHM 234 Organic Chemistry II Lab
CS elective
MTH 105 or MTH 111
MTH 106 or MTH 112
PHY 171
PHY 174
Major Electives (12 - 16)

In addition, students must take the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

Chemistry Certification

Students seeking chemistry certification should follow the Bachelor of Arts (B.A.) curriculum in Chemistry. The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking secondary certification in Chemistry are required to take the following courses:

CHM 115 Elements & Compounds
CHM 113 Elements & Compounds Lab
CHM 116 The Chemical Reaction
CHM 114 The Chemical Reaction Lab
CHM 231 Organic Chemistry I
CHM 233 Organic Chemistry I Lab
CHM 232 Organic Chemistry II
CHM 234 Organic Chemistry II Lab
CHM 248 Analytical Chemistry
CHM 246 Analytical Chemistry Lab
CHM 322 Advanced Inorganic Chemistry
CHM 351 Physical Chemistry I
CHM 353 Physical Chemistry I Lab
CHM 352 Physical Chemistry II
CHM 354 Physical Chemistry II Lab
CHM 341 Instrumental Methods for
Chemical Analysis
CHM 343 Instrumental Methods for
Chemical Analysis Lab
CHM 361 or CHM 362 Biochemistry
CHM 370*/ 371*/ 372* (two credits total)
*can each be taken for one or two credits

CHM 390 Junior Seminar
CHM 391 Senior Research I (OPO)
CHM 392 Senior Research II (OPO)
CS 125
MTH 111
MTH 112
MTH 212
PHY 201
PHY 202

Major Electives (six credits required)

In addition, students must take the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

Earth and Space Science Certification /

General Science Certification

Students seeking Earth and Space Science certification should follow the Bachelor of Arts (B.A.) curriculum in Earth and Environmental Sciences. This curriculum emphasizes human interactions with the earth and environmental sciences while still requiring an extensive background in the sciences. The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Required science courses for the Earth and Space Science certification include:

CS Elective
EES 211 - Physical Geology
EES 210 - Global Climatic Change
EES 212 - Historical Geology
EES 230 - Ocean Science
EES 240 - Principles of Environmental
Science
EES 251 - Synoptic Meteorology
EES 280 - Principles of Astronomy
EES 302 & 304 - Literature Methods &
Environmental Data Analysis
EES 394 - Field Study
EES 391 & 392 - Senior Projects I and II
MTH 150 - Elementary Statistics
PHY 171 & 174 - Principles and
Application of Classical and Modern
Physics
PSY 101 - General Psychology
CHM 113 & 115 - Elements and
Compounds with Lab

Optional for General Science Certification:
BIO 121 - Principles of Modern Biology I
BIO 122 or 225 - Principles II or
Population and Evolutionary Biology
CHM 114 & 116 - The Chemical
Reaction with Lab

In addition, students must take the required Education courses and special methods course (ED 371) followed by student teaching as

listed under Secondary Education Requirements.

English Certification

The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking secondary certification in English are required to take the following courses:

- ENG 101 - Composition
- ENG 120 - Literature and Culture
- ENG 201 - Writing about Literature and Culture
- ENG 225 - Comparative Grammar
- ENG 324 - History of the English Language
- Senior Capstone Project

Three of four survey courses

- ENG 233 - Survey of English Literature I
- ENG 234 - Survey of English Literature II
- ENG 281 - Survey of American Literature I
- ENG 282 - Survey of American Literature II

It is recommended that students seeking certification take all four survey courses

12 credit hours in English courses above 300, including ENG 397 Seminar

In addition, students must take PSY 101 (General Psychology), the required Education courses (with the exception of ED 380 Content Area Literacy), and the special methods course (ENG 393) followed by student teaching as listed under Secondary Education Requirements.

Spanish Certification

The B.A. curriculum offers flexibility so that students seeking K-12 certification can include the professional semester of student teaching in the seventh or eighth semester.

Students seeking K-12 certification in Spanish must take the following courses:

- SP 101 and 102 - Elementary I & II
- SP 203 and 204 - Intermediate I & II
- SP 205 - Conversation
- SP 206 - Advanced Grammar, Stylistics, & Composition
- SP 208 - Culture & Civilization
- SP 301 - Introduction to Literature
- SP 298 - Topics
- SP 307 & 308 - Literature I & II
- SP 397 - Seminar
- PSY 101 General Psychology
- PSY 221 Developmental Psychology
- ANT 102 Cultural Anthropology

In addition, students must take the required Education courses and special methods course (ED 300) followed by student teaching as listed under Secondary Education Requirements.

Mathematics Certification

Students seeking Mathematics certification should follow the Teacher Certification track and elect to pursue a Bachelor of Arts or a Bachelor of Science degree. The curriculum for either offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

The requirements for each degree are found in the Undergraduate Bulletin under the Department of Mathematics and Computer Science.

Students seeking certification in Mathematics must take the following courses:

- CS 125 - Computer Science I
- MTH 111 and 112 - Calculus I and II
- MTH 202 - Set Theory & Logic
- MTH 212 - Multivariable Calculus
- MTH 214 - Linear Algebra
- MTH 343 - Introduction to Geometry
- MTH 311 - Real Analysis
- MTH 331 - Introduction to Abstract Algebra I
- MTH 351 - Probability and Mathematical Statistics I
- MTH 391 - Senior Seminar
- PSY 101 - General Psychology
- MTH electives: 3 for B.A.; 9 for B.S.
- Science electives: 6 for B.A.; 7 for B.S.

In addition, students must take the required Education courses and special methods course (MTH 303, offered every other fall semester) followed by student teaching as listed under Secondary Education Requirements.

Social Studies Certification

Students seeking Social Studies certification will major in history or political science.

The B.A. curriculum offers flexibility so that students seeking secondary certification can include the professional semester of student teaching in the seventh or eighth semester.

Students pursuing a History major and seeking secondary certification in Social Studies are required to take the following courses:

- HST 102 - Europe Before 1600
- HST 125 & 126 - American History I & II
- HST 297 Historical Research & Methods
- HST 397 Seminar

School of Education

History electives 15 credits (two American; two non-American topics)

Also required for Social Studies Certification:

ANT 102 Cultural Anthropology
EC 102 Principles of Economics II
PS 111 Introduction to American Politics
PS 141 Introduction to International Politics
PSY 101 General Psychology
PSY 222 Adolescent Psychology
SOC 101 Introduction to Sociology
6 credits in Mathematics (MTH 150 Elementary Statistics is highly recommended.)

In addition, students must take the required Education courses and special methods course (ED 381) followed by student teaching as listed under Secondary Education Requirements.

Students pursuing a Political Science major and seeking secondary certification in Social Studies are required to take the following courses:

PS 111 Introduction to American Politics
PS 141 Introduction to International Politics
PS 151 Governments of the World
PS 260 Introduction to Political Thinking
PS 265 Quantitative Reasoning for Social Sciences
PS 380 PS Senior Project
Major electives: 21 credits

Also required for Social Studies Certification:

ANT 102 Cultural Anthropology
EC 102 Principles of Economics II
HST 101 Historical Foundations
HST 125 & 126 American History I & II
PSY 101 General Psychology
PSY 222 Adolescent Psychology
SOC 101 Introduction to Sociology
6 credits in Mathematics (MTH 150 Elementary Statistics is highly recommended.)

In addition, students must take the required Education courses and special methods course (ED 381) followed by student teaching as listed under Secondary Education Requirements.

TEACHER EDUCATION PROGRAM ADMISSION REQUIREMENTS:

Students interested in preparing for teacher certification must be formally admitted to the Teacher Education Program at Wilkes University, which includes completion of a formal written application. Students are expected to review and comply with policy documents available in the Education

Department (Breiseth Hall 204). Policies may change due to PDE regulation changes.

The criteria for formal admission to the Teacher Education Program are:

1. completed 48 semester hour credits (including 6 credits of Mathematics and 6 credits of English as required by PDE);
 2. a minimum GPA of 2.5 to register for ED 190 (Effective Teaching with Field Experience) and ED 191 (Integrating Technology into the Classroom);
 3. final grades of 2.5 or higher in ED 180, ED 190, and ED 191;
 4. an overall GPA of 2.5 to proceed from 100-level ED to 200-level ED courses;
 5. an overall GPA of 3.0 is needed to be formally admitted into the Teacher Education Program and to continue in courses at the 300-level;
 6. **taking and passing the three PRAXIS tests in Reading, Writing, and Math (administered by Educational Testing Services) in order to register for 300-level Education courses;**
 7. a final grade of 2.0 in all courses (major and minor);
 8. a cumulative 3.0 GPA must be maintained in order to be retained in the program following formal admission (as required by PDE);
 9. submitted current/valid Act 34 State Police Criminal Record Check;
 10. submitted current/valid Act 151 Child Abuse History Clearance;
 11. submitted current/valid Act 114 FBI Fingerprint Check;
 12. completed formal Teacher Education Program Application, essay, signed Code of Professionalism and Academic Honesty, and signed understanding of student policies (completed during ED 190);
- Students must maintain all criteria in order to be retained in the Teacher Education Program.*

TEACHER EDUCATION PROGRAM STUDENT TEACHING REQUIREMENTS:

1. **Successful completion of requirements for TEP Admission and Retention, including passing scores on 3 PPST tests (Reading, Writing, Math)**
2. Achievement of the GPA major and minor requirements

3. Attendance at the Student Teaching Placement Meeting the semester prior to student teaching
4. Completion of all required paperwork obtained at Student Teaching Placement Meeting the semester prior to student teaching
5. Clearances with no offenses
6. Completion of all required coursework and fieldwork, with the exception of Student Teaching
7. Registration form with Advisor's signature
8. Approval of student teaching eligibility by major department, Education Department, and Teacher Education Committee
8. Completed PDE application form PDE 338C (University Verification Form - Part A) for Pennsylvania Teacher Certification.
9. Paid PDE Certification fees with a money order made payable to the "Commonwealth of PA Dept. of Education."

*****Program requirements may change at the discretion of the Pennsylvania Department of Education.***

ELEMENTARY & EARLY CHILDHOOD EDUCATION MAJOR WITH CERTIFICATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

Total Proposed Credits: 124

Elementary and Early Childhood Education majors will also complete a Reading Education minor within the major requirements.

Students are assigned to schools in Wyoming, Luzerne or Lackawanna counties for student teaching.

Note: Student teaching placement is contingent upon availability of supervisors and decisions of school administrators. Students may not student teach in a school from which they have graduated. Students are expected to reside within driving distance from Wilkes University when completing the student teaching semester.

TEACHER EDUCATION PROGRAM REQUIREMENTS FOR GRADUATION AND CERTIFICATION:

1. Achievement of the GPA major and minor requirements.
2. Completed all Wilkes University and TEP requirements.
3. Successfully completed Student Teaching, including satisfactory scores on each category of the Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430).
4. Provided evidence of passing scores on all relevant PRAXIS tests. Note: A student may graduate without passing all PRAXIS II tests, but cannot obtain PDE certification.
5. Completed the Wilkes University application for graduation (provided by the Registrar's office).
6. Reviewed graduation audit (provided by the Registrar's office) with academic advisor.
7. Completed PDE Application Form PDE 338G (General Application) for Pennsylvania Teacher Certification.

First Semester

- FYF 101 First-Year Foundations
- PSY 101 General Psychology
- HST 101 Historical Foundations of the Modern World
- ENG 101 Composition
- CS 115 Computers and Applications

Second Semester

- ED 190 Effective Teaching *40
- ED 191 Integrating Technology into the Classroom
- HST 125/126 American History I or II
- Science Elective
- FL Elective

Third Semester

- MTH 103 Mathematics for Elementary School Teachers I
- SOC 101 Introduction to Sociology
- ENG 120 Introduction to Literature and Culture
- EDSP 210 Teaching Students with Special Needs
- ED 263 Child Development and Cognition *15

Fourth Semester

- Science Elective
- MTH 104 Mathematics for Elementary School Teachers II
- ED 220 Teaching Culturally and Linguistically Diverse Learners
- ED 264 Child Development and Cognition - Classroom Application *30
- EDSP 225 Special Education Methodology I *30

Fifth Semester

School of Education

ART 101, DAN 100, MUS 101, OR THE 100

ED 344 Assessment in Early Childhood & Elementary Education **First Semester**

ED 321 Literacy Foundations I *30

FYF 101 First-Year Foundations ³

ED 341 Language Arts

CS 115 Computers and Applications ³

ED 360 Social Studies

ENG 101 Composition ³

PSY 101 General Psychology ¹⁵

Sixth Semester

ED 180 Educational Psychology ³

ED 330 Mathematics in Early Childhood and Elementary Education

Second Semester

ED 322 Literacy Foundations II

MTH 101 Solving Problems Using Mathematics ³

ED 324 Children's and Adolescent Literature

ED 190 Effective Teaching with Field Experience ³

ED 345 Assessment in Education

ED 370 Science in Early Childhood and Elementary Education ED 191 Integrating Technology into the Classroom

ED 363 School, Family, and Community

Social Science Elective

Major Elective ¹⁸

Seventh Semester

Third Semester

ED 310 Health, Physical Education, and Safety

HST 101 Historical Foundations of the Modern World ³

ED 350 The Arts in Early Childhood and Elementary Education

ENG 120 Introduction to Literature and Culture ³

ED 323 Differentiated Reading

EDSP 210 Teaching Students with Special Needs ³

ED 385 Classroom Management

Math Elective ³

ED 325 Applied Reading Strategies *15

Science Elective ¹⁵

Major Elective

Eighth Semester

ED 390 Student Teaching with Seminar *40 (first two weeks pre-student teaching hours) ¹²

Fourth Semester

EDSP 388 Inclusionary Practices

ED 220 Teaching Culturally & Linguistically Diverse Learners. ⁵

Science Elective ⁵

Visual and Performing Arts Elective

Major Electives

***Denotes field experience hours**

SECONDARY EDUCATION CERTIFICATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE*

Fifth Semester

*Since the Education Minor may be pursued in combination with eight different majors (Biology, Chemistry, Earth & Environmental Sciences, English, History, Mathematics, Political Science, or Spanish), this sequence demonstrates one way all the minor courses should be taken. The required major courses, which all differ in total credits, and the required sequences of those courses may be accommodated to pursue the minor in Education.

EDSP 225 Special Education Method I with Field Experience ³

FL 101 or PHL 101 Foreign Language or Introduction to Philosophy ³

Major Electives

Sixth Semester

Major Electives

ED 380 Content Area Literacy** ³

** not required for English majors

Seventh Semester

ED XXX Special Methods with Field Experience ³

Major Electives

Eighth Semester

To ensure that the academic major and Education minor are completed in four years, early in their matriculation at Wilkes, students should seek advice from the major advisor as well as from the Coordinator of the Secondary Education Program when planning their individual sequence of courses.

ED 390 Student Teaching with Seminar *40 (first two weeks pre-student teaching hours) ¹²

EDSP 388 Inclusionary Practices ⁵

	Major Electives 5	9-
SECONDARY CERTIFICATION AND SPECIAL EDUCATION CERTIFICATION (7-12) - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE		16
Total Proposed Credits: 137 (includes special education classes)		
First Semester		
FYF 101 First-Year Foundations		
ED 180. Educational Psychology		
MTH 101 Quantitative Reasoning		
HST 101 Historical Foundations of the Modern World		
CS 115 Computers and Applications		
	3	1
Second Semester		
ED 190 Effective Teaching *40	3	
ENG 101 Composition	4	
ED 191 Integrating Technology into the Classroom	3	
Science Elective	3	
PSY 101 General Psychology	3	
	16	
Third Semester		
Science Elective	3	
Major Electives	6	
Visual & Performing Arts Elective	3	
EDSP 210 Teaching Students with Special Needs	3	
ENG 120 Introduction to Literature and Culture	3	
	18	
Fourth Semester		
Major Electives	6	
EDSP 225 Special Education Methodology I *30	3	
FL Elective	3	
Social Science Elective	3	
ED 220 Teaching Culturally & Linguistically Diverse Learners	3	
	18	
Fifth Semester		
Second Math Course	3	
EDSP 226 Special Education Methodology II *20	3	
Major Electives	9	
Social Science Elective	3	
PSY 221 Developmental Psych	3	
	18	
Sixth Semester		
EDSP 227 Behavior Management in Special Education *20	3	
EDSP 302 Special Education Methods	3	

¹⁵
*Denotes field experience hours

COLLEGE OF SCIENCE AND ENGINEERING

DEPARTMENT OF AIR AND SPACE STUDIES

DIVISION OF BIOLOGY AND HEALTH SCIENCES

DEPARTMENT OF CHEMISTRY

DIVISION OF ENGINEERING AND PHYSICS

DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

COLLEGE OF SCIENCE AND ENGINEERING

DEAN: DR. DALE A. BRUNS

OUR MISSION

It is the mission of the College of Science and Engineering to provide challenging academic programs that promote understanding of principles in basic and applied sciences and mathematics; foster intellectual curiosity and critical thinking; develop skill in research, information technology, and engineering design; and facilitate student professional growth and development. The College cultivates faculty-student mentoring to promote application of advanced science and engineering concepts to help solve "real-world" problems and to encourage students to participate in leadership roles in their communities and in Northeastern Pennsylvania and to sustain individual initiative and life-long learning.

OUR VISION

Academic programs of the College of Science and Engineering will build on historic strengths of a traditional Wilkes education, revitalized through a new core and participatory strategic planning. Programs of the College emphasize experiential "hands-on" learning, teamwork in laboratories and class projects, state-of-the-art technology, individualized teacher-student mentoring, and a capstone senior research or design project, including cooperative education opportunities in the regional business community. These practical experiences, integrated with our diverse and innovative curricula, enhance our emphasis on core values of academic excellence and student-centered learning. The College seeks to foster agility and technical innovation in response to a rapidly changing marketplace and global economy, competition for quality students in higher education, changing population demographics (traditional students vs. adult learners), and increased requirements of employers for science and engineering graduates. The College will play an integral role in the overall success of the University's strategic goals and will expand its service sector to the Mid-Atlantic region.

PROGRAMS

Our best students and their professional career achievements illustrate the power of a cooperative and supportive learning environment that cuts across individual courses, programs, departments, and curricula. Individual faculty, departments, and programs

of the College have demonstrated academic excellence and success in partnering with industry, working with local community groups and local government, conducting research, serving on national panels and professional organizations, providing student internships, and fostering student-centered research and cooperative education. The College hosts a number of state-of-the-art laboratory facilities, often equipped through faculty grants and research projects that involve undergraduate students. A strong connection to our region enhances cultural, academic, and industrial opportunities for our students. National professional boards have accredited engineering programs within the College and various student chapters of professional organizations are active on campus. Our programs offer diverse opportunities for technical careers in education, industry, and government.

The College includes the following academic departments and divisions:

- Aerospace Studies
- Biology and Health Sciences
- Chemistry
- Engineering and Physics
- Environmental Engineering and Earth Sciences
- Mathematics and Computer Science

Bachelor's Degrees—Majors

- Applied and Engineering Sciences
- Biochemistry
- Biology
- Chemistry
- Computer Information Systems
- Computer Science
- Earth and Environmental Sciences
- Electrical Engineering
- Engineering Management
- Environmental Engineering
- Mathematics
- Mechanical Engineering
- Medical Technology

AIR AND SPACE STUDIES MINOR (AIR FORCE ROTC)

CHAIRPERSON: LIEUTENANT COLONEL TODD PEACHEY

Faculty: Professor: Lt. Col. Kaster

Assistant Professors: Maj. Everitte, Capt. Abadon

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR – 22.

The Air Force Reserve Officer Training Corps (AFROTC) program at Wilkes University permits students to earn commissions as officers in the U.S. Air Force while pursuing a university degree. Students enroll in either the four-year or two-year program. Students with three years remaining until graduation may enroll concurrently in the freshman and sophomore Air and Space Studies courses and can complete the four-year program in three years; moreover, any interested student may call the detachment and query staff regarding additional programs available (408-4860). A minor in Air and Space Studies is available to students who complete a minimum of 22 semester hours including: up to 16 hours of Air and Space Studies courses (AS 101, 102, 201, 202, 301, 302, 401, 402 and 3 hours for AFROTC Field Training AS 240, 4-week AFROTC Field Training; AS 250, 5-week AFROTC Field Training) and a minimum of 3 credit hours within one area listed below. This area should explore a discipline other than the student's major.

Additional courses required in the minor, by concentration:

History: 101, 102, 125, 126, 328, 334, 335, 376.

Political Science: 111, 141, 211, 212, 213, 221, 253, 261, 331, 332.

Business Administration: 151, 233, 234, 321, 326, 327, 341, 351, 352, 354, 356, 357.

Communication: 101, 102, 201, 202, 206, 220, 303, 352, 361, 399.

General Military Course (4-Year Program Only)

The first two years of the four-year program constitute the General Military Course (GMC). GMC courses are open to any university student. Students enrolling in these courses do not incur any military service obligation. (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) The GMC curriculum consists of four one-credit Air and Space Studies courses; a non-credit leadership laboratory each semester, which introduces

students to U.S. Air Force history and environment, customs, courtesies, drill and ceremonies, and leadership skills; and Physical Training (PT) twice weekly.

Field Training

Field training consists of a four-week, 3-credit Air and Space Studies course or a 5-week, 3-credit Air and Space Studies course conducted at selected Air Force bases. It provides students an opportunity to observe Air Force units and people at work; to participate in marksmanship, survival, athletics, and leadership training activities; to experience aircraft orientation flights; and to work with contemporaries from other colleges and universities. Transportation from the legal residence of the cadet to the field training base and return, food, lodging, and medical and dental care are provided by the Air Force.

Professional Development Program (PD) (Optional)

The program allows both GMC and POC members to visit a USAF base for up to three weeks during the summer (cadets attending Field Training are not eligible). PD allows the cadet to “shadow” an active duty officer working in the student’s career interest (i.e., pilot, navigator, communications, intelligence, etc). Transportation from the legal residence of the cadet to the PD base (and return), food, lodging, and medical and dental care during the visit are provided by the Air Force. The participating cadet is also provided a nominal stipend during the program.

Uniforms

All uniforms, equipment, and textbooks for AFROTC are supplied by the U.S. Air Force.

Scholarships

AFROTC also offers 2-to 5-year, full and partial tuition scholarships for which qualified students may compete, if they enroll in AFROTC. All scholarship awards are based on individual merit, regardless of financial need, with most scholarship recipients determined by central selection boards. Since scholarship applicants must meet certain academic, physical fitness and medical requirements to be considered by the scholarship boards, contact the Air and Space Studies Department early in the fall semester. High school students wishing to compete for AFROTC college scholarships must complete and submit an application early in the fall term of their senior year. **ALL AFROTC SCHOLARSHIP RECIPIENTS ENTERING (OR TRANSFERRING TO) WILKES UNIVERSITY RECEIVE FREE ROOM AND BOARD.** (To receive free room and board, the scholarship recipient must live in a Wilkes University-owned and operated

residence hall.) Contracted cadets also receive a monthly stipend (300-\$500, depending on AS-level) and \$900/year for a book allowance.

Commissioning

Students who satisfactorily complete the POC curriculum requirements are commissioned as Second Lieutenants in the U.S. Air Force and will serve on active duty in a career specialty they have chosen, consistent with USAF needs. Qualified students may compete for duty as pilots, navigators, engineers, missile or space operations officers, nurses, engineers, meteorologists, computer analysts, lawyers, security forces or any of a number of other career fields.

RECOMMENDED 4-YEAR COURSE SEQUENCE LEADING TO A COMMISSION IN THE UNITED STATES AIR FORCE

The General Military Course (GMC) consists of four one-credit courses which are introductory in nature and open to freshmen or sophomores. Students enrolling in these courses do not incur any military service obligation (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) Course credit values are shown with each course.

First Semester

AS 101 Foundations of the USAF I	1
AS 103 Leadership Laboratory	0
	<u>1</u>

Second Semester

AS 102 Foundations of the USAF II	1
AS 104 Leadership Laboratory	0
	<u>1</u>

Third Semester

AS 201 Evolution of USAF Air & Space Power I	1
AS 203 Leadership Laboratory	0
	<u>1</u>

Fourth Semester

AS 202 Evolution of USAF Air & Space Power II	1
AS 204 Leadership Laboratory	0
	<u>1</u>

Variations in the above schedule are possible. Sophomores with no AFROTC experience can enroll in both the one-credit freshman and sophomore courses (our "dual-enrollee" program).

Summer Field Training

Only one Field Training class is required. Students attending the 5-week class are students that have not completed the first four semesters of Air and Space Study classes

4-Week AFROTC Field Training

AS 240 4-week AFROTC Field Training	3
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5-Week AFROTC Field Training

AS 250 5-week AFROTC Field Training	3
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The Profession Officer Course (POC) consists of four three-credit courses which focus on leadership, management, national security studies and preparation for active duty. Students enrolled in the POC desiring to commission in the Air Force upon graduation must attend these courses. POC students may incur a military service obligation upon graduation even if they do not successfully complete these courses and fail to commission in the Air Force. (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) Course credit values are shown with each course. These courses are open to all college students as electives with the permission of the chairperson of the department.

Fifth Semester

AS 301 Air Force Leadership Studies I	3
AS 303 Leadership Laboratory	0
	<u>3</u>

Sixth Semester

AS 302 Air Force Leadership Studies II	3
AS 304 Leadership Laboratory	0
	<u>3</u>

Seventh Semester

AS 401 National Security Affairs/Active Duty Preparation I	3
AS 403 Leadership Laboratory	0
	<u>3</u>

Eighth Semester

AS 402 National Security Affairs/Active Duty Preparation II	3
AS 404 Leadership Laboratory	0
	<u>3</u>

DIVISION OF BIOLOGY AND HEALTH SCIENCES

CHAIRPERSON: DR. MICHAEL A. STEELE

Faculty: Professors: Klemow, Steele, Terzaghi

Associate Professors: Biggers, Kalter, Pidcock

Assistant Professors: Gutierrez, Kadlec, Stratford

Adjunct Faculty: Mullen, Ruotolo, Serfass

Faculty Emeriti: Hayes, Turoczi

Coordinator of Health Sciences: Sharp

Lab. Preparation Supervisor: Elias

Lab Preparation Assistant: Buzalka

Biology Instructor and Education Specialist: Chapman

BIOLOGY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOLOGY LEADING TO THE B.A. DEGREE - 122.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOLOGY LEADING TO THE B.S. DEGREE - 122.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR - 22.

The Biology program is a generalized program covering basic areas of biology. Specific pre-professional training is minimized in favor of the broadest possible background in the liberal arts as well as the biological sciences.

The B.A. curriculum offers flexibility so that those students in secondary education who are preparing to teach can include the professional semester of student-teaching in the eighth semester. Students majoring in biology may opt to earn a Pennsylvania Teaching Certificate for teaching biology in grades 7-12 by completing a minor in secondary education.

Students interested in Secondary Education declare the minor in secondary education with their advisor. The minor consists of the following courses: ED180, ED 190, ED 191, ED 220, ED 371 (Teaching Methods in Science), ED 380, ED 390, EDSP 210, EDSP 225 and EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and an overall 3.0 grade point average and pass the appropriate PRAXIS tests in order to be certified.

The B.S. curriculum meets all of the liberal arts requirements for the Bachelor of Arts degree.

In addition, it provides a greater concentration of advanced biology courses. This program is recommended for those students planning to enter industry, professional schools, or continue with graduate study in biology.

In order to emphasize the broadening aspects of biological knowledge, the department has established categories of specific biological fields from which the student must achieve reasonable diversity in the selection of upper-level courses. The four categories are (1) Molecular/Cellular Biology, (2) Structural and Functional Biology, (3) Diversity and Populational Biology, and (4) Botanical Biology. The B.A. major is required to take a total of four electives with one upper-level course from each of the four categories. The B.S. major must take a total of five electives with one upper-level course from each of the four categories and additionally select any one course from those same categories.

Courses within the four categories are constituted as follows:

- (1) Molecular/Cellular – Bio 326, 327, 328, 338, 345, 398
- (2) Structural/Functional – Bio 311, 314, 321, 323, 325, 398
- (3) Diversity/Populational – Bio 306, 312, 341, 343, 344, 346, 398
- (4) Botanical – Bio 361, 362, 366, 368, 398

BIOLOGY MINOR

Students in majors other than Biology may wish to elect a minor in Biology. The minor in Biology shall consist of a minimum of 22 credits. Required courses are Bio 121-122, 225-226 plus two 300-level, biology electives. These upper-level electives (exclusive of Independent Research, Bio 395-396) will be selected after consultation with the department chairperson.

Honors Program in Biology

Honor students in Biology will be recognized upon completion of the following requirements: achieving a graduating grade point average of 3.25 or better, receiving grades of 3.00 or better in all biology courses, pursuing independent research in biology and presenting their project results either at a national or regional scientific conference or through publication of a research paper. The distinction "Honors in Biology" will be recorded on the student's transcript upon graduation.

BIOLOGY MAJOR- REQUIRED COURSES
AND RECOMMENDED COURSE
SEQUENCES

First Semester

	B.A.	B.S.
Bio 121 - Principles of Modern Biology I	4	4
Chm 113 - Elem. & Compounds Lab	1	1
Chm 115 - Elements & Compounds	3	3
FYF 101 - First-Year Foundations	3	3
Mth 105 - Calculus for Life, Managerial, and Social Sciences I or Mth 111 - Calculus I	4	4
	<hr/>	<hr/>
	15	15

Second Semester

	B.A.	B.S.
Bio 122 - Principles of Modern Biology II	4	4
Chm 114 - The Chem. Reaction Lab	1	1
Chm 116 - The Chemical Reaction	3	3
Eng 101 - Composition	4	4
Mth 106 Calculus for Life, Managerial, and Social Sciences II or Mth 112 - Calculus II	4	4
	<hr/>	<hr/>
	16	16

Third Semester

	B.A.	B.S.
Bio 225 - Population and Evolutionary Bio.	4	4
Chm 231 - Organic Chemistry I	3	3
Chm 233 - Organic Chem. I Lab	1	1
Distribution Requirements	6	6
	<hr/>	<hr/>
	14	14

Fourth Semester

	B.A.	B.S.
Bio 226 Cellular and Molecular Biology	4	4
Chm 232 - Organic Chemistry II	3	3
Chm 234 - Organic Chem. II Lab	1	1
Distribution Requirements	6	6
	<hr/>	<hr/>
	14	14

Fifth Semester

	B.A.	B.S.
Bio 397 - Professional Prep. Techniques*	2	2
Bio Elective/Research	3	3
Phy 171 - Classical and Modern	4	4

Physics

Distribution Requirements	0	3
Free Elective**	9	3
Mth 150 Elementary Statistics		3
	<hr/>	<hr/>
	16-	16-
	18	18

Sixth Semester

	B.A.	B.S.
Bio 397 - Professional Prep. Techniques*	2	2
Bio Elective/Research	3	3
Phy 174 - Classical and Modern Physics	4	4
Distribution Requirements	3	3
Computer Science Elective	3	3
	<hr/>	<hr/>
	13-	13-
	15	15

Seventh Semester

	B.A.	B.S.
Bio 391 - Senior Research Projects	1	1
Bio Electives	3-4	6-8
Free Electives**	12	9
	<hr/>	<hr/>
	16-	16-
	17	18

Eighth Semester

	B.A.	B.S.
Bio 392 - Senior Research Projects	2	2
Bio Electives	3-4	6-7
Distribution Requirement	3	0
Free Electives**	7	7
	<hr/>	<hr/>
	15-	15-
	16	16

No more than four credits of Bio 395/396 can count toward the major.

*Only one semester of Bio 397 is required but it must be taken in either the fifth or sixth semester.

**Any course other than a biology course.

MARINE SCIENCE OPTION WITH A MAJOR
IN BIOLOGY AND A MINOR IN EARTH AND
ENVIRONMENTAL SCIENCES

Wilkes University is a member of the Wallops Island Marine Science Consortium, an association of both state and private institutions that oversee the operation of a marine field station located in southeastern Virginia. Through its membership in the Consortium, Wilkes offers to its students the full range of courses in marine sciences and oceanography regularly taught at the Station each summer. Interested students in Biology

College of Science and Engineering

may formally pursue a Marine Science Option concentration in a four-year program that is fully integrated into their major and a minor in Earth and Environmental Sciences. On a less formal basis, students who meet course prerequisites may complement regular coursework with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island Marine Science Station typically carry three credits and involve three weeks of intensive field and laboratory study at the Marine Station and related field sites (e.g. Florida Keys and Honduras). Facilities at the Station include dormitory space, cafeteria, labs, lecture halls, a variety of field and laboratory equipment (e.g. one large oceanographic vessel and three inshore vessels) and a range of inshore, offshore, and estuarine field sites. To enroll, students must first contact the coordinators of the Wallops Island Program at Wilkes University (prior to the spring semester) and then register for the appropriate course through the Wilkes University Registrar.

Courses regularly offered at the Station include:

MS 110 - Introduction to Oceanography
 MS 211 - Field Methods in Oceanography
 MS 221 - Marine Invertebrates
 MS 241 - Marine Biology
 MS 250 - Wetland Ecology
 MS 260 - Marine Ecology
 MS 300 - Behavior of Marine Organisms
 MS 330 - Tropical Invertebrates
 MS 331 - Chemical Oceanography
 MS 342 - Marine Biology
 MS 343 - Marine Ichthyology
 MS 345 - Ornithology
 MS 352 - Modeling in Environmental Biological Sciences
 MS 362 - Marine Geology
 MS 390 - Undergraduate Research in Marine Science
 MS 394 - Physiology of Marine Organisms
 MS 431 - Ecology of Marine Plankton
 MS 432 - Marine Evolutionary Ecology
 MS 433 - Advanced Methods in Coastal Ecology
 MS 450 - Coastal Geomorphology
 MS 451 - Coastal Environmental Oceanography
 MS 464 - Biological Oceanography
 MS 470 - Research Diver Methods
 MS 471 - Scanning Electron Microscopy: Marine Applications
 MS 490 - Marine Aquaculture
 MS 491 - Coral Reef Ecology and MS 492 - Marine Mammals
 MS 493 - Behavioral Ecology
 MS 500 - Problems in Marine Science

See Coordinators of the Wallops Island Program for outlines of individual courses and for information on the structure of the Marine Sciences Option.

MARINE SCIENCE OPTION CONCENTRATION WITH A MAJOR IN BIOLOGY- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Bio 121 - Modern Biology I	4
FYF 101 - First-Year Foundations	3
Mth 111 - Calculus I or	4
Mth 105 - Calculus for LMSS	
Chm 113 - Elements and Compounds Lab	1
Chm 115 - Elements and Compounds	3
	<hr/> 15
Second Semester	
Bio 122 - Modern Biology II	4
Eng 101 - Composition	4
Mth 112 - Calculus II or	4
Mth 106 - Calculus for LMSS	
Chm 114 - The Chemical Reaction Lab	1
Chm 116 - The Chemical Reaction	3
	<hr/> 16
Third Semester	
Bio 225 - Population and Evolutionary Biology	4
Chm 231 - Organic Chemistry I	3
Chm 233 - Organic Chemistry I Lab	1
EES 230 - Ocean Science	4
Distribution Requirement	3
	<hr/> 15
Fourth Semester	
Bio 226 Cellular and Molecular Biology	4
Chm 232 - Organic Chemistry II	3
Chm 234 - Organic Chemistry II Lab	1
Computer Science Elective	3
Distribution Requirements	3
Mth 150 Statistics	3
	<hr/> 17
MS__ Summer College MCS ²	3
Fifth Semester	
Phy 171 - Classical and Modern Physics	4
Bio 397 - Professional Preparation Techniques	2
Bio Electives/Research	6
Distribution Requirement	3
	<hr/> 15
Sixth Semester	
Phy 174 - Classical and Modern Physics	4

EES Elective	3
Bio Elective/Research	3
Bio/EES 343 - Marine Ecology 1, 3	3
Distribution Requirement	3
	<hr/>
	16
MS__ Summer College MCS ²	3
Seventh Semester	
Bio 391 - Senior Projects I	2
Bio Electives	3-4
Free Electives	6
Distribution Requirement	3
	<hr/>
	14-15
Eighth Semester	
Bio 392 - Senior Projects II	2
Bio Electives	6-7
Distribution Requirement	3
EES Elective	2-3
	<hr/>
	13-15

¹ EES/BIO 343 counts toward both BIO degree and EES minor.

² EES minor credits includes 2 MS courses at MSC Wallops Island, but not MS 110 or MS 260.

³ 18 minimum credits for EES minor includes BIO/EES 343.

Summary of Requirements:

Biology Course Credits (BIO 121, 122, 225, 226, 343, 397, 391, 392 & Wilkes BIO electives (18-20 credits) = 42-44

EES Minor Credits (EES 230, 343, 2 Wilkes EES electives, and 2 MS) = 18-19

Other Science, Math and Free Elective Credit = 48; Core and Distribution Credits = 25;

Minimum Program Credits = 127

HEALTH SCIENCES

EILEEN M. SHARP, M.S., COORDINATOR FOR HEALTH SCIENCES PROFESSIONAL PROGRAMS

DEBRA I. CHAPMAN, M.S., PREMEDICAL AND PRE-PROFESSIONAL PROGRAMS ADVISOR

Adjunct Faculty:

Ms. Denise Dolan, Coordinator, Medical Education, Guthrie Health System, Sayer, PA; and Richard English, M.D., Program Director, Family Practice Residency Program, Wyoming Valley Health Care System, Wilkes-Barre, PA in the premedical programs. Brian D. Spezialetti, Program Director, Medical Technology Program, Robert Packer Hospital, and Joseph King, M.D., Medical Director, Medical Technology Program, Robert Packer Hospital for the medical technology programs.

Health Sciences Committee

(reports to Dale Bruns, Ph.D., Dean of the College of Science and Engineering) Michael A. Steele, Ph.D., Committee Chair, Professor of Biology and Chair,

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Wilkes University has a long-standing tradition of educating students who become health care professionals in a variety of community settings—large and small, rural and urban. The Health Sciences Programs at Wilkes provide a particularly broad and rich range of choices for entry into the medical and allied health professions.

The University's medical pre-professional programs prepare students for careers in allopathic and osteopathic medicine, dentistry, optometry, podiatric medicine, and veterinary medicine. Pre-professional programs in allied health provide preparation for students to enter the health care professions of physical therapy, occupational therapy, and clinical laboratory sciences.

Advisement, Guidelines and Procedures for all Health Sciences Students

All Health Sciences students must declare a specific academic major and also complete a core of courses for their chosen health profession. Many pre-doctoral students major in Biology, Chemistry or Biochemistry. However, students who have majored in the traditional liberal arts, Math or Engineering have also been successful in gaining admission to health professions schools. Health professions schools are generally interested in students who have in-depth training in the sciences along with a broad background in the humanities and social sciences. Many students pursuing one of the allied health areas major in Biology, Psychology or one of the other traditional science or social science programs.

An important component of the University's Health Sciences Programs is its counseling and advising system. The Wilkes tradition of close student advising permits thorough understanding of the student's aspirations and goals. A faculty advisor is assigned to the student in his or her academic major. This academic advisor is the first point of contact

regarding course planning and registration for the student. In addition, the student is counseled on the particulars of pre-doctoral and allied health education by the advisors in the Health Sciences Office.

The Health Sciences Office specifically provides information about standards for admission to the various health professions. In addition, time lines for individual programs, admission services for health professions schools, test dates and study guides for professional school admission exams, admission deadlines, and catalogues from a variety of professional schools in the health sciences are available.

All students planning to pursue careers in the health sciences must declare their specific interest with the Wilkes Health Sciences Office. Students must complete a Health Sciences Declaration Form as soon as they determine their interest and submit a schedule of their classes each semester to that office. The Declaration Form enables the Health Sciences Office to track the student and monitor his or her academic progress.

HEALTH SCIENCES PRE-PROFESSIONAL PROGRAMS

These programs prepare students for health professional programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine and Veterinary Medicine.

Overview

Wilkes University offers premedical programs that share a fundamental and formative premise— that unprecedented technological and scientific dynamism will characterize the context of medical careers conducted in the next thirty to fifty years. This perspective has important implications for the future health professionals' baccalaureate studies, including the need to master computer-based information access systems, to reach a level of mastery in the sciences permitting independent judgment and research, and to grow in ethical sensitivity and sophistication. Drawing on the University's strengths in science, information systems, and the humanities, Wilkes has defined an approach to health sciences pre-professional education that produces exceptionally competent and competitive candidates for admission to the nation's leading health professions institutions.

The Wilkes Health Sciences pre-professional graduate stands out first of all because he or she is not only broadly trained but also has mastered the rapidly evolving medical information technologies. Throughout the

science curriculum at Wilkes, students are exposed to and use databases that relate up-to-date information at the cutting edge of research in science fields. Interviews with professional school professors and admissions officers indicate that such information access skills are increasingly relevant and are essential for the health practitioner. As a comprehensive University, with a full range of bachelor's and master's degree programs in natural sciences, computer science, and engineering, Wilkes provides a sophisticated, research-capable science environment in which students learn how to negotiate the information-rich, highly complex, world of scientific database communications.

The future health practitioner will also be called upon to assess and implement promising information emerging in the fields of molecular biology, biochemistry, cell biology, and organic chemistry. A general exposure to science at the undergraduate level, typical of liberal arts college health sciences pre-professional studies, will no longer be sufficient to prepare medical students and practitioners to be fully competent as professionals. The Wilkes science-intensive pre-professional program involves students in research projects and applications activities during their undergraduate years and helps them to gain real mastery as scientists, able to make independent judgments and to conceptualize and conduct independent research. Health care now makes obsolete the former dichotomous categorization of science and pre-professional studies, in that the superior physician will increasingly have to be a research-capable scientist. Pre-professional studies at Wilkes have adapted to this trend well in advance of programs at most other institutions.

Database information and scientific dynamism make it necessary to focus attention on the moral and ethical dimensions of pre-professional studies. Through its General Education Requirements, Wilkes provides the future health practitioner with a highly meaningful learning experience in philosophy, ethics, and social problems. These learning experiences are augmented by the robust atmosphere of intellectual discussion and debate, which has long been one of Wilkes' distinguishing institutional characteristics, as a nondenominational, non-sectarian university at which issues of morality and ethics are taken seriously. In this way Wilkes prepares its Health Sciences students for the real world in which they will function as broadly educated, competent professionals.

The descriptions of courses and curricula that follow put into practice what we at Wilkes believe to be a progressive program of pre-professional studies in health care careers.

The Wilkes Health Sciences Pre-professional Core

(Required of all students aspiring to enter programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine, and Veterinary Medicine.)

A unique feature of the University's pre-professional education is the pre-professional core, a sequence of courses designed to prepare students for the challenges and rigors of a health care doctoral education. The core was developed after consulting admissions personnel from health professions schools regarding undergraduate courses required for admission. The pre-professional core not only includes the traditional requirements expected by health professions schools, but also capitalizes on the University's strengths in science and technology.

The pre-professional core includes a meaningful research or project experience, a practicum and observation experience provided by local health professionals, knowledge and utilization of computers in healthcare, meaningful laboratory background with emphasis on the understanding and use of modern instrumentation, and participation in a variety of seminars and programs offered through the Health Sciences Office.

The Wilkes Pre-professional Core requires the following courses as a minimum:*

2 courses in Modern Biology (BIO 121-122)

(A third course in Comparative Anatomy, BIO 314, is recommended)

4 courses in Chemistry (CHM 115-116, 231-232)

1 course in Biochemistry (CHM 361 or 362)

1 course in Medical Informatics (CS 265)

2 courses in Physics (PHY 171-174 or 201-202)

2 courses in Mathematics (MTH 105-106 or 111-112)

1 course in Psychology (PSY 101)

1-2 courses in English** (emphasizing writing skills)

Research course or a Special Project ***

A shadowing experience (20–25 hrs) in each of the undergraduate years

Attendance at Health Science Office-sponsored events on campus

**Pre-optometry students are also required to complete statistics (MTH 150), Cellular and Molecular Biology (BIO 226) and Medical Microbiology (BIO 327).*

**Pre-dentistry students are also required to complete a course in sculpture (ART 122).*

***English course requirements (as well as other prerequisite course requirements) vary from one health professions school to another. It is the student's responsibility to meet the requirements of a particular health professions school.*

****Students enrolled in one of the accelerated seven-year programs may elect to be waived from the senior year research course or special project.*

All students intending to enter doctoral programs in health care must complete these pre-professional core courses. Students should work with their academic advisors to integrate this core into the recommended course sequence for their academic major as outlined in this Bulletin.

The goals of the Pre-professional Core are to:

- Help the student develop a useful scientific foundation.
- Serve as a unique signature, which Wilkes graduates can carry forward as successful professionals.
- Facilitate the preparation for standardized admissions tests such as the MCAT, OAT, and DAT.

Letter of Evaluation

Students applying to a health professions school may request a Letter of Evaluation from the Wilkes Health Sciences Committee. In order to receive the Letter of Evaluation from the Committee, students must have a Declaration Form on file, successfully complete the Pre-professional Core, develop knowledge of and experience in the field they wish to enter through shadowing and gain experience in the social service field by volunteering their time with community agencies. These types of experiences are required by most health-professions schools. The application for the committee letter must be submitted to the Health Sciences Committee by May 1st of a student's junior year.

Placement of Pre-doctoral Students

Wilkes enjoys an enviable record of placement of students in health professions schools with acceptance rates of almost 90%. Allopathic medical schools accepting Wilkes students

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include George Washington, Georgetown, Harvard, Johns Hopkins, Drexel University, Pennsylvania State University-Hershey, Stanford, SUNY Upstate, Temple University, Thomas Jefferson University, Tulane, the University of Pennsylvania, the University of Pittsburgh and Yale. A number of Wilkes students also enter osteopathic medical schools such as Lake Erie College of Osteopathic Medicine, the Philadelphia College of Osteopathic Medicine, Ohio University College of Osteopathic Medicine, and University of Health Sciences College of Osteopathic Medicine in Kansas City.

Wilkes students have attended dental school at the University of Connecticut, Tufts University, the University of Pittsburgh, the University of Buffalo School of Dental Medicine, and Temple University. Preoptometry students have gained admission to institutions such as Illinois College of Optometry, New England College of Optometry, Ohio State University College of Optometry, and Pennsylvania College of Optometry. Podiatric medical schools accepting Wilkes students include California College of Podiatric Medicine, New York College of Podiatric Medicine, Ohio College of Podiatric Medicine, and Temple University School of Podiatric Medicine. Wilkes students have also gained admission to veterinary schools such as the Oklahoma State University School of Veterinary Medicine, the University of Illinois School of Veterinary Medicine, University of Pennsylvania School of Veterinary Medicine, the University of Wisconsin-Madison Veterinary School, and the Virginia-Maryland Regional College of Veterinary Medicine.

AFFILIATED DEGREE PROGRAMS IN MEDICINE

I. Early Assurance B.S./M.D. Programs in Allopathic Medicine

Wilkes has developed special early assurance joint B.S./M.D. degree programs and established agreements with three major medical schools, which lead to a baccalaureate degree from Wilkes University and the professional degree in medicine upon completion of medical school. Once students have been granted acceptance to Wilkes University, and identified as qualified to be considered for selection to one of the early assurance programs, they will be required to submit essays and letters of recommendation from two high school science teachers and one humanities/English teacher to the Health Sciences Committee and successfully complete three interviews. If ultimately selected for any

of the three programs, students must satisfy all requirements as articulated in each specific affiliation agreement. All students in these early assurance programs will spend their 7th or 8th semester in a clinical setting. Wilkes University has established special affiliations with Guthrie Health Systems (GHS), which includes the Robert Packer Medical Center in Sayre, Pennsylvania (Guthrie Scholars) and the Wyoming Valley Health Care System (WVHCS), which includes the General Hospital in Wilkes-Barre, PA (Wyoming Valley Scholars) for students to participate in this clinical experience.

A. PREMEDICAL SCHOLARS PROGRAMS WITH DREXEL (FORMERLY MCP-HAHNEMANN) UNIVERSITY SCHOOL OF MEDICINE

Drexel University School of Medicine (Drexel) in Philadelphia and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from northeastern Pennsylvania and the southern tier of New York State (from Binghamton to Corning) who are interested in a career in medicine. Students from northeastern Pennsylvania may choose either the Guthrie Scholars or the Wyoming Valley Scholars clinical site. Southern tier New York students will spend their semester at the Guthrie clinical site.

This program allows high school seniors to be assured admission to Drexel University School of Medicine as they enter Wilkes University to do their undergraduate work. Details of this program are as follows:

1. Program Admission

- a. To be considered for selection to the Drexel Premedical Scholars Program, applicants must meet the following conditions:
 - Be accepted into the entering freshman class at Wilkes University by November 15th of their senior year in high school.
 - Have a minimum combined SAT score of 1270 (with no subset less than 560) (The new SAT writing sample will be considered, but no official minimum score has yet been determined.)
 - Have a high GPA
 - Rank in the top 10% of their high school graduating class

- Have satisfactorily completed Completed the following high school prerequisite courses or equivalents: four (4) years of mathematics; four (4) years of English; three (3) years of science (at least one semester each of biology, chemistry, and physics)
 - Have had at least one shadowing experience (preferably with a primary care or general practice physician)
- b. Up to six (6) Premedical Scholars may be selected to the program each year.
 - c. Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office will notify students who meet minimal qualification criteria for selection to this early assurance program. To be selected, students are required to successfully complete interviews at Wilkes, at either the Robert Packer Medical Center of the Guthrie Health Care System or the Wyoming Valley Health Care System, and at the Drexel University School of Medicine.
 - d. Only students from northeastern Pennsylvania and the lower tier of New York (from Binghamton to Corning) for the Guthrie Scholars Program and northeastern Pennsylvania for the WVHCS Scholars Program will be considered.
 - e. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
 - f. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core. Students must maintain a minimum overall GPA of 3.5 and a cumulative GPA of 3.5 in the prerequisite sciences during their four (4) years at Wilkes, without repeating a course. Students who receive a grade below a 2.0 in any course will be automatically disqualified from the program. Students must score, in a single test, "9" or better on the verbal subsection and "10" or better on the physical sciences and biological sciences subsections or a minimum score of 31 (with no sub-section less than "8") and a letter score of "M" or higher on the writing subsection of the MCAT by the end of their junior year at Wilkes to complete the medical school admission requirements. Additional requirements are specified in the acceptance letter from the medical school and Wilkes University.
- b. The off-campus clinical semester requires a total of 15 credits of course work, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussion on Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department. *Students in the Guthrie Program* will spend the 7th or 8th semester of undergraduate study at the Robert Packer Medical Center in Sayre, PA, doing clinical research and studying the rural and semi-rural Health Care Delivery System of northeastern Pennsylvania and the lower tier of New York. In return for Guthrie's investment in them, students in the Guthrie Scholars Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Robert Packer Medical Center. *Students in the WVHCS Program* will spend the 7th or 8th semester of undergraduate study at the Wyoming Valley Health Care System in Kingston, PA, doing clinical research and studying the semi-rural Health Care Delivery System of northeastern Pennsylvania. In return for Wyoming Valley's investment in them, students in the WVHCS Scholars Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Wyoming Valley Health Care System.

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- c. Four (4) years of medical school study at Drexel University.

B. THE PREMEDICAL SCHOLARS PROGRAM WITH THE PENNSYLVANIA STATE UNIVERSITY COLLEGE OF MEDICINE AT HERSHEY

The Pennsylvania State University College of Medicine at Hershey (Penn State Hershey) and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from rural and/or medically underserved areas of Pennsylvania who must be interested in a career in primary health medicine. This program allows students to select either the Guthrie Scholars clinical site or the Wyoming Valley Scholars clinical site for their senior year clinical experience.

The program allows high school seniors to be assured admission to the Pennsylvania State University College of Medicine at Hershey as they enter Wilkes University to do their undergraduate work. Details of this program are as follows:

1. Program Admission

- a. To be considered for selection to the Penn State Hershey Premedical Scholars Program, applicants must meet the following conditions:
- Be accepted into the entering freshman class at Wilkes University by November 15th of their senior year in high school
 - Have a minimum combined SAT score of 1250 (The new SAT writing sample will be considered, but no official minimum score has yet been determined.)
 - Have a high GPA
 - Rank in the top 10% of their high school graduating class
 - Have satisfactorily completed three (3) years of natural sciences, including biology, chemistry and physics, and mathematics through trigonometry (calculus is recommended)
 - Have had at least one shadowing experience (preferably with a primary care or general practice physician)
- b. Two Premedical Scholars may be selected to the program each year.

- c. Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office will notify students who meet minimum qualification criteria for selection to this early assurance program. To be selected, students are required to successfully complete interviews at Wilkes, at either the Robert Packer Medical Center of the Guthrie Health Care System or the Wyoming Valley Health Care System, and at the Pennsylvania State University College of Medicine.
- d. Emphasis in recruiting will be placed on students from rural and/or medically underserved areas of Pennsylvania who wish to pursue a career in primary care medicine.
- e. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- f. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four years of successful undergraduate premedical study at Wilkes University. Student must maintain a minimum GPA of 3.5 in biology, chemistry and physics and an overall GPA of at least 3.5 by the end of their junior year at Wilkes. Specific criteria by year are as follows.

Freshman Year

- Minimum GPA of 3.3

Sophomore Year

- Minimum GPA of 3.4
- Shadowing experience with a primary care physician
- Meet with the Associate Dean for Admissions and Student Affairs of the Penn State College of Medicine

Junior Year

- Minimum GPA in biology, chemistry and physics of 3.5 and a minimum overall GPA of 3.5
- A second shadowing experience with a primary care physician
- A Letter of Evaluation from the Health Sciences Committee at Wilkes University
- Completion of the MCAT
- Completion of the AMCAS application

Senior Year

- Maintain a high level of academic achievement and complete the Wilkes University premedical core of courses
 - Participate in the clinical site experience during the 7th or 8th semester
 - Meet with the Associate Dean for Admissions and Student Affairs of the Penn State College of Medicine
- a. The off-campus semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions on Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department.
 - b. Students must complete their 7th or 8th semester in college at either the Robert Packer Hospital or the General Hospital. In return for Guthrie's or Wyoming Valley's investment in them, students must spend parts of the 3rd and 4th years in medical school doing required and elective clinical rotations at either Robert Packer Medical Center or General Hospital (dependent on which location they spent their 7th or 8th semester at Wilkes).
 - c. Completion of the MCAT examination is required for admission to the Pennsylvania State University College of Medicine. The exam must be taken by April of the junior year at Wilkes. Students are expected to perform at or above the mean score in each section when compared with the previous College of Medicine entering class. Additional requirements are specified in the acceptance letter from the medical school and Wilkes University.
 - d. Four (4) years of medical school study at the Pennsylvania State University College of Medicine at Hershey.

C. THE PREMEDICAL SCHOLARS PROGRAM WITH THE STATE UNIVERSITY OF NEW YORK UPSTATE MEDICAL UNIVERSITY AT SYRACUSE, NEW YORK (SUNY UPSTATE)

The State University of New York Upstate Medical University at Syracuse, New York (SUNY Upstate) and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from the southern tier of New York State, from Binghamton to Corning. Students will

spend their clinical semester at the Guthrie Scholars clinical site in Sayre, Pennsylvania.

This program allows high school seniors to be assured admission to SUNY Upstate Medical University as they enter Wilkes University to do their undergraduate work. The program is as follows:

1. Program Admission

- a. High school applicants must have a minimum combined SAT score of 1200 to be considered for admission to the SUNY Upstate Premedical Scholars Program. The new SAT writing sample will be considered, but no official minimum score has yet been determined.
- b. Students admitted to the program, after successful interviews at Wilkes, Robert Packer Medical Center, and SUNY Upstate, will be simultaneously assured admission to medical school at SUNY Upstate Medical University and to Wilkes University.
- c. Students must maintain a minimum GPA of 3.5 in biology, chemistry, mathematics and physics (BCMP) during their first three (3) years at Wilkes to complete the medical school admission requirements. [No Medical College Admission Test (MCAT) is required] Additional requirements will be specified in the acceptance letter from the medical school and Wilkes University.
- d. Emphasis in recruiting for this program will be placed on students from the southern tier of New York State, from Binghamton to Corning.
- e. The deadline for application and acceptance to Wilkes University is November 15th of their senior year in high school.
- f. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- g. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core.

- b. The off-campus semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions of Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each department.
Students in the program will spend the 7th or 8th semester of undergraduate study at the Guthrie Scholars clinical site in Sayre, Pennsylvania, doing clinical and basic science research, and studying the rural and semi-rural Health Care Delivery System of New York. In return for Guthrie's investment in them, students in the SUNY Upstate Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Robert Packer Medical Center.
- c. Four (4) years of medical school study at SUNY Upstate Medical University. Third and fourth year medical students in the program will be assigned to the SUNY Upstate Clinical campus at Binghamton to complete their required and elective clinical rotations.

II. Seven-Year Affiliated Health Professions Programs

In addition to the traditional four-year premedical undergraduate programs, Wilkes University has developed affiliations with health professions schools in osteopathic medicine, dentistry, optometry, and podiatric medicine. These programs permit students to spend three years at Wilkes in the basic sciences and liberal arts and four years at the affiliated health professions school. The University has developed these seven-year health professions programs with the following institutions:

- Philadelphia College of Osteopathic Medicine (PCOM)
- Temple University School of Dentistry (TUSD)
- Pennsylvania College of Optometry (PCO)
- Temple University School of Podiatric Medicine (TUSPM)
- State University of New York College of Optometry (SUNY-Optometry)

These programs offer a unique opportunity for outstanding high school students, who are fairly certain of the career path they wish to pursue, to complete their pre-professional and professional education in seven years. Students should have a high GPA and high rank in their high school graduating class, a

combined SAT score of 1200 or better (with no score less than 550) and have completed Honors or AP coursework, especially in the sciences. The new SAT writing sample will be considered, but no official minimum score has yet been determined.

In order to qualify for any of these seven-year programs, students must apply and be accepted to Wilkes University by January 1st of their senior year in high school. If minimum prerequisites are met and students are accepted to the University, they will be interviewed by representatives of the Wilkes University Health Sciences Committee prior to April 1st of their senior year in high school for final selection. Once students are selected for one of these affiliated programs and begin their undergraduate education, they will receive assistance from the Health Sciences Office in advising them through their accelerated program of study and in the application process to the health profession school. Students will be expected to maintain a high GPA and are required to participate in shadowing experiences, volunteer activities and seminars and programs sponsored by the Health Sciences Office during their three years at Wilkes in addition to meeting the requirements listed below by each individual health professional institution.

SEVEN-YEAR PROGRAMS WITH A MAJOR IN BIOLOGY- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
BIO 121 Principals of Modern Biology I	4
CHM 113 Elements and Compounds Lab	1
CHM 115 Elements and Compounds	3
FYF 101 First-Year Foundations	3
MTH 105 Calculus for Life, Managerial and Social Sciences I	4
	15
Second Semester	
BIO 122 Principals of Modern Biology II	4
CHM 114 The Chemical Reaction Lab	1
CHM 116 The Chemical Reaction	3
ENG 101 Composition	4
MTH 106 Calculus for Life, Managerial and Social Sciences II	4
	16
Third Semester	
BIO 225 Population and Evolutionary Biology	4
CHM 231 Organic Chemistry I	4
COM 101 Fundamentals of Public Speaking	3
Distribution Requirement	3

Distribution Requirement	3
	17
Fourth Semester	
BIO 226 Cellular and molecular Biology	4
CHM 232 Organic Chemistry II	4
PSY 101 General Psychology	3
CS 265 Medical Informatics	3
Distribution Requirement	3
	17
Fifth Semester	
BIO 397 Professional Preparation Techniques	2
BIO Elective	4
PHY 171 Princ. of Classical and Modern Physics	4
MTH 150 Elementary Statistics	3
Distribution Requirement	3
	16
Sixth Semester	
BIO Elective	4
CHM 362 Biochemistry: Metabolism	4
PHY 174 App. of Classical and Modern Physics	3
Distribution Requirement	3
Free Elective	3
	17

Select one course from Structural/Functional category.

Select one course from Diversity/Populational category.

Pre-optometry students must complete BIO 327 (Medical Microbiology).

Following successful completion of their first year of basic science education in professional school, a student is responsible for transferring the credits earned at the professional school to Wilkes and Wilkes will confer upon each student the Wilkes University baccalaureate degree.

Wilkes University students must apply for and receive a Health Sciences Committee Letter of Evaluation after their sophomore year in order to apply to any of the affiliated institutions. Only students who have earned a high grade point average by the end of their sophomore year and who have fulfilled appropriate requirements of the Pre-professional Core and the General Education Requirements will be endorsed and receive a Letter of Evaluation for the seven-year programs. Students whose academic credentials fall beneath the standards set by the Committee will be advised to complete a third year of study at Wilkes before

reapplying for a Letter of Evaluation. Decisions for admission to these health professions schools are made by a Joint Admissions Committee from Wilkes University and the affiliated institution. Students must meet all admission requirements as outlined by the health professions schools with the final admission decision determined by the health professions institution.

• *Philadelphia College of Osteopathic Medicine (PCOM)*

PCOM holds up to fifteen (15) seats each year for Wilkes University students who are recommended by the Health Sciences Committee for admission and who meet all of PCOM's admission requirements. Students should consult the Wilkes Health Sciences Office for information regarding PCOM's requirements for a minimum grade point average and MCAT score.

• *Temple University School of Dentistry (TUSD)*

TUSD reserves a minimum of four (4) seats each year for Wilkes students who meet all of Temple University's admission requirements. Wilkes students will be granted an automatic invitation for an interview if they submit their application no later than December 1 of the year prior to matriculation to TUSD and they meet the following minimum requirements as specified by Temple Dentistry:

- Track as a science major in the Wilkes pre dental program.
- Submit application letter to TUSD prior to December 1 of the junior year at Wilkes.
- Receive a Letter of Evaluation from the Wilkes University Health Sciences Committee.
- Earn a minimum grade point average of 3.5 by the end of the 5th semester in the Basic Sciences, 3.4 in the Sciences, and 3.3 overall.
- Earn a minimum score of 18 in the Science section and 18 as the academic average on the Dental Admission Test (DAT).

Students who are interviewed will then be evaluated for admission by the Temple University Admission Committee.

Pennsylvania College of Optometry (PCO)

State University of New York College of Optometry (SUNY-Optometry)

Temple University School of Podiatric

Medicine (TUSPM)

PCO holds up to four (4) seats, SUNY-Optometry holds up to six (6) seats, and TUSPM holds up to six (6) seats each year for Wilkes University students who are endorsed for admission by the Wilkes Health Sciences Committee and who meet all of the appropriate institution's admission requirements. Students should consult the Wilkes Health Sciences Office for information regarding requirements for a minimum grade point average (GPA) and a minimum score on the appropriate health professions school admission test.

Wilkes University takes pride in having developed these affiliated seven-year medical programs, which have been ongoing since the late 1970s. Currently, large numbers of alumni who have graduated from these programs are in successful professional practice. We especially encourage highly motivated and academically gifted students to take advantage of these abbreviated specialized programs and join those already enrolled in this pursuit.

III. State University of New York, State College of Optometry Affiliation Programs

A. OPTOMETRY SCHOLARS PROGRAM

Wilkes University and the State University of New York, State College of Optometry offer a special academic affiliation in optometric education, the Optometry Scholars Program. Up to six (6) students per year may be selected into a seven-year Bachelor of Arts or Science (B.A. or B.S.) and Doctor of Optometry (O.D.) program. Students chosen for this joint degree program are admitted to a designated, prescribed major at Wilkes University and simultaneously admitted to candidacy to the SUNY College of Optometry's professional program of study.

1. Program Admission

- a. High school applicants must have a minimum combined SAT of 1200 (at least 600 math and 550 verbal), a minimum of 93 for their high school grade point average, and place in the top 10% of their graduating class. The new SAT writing sample will be considered, but no official minimum score has yet been determined.

- b. Students selected for the SUNY Optometry Scholars Program, after successful interviews at Wilkes and SUNY College of Optometry, will be simultaneously admitted to candidacy in the Optometry School at State University of New York, College of Optometry and to Wilkes University.
- c. Students in this program must maintain a GPA of 3.3 overall and a 3.3 in the required science and math portion of the joint degree track curriculum, with no grade lower than a 2.0 in each individual science and math prerequisite course. Students must also attain a total science score above 330 on the Optometry Admissions Test (OAT) with no score in any one area below 310.
- d. Students must receive a positive Letter of Evaluation from the Wilkes Health Sciences Committee, pass reasonable personal interview standards and submit all required application materials during their junior year at Wilkes.

2. Program format

- a. Three (3) years of successful undergraduate study at Wilkes University, which includes coursework in an academic major and in the Pre-professional Core.
- b. Students in this program must also visit and shadow three different professional optometric offices in order to become more fully acquainted with the profession of optometry during their undergraduate study at Wilkes University.
- c. Four (4) years of Optometry School study at SUNY College of Optometry. At the successful completion of their first year of Optometry school, students may transfer their credits to Wilkes and Wilkes will grant the baccalaureate degree.

B. EARLY ASSURANCE PROGRAM

Wilkes University and SUNY Optometry also offer an Early Assurance program to which Wilkes sophomores who are interested in a career in optometry may apply.

To be considered, each applicant must:

- Have completed two (2) years of undergraduate study (approximately 60 hours) and at least 70% of SUNY's prerequisite courses.

- Maintain throughout the four years a total GPA of 3.3 and a 3.3 GPA in the SUNY prerequisite science and math courses, with no grade lower than a 2.0 (C) in any of the SUNY prerequisite courses.
- Demonstrate a basic knowledge of and a motivation for a career in optometry.
- Take the Optometry Admission Test (OAT) in their junior or senior year and attain a total science score above 330 with no score below 310.
- Provide high school and college transcripts and SAT scores to SUNY Optometry.
- Receive a positive Letter of Evaluation from the Wilkes University Health Sciences Committee.
- During their senior year at Wilkes University, be interviewed at SUNY Optometry.
- Applications are due at SUNY by June 1 following the sophomore year. After the submission and review of all written materials, each applicant receiving serious consideration for admission to the Early Assurance Program will be offered an opportunity to interview at the SUNY College of Optometry. Candidates will be notified of committee action in writing prior to August 31st.

C. TRADITIONAL ADMISSION PROGRAM

SUNY Optometry also welcomes applications from Wilkes University juniors interested in a career in optometry who wish to apply to the professional program by the traditional method.

IV. Transfer Doctoral Degree Program

The transfer program is similar to our Seven-Year Affiliated Degree programs. However, instead of choosing this 3+4 track before entering Wilkes University as a freshman (as in the 3+4 programs), a student may elect this path during their tenure as an undergraduate student.

Typically, four (4) years of undergraduate study are required to qualify for the bachelor's degree. Wilkes University makes an exception to this requirement in special circumstances for doctoral students in allopathic and osteopathic medicine, dentistry, optometry, podiatric medicine, veterinary medicine, and doctoral-level physical therapy (DTP).

These students may, with the approval of the Wilkes Academic Standards Committee,

satisfy the requirements for the bachelor's degree by completing three years of an academic major, at least the last two of which must be at Wilkes, and by requesting credit toward the degree for their first two years of work in professional school. Students in these programs must, however, satisfy the General Education Requirements at Wilkes University to be considered for a bachelor's degree from the University.

Such students must also petition the Academic Standards Committee for permission to graduate, submit official transcripts from the professional school, and pay the usual graduation fees. In all cases, the final approval for the granting of the baccalaureate degree rests with the Academic Standards Committee of Wilkes University.

ALLIED HEALTH PROGRAMS

Wilkes University has developed programs that prepare students for admission to physical therapy and occupational therapy schools as well as programs in clinical laboratory sciences.

Overview

With career opportunities expanding in the allied health fields known as physical therapy, occupational therapy, clinical laboratory sciences, physician assistant and chiropractic medicine, admission to programs in these areas has become increasingly competitive. Wilkes University has defined an approach to pre-allied health education to produce competitive, noteworthy candidates for admission.

The University has structured a program of study emphasizing the basic sciences and social sciences to provide students with the appropriate background knowledge to enter occupational and physical therapy programs. The curriculum is complemented by an advising system that closely monitors the student's academic progress and their application process to a professional program.

Students interested in allied health fields must meet with their academic advisors and advisors from the Health Sciences Office early in their freshman year to work out an individualized course of study. Students may plan to apply to a preprofessional undergraduate program in physical therapy, occupational therapy physician assistant and chiropractic medicine after two or three years of coursework at Wilkes. Students may also plan to complete an undergraduate degree at Wilkes and apply to an entry-level allied health master's or doctoral degree program. Career plans affect course selection and must be reviewed with academic and health sciences advisors.

I. Physical Therapy

Physical Therapy is a profession concerned with restoration of physical function and the prevention of disability following disease, injury, or loss of body parts. The goal of physical therapy is to help the patient reach maximum potential and to assume a place in society while learning to live within the limits of his/her capabilities.

Physical therapists are qualified to utilize such physical agents as therapeutic heat, light, electricity, water, exercise, or massage in treating patients. Treatment may consist of teaching the patient an exercise regimen to increase muscle power or improve coordination, or teaching the patient to walk with prostheses, braces, or other ambulatory aids. Appropriate psychological and sociological principles are applied in motivating and instructing the patient, his or her family, and others. Physical therapists may delegate selected forms of treatment to supportive personnel with assumption of the responsibilities for the care of the patient and the continuing supervision of the supportive personnel.

Career opportunities exist for physical therapists in hospitals, rehabilitation centers, pediatric facilities, private practice, research, industry, sports medicine, school systems, nursing homes and other health care settings.

The Wilkes Pre-Physical Therapy Core

In addition to completing an academic major, each student must also complete the Wilkes University Pre-Physical Therapy Core, which provides a base from which students can structure their classes. The Pre-Physical Therapy Core includes a sequence of courses that are common prerequisites at most physical therapy schools. It must be emphasized that there are no universal prerequisite courses for all physical therapy programs. Therefore, students must consult with each school to which they seek to apply to ascertain that particular school's prerequisites.

The Wilkes Pre-Physical Therapy Core (Minimum Requirements per the Drexel University and Widener University Doctor of Physical Therapy Degree Programs)

A. THE PRE-PHYSICAL THERAPY CORE

- Five (5) courses in Biology for a total of 19-20 credits to include the following:
Principles of Modern Biology I & II (BIO 121 & 122)
Medical Anatomy and Physiology I & II (BIO 314 & 321)*

One of the following upper-level Biology courses:

- Functional Histology (BIO 323)
- Molecular Biology (BIO 324)
- Immunology and Immunochemistry (BIO 326)
- Medical Microbiology (BIO 327)
- Genetics (BIO 345) or

Senior Research Projects (BIO 391, 392)
OR Independent Research (BIO 395, 396)
OR Independent Research (PSY 395, 396)

* Please note that *Cellular and Molecular Biology (BIO 226)* is required as a course to precede the 300-level biology courses.

- Two courses in General Chemistry with laboratory for a total of 8 credits (For example: CHM 115 & 116 with labs CHM 113 & CHM 114)
- Two courses in Physics with laboratory for a total of 8 credits (For example: PHY 171 & 174)
- Two courses in Psychology for a total of 6 credits: General Psychology (PSY 101 and Developmental Psychology (PSY 221)
- One course in Statistics for a total of 3 credits (For example: PSY 200 or MTH 150)
- Mathematics (as per the requirements of professional school(s))
- Five courses in the Humanities and Social Sciences for a total of 15 credits. For example: courses that satisfy Areas I and III of the Distribution Requirements of the Wilkes University Core.

B. VOLUNTEER EXPERIENCE IN PHYSICAL THERAPY

Each institution has varied prerequisites and all professional schools generally require a certain number of volunteer hours in physical therapy. Some or all of those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Cooperative Education Office or through the Health Sciences Office.

C. LETTERS OF EVALUATION

One composite letter from the Wilkes University Health Sciences Committee and one letter from a physical therapist.

In addition to completing this minimum Pre-Physical Therapy Core, students must consult prerequisite guidelines published by the particular institutions from which they wish to gain admission.

A. AFFILIATED PROGRAM WITH DREXEL UNIVERSITY DEPARTMENT OF REHABILITATION SCIENCES: DOCTOR OF PHYSICAL THERAPY DEGREE PROGRAM

The affiliated physical therapy program requires four (4) years of study at Wilkes University leading to the Bachelor's Degree and three (3) years of study at Drexel University leading to the Doctoral Degree in Physical Therapy. Early admission to the Drexel University graduate program is granted to up to five (5) Wilkes students, who have satisfied all requirements for admission, per year.

Students should consult the previous section of the Bulletin for the prerequisite courses required for admission to Drexel University's Affiliated Physical Therapy Program.

Wilkes students applying to Drexel University must meet the criteria for admission outlined here:

- A cumulative grade point average at the end of six full semesters of 3.25 or above, as noted in the curricular outline.
- Completion of all science courses with a cumulative grade point average of 3.00 or above.
- Minimum Graduate Record Examination (GRE) score of 1600.
- Volunteer experience in physical therapy for at least 75 hours.
- Petition to the Wilkes University Health Sciences Committee for a Letter of Evaluation to accompany their application. This request must be made in writing to the Committee by May 15th of the student's junior year.
- Obtain a Letter of Evaluation/Recommendation from a licensed physical therapist.

Students who meet the guidelines of this program will be automatically granted an interview with the Drexel Physical Therapy Committee on Admissions. The decision to offer acceptance to students into this program shall be made by the Program in Physical Therapy Committee on Admissions of Drexel University. In addition, students must also complete all requirements for a bachelor's degree from Wilkes University prior to matriculation at Drexel University.

B. AFFILIATED PROGRAM WITH WIDENER UNIVERSITY: DOCTOR OF PHYSICAL THERAPY DEGREE PROGRAM

The Affiliated Physical Therapy Program provides students the opportunity to transfer from Wilkes University to the Doctor of Physical Therapy Program at Widener University to earn a joint 3+3 B.S./D.P.T. degree. Selected students able to meet or exceed established criteria will be eligible for a GUARANTEED place in the Widener Physical Therapy Program. Widener guarantees five (5) seats each year for this D.P.T. Program. Students will also be given the opportunity to earn a joint 4+3 B.S./D.P.T. degree.

Students should consult the previous section of the Bulletin for prerequisite courses required by Widener University's Doctor of Physical Therapy Program.

1. High school students applying for admission to this guaranteed-seat program must meet the following criteria:
 - Apply and be accepted to Wilkes University by January 1 of their senior year in high school.
 - Have a minimum SAT score of 1200 (with no sub-section less than 550). The new SAT writing sample will be considered, but no official minimum score has yet been determined.
 - Have a high school GPA of 3.45 or higher
 - Rank in the top 25% of their high school graduating class
2. Wilkes University freshmen or sophomores who wish to be considered for admission must meet the following criteria:
 - Be a student in good standing at Wilkes
 - Have a cumulative GPA of 3.0 with no grade in the Pre-Physical Therapy Core curriculum of less than a 3.0
3. The selection process will include interviews with the Wilkes University Health Sciences Committee and the Widener University Department of Physical Therapy.
4. Undergraduate program requirements are as follows:
 - Completion of prerequisite courses with a cumulative GPA of 3.0
 - Computer literacy, either by demonstration or successful completion of a computer course or a challenge examination.

- Graduate Record Exam (GRE) general test scores of 1000 or better on the combined verbal and quantitative sections
 - Evidence of volunteer service in physical therapy (usually 50 hours or more)
 - Three favorable letters of recommendation: one from the Wilkes University Health Sciences Committee, one from a physical therapist, and one from an individual chosen by the student.
 - Participation in Health Sciences Office-sponsored events on campus.
5. Students who have completed their baccalaureate degree at Wilkes will be subject to the same admission guidelines as the 3+3 students.

C. AFFILIATED PROGRAM WITH TEMPLE UNIVERSITY COLLEGE OF ALLIED HEALTH PROFESSIONS: DOCTOR OF PHYSICAL THERAPY PROGRAM

This Affiliated Physical Therapy Program requires four (4) years of study at Wilkes University and three (3) years of professional study at Temple University, leading to the Doctor of Physical Therapy degree following successful completion of the three years at Temple.

The Affiliated Physical Therapy Program with Temple University requires students to complete a series of prerequisite courses as part of their four years of study at Wilkes. A listing of these courses is available in the Wilkes Health Sciences Office or through the Temple University Department of Physical Therapy.

Candidates must also complete the Graduate Record Exam (GRE) in the fall semester of their fourth year of study at Wilkes. To qualify for admission at Temple, students must earn a minimum of a 3.0 GPA while at Wilkes and score above the fiftieth percentile on the GRE. Wilkes students who meet the standards of this affiliated program will be given special consideration for admission by Temple.

II. Occupational Therapy

Occupational therapists work with members of the community who encounter difficulties with tasks of living. These difficulties may be from developmental deficits, the aging process, physical illness or injury, economic stress, cultural differences, or psychological problems which present barriers for an individual to function in life. The occupational therapist bases service on a rapidly growing field of

knowledge to enhance the individual's abilities to function and prevent areas of dysfunction. The therapist uses selected, goal-directed activities to encourage learning, re-education, growth and strength, and to promote general health. Occupational therapists provide services along with other health professionals in a number of different settings ranging from hospitals and clinics to schools to reach a wide population of all ages.

The Wilkes Pre-Occupational Therapy Core

In addition to completing an academic major, each student must also complete the Wilkes University Pre-Occupational Therapy Core. The Pre-Occupational Therapy Core provides a base from which students can structure their classes. The Pre-Occupational Therapy Core includes a sequence of courses identified by the American Association of Occupational Therapy Schools as common prerequisites at most occupational therapy schools. It must be emphasized that there are no universal prerequisite courses for all existing occupational therapy programs.

The Wilkes Pre-Occupational Therapy Core requires as a minimum:

Two Courses in Modern Biology (BIO 121-122)

Two Courses in Anatomy and Physiology (BIO 115-116 or BIO 331-332)

One Course in Chemistry (CHM 115 with CHM 113 lab)

One Course in Mathematics (MTH 100, 101 or 105)

Four Courses in Psychology (PSY 101, 200, 221 and 222)

One Course in Sociology (SOC 101)

(An additional course, SOC 251, is also recommended)

Cooperative Education or Internship

In addition to completing the Core, students must consult prerequisite guidelines published by the particular institutions from which they wish to gain admission. Institutions have varied prerequisites and generally require a certain number of volunteer hours in occupational therapy. Some or all of those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Cooperative Education Office.

Affiliated Program in Occupational Therapy at Temple University College of Allied Health Professions: Master's in Occupational Therapy

Wilkes University offers a specialized,

affiliated program in Occupational Therapy with Temple University that requires four (4) years of study at Wilkes and two (2) years of study at Temple University, leading to a master's degree in Occupational Therapy.

The Affiliated Occupational Therapy Program with Temple University requires students to complete a series of prerequisite courses as part of their four years of study at Wilkes. A list of these courses is available in the Wilkes Health Sciences Office or through the Temple University Department of Occupational Therapy.

Placement of Pre-Physical Therapy and Pre-Occupational Therapy Students

Wilkes University graduates have been accepted to a number of physical therapy and occupational therapy schools including: Columbia University College of Physicians and Surgeons, Duke University and Drexel (formerly MCP-Hahnemann) University School of the Health Sciences, Tufts Graduate School of Arts and Sciences, Thomas Jefferson University Program in Occupational Therapy, Temple University Health Sciences Center, Allegheny University, and University of Pittsburgh School of Health and Rehabilitation Sciences.

III. Clinical Laboratory Sciences (Medical Technology)

The Board of Registry of Medical Technology, part of the American Society for Clinical Pathology, recommends certain requirements for a program of training leading to a B.S. degree. The curriculum offered at Wilkes University follows these recommendations and is presented below.

At the completion of three years, the student may be accepted by an affiliated program of medical technology for a period of twelve months of clinical training. Following graduation from the programs, the students will receive the B.S. degree in Medical Technology from Wilkes University and will be eligible for certification as a Medical Technologist by the Board of Registry of Medical Technology or as a Clinical Laboratory Scientist by the National Certification Agency for Medical Laboratory Personnel.

Wilkes University has established a formal affiliation with the Robert Packer Hospital in Sayre, PA. Fulfillment of the fourth-year requirement at non-affiliated NACCLS-certified hospital programs may be arranged

by agreement between the program and Wilkes University.

CLINICAL LABORATORY SCIENCE MAJOR (MEDICAL TECHNOLOGY)- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Bio 121 Principles of Modern Biology I	4
Chm 115 Elements and Compounds/CHM 113	4
FYF 101 First-Year Foundations	3
Mth 105 or 111 Calculus I	4
	<hr/> 15
Second Semester	
Bio 122 Principles of Modern Bio II	4
Chm 116 The Chemical Reaction/CHM 114	4
Eng 101 Composition	4
Distribution Requirements	3
	<hr/> 15
Third Semester	
Bio 225 Population and Evolutionary Biology I	4
Chm 231 Organic Chemistry I/Chm 233	4
Computer Science Elective	3
Distribution Requirements	3
	<hr/> 14
Fourth Semester	
Bio 226 Cellular and Molecular Biology	4
Chm 232 Organic Chemistry II/Chm 234	4
Mth 150 Elementary Statistics	3
Distribution Requirements	3
	<hr/> 14
Fifth Semester	
Bio 327 Medical Microbiology	4
Chm 361 Biochemistry I	3
Distribution Requirements/Free Electives	9
	<hr/> 16
Sixth Semester	
Bio 326 Immunology and Immunochemistry	4
Bio 397 Professional Prep. Techniques	2
Phy 174 Classical and Modern Physics	4
Distribution Requirements/Free Electives	6
	<hr/> 16
Seventh and Eighth Semesters	
CLINICAL LABORATORY SCIENCES PROFESSIONAL STUDY YEAR	

College of Science and Engineering

The 30 credits supplied by the twelve months of clinical training are divided into the following courses:

Bio 371 Clinical Microbiology	7
Bio 372 Clinical Chemistry	8
Bio 373 Clinical Hematology/Coagulation	5
Bio 374 Clinical Immunohematology	4
Bio 375 Clinical Immunology/Serology	3
Bio 376 Clinical Seminar	<u>3</u>
	30

The total minimum number of credits required for a major in Clinical Laboratory Science (Medical Technology) leading to the B.S. degree is 120.

Other Professions

Information on academic programs in related health fields, such as Nursing, Prepharmacy and Pharmacy at Wilkes (Pharm.D. Degree), may be found in the appropriately labeled sections of this Bulletin. Wilkes University has a number of affiliations with other health professions institutes whereby students receive some special consideration for interview and admission. Consult the Health Sciences Office for the information on these affiliations.

DEPARTMENT OF CHEMISTRY

CHAIRPERSON: DR. TERESE M. WIGNOT

Faculty: Professor: Verret

Associate Professors: Bradley, Castejon, Mencer, Trujillo, Wignot

Assistant Professors: Dinescu, Peters

Adjunct Faculty: Carr, St. Martin

Faculty Emeriti: Bohning, Faut, Rozelle, Stine, Swain

Laboratory Manager: Bianco

Lab Preparation Specialist: Tambasco

BIOCHEMISTRY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOCHEMISTRY LEADING TO THE B.S. DEGREE - 122.

The Biochemistry curriculum is designed to provide comprehensive background education and training for those students interested in this interdisciplinary area.

The B.S. curriculum meets the liberal arts requirements of the University with a concentration in advanced courses. It was developed for those students who wish to prepare for Biochemistry as a professional option. Holders of this degree seek employment directly in the field or they can pursue advanced degrees in graduate school.

The biochemistry degree was developed for those students interested in Biochemistry as a means of preparation for entrance into health science professional schools such as allopathic, osteopathic, and podiatric medicine; dental medicine; optometry, etc. Two specific features of the program are that students (1) may pursue the first three years of the Biochemistry degree curriculum in the three-year option under one of the Wilkes University combined seven-year medical and baccalaureate degree programs or (2) use the seventh or eighth semesters in cooperative research programs. The latter option is particularly useful for those students selected to The Premedical Scholars Program (see Affiliated Degree Programs in Medicine).

BIOCHEMISTRY BACHELOR OF SCIENCE DEGREE - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE (122 CREDITS)**First Semester**

Chm 113 - Elem. and Compounds Lab	1
Chm 115 - Elements and Compounds	3

Bio 121 - Princ. of Modern Biology I	4
Mth 111 - Calculus I	4
FYF 101 - First-Year Foundations	3
Distribution Requirement	3
	<hr/> 18
Second Semester	
Chm 114 - The Chem. Reaction Lab	1
Chm 116 - The Chemical Reaction	3
Bio 122 - Princ. of Modern Biology II	4
Mth 112 - Calculus II	4
Eng 101 - Composition	4
	<hr/> 16
Third Semester	
Chm 231 - Organic Chemistry I	3
Chm 233 Organic Chem. I Lab	1
Phy 201 - General Physics I	4
CS 125 Computer Science I	4
Distribution Requirement	6
	<hr/> 18
Fourth Semester	
Chm 232 - Organic Chemistry II	3
Chm 234 Organic Chem. II Lab	1
Phy 202 - General Physics II	4
Mth 212 Multivariable Calculus	4
Chm 248 Analytical Chemistry	3
Chm 246 Analytical Chemistry Lab	1
	<hr/> 16
Fifth Semester	
Chm 351 - Physical Chemistry I	3
Chm 353 - Physical Chemistry I Lab	1
Chm 361 - Biochemistry I	3
Distribution Requirement	3
Chm 341 Instrumental Analysis	3
Chm 343 Instrumental Analysis Lab	1
	<hr/> 14
Sixth Semester	
Chm 352 - Physical Chemistry II	3
Chm 354 - Physical Chemistry II Lab	1
Chm 362 - Biochemistry II	3
Chm 370 Integrated Laboratory	1
Chm 390 Junior Seminar	1
Bio 226 Cellular and Molecular Biology	4
Distribution Requirement	3
	<hr/> 16
Seventh Semester	
Chm 391 - Senior Research I	2

College of Science and Engineering

Chm 371 Integrated Laboratory	1
Biology Elective	3-4
Distribution Requirement	3
Free Elective	8
	<hr/>
	12-13
Eighth Semester	
Chm 322 Advanced Inorganic Chemistry	3
Chm 372 Integrated Laboratory	1
Chm 392 - Senior Research II	2
Biology Elective	3-4
Free Elective	3
	<hr/>
	12-13

All biochemistry majors (B.S.) are required to take a total of three (3) credits of Integrated Laboratory (Chm 370, 371, 372).

CHEMISTRY MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CHEMISTRY LEADING TO THE B.S. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CHEMISTRY LEADING TO THE B.A. DEGREE — 121.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 22.

The Chemistry curriculum is designed to provide a comprehensive background in the fundamentals of the science and to contribute to the general education of the student. Graduates with a B.S. degree may find industrial or government employment or continue advanced studies in a graduate or professional school. The B.A. degree is available for students who need additional flexibility to prepare for a career in secondary education, the health professions (such as medicine, dentistry, etc.), law, business, engineering, computer science, or other related areas. In all cases students will choose electives for the various career options after consultation with departmental advisors.

The B.A. program in Chemistry will include specific concentrations which will allow students to have a solid, fundamental background in chemistry in combination with other disciplines such as art, business, mathematics, computer science, secondary education, environmental sciences, etc. The ultimate goal is to create a curriculum that is easily adapted to the ever-changing challenges of multidisciplinary academic endeavors. The B.A. program in Chemistry may be accredited, dependent on the student's choice of chemistry courses.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 180, ED 190, ED 191, ED 215, ED 220, ED 371 (Teaching Methods in Science), ED 380, ED 390, and EDSP 210, EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses, a 3.0 cumulative GPA, and pass the appropriate PRAXIS tests in order to be certified.

Wilkes is approved by the American Chemical Society for the professional training of chemists. Students who complete the B.S. program are certified for membership eligibility in the Society at graduation. The B.S. programs in Chemistry and Biochemistry will maintain ACS accreditation.

Required courses are indicated in the following suggested curricular outlines which are based on an extensive prerequisite structure. The order of the courses presented in this sequential arrangement is a suggested one and changes in the order may be made after faculty advisement.

CHEMISTRY MINOR

A minor in Chemistry consists of the completion of 22 credits in chemistry, including Chm 115 and Chm 116. Selection of other courses must be in keeping with the existing prerequisites as specified in this Bulletin.

CHEMISTRY BACHELOR OF SCIENCE DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE (120 CREDITS)

First Semester

Chm 113 - Elem. and Compounds Lab	1
Chm 115 - Elements and Compounds	3
Eng 101 - Composition or	4
Distribution Requirement	3
Mth 111 - Calculus I	4
FYF 101 - First-Year Foundations	3
	<hr/>
	14-15

Second Semester

Chm 114 - The Chem. Reaction Lab	1
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Chm 116 - The Chemical Reaction	3
Eng 101 - Composition or Distribution Requirement	4
Mth 112 - Calculus II	3
Distribution Requirement	4
CS 125 Computer Science I	4

17-18

Third Semester

Chm 231 - Organic Chemistry I	3
Chm 233 - Organic Chem. I Lab	1
Phy 201 - General Physics I	4
Distribution Requirements	6

14

Fourth Semester

Chm 246 Analytical Chemistry Lab	1
CHM 248 Analytical Chemistry	3
Chm 232 - Organic Chemistry II	3
Chm 234 - Organic Chem. II Lab	1
Mth 212 Multivariable Calculus	4
Phy 202 - General Physics II	4

16

Fifth Semester

Chm 341 - Instrumental Analysis	3
Chm 343 - Instrumental Analysis Lab	1
Chm 351 - Physical Chemistry I	3
Chm 353 - Physical Chemistry I Lab	1
Chm 361 - Biochemistry I	3
Distribution Requirement	3

14

Sixth Semester

Chm 370 - Integrated Laboratory	1-2*
Chm 390 - Junior Seminar	1
Chm 352 - Physical Chemistry II	3
Chm 354 - Physical Chemistry II Lab	1
Chm 322 - Inorganic Chemistry	3
Distribution Requirement	3

12-13

Seventh Semester

Chm 371 Integrated Laboratory	1-2*
Chm 391 Senior Research	2
Major Elective	3
Free Electives	9

15-16

Eighth Semester

Chm 372 Integrated Laboratory	1-2*
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Chm 392 Senior Research	2
Major Electives	3
Free Electives	9

15-16

*All chemistry majors (B.S.) are required to take a total of four (4) credits of Integrated Laboratory (Chm 370, 371, 372).

CHEMISTRY BACHELOR OF ARTS DEGREE
REQUIRED COURSES AND RECOMMENDED
COURSE SEQUENCE (121 CREDITS)

First Semester

Chm 113 - General Chemistry Lab	1
Chm 115 - General Chemistry I	3
Eng 101 - Composition or Distribution Requirement	4
Mth 111 - Calculus I	3
FYF 101 - First-Year Foundations	3

14-15

Second Semester

Chm 114 - General Chemistry Lab II	1
Chm 116 - General Chemistry II	3
Eng 101 - Composition or Distribution Requirement	4
CS 125 Computer Science I	3
Mth 112 - Calculus II	4

15-16

Third Semester

Chm 231 - Organic Chemistry I	3
Chm 233 - Organic Chem. I Lab	1
Phy 201 - General Physics I	4
Combination Program Elective	3
Distribution Requirement	3
Free Electives	3

17

Fourth Semester

Chm 232 - Organic Chemistry II	3
Chm 234 - Organic Chem. II Lab	1
MTH 212 - Multivariable Calculus	4
Chm 248 - Analytical Chemistry	3
Chm 246 - Analytical Chemistry Lab	1
Phy 202 - General Physics II	4

16

Fifth Semester

Chm 351 - Physical Chemistry I	3
Chm 353 - Physical Chemistry I Lab	1
Chm 341 - Analytical Chemistry	3

College of Science and Engineering

Chm 343 - Analytical Chemistry Lab	1
Combination program Elective	3
Distribution Requirements	<u>3</u>
	14

Sixth Semester

Chm 352 - Physical Chemistry II	3
Chm 354 - Physical Chemistry II Lab	1
Combination Program Elective	3
Chm 390 Junior Seminar	1
Distribution Requirements	<u>9</u>
	17

Seventh Semester

Combination Program Electives	6
Chm 391 Senior Research	2
Chm 371 Integrated Laboratory	2
Free Electives	<u>3</u>
	13

Eighth Semester

Chm 392 Senior Research II	2
Combination Program Elective	3
Free Electives	<u>9</u>
	14

Students in the B.A. program are required to take a total of two (2) credits of Integrated Laboratory (Chm 370, 371, 372).

DIVISION OF ENGINEERING AND PHYSICS

DIRECTOR: DR. RODNEY S. RIDLEY, SR.

*Faculty: Professors: Arora, Ghorieshi, Gilmer,
Kalim, Orehotsky, Razavi, Srinivasan*

Associate Professor: Ridley

Assistant Professor: Janecek

Instructor: Nabaa

*Faculty Emeriti: Bailey, Donahoe, Hostler,
Maxwell, Placek*

Technical Support Staff: Adams

MISSION

The mission for engineering students is to enable the professional development of their abilities for analysis and design within the context of environment. The Wilkes view emphasizes engineering as a creative, hands-on profession with leadership responsibilities. Teamwork, ethics, and professional communications permeate the educational experience to enhance the graduate's technical problem solving ability. Wilkes Engineering graduates will possess the vision, confidence, and will to pursue and assume increasing responsibilities in engineering and leadership throughout their careers.

ENGINEERING

Engineering is a creative profession in which technological problems are met within the framework of scientific possibilities, economic constraint, and cultural preference. The Wilkes University engineering programs provide the knowledge and investigative skills, both theoretical and experimental, to responsibly address professional and societal needs through modern curricula, hands-on experience, and a personalized academic environment. Students intending to major in Engineering are encouraged to be well prepared in the sciences and mathematics. Engineering students may also elect to complete a minor in Physics.

Wilkes University offers five engineering programs. Three programs maintain professional accreditation (Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, ABET, III Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: 410 347-7700): Electrical Engineering and Mechanical Engineering are housed in the Division of Engineering and Physics, and Environmental Engineering is housed within the Department of Environmental Engineering and Earth Sciences on page 137.

Two additional engineering programs are configured to provide greater flexibility to pursue depth and breadth in specific areas of interest to the student: Applied and Engineering Sciences and Engineering Management, both housed in the Division of Engineering and Physics.

HONORS IN ENGINEERING

Upon the recommendation and approval of the Engineering faculty, honor students in Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of 3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through the publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

STUDENT ACTIVITIES

Professional societies in which students participate include the American Society of Mechanical Engineers (ASME), the Institute of Electrical and Electronic Engineers (IEEE), the Society of Women Engineers (SWE), the Pennsylvania Society of Professional Engineers (PSPE), the Society of Automotive Engineers (SAE), and Engineering Student Council. Students also participate in various on-campus activities and design competitions such as the Mini-Baja Off-Road Design Competition

COOPERATIVE EDUCATION

An important characteristic of all engineering programs at Wilkes University is the Cooperative Education experience, a valuable option usually scheduled during the junior year. The co-op option may be continued into the summer preceding the senior year. Participants derive three advantages from a co-op experience: a determination of how they wish to fill their elective courses during the senior year, an enhanced ability to conduct a job search, and a greater recognition that career opportunities may be stimulating and fulfilling as well as financially rewarding. The Cooperative Education opportunity provides a natural extension of the college experience.

APPLIED AND ENGINEERING SCIENCES

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN APPLIED AND ENGINEERING SCIENCES LEADING TO THE B.S. DEGREE – 120.

The four-year Bachelor of Science degree program in Applied and Engineering Science

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(A&ES) blends a core of engineering preparation with flexibility for students to focus on areas of specific interest. It is ideal for students with specific engineering interests outside the configuration of traditional engineering programs. Successful examples include medicine, performing arts engineering (sound, lighting, staging, recording), computer science, safety and reliability, information technology, and patent law. To this end, faculty and facilities center on the individual, incorporating the adoption of new technological developments with an emphasis on analysis, design and application; on student-faculty-industry cooperative projects; on the concept of teamwork; and on the hands-on student utilization of modern laboratories and computer systems. Wilkes University does not maintain professional accreditation for the A&ES program.

The A&ES program demands careful planning by the student with her/his faculty advisor to assure a clear and well-planned program configured realistically to the students' interests and needs.

APPLIED & ENGINEERING SCIENCES B.S. DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition	4
ME 180 CADD Lab	1
Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
PHY 201 General Physics I	4
	<hr/>
	16

Second Semester

Mth 112 Calculus II	4
Distribution Requirement	6
EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
	<hr/>
	17

Third Semester

Chm 113 Elements and Compounds Lab	1
Chm 115 Elements and Compounds	3
Free Elective	3
Distribution Requirement	6
	<hr/>
	13

Fourth Semester

EES 202 Biogeochemistry or	3
EGR 200 Intro. to Materials Science	
Free Elective	9

Distribution Requirement	3
	<hr/>
	15

Fifth Semester

EE 283 Electrical Measurements Lab.	1
ME 231 Statics & Dynamics I	3
EE 211 Electrical Circuits and Devices	3
Free Elective	6
Distribution Requirement	3
	<hr/>
	16

Sixth Semester

EGR 399 Cooperative Ed. or Tech. Electives	6
Technical Elective	3
EGR 201 Professionalism and Ethics	1
EGM 320 Engineering Project Analysis	3
	<hr/>
	13

Seventh Semester

EGR 391 Senior Project I*	1
Technical Electives	6
Free Elective	9
	<hr/>
	16

Eighth Semester

EGR 392 Senior Project II*	2
Electives	6
Technical Electives	6
	<hr/>
	14

*EGR 391 and 392 can be replaced by EGM/ENV/ME 391 and 392 depending on the student's concentration. Technical Electives may be selected from advisor-approved science, math or engineering courses numbered 200 or above. Consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

ELECTRICAL ENGINEERING

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ELECTRICAL ENGINEERING LEADING TO THE B.S. DEGREE — 130.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER ENGINEERING — 22.

The four-year Bachelor of Science degree program in Electrical Engineering (EE) is dedicated to the principle of preparing its students for industry and graduate study with the expectation of eventual leadership responsibilities. To that end, its faculty and facilities focus on an emphasis of design and industrial experience; student-faculty-industry cooperative projects; teamwork; the adoption of new technologies; and on the hands-on student utilization of laboratories and computing systems. The Electrical Engineering Program maintains ABET accreditation as noted above under the heading of Engineering.

The EE program is designed to achieve a balance among the major areas of Communication Systems, Microelectronics and Computer Systems. The student may choose to specialize within the EE program in any of the following areas: Communication & Information Systems; Computer Hardware & Software Engineering and Design & Fabrication of Microelectronic Devices & Circuits. A description of program objectives and outcomes is available in the Division office and is posted on the Division of Engineering and Physics Bulletin Board.

MINOR IN ELECTRICAL ENGINEERING

A 22-credit Computer Engineering (CE) minor is a special and highly focused option for students majoring in Electrical Engineering and other related disciplines. The CE minor consists of: CS 125 Computer Science I, CS 126 Computer Science II, EE 241 Digital Design, EE 345 Computer Organization, EE 342 Microcomputer Operation & Design, plus one elective course from an Application Area (e.g. EE 314 Control Systems or CS 355 Computer Networks or ME 317 Robotics or CS 367 Computer Graphics).

ETA KAPPA NU, the International Electrical Engineering Honor Society, established the Kappa Beta chapter at Wilkes in 1991. The Society recognizes Electrical Engineering students and professionals who display exemplary academic achievement and service. It provides a forum to encourage continued achievement and service among its members, the University and the community.

A Master of Science degree in Electrical Engineering (MSEE) is also available; it is described in a separate Bulletin.

ELECTRICAL ENGINEERING B.S. DEGREE - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
PHY 201 General Physics I	4
Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
ME 180 CADD Lab	1
Eng 101 Composition	4
	<hr/>
	16
Second Semester	
EGR 200 Intro. to Materials Science or	3
EES 202 Biogeochemistry	
Mth 112 Calculus II	4

EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
Distribution Requirement	3
	<hr/>
	17
Third Semester	
CHM 113 Elements and Compounds Lab	1
CHM 115 Elements and Compounds	3
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
Mth 211 Intro. to Differential Equations	4
ME 231 Statics & Dynamics	3
	<hr/>
	15
Fourth Semester	
EGR 214 Linear Systems	3
EE 251 Electronics I	3
EGR 222 Mechatronics	3
EE 241 Digital Design	4
Distribution Requirement	3
	<hr/>
	16
Fifth Semester	
EE 252 Electronics II	4
EE 271 Semiconductor Devices	3
EE 373 CAD for Microfab	1
EE 381 Microfabrication Lab	3
Technical Elective	3
Distribution Requirement	3
	<hr/>
	17
Sixth Semester	
EGR 399 Cooperative Education or	6
Technical Electives	
EGR 201 Professionalism and Ethics	1
Distribution Requirement	6
EGM 320 Engr. Project Analysis	3
	<hr/>
	16
Seventh Semester	
EE 314 Control System	3
EE 337 Engineering Electromagnetics I	4
EE 391 Senior Project I	1
EE 325 Energy Conversion Devices	3
Technical Elective	3
Distribution Requirement	3
	<hr/>
	17
Eighth Semester	
EE 339 Engineering Electromagnetics II	4
EE 382 Modern Communication Systems	4
EE 392 Senior Project II	2
Technical Elective	3

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Free Elective 3

16

Technical electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above, to satisfy a concentration requirement. Students consult with Co-op Advisor for availability and proper scheduling of Cooperative Education.

ENGINEERING MANAGEMENT

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENGINEERING MANAGEMENT LEADING TO THE B.S. DEGREE — 130.

The four-year Bachelor of Science degree program in Engineering Management (EgM) prepares students for eventual leadership responsibilities in technological environments. Traditional paths for EgM graduates include project management, project engineering, process management, new product development, manufacturing management, new product development processes, quality control, and reliability analysis.

The EgM program integrates the engineering disciplines of electrical and mechanical engineering with business. Flexibility exists for the student to develop concentrations in Information Systems or Entrepreneurship, for example. This program is attractive to companies seeking graduates who are well-rooted in engineering fundamentals yet are broadly interested in technology, competitive markets, and business development. Wilkes University does not maintain professional accreditation for the Engineering Management degree.

The EgM program demands careful academic program planning by the student with her/his faculty advisor to assure a clear and well-planned program configured realistically to the student's interests and needs.

ENGINEERING MANAGEMENT B.S. DEGREE- REQUIRED COURSES AND RECOMMENDED FOUR-YEAR COURSE SEQUENCE

First Semester

Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
ME 180 CADD Lab	1
Eng 101 Composition	4
PHY 201 General Physics I	4
	16

16

Second Semester

EGR 200 Intro. to Materials Science or	3
EES 202 Biogeochemistry	
Mth 112 Calculus II	4
EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
Distribution Requirement	3
	17

Third Semester

Chm 113 Elements and Compounds Lab	1
Chm 115 Elements and Compounds	3
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
ME 231 Statics & Dynamics	3
Mth 211 Intro. to Differential Equations	4
Distribution Requirement	3
	18

Fourth Semester

Ec 102 Economics II	3
ME 232 Strength of Materials	3
EGR 214 Linear Systems	3
Mth 150 Statistics or BA/Ec 319 Economic Statistics	3
Acc 161 Intro. to Financial Accounting	3
EGR 222 Mechatronics	3
	18

Fifth Semester

EgM 321 Quant. Anal. & Prog. Methods	3
BA 321 Marketing or Ec 101 Economics I	3
BA 351 Management of Organizations	3
ME 335 Egr. Modeling & Analysis	3
BA 234 Business Law or Acc 162 Managerial Accounting	3
	15

Sixth Semester

EGR 399 Cooperative Education or	6
Technical Electives	6
EGR 201 Professionalism and Ethics	1
Distribution Requirements	6
EgM 320 Engr. Project Analysis	3
	16

Seventh Semester

EgM 391 Senior Projects I	1
BA 341 Managerial Finance	3
Technical Electives	6
Distribution Requirements	3
Free Elective	3
	16

Eighth Semester

EgM 392 Senior Projects II	2
EgM 336 Engr. & Manag. Models	3
Technical Electives	6
Free Elective	3
	<hr/> 14

Technical Electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above to satisfy a concentration requirement. Consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

MECHANICAL ENGINEERING

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MECHANICAL ENGINEERING LEADING TO THE B.S. DEGREE — 130.

The Division of Engineering offers a four-year Bachelor of Science degree program in Mechanical Engineering. The four-year Bachelor of Science degree program in Mechanical Engineering (ME) is dedicated to the principle of preparing its students for industry and graduate study with the expectation of eventual leadership responsibilities. To that end, its faculty and facilities focus on an emphasis of design and industrial experience; student-faculty-industry cooperative projects; teamwork; the adoption of new technologies; and on the hands-on student utilization of laboratories and computing systems. The Mechanical Engineering program maintains ABET accreditation as noted above under the heading of Engineering.

The ME program is designed to achieve a balance among the major areas of Machine Design, Electro-Mechanical Systems, and Thermal Systems. The student may choose to specialize within the ME program in any of the following areas: Thermal, Design, and Micro-Electro-Mechanical Systems. A description of program objectives and outcomes is available in the Division office and is posted on the Division of Engineering and Physics Bulletin Board.

MECHANICAL ENGINEERING B.S. DEGREE-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
Mth 111 Calculus I	4
FYF 101 First-Year Foundations	3
ME 180 CADD Lab	1
Eng 101 Composition	4
PHY 201 General Physics I	4
	<hr/> 14

	<hr/> 16
Second Semester	
EGR 200 Intro. to Materials Science or	3
EES 202 Biogeochemistry	
Mth 112 Calculus II	4
EGR 140 Computer Utilization	3
PHY 202 General Physics II	4
Distribution Requirement	3
	<hr/> 17
Third Semester	
Chm 113 Elements and Compounds Lab	1
Chm 115 Elements and Compounds	3
Mth 211 Intro. to Differential Equations	4
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
ME 231 Statics & Dynamics I	3
Distribution Requirement	3
	<hr/> 18
Fourth Semester	
EGR 222 Mechatronics	3
ME 232 Strength of Materials	3
ME 234 Statics & Dynamics II	3
ME 322 Egr. Thermodynamics	3
EGR 214 Linear Systems	3
ME 175 Intro to Mfg/Machining	1
	<hr/> 16
Fifth Semester	
ME 321 Fluid Mechanics	3
ME 323 Fluid Mechanics Lab	1
ME 215 Intro. to Manufacturing Processes	3
ME 335 Engineering Modeling and Analysis	3
ME 333 Machine Design I	3
Distribution Requirements	3
	<hr/> 16
Sixth Semester	
EGR 399 Cooperative Education or	6
Technical Electives	6
EGR 201 Professionalism and Ethics	1
Distribution Requirements	6
EgM 320 Engr. Project Analysis	3
	<hr/> 16
Seventh Semester	
ME 324 Heat and Mass Transfer	3
ME 326 Heat & Mass Transfer Lab	1
ME 384 Mechanical Design Lab.	3
ME 391 Senior Projects I	1
Technical Elective	3

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EE 314 Control Systems	3
Distribution Requirement	<u>3</u>
	17
Eighth Semester	
Technical Elective	6
ME 392 Senior Projects II	2
ME 332 Mechanics of Vibration	3
Free Elective	<u>3</u>
	14

Technical Electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above to satisfy a concentration requirement. Students consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

PHYSICS MINOR

Physics is the study of physical phenomena including forces, energy, momentum, friction, electricity, electrostatics, magnetism, acoustics, heat, light, and relativity. It is thus the foundation of mechanical, civil, and electrical engineering and also is central to music, sound and architecture.

Wilkes University offers a minor in Physics, which requires the satisfactory completion of twenty hours as follows:

<i>Required courses</i>	<i>Credit hours</i>
Phy 201, Phy 202, and Phy 203	11
Electives (from the following list; at least three credits must be a 300-level course):	9
CHM 251, CHM252, EE337, EGR200 EES251, EES280, ME231, ME321, ME322, MTH361, MTH362, PHY398	
Minimum Total Requirement	20

The Physics minor may be ideally suited for engineers seeking additional theoretical preparation in the physical sciences.

DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

CHAIRPERSON: DR. BRIAN E. WHITMAN

Faculty: Professors: Bruns, Case, Halsor, Redmond

Associate Professors: Murthy, Troy, Whitman

Adjunct Professors: Hofman, Walski

Laboratory Manager: Oram

Laboratory Technician: Longenberger

Visiting Assistant Professor: Frederick

The Department of Environmental Engineering and Earth Sciences (EEES) offers the following degree programs:

B.S. in Environmental Engineering

B.S. in Earth and Environmental Sciences

B.A. in Earth and Environmental Sciences

The above programs incorporate a strong background in all of the sciences and include extensive laboratory and field experience. The department highlights unique facilities such as a certified water quality laboratory used for teaching and contract work and The Center for Geographic Information Science (GIS). Other facilities in the area are used for field study in courses and student research.

The center for Geographic Information Science is an EEES state-of-the-art technology facility that integrates the use of GIS student research encompassing a variety of applications: environmental planning and assessment, watershed analysis, lake and stream studies, database management and analysis for soils, wetlands, vegetation, land cover, and environmental pollution. The Center was originally funded in 1993 by an extramural EEES faculty research grant and recently was expanded with a faculty education grant to facilitate GIS applications across various courses in the EEES environmental curriculum.

EARTH AND ENVIRONMENTAL SCIENCES MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES LEADING TO THE B.A. — 124.

WITH SECONDARY TEACHING CERTIFICATION IN EARTH AND SPACE SCIENCE — 133.

WITH SECONDARY TEACHING CERTIFICATION IN EARTH AND SPACE SCIENCE AND GENERAL SCIENCE — 137.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED

FOR A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES LEADING TO THE B.S. — 123.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN GEOLOGY — 18.

The interdisciplinary nature of the programs provides the student with a unique breadth of understanding of the principles and concepts of the earth and environmental sciences while emphasizing methods of analysis and experimentation of very complex, dynamic, and interactive quality; cooperative internships with environmental organizations and industries are encouraged.

The major leading to the B.S. degree emphasizes the technical and analytical aspects of the earth and environmental sciences and is designed for those students intending to work as scientists in laboratory, field, or research positions. Students with this degree may enter graduate programs in geology, meteorology, and environmental sciences.

The major leading to the B.A. degree emphasizes human interactions with the earth and the environment. The student is required to choose an appropriate minor, such as political science, technical writing, and business administration. Another option is to satisfy the requirements leading to a Pennsylvania Secondary Teaching Certificate with certification in Earth and Space Science. By adding one chemistry and two biology courses, the student would also satisfy requirements for certification in General Science.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the Coordinator of the Secondary Education Program to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 180, ED 190, ED 191, EDSP 210, ED 220, EDSP 225, ED 371, ED 380, EDSP 388, and ED 390. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

EARTH AND ENVIRONMENTAL SCIENCES AND GEOLOGY MINORS

Two minors are offered by the department. A minor can be obtained by students with a demonstrated expertise in Earth and Environmental Sciences or Geology as determined by the faculty of the department.

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The minimum requirement for the Earth and Environmental Sciences minor can be met by students who have completed 18 credits in EES courses (at least 12 credits at the 200-level or above). For the Geology minor, 18 credits of prequalified environmental EES geology courses are required (at least 15 credits at the 200-level or above). Only those course credits for which a student has achieved a grade of 2.0 or higher will count toward the minimum requirements for either minor. Courses counted toward the Geology minor could not be used for the existing EES minor; however, since there is no geology major, EES majors, like any other major, could pursue a Geology minor. Also, EES majors may take any of the Environmental Engineering courses (ENV), if prerequisites are satisfied.

Courses that qualify for the Geology Minor

<i>Course</i>	<i>Credits</i>
EES 105 Planet Earth	3
EES 211 Physical Geology	4
EES 212 Historical Geology	3
ENV 315 Soils	3
ENV 321 Hydrology	4
EES 370 Geomorphology	3
EES 375 Geochemistry	3
EES 381 Mineralogy**	3
EES 382 Petrology**	3
EES 391* Senior Projects I	1
EES 392* Senior Projects II	2
EES 395* Independent Research I	1-3
EES 396* Independent Research II	1-3

*Content must be within the field of geology.

** Required for minor in geology.

MARINE SCIENCE OPTION WITH A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES AND A MINOR IN BIOLOGY

Wilkes University is a member of the Wallops Island Marine Science Consortium, an association of both state and private institutions that oversee the operation of a marine field station located in southeastern Virginia. Through its membership in the Consortium, Wilkes offers to its students the full range of courses in marine sciences and oceanography regularly taught at the Station each summer. Interested students in Earth and Environmental Sciences may formally pursue a Marine Science Option concentration in a four-year program that is fully integrated into their EES major and a minor in Biology. On a less formal basis,

students who meet course prerequisites may complement regular coursework with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island Marine Science Station typically carry three credits and involve three weeks of intensive field and laboratory study at the Marine Science Station and related field sites (e.g. Florida Keys and Honduras). Facilities at the Station include dormitory space, cafeteria, labs, lecture halls, a variety of field and laboratory equipment (e.g. one large oceanographic vessel and three inshore vessels) and a range of inshore, offshore, and estuarine field sites. To participate in the Marine Science Option concentration or to enroll in individual courses, students must first contact the coordinators of the Wallops Island Program at Wilkes University (prior to the spring semester) and then register for the appropriate course through the Wilkes University Registrar.

Courses regularly offered at the Station include:

MS 110 Introduction to Oceanography
MS 211 Field Methods in Oceanography
MS 221 Marine Invertebrates
MS 394 Physiology of Marine Organisms
MS 241 Marine Biology
MS 250 Wetland Ecology
MS 260 Marine Ecology
MS 300 Behavior of Marine Organisms
MS 330 Tropical Invertebrates
MS 331 Chemical Oceanography
MS 342 Marine Botany
MS 343 Marine Ichthyology
MS 345 Ornithology
MS 352 Modeling Applications in Environmental
MS 362 Marine Geology
MS 390 Undergraduate Research in Marine Science
MS 394 Physiology of Marine Organisms
MS 431 Ecology of Marine Plankton
MS 432 Marine Evolutionary Ecology
MS 433 Advanced Methods in Coastal Ecology
MS 450 Coastal Geomorphology
MS 451 Coastal Environmental Oceanography
MS 464 Biological Oceanography
MS 470 Research Diver Methods
MS 471 Scanning Electron Microscopy: Marine Applications
MS 490 Marine Aquaculture
MS 491 Coral Reef Ecology
MS 492 Marine Mammals
MS 493 Behavioral Ecology and Biological Sciences
MS 500 Problems in Marine Science

See Coordinators of the Wallops Island Program for outlines of individual courses and for more information on the structure of the Marine Science Option.

**EARTH AND ENVIRONMENTAL SCIENCES
B.S. DEGREE- REQUIRED COURSES AND
RECOMMENDED COURSE SEQUENCE**

First Semester

ENG 101 Composition	4
FYF 101 First-Year Foundations	3
MTH 111 Calculus I or MTH 105 (1)	4
CHM 113 Elements & Compounds Lab	1
CHM 115 Elements & Compounds	3
	<hr/>
	15

Second Semester

CHM 114 Chemical Reaction Lab	1
CHM 116 Chemical Reaction	3
Distribution Requirement	3
EES 211 Physical Geology	4
MTH 112 Calculus II or MTH 1061	4
	<hr/>
	15

Third Semester

BIO 121 Modern Biology I	4
MTH 150 Statistics	3
Free Elective	3
Distribution Requirements	3
PHY 171 Principles of Classical and Modern Physics	4
	<hr/>
	17

Fourth Semester

BIO 122 Modern Biology II	4
EES 240 Principles of Environmental Engineering & Science	4
PHY 174 Appl of Classical & Modern Physics	4
CS Elective	3
	<hr/>
	15

Fifth Semester

EES 230 Ocean Science	4
EES 251 Synoptic Meteorology	4
EES 271 Environ. Mapping I or EES/ENV Elective	3
EES 394 Field Study	1
ENV 321 Hydrology	4
ME 180 CADD	1
	<hr/>
	17

Sixth Semester

EES 202 Biogeochemistry	3
EES 244 Instrumental Analysis	3
EES 272 Environ. Mapping II or EES/ENV Elective	3
EES 302 Literature Methods	1
EES 304 Environmental Data Analysis	2
Free Elective	3
	<hr/>
	15

Seventh Semester

Free Elective	2
EES/ENV Electives	6
Distribution Requirements	6
EES 391 Senior Projects I	1
	<hr/>
	15

Eighth Semester

ENV 330 Water Quality or ENV 332 Air Quality	4
EES/ENV Elective	3
Distribution Requirements	6
EES 392 Senior Projects II	2
	<hr/>
	15

(1) Substitution of MTH 105-106 is permissible in consultation with advisor. MTH 105-106 will not retrospectively satisfy the calculus requirement of any engineering degree at Wilkes.

NOTE: B.S. candidates are encouraged to complete a science minor (e.g., Physics, Chemistry, etc.; consult the Bulletin for program details). Candidates are also encouraged to have relevant Co-op experience, 6 credits of which may count as EES electives.

NOTE: Courses at the 200-level and above are intended for science and math majors only. Exceptions by permission of the instructor. Election of a 200-level course by a non-science major will preclude registration for the corresponding 100-level course.

NOTE: A student following the above major sequence (and an 18 credit option in second semester freshman year) can satisfy all freshman and sophomore pre-pharmacy requirements except 6 credits of distribution requirements and 3 credits as COM 101. These may be addressed in consecutive summer sessions in consultation with the major advisor.

**MARINE OPTION CONCENTRATION WITH
MAJOR IN EARTH AND ENVIRONMENTAL
SCIENCES- REQUIRED COURSES AND
RECOMMENDED COURSE SEQUENCES**

First Semester

BIO 121 Modern Biology I	4
FYF 101 First-Year Foundations	3
MTH 111 Calculus I	4
CHM 113 Elem. & Compounds Lab	1
CHM 115 Elements and Compounds	3
	<hr/>

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	<u>15</u>		<u>15</u>
Second Semester		Eighth Semester	
BIO 122 Modern Biology II	4	EES 392 Senior Projects II	2
ENG 101 Composition	4	EES/ENV Electives	6
MTH 112 Calculus II	4	Distribution Requirements	6
CHM 114 The Chem. Reaction Lab	1	Free Electives	<u>2</u>
CHM 116 The Chemical Reaction	<u>3</u>		<u>16</u>
	<u>16</u>	(1) EES/BIO 343 counts toward both EES degree and BIO minor.	
Third Semester		(2) BIO minor includes 2 MS courses (biology content) at MSC Wallops Island, but not MS 110 or MS 260.	
EES 230 Ocean Science	4	(3) 22 minimum credits for BIO minor includes BIO/EES 343.	
BIO 225 Population and Evolutionary Biology	4	NOTE: Three (3) credits of EES Electives must be in either EES 271 or EES 272.	
ME 180 CADD Lab	1	Summary of Requirements:	
Distribution Requirements	<u>6</u>	EES Course Credits (EES 230, 211, 240, 251, 394, 343, 244, 302, 304, 391, 392 & Wilkes EES electives (15 credits)) = 44	
	<u>15</u>	BIO Minor Credits (BIO 121, 122, 225, 226, 343 and 2 MS) = 25	
Fourth Semester		Other Science, Math and Free Elective Credits = 38	
EES 211 Physical Geology	4	Core and Distribution Credits = 25	
Computer Science Elective	3	EARTH AND ENVIRONMENTAL SCIENCES B.A. DEGREE (EARTH AND SPACE SCIENCE EDUCATION)- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCES	
EES 240 Principles of Environmental Engineering & Science	4	First Semester	
BIO 226 Cellular & Molecular Biology	<u>4</u>	ENG 101 Composition	4
	<u>15</u>	FYF 101 First-Year Foundations	3
MS_Summer College MCS (BIO Course)(2)	3	MTH 105 Intro to Calculus	4
		PSY 101 General Psychology I	3
Fifth Semester		BIO 121 Principles of Modern Bio I	<u>4</u>
PHY 171 Classical and Modern Physics or	4		18
PHY 201 Introductory Physics I	4	Second Semester	
EES 251 Synoptic Meteorology	4	EES 211 Physical Geology	4
EES 394 Field Study	1	Distribution Requirement	6
EES/ENV Elective	3	Computer Science Elective	3
Distribution Requirement	<u>3</u>	BIO 122 Principles of Modern Biology II or	4
	<u>15</u>	BIO 225 Population and Evolutionary Biology	<u>2</u>
Sixth Semester			<u>17</u>
PHY 174 Appl Classical & Modern Physics or	4	Third Semester	
PHY 202 Introductory Physics II	4	EES 230 Ocean Science	4
BIO/EES 343 Marine Ecology (1, 3)	3	Distribution Requirement	6
EES 244 Instrumental Analysis	3	PHY 171 Prin of Classical and Modern Physics	4
EES 302 Literature Methods	1	ED 190 Effective Teaching	<u>3</u>
EES 304 Environmental Data Analysis	2		<u>17</u>
MTH 150 Statistics	3		
	<u>16</u>		
MS__ Summer College MCS(BIO Course) (2)	3		
Seventh Semester			
EES 391 Senior Projects I	1		
EES/ENV Electives	6		
Distribution Requirement	3		
Free Electives	<u>5</u>		

Fourth Semester				
EES 240 Principles of Environmental Engineering & Science	4		<i>By adding CHM 114, CHM 116, BIO 121, and BIO 122 or 225 to the Earth and Space Science Education Track, the candidate would satisfy course certification requirements for general science.</i>	
EES 212 Historical Geology	3			
PHY 174 Classical & Modern Physics	4			
ED 200 Educational Psychology	3			
ED 371 Methods of Teaching Science	3			
	<hr/>	17		
Fifth Semester				
CHM 113 Elements and Compounds Lab	1		<i>Summary of Requirements:</i> EES Course Credits (EES 210, 211, 212, 230, 240, 251, 280, 302, 304, 391, 392, 394) = 33 EES Electives = 9 ED Minor Credits (ED 190, 200, 210, 220, 315, 371, 380, 390A) = 36 Other Science and Math Credits = 30 Core and Distribution Credits = 24	
CHM 115 Elements and Compounds Lecture	3			
EES 251 Synoptic Meteorology	4			
EES 394 Field Study	1			
ED 210 Teaching Students with Special Needs	3			
ED 215 Integrating Technology in the Classroom	3			
MTH 150 Elementary Statistics	3			
	<hr/>	18		
Sixth Semester				
CHM 114 Chemical Reaction Lab	1			
CHM 116 Chemical Reaction Lecture	3			
EES 302 Literature Methods	1			
EES 304 Environmental Data Analysis	2			
ED 220 Multicultural Education	3			
ED 380 Content Area Reading	2			
EDSP 225 Sp Ed Meth I w/ Field Exp/OPO	3			
Distribution Requirement	3			
	<hr/>	18		
Seventh Semester				
EES 391 Senior Projects I	1		ENVIRONMENTAL ENGINEERING MAJOR	
ED 390 Intern Teaching	15			
	<hr/>	16		
Eighth Semester				
EES 392 Senior Projects II	2		TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENVIRONMENTAL ENGINEERING LEADING TO THE B.S. DEGREE — 134. The Department of Environmental Engineering and Earth Sciences (EEES) offers a four-year ABET-accredited degree program in Environmental Engineering (ENV). This program provides strong engineering and scientific experience with advanced techniques heavily integrated into the curriculum. Students intending to major in this program are encouraged to be well prepared in the sciences and mathematics. The first year of coursework is common to all engineering programs. Specialization is achieved through the appropriate selection of the technical electives. The department highlights unique facilities such as a certified water quality laboratory used for teaching and contract work, and The Center for Geographic Information Science (GIS). Other facilities in the area are used field study in courses and student research. The student professional chapters of the Society of Women Engineers (SWE) and the Air & Waste Management Association (A&WMA), in conjunction with the Department of Environmental Engineering and Earth Sciences (EEES) periodically offer seminars on subjects of a timely nature. Attending these seminars and taking the E.I.T. (Engineers-In-Training) Exam are mandatory for the completion of the degree.	
EES 210 Global Climate Change	3			
EES 280 Principles of Astronomy	4			
EES Electives (1)	9			
	<hr/>	18		

(1) Three credits of EES electives must include either EES 271 or EES 272.

NOTE: All B.A. degree candidates are required to complete an appropriate minor or teaching certification. Other B.A. programs and minors may be considered by the Department.

Adding one additional course in Chemistry will satisfy the course requirements for certification in General Science.

Honors Program in Environmental Engineering

Upon the recommendation and approval of the Environmental Engineering faculty, honor students in Environmental Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of

College of Science and Engineering

3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

ENVIRONMENTAL ENGINEERING B.S. DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

CHM 113 Elements and Compounds lab	1
CHM 115 Elements and Compounds	3
Mth 111 Calculus I	4
ME 180 CADD Lab	1
ENG 101 Composition	4
FYF 101 First-Year Foundations	3

16

Second Semester

EES 202 Biogeochemistry or	
EGR 200 Intro. to Materials Science	3
MTH 112 Calculus II	4
CS 125 Computer Science I or	4
EGR 140 Computers in Engineering	3
PHY 201 General Physics I	4
Distribution Requirement	3

17-18

Third Semester

MTH 211 Intro. to Differential Equations	4
PHY 202 General Physics II	4
EE 211 Electrical Circuits and Devices	3
EE 283 Electrical Measurements Lab	1
ME 231 Statics & Dynamics	3
ENV 205 Environmental Microbiology	1

16

Fourth Semester

EES 211 Physical Geology	4
ME 322 Engineering Thermodynamics	3
EES 240 Principles of Environmental Science	4
ME 232 Strength of Materials	3
Distribution Requirement	3

Fifth Semester	
ENV 315 Soils	3
ENV 321 Hydrology	4
ME 321 Fluid Mechanics	3
Distribution Requirement	3
ME 323 Fluid Mechanics Lab	1
Technical Elective ¹	3

17

3

4

3

3

1

3

17

Sixth Semester

ENV 330 Water Quality	3
ENV 332 Air Quality	4
EGM 320 Engineering Project Analysis	3
EGR 201 Professionalism and Ethics ²	1
Technical Elective ¹	3
Distribution Requirement	3

17

Seventh Semester

ENV 305 Solid Waste Management	3
ENV 351 Water and Wastewater Treatment	4
ENV 353 Air Pollution Control	3
ENV 391 Senior Projects I	1
Distribution Requirement	3
Technical Elective ¹	3

17

Eighth Semester

ENV 322 Water Resources Engineering	3
ENV 352 Environmental Engineering Hydraulics	3
ENV 354 Hazardous Waste Management	3
ENV 392 Senior Projects II	2
Technical Elective ¹	3
Distribution Requirement	3

17

¹ Advisor-approved science or engineering courses numbered 200 or above with at least one course in engineering. Technical electives must include either EES 271 or EES 272.

² Consult with advisor for availability and proper scheduling. May be taken on campus, at other institutions and/or off campus as an independent study or distance learning course.

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CHAIRPERSON: DR. V. MING LEW

Faculty: Professors: Berard, Koch, Tillman

Associate Professors: Bracken, Harrison, Kapolka, Lew, Sullivan

Assistant Professor: Kong

Visiting Assistant Professor: Pryor

Math Specialist: Gapinski

Faculty Emeriti: Merrill, Wong

COMPUTER INFORMATION SYSTEMS

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER INFORMATION SYSTEMS LEADING TO THE B.S. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER INFORMATION SYSTEMS — 17.

The Department of Mathematics and Computer Science offers an interdisciplinary program (in cooperation with the Jay S. Sidhu School of Business and Leadership) leading to a B.S. degree in Computer Information Systems.

COMPUTER INFORMATION SYSTEMS MAJOR

Computer Information Systems is concerned primarily with the use of computer systems in business and industrial organizations. Its principal focus includes the study of systems analysis, systems design and computer programming, along with other analytical areas of business that are pertinent to the development, implementation, and maintenance of information systems.

COMPUTER INFORMATION SYSTEMS MINOR

A minor in Computer Information Systems requires the completion of 17 credits, consisting of the following courses:

Because certain required and elective courses are offered in either alternate semesters or alternate years, or when demand warrants, degree candidates are strongly encouraged to meet with their advisors on a regular basis to discuss their academic schedule to ensure satisfactory degree progress.

Required Courses:

CS 125, CS 126, CS 225, CS 324	14
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One additional course from:

CS 226, CS 317, CS 321, CS 325, CS 334, CS 335, CS 340, CS 350, CS 355, CS 360, CS 363, CS 366, CS 367, CS 383, or MTH 354	3
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17

COMPUTER INFORMATION SYSTEMS MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

CS 125 Computer Science I	4
ACC 161 Financial Accounting and Decision Making	3
Eng 101 Composition	4
FYF 101 First-Year Foundations	3
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
	14

Second Semester

CS 126 Computer Science II	4
ACC 162 Managerial Accounting and Decision Making	3
Mth 105 Calculus for Life, Managerial and Social Sciences I	4
Distribution Requirements	3-6
	<hr style="width: 10%; margin-left: auto; margin-right: 0;"/>
	14-17

College of Science and Engineering

Third Semester

CS 225 Computer Science III	3
CS 224 Cobol and File Management or CS 283 Web Development I	3
Eng 202 Technical Writing	3
Distribution Requirements	6
	<hr/>
	15

Fourth Semester

CS 226 Computer Science IV	3
Mth 150 Elementary Statistics	3
BA 153 Management Foundations	3
Distribution Requirements	6
	<hr/>
	15

Fifth Semester

CS 324 Systems Analysis or CS 325 Database Management	3
CS 317 Software Integration or CS Elective	3
CS 224 Cobol and File Management or CS 283 Web Development I	3
BA 351 Management of Organizations and People	3
Distribution Requirements	3-6
	<hr/>
	15-18

Sixth Semester

CS Electives	6
BA 354 Organizational Behavior	3
Distribution Requirements and/or Free Electives	6
	<hr/>
	15

Seventh Semester

CS 324 Systems Analysis or CS 325 Database Management	3
CS 317 Software Integration or CS Elective	3
CS 391 Senior Projects I	1
BA Elective	3
Distribution Requirements or Free Electives	3 - 6
	<hr/>
	13-16

Eighth Semester

CS 392 Senior Projects II	2
Distribution Requirements and/or Free Electives	12-15
	<hr/>
	14-17

*Summary of Minimum Credit
Distribution for the CIS Major:*

*Credit
Hours*

CS 125, 126, 224, 225, 226, 283, 317, 324, 325, 391, 392.	32
CS/Mth Electives (select 3 of the following)	
CS335, CS340, CS367, CS355, CS321, CS360, CS363, CS 383, MTH 354, CS334, CS366, or CS350	9
BA required courses BA 153, Acc161, Acc 162, BA 351 and BA 354	15
BA elective courses (select one of the following) BA352, BA321, or BA341	3
Mth 105, 150	7
FYF 101, ENG 101, 202	10
Distribution Requirements	24
Free Electives	20
Total	120

COMPUTER SCIENCE

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER SCIENCE LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER SCIENCE LEADING TO THE B.S. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER SCIENCE — 17.

A program of study leading to a B.A. or B.S. degree with a major or minor in Computer Science is offered by the Department of Mathematics and Computer Science.

MAJOR IN COMPUTER SCIENCE

The Computer Science curriculum consists of theoretical as well as application-oriented courses and is based on a strong foundation in mathematics. The B.A. degree is intended for those interested in management and social sciences, whereas the B.S. degree requires greater concentration in the engineering, natural and physical sciences. Two tracks of study are offered to satisfy students' interests and career goals. A gaming and media design track can be chosen to prepare students for work in the expanded gaming industry. A traditional track can be taken to prepare students for graduate study and research in the discipline, or for employment in government or industry. Students are encouraged, through the attainment of a minor or second major, to acquire competence in an area that lends itself to meaningful computer applications.

Because certain required and elective courses are offered in either alternate semesters or alternate years, or when demand warrants, degree candidates are strongly encouraged to meet with their advisors on a regular basis to discuss their academic schedule to ensure satisfactory progress toward the degree.

COMPUTER SCIENCE MINOR

A minor in Computer Science requires the completion of 17 credits, consisting of the following courses:

<i>Required Courses:</i>	<i>Credit Hours</i>
CS 125, CS 126, CS 225 and CS 226	14
<i>Electives:</i>	
One additional 300-level course,	3

College of Science and Engineering

excluding any required courses and
 CS 321, CS 324, CS 360,
 CS 363 and CS 364

Minimum Total Required	17
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COMPUTER SCIENCE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE, CLASSIC TRACK

First Semester

	B.A.	B.S.
CS 125 Computer Science I	4	4
FYF 101 First-Year Foundations	3	3
Eng 101 Composition or Distribution Requirement	4/3	4/3
Mth 111 Calculus I	4	4
	14-15	14-15

Second Semester

	B.A.	B.S.
CS 126 Computer Science II	4	4
Mth 112 Calculus II	4	4
Distribution Requirements	3	3
Eng 101 Composition or Distribution Requirement	4 3	4 3
	14-15	14-15

Third Semester

	B.A.	B.S.
CS 225 Computer Science III	3	3
Mth 202 Set Theory and Logic	4	4
Laboratory Science Sequence	0	4
Distribution Requirement	9	6
	16	17

Fourth Semester

	B.A.	B.S.
CS 226 Computer Science IV	3	3
Mth 231 Discrete Math	3	3
Laboratory Science Sequence	0	4
Distribution Requirements	6	3
Eng 202 Tech. Writing	3	3
	15	16

Fifth Semester

	B.A.	B.S.
CS 326 Operating System Principles or CS 328 Analysis of Algorithms	3	3
Mth 150 Elementary Statistics or Mth 351 Probability and Statistics I	3	3
Laboratory Science Elective	0	4
Distribution Requirements and/or Free Electives	9	6
	15	16

Sixth Semester

	B.A.	B.S.
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CS 334 Software Engineering	3	3
CS Elective or CS330	3	3
CS Elective or CS 319 Programming Languages or CS 323 Theory of Computation or CS 327 Compiler Design	3	3
Free Electives	<u>6</u>	<u>6</u>
	15	15

Seventh Semester

	B.A.	B.S.
CS 391 Senior Projects 1	1	1
CS Elective	3	3
CS 326 Operating System Principles or CS 328 Analysis of Algorithms	3	3
Free Electives	<u>6-9</u>	<u>6-9</u>
	13-16	13-16

Eighth Semester

	B.A.	B.S.
CS 392 Senior Projects II	2	2
CS Elective or CS330	3	3
CS Elective or CS 319 Senior Programming Languages or CS 323 Theory of Computation or CS 327 Compiler Design	3	3
Free Electives	<u>6-9</u>	<u>6-9</u>
	14-17	14-17

COMPUTER SCIENCE B.S.- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE, GAMING AND MEDIA DESIGN TRACK

First Semester

CS 125 Computer Science I	4
FYF 101 First-Year Foundations	3
Eng 101 Composition or Distribution Requirement	4/3
Mth 111 Calculus I	<u>4</u>
	14-15

Second Semester

CS 126 Computer Science II	4
Mth 112 Calculus II	4
Distribution Requirements	3
Eng 101 Composition or Distribution Requirement	<u>4/3</u>
	14-15

Third Semester

CS 225 Computer Science III	3
Mth 202 Set Theory and Logic	4
Laboratory Science Sequence	4
Distribution Requirement	<u>6</u>
	17

Fourth Semester

College of Science and Engineering

CS 226 Computer Science IV	3
Mth 231 Discrete Math	3
Laboratory Science Sequence	4
Distribution Requirement or CS 366 Gaming I	3
Eng 202 Technical Writing	3
	<hr/>
	16
Fifth Semester	
CS 328 Analysis of Algorithms or CS Elective	3
Mth 150 Elementary Statistics or Mth 351 Probability and Statistics I	3
CS 340 Artificial Intelligence or CS 367 Computer Graphics	3
PHY 201 - General Physics	4
	<hr/>
	13
Sixth Semester	
CS 334 Software Engineering	3
CS 366 Gaming I or CS 368 3D Game Development	3
CS Elective or Distribution Requirement	3
Distribution Requirements	6
	<hr/>
	15
Seventh Semester	
CS 328 Analysis of Algorithms or CS Elective	3
CS 340 Artificial Intelligence or CS 367 Computer Graphics	3
CS 391 Senior Projects I	1
Free Electives	6-9
	<hr/>
	13-16
Eighth Semester	
CS 368 3D Game Development or CS Elective	3
CS 392 Senior Projects II	2
Free Electives	9-12
	<hr/>
	14-17

SCIENCE ELECTIVES FOR COMPUTER SCIENCE MAJORS

B.A. candidates: See General Education Requirements.

B.S. candidates: A laboratory science sequence which must be one of the following:

Bio 121-122; Chm 113/115-114/116; EES 211, 230; or Phy 201-202.

and

One additional 4-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be numbered above 200 except that Bio 121, 122, Chm 113/115 or 114/116 are also acceptable in this requirement.

Computer Science Electives for Computer Science Majors:

Classic Track: CS 319 or CS 323 or CS 327, and three additional 300-level CS courses not listed as required courses.

Gaming and Media Design Track: Any two 300-level CS courses not listed as required courses.

*Summary of Minimum Credit Distribution for**Computer Science - Classic Track:*

	B.A.	B.S.
CS 125, 126, 225, 226, 326, 328, 330, 334, 391, 392	29	29
CS319 or 323 or 327	3	3
CS Electives	9	9
Mth 111, 112, 202, 231 and 150 or 351	18	18
Eng 101, 202	7	7
FYF 101	3	3
Science Electives	6	12
Distribution Requirements	18	18
Free Electives	27	21
<i>Minimum Total Required</i>	<i>120</i>	<i>120</i>

Computer Science Majors - Gaming and Media Design:

	B.S.
CS 125, 126, 225, 226, 328, 334, 340, 366, 367, 368, 391, 392	35
CS Electives	6
Mth 111, 112, 202, 231 and 150 or 351	18
Eng 101, 202	7
FYF 101	3
PHY201	4
Science Electives	8
Distribution Requirements	18
Free Electives	21
<i>Minimum Total Required</i>	<i>120</i>

MATHEMATICS MAJOR

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MATHEMATICS LEADING TO THE B.A. DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MATHEMATICS LEADING TO THE B.S.

College of Science and Engineering

DEGREE — 120.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN MATHEMATICS — 21.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN STATISTICS — 21.

Programs of study leading to the B.A. or B.S. degree with a major or minor in Mathematics along with a minor in Statistics are offered by the Department of Mathematics and Computer Science.

The Department offers two tracks leading to a baccalaureate degree in Mathematics: the Standard Mathematics Track and the Teacher Certification Track. The Teacher Certification Track provides preparation for secondary school teaching. The Standard Mathematics Track prepares students for graduate study and research in mathematics, or for careers in industry or government, depending on the upper-level electives chosen in consultation with the faculty advisor. The Standard Track, when combined with an appropriate second major or minor, can also provide an excellent foundation for professions in business and management; economics; law; medicine; actuarial, computing, engineering, environmental and physical sciences. Both tracks share a common core of study in modern algebra, analysis, probability, and statistics.

In both tracks a student may opt for either a Bachelor of Arts or Bachelor of Science degree. The B.A. degree is intended for those who wish to elect more humanities and social science courses, whereas the B.S. degree requires greater concentration in the natural and physical sciences.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. The Teacher Certification track is specifically designed to incorporate requirements necessary for certification in secondary education. Upon completion of all requirements, students receiving a degree in mathematics with secondary teaching certification will also receive a minor in Secondary Education. Questions regarding requirements for the minor in Secondary Education should be directed to the Education Department.

MATHEMATICS MINOR

Because certain required and elective courses are offered in either alternate semesters or alternate years, or when demand warrants, degree candidates are strongly encouraged to meet with their advisors on a regular basis to discuss their academic schedule to ensure satisfactory degree progress.

<i>Required Courses</i>	<i>Credit Hours</i>
Mth 111 - 112	8

Electives:

Two of the following courses:

Mth 202, 211, 212, 214, 231	7-8
Any two MTH courses numbered 300 or higher excluding MTH 303, MTH 391, and MTH 392	6-8

<i>Minimum Total Required</i>	<i>21-24</i>
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STATISTICS MINOR

In a wide range of sciences, both natural and social, statistical analysis is of major importance both in conducting research and in understanding its findings. Likewise, in governmental planning and industrial management, statistical methods are a necessary tool and constitute a major application of mathematics and computing. The minor in Statistics is intended to support work in a major either in another mathematical science or in a number of other disciplines.

<i>Required Courses:</i>	<i>Credit Hours</i>
Mth 105-106 or Mth 111-112	8
CS 125	4

Mth 351-352; and Mth 354	9	
Minimum Total Required	21	

STANDARD MATHEMATICS TRACK- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

	B.A.	B.S.
Mth 111 Calculus I	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
CS 125 Computer Science I	4	4
FYF 101 First-Year Foundations	3	3
	14-15	14-15

Second Semester

	B.A.	B.S.
Mth 112 Calculus II	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
Distribution Requirements	9	6
Phy 201 General Physics I	-	4
	16-17	17-18

Third Semester

	B.A.	B.S.
Mth 202 Set Theory and Logic	4	4
Mth 211 Intro. to Ordinary Differential Equations	4	4
Science Elective	3	3
Distribution Requirements	6	6
	17	17

Fourth Semester

	B.A.	B.S.
Mth 212 Multivariable Calculus	4	4
Mth 214 Linear Algebra	3	3
Science Elective	3	4
Distribution Requirements	-	3
Free Elective	3	0
	13	14

Fifth Semester

	B.A.	B.S.
Mth 311 Functions of a Real Variable or Mth 331 Intro to Abstract Algebra I	4	4
Mth 351 Probability and Mathematical Statistics I	3	3
Free Electives	9	6
	16	13

Sixth Semester

	B.A.	B.S.
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College of Science and Engineering

Mth/CS Elective	6	6
Free Electives	9	9
	<hr/>	<hr/>
	15	15

Seventh Semester

	B.A.	B.S.
Mth 391 Senior Seminar	1	1
Mth 311 Functions of a Real Variable or Mth 331 Intro. to Abstract Algebra I	4	4
Mth/CS Elective	-	3
Free Electives	9	7
	<hr/>	<hr/>
	14	15

Eighth Semester

	B.A.	B.S.
Mth 392 Senior Seminar	2	2
Mth/CS Elective	3	3
Free Electives	9	9
	<hr/>	<hr/>
	14	14

TEACHER CERTIFICATION MATHEMATICS TRACK- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

	B.A.	B.S.
Mth 111 Calculus I	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
CS 125 Computer Science I	4	4
FYF 101 First-Year Foundations	3	3
	<hr/>	<hr/>
	14-15	14-15

Second Semester

	B.A.	B.S.
Mth 112 Calculus II	4	4
Eng 101 Composition or Distribution Requirement	4/3	4/3
Psy 101 General Psychology	3	3
Distribution Requirements	6	3
Lab Science Sequence I	-	4
	<hr/>	<hr/>
	16-17	17-18

Third Semester

	B.A.	B.S.
Mth 202 Set Theory and Logic	4	4
Ed 190 Effective Teaching	3	3
Lab Science Sequence II	3	4
Distribution Requirements	6	6
	<hr/>	<hr/>
	16	17

Fourth Semester

B.A.	B.S.
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Mth 212 Multivariable Calculus	4	4
Mth 214 Linear Algebra	3	3
ED 180 Educational Psychology	3	3
Science Elective	3	4
Free Elective	3	-
	<hr/>	<hr/>
	16	14
Fifth Semester		
	B.A.	B.S.
Ed 210 Teach. Students w/Special Needs	3	3
Mth 343 Intro. to Geometry or Mth 303 Teaching of Mathematics in Secondary School	3/4	3/4
Mth 311 Functions of a Real Variable or	4	4
Mth 331 Intro. to Abstract Algebra Distribution Requirement	-	3
Free Electives	3	0
	<hr/>	<hr/>
	13-14	13-14
Sixth Semester		
	B.A.	B.S.
Mth/CS Electives	3	9
Ed 220 Multicultural Education	3	3
EDSP 225 Special Education Methodology	3	3
Ed 380 Content Area Reading	2	2
Free Electives	3	0
	<hr/>	<hr/>
	14	17
Seventh Semester		
	B.A.	B.S.
Mth 343 Intro. to Geometry or Mth 303 The Teaching of Mathematics in Secondary School	3/4	3/4
Mth 311 Functions of a Real Variable or Mth 331 Intro to Abstract Algebra I	4	4
Mth 351 Probability and Mathematical Statistics	3	3
Mth 391 Senior Seminar	1	1
ED 191 Technology in the classroom	3	3
	<hr/>	<hr/>
	14-15	14-15
Eighth Semester		
	B.A.	B.S.
EDSP 388 Inclusionary Practices	3	3
Ed 390A Intern Teaching	12	12
	<hr/>	<hr/>
	15	15

College of Science and Engineering

Science Electives for Mathematics Majors:

B.A. candidates: See General Education Requirements.

B.S. candidates: A laboratory science sequence which must be one of the following: BIO 121-122; Chm 113/115-114/116; EES 211, 230; or Phy 201-202 and one additional 4-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be numbered above 200 except that Bio 121, 122, Chm 113/115 or 114/116 are also acceptable in this requirement.

Mathematics/Computer Science Electives for Mathematics Majors:

Standard Mathematics Track:

Any two Mth courses numbered above 300; and for

B.A. candidates: Mth 231, or any Mth or CS course numbered above 300, excluding Mth 303

B.S. candidates: Two of the following: Mth 231, or any MTH or CS course numbered above 300, excluding Mth 303

Teacher Certification Mathematics Track:

Any one 3-credit MTH course numbered above 300; and for B.S. candidates:

Two of the following courses:

Mth 211, Mth 231, CS 227, or any Mth or CS course numbered above 300

Summary of Minimum Credit Distribution:

Standard Mathematics Track

	B.A.	B.S.
Mth 111, 112, 202, 211, 212, 214, 311, 331, 351, 391, and 392	37	37
Mth/CS Electives	9	12
CS 125	4	4
Science Electives	6	12
Eng 101	4	4
FYF 101	3	3
Distribution Requirements	18	18
Free Electives	39	30
Total	120	120

Teacher Certification Mathematics Track

	B.A.	B.S.
Mth 111, 112, 202, 212, 214, 303, 311, 331, 343, 351, and 391	38	38
Mth/CS Electives	3	9
CS 125	4	4
Science Electives	6	12
Eng 101	4	4
Ed 180, 190, 191, 220, EDSP 210, 225, 380, 388 and 390A	32	32
FYF 101	3	3
Psy 101	3	3
Distribution Requirements	15	15
Free Electives	9	0
Total	120	123

THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

DEAN: DR. PAUL C. BROWNE

THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

DEAN: DR. PAUL C. BROWNE

The Jay S. Sidhu School of Business and Leadership combines a strong core business education with the development of skills for authentic leadership and ethical business practices. The School offers degree programs for undergraduate and MBA students. In addition, it houses the Sovereign Center for Leadership and Management Development to provide leadership and professional development programs for business executives, managers and supervisors throughout the region.

The School bears the name of Jay S. Sidhu, a 1973 graduate of the Wilkes MBA program, a member of the University Board of Trustees, and former President and chief executive of Sovereign Bancorp. Mr. Sidhu and Sovereign Bank, a financial institution based in Reading, Pennsylvania, have provided Wilkes with a major gift to endow the School in Mr. Sidhu's name.

The Sidhu School offers three undergraduate degrees: the Bachelor of Business Administration degree (including an accelerated degree completion option for adult learners), the Bachelor of Business Administration degree in Entrepreneurship, and the Bachelor of Science degree in Accounting. The School also offers the Master of Business Administration degree, described in the *Wilkes University Graduate and Professional Studies Bulletin*.

The Sidhu undergraduate business program is centered on self-development through three interconnected components: a balanced set of foundation courses, preparation for entry into specific careers and jobs, and leadership development. At the heart of the experience is the Personal and Professional Development (PPD) Series. Consisting of seven one-credit courses, it engages small student cohorts in a four-year process of discovery and development. Students explore their knowledge, values, learning styles, and competencies in a spirit of self-examination, self-awareness and self-knowledge, forming the basis for an evolving Life and Learning Plan. The PPD series draws on the resources of the University and surrounding community and provides a linking thread throughout a student's experience in the business administration, accounting, and entrepreneurship programs. Courses challenge students to reflect on their learning

and assess how well they are progressing in the integration of content with skill and competency development. The goal is to develop graduates who understand the value of cognitive and emotional intelligence as they exercise authentic leadership in careers that demand individual commitment to excellence and genuine appreciation for teamwork.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of these programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing business programs at Wilkes.

Closely linked to the Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for students to apply what they study in classroom settings to functioning organizations under the direction of senior staff at each unit.

The School provides a wealth of co-curricular and extracurricular opportunities for students to develop and hone their personal leadership skills. Campus chapters of Delta Epsilon Chi () and the Society for Advancement of Management (SAM) provide students with opportunities for professional development, social interaction and national exposure. The Wilkes University Students in Free Enterprise (SIFE) team provides the opportunity to make a difference through service and to develop leadership, teamwork and communication skills through learning, practicing and teaching the principles of free enterprise. These organizations are open to all students, regardless of major or career interests.

Upper-level accounting students serve as tax preparers in the Volunteer Income Tax Assistance (VITA) program of the U.S. Internal Revenue Service. VITA provides free tax-filing assistance for low-income and elderly residents of Wilkes-Barre and the surrounding vicinity, while giving students actual, hands-on experience in completing and filing personal tax returns. Wilkes University and the Sidhu School also sponsor an active chapter of Delta Mu Delta, an honorary business society that recognizes the

highest levels of academic achievement by undergraduate and graduate students.

Bachelor's Degree-Majors

Accounting (B.S.); Business Administration (B.B.A.); Entrepreneurship (B.B.A.)

BUSINESS ADMINISTRATION AND ACCOUNTING

CHAIRPERSON: DR. JUSTIN C. MATUS

Faculty: Professors: Alves, Batory, Liuzzo, Rexter, Taylor

Associate Professors: Chisarick, Engel

Assistant Professors: Das, Edmonds, Frear, Gordon, Hao, Matus, Raineri, Xiao

Adjunct Faculty: Albany, Gorman, Hughes, Kosicki, McDonald, Ruthkosky, Sabatini, Sowcik, Zipay

Faculty Emeriti: Broadt, Capin, Gera, Raspen

ACCOUNTING MAJOR

COORDINATOR: DR. MARIANNE M. REXER

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ACCOUNTING LEADING TO THE B.S. DEGREE — 125.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The Jay S. Sidhu School of Business and Leadership offers a major in Accounting, providing the necessary background for an entry-level professional position in public, private or governmental accounting. Students receive the necessary educational background to compete successfully for placement in graduate and professional schools and licensures as certified public accountants and certified management accountants. Those choosing a career in administration receive the managerial training necessary for success in a full range of leadership roles.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited both the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the Accounting major at Wilkes.

The Accounting curriculum parallels that of Business Administration and Entrepreneurship and contains four tiers. The *first tier* begins with a comprehensive study of the arts, sciences, mathematics,

communications, and humanities. This liberal arts core is a common experience to all majors and provides the basis for a broadly educated individual. To become competitive, effective organizational leaders and self-fulfilled individuals, Accounting graduates are expected to possess the skills and knowledge acquired through this liberating exposure to the arts, sciences, mathematics, and the humanities.

The *second tier* of educational experience provides a general background in statistical, financial, and managerial techniques. Subjects included in this area of study are finance, economics, management, and marketing, including a two-semester Integrated Management Experience which serves as the school's foundation course in the study of accounting, business, and entrepreneurship. This tier also includes a sequence of seven one-credit courses called the "Professional and Personal Development" series, designed to engage all business students in an in-depth exploration and assessment of their personal strengths, goals, and career aspirations and provide a series of developmental activities and experiences to facilitate their transition into professional careers.

The *third tier* of basic educational skills relates to the fields of financial and managerial accounting. A rigorous thirty-six credit hours are devoted to current accounting theory and applications through the use of texts, computer applications, cases, and practical experience. The sequence begins with introductory level accounting and progresses through intermediate, tax, cost, auditing, and accounting information systems. A fourth tier utilizes an accounting internship to bond classroom knowledge with practical experience. Most students are placed with public accounting firms where it is possible to experience many areas of accounting as well as a broad range of business problems in a short time span. Additionally, for students with a more specialized interest, accounting internships are also available in banks, in private industry, and with the government. The Wilkes internship program is the oldest in Northeast Pennsylvania, and most successful interns have been placed in positions of their choice, including the large international accounting firms.

A *fifth tier*, a five and a half year BS/MBA program, is available for students who wish to meet the needs of a professional in the 21st century. This program offered by the Jay S.

Sidhu School of Business and Leadership has been developed to encompass each of the above-mentioned levels, along with an additional year and a half of graduate coursework. Upon successful completion, the student will have earned a Bachelor of Science degree in Accounting and a Master of Business Administration degree with 161 credit hours of coursework.

Accounting alumni can be found in public accounting firms ranging in size from those of individual practitioners to international organizations. Many of our graduates who began their careers in public accounting have since moved into leadership positions with government or private industry.

The Accounting major in the Jay S. Sidhu School of Business and Leadership at Wilkes University will provide an individual with the combined educational skills to be a future success as a leader in the accounting profession, industry, or government.

ACCOUNTING MINOR

Students from other disciplines, even those unrelated to business, have been inclined to select an Accounting minor to enhance their major field of study. The minor provides the student with enough background to begin with professional entry-level employment while developing a background in his or her chosen field of study. The minor program is composed of ACC 161-162, ACC 201-202 and six additional elective credits in accounting.

ACCOUNTING MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ACC 151 Integrated Management Experience I	3
CS 115 Computers and App.	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Distribution Requirement	3
PPD 101 Personal and Professional Development I	1
	17

Second Semester

ACC 152 Integrated Management Experience II	3
COM 101 Public Speaking	3
MTH 107 Business Math	3
Distribution Requirement	3
Distribution Requirement	3
PDD 102 Personal and Professional	1
	17

Development II	16
Third Semester	
ACC 161 Financial Accounting	3
BA 351 Management of Organizations & People	3
EC 101 Principles of Economics	3
Distribution Requirement	3
Distribution Requirement	3
PPD 201 Personal and Professional Development III	1
	16
Fourth Semester	
ACC 162 Managerial Accounting	3
BA 321 Marketing	3
EC 102 Economics II	3
Distribution Requirements	6
PPD 202 Personal and Professional Development IV	1
	16
Fifth Semester	
ACC 201 Intermediate Accounting I	3
ACC 321 Taxes	3
BA 233 The Legal Environment of Business	3
BA 319 Business Statistics	3
BA 354 Organizational Behavior	3
PPD 301 Personal and Professional Development V	1
	16
Sixth Semester	
ACC 202 Intermediate Accounting II	3
ACC 322 Advanced Taxes	3
BA 234 Business Law	3
BA 341 Managerial Finance	3
BA 352 Prod/Operations Mgmt.	3
PPD 302 Personal and Professional Development VI	1
	16
Seventh Semester	
ACC 301 Advanced Financial Accounting	3
ACC 331 Auditing	3
Free Elective	3
BA 358 International Business Seminar	3
BA 361 Business Strategy and Decision-making	3
PPD 401 Personal and Professional Development VII	1
	16
Eighth Semester	

The Jay S. Sidhu School of Business and Leadership

ACC 311 Advanced Managerial Accounting	3
ACC 341 Accounting Info Systems	3
ACC 362 Accounting Internship or or	6
ACC 362 Accounting Internship* and Free Elective	6
	12

* Accounting 362 may be taken for 6 credits in place of the Free Elective in semester 8.

BUSINESS ADMINISTRATION MAJOR

COORDINATOR: DR. JUSTIN C. MATUS

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A BACHELOR OF BUSINESS ADMINISTRATION DEGREE — 125.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A BUSINESS ADMINISTRATION MINOR — 18.

The Jay S. Sidhu School of Business and Leadership offers undergraduate and graduate degree programs in Business Administration with a variety of concentrations leading to executive, managerial and technical careers in business, industry, and governmental organizations.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited both the undergraduate and graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the Business Administration major at Wilkes. Students interested in pursuing graduate or professional studies will find that the curriculum provides the appropriate foundation for such opportunities.

The Business Administration curriculum parallels that of Accounting and Entrepreneurship and contains a minimum of three tiers. These tiers or steps are intended to combine simultaneously a rigorous general education with the flexibility of individualized program design. The *first tier* begins with a comprehensive study of the arts, sciences, mathematics, communications, and humanities. This liberal arts core is a common experience to all majors and provides the basis for a broadly educated individual. To become competitive, effective, organizational leaders and self-fulfilled individuals, Business Administration graduates are expected to possess the skills and knowledge acquired through this

liberating exposure to the arts, sciences, mathematics, and the humanities.

The *second tier* of the curriculum is the Business Administration core, which transmits a common educational experience to all Business Administration majors by addressing topics that are recognized to be basic and necessary to all practicing professionals. Although the following twenty-three courses are required by the Business Administration core, four of them fulfill Distribution Area requirements of the University core and so are counted in the first tier grouping. They appear here for completeness:

- ACC 161 Financial Accounting and Decision Making
- ACC 162 Managerial Accounting and Decision Making
- BA 151 Integrated Management Experience I
- BA 152 Integrated Management Experience II
- BA 233 The Legal Environment of Business
- BA 234 Business Law
- BA 257 Management Information Systems
- BA 309 Business Correspondence and Reports
- BA 319 Business Statistics
- BA 321 Marketing
- BA 341 Managerial Finance
- BA 351 Management of Organizations and People
- BA 352 Production and Operations Management
- BA 354 Organizational Behavior
- BA 356 The Social Responsibility of Business
- BA 358 International Business
- BA 361 Business Strategy and Decision-Making
- BA 362 Professional Business Experience (or an experiential Independent study)
- COM 101* Public Speaking
- CS 115* Computers and Applications
- Ec 101 Economics I
- Ec 102* Economics II
- Mth 107* Business Mathematics
- 6 additional credits in General Education Electives
- PPD 101 Personal and Professional Development I
- PPD 102 Personal and Professional Development II
- PPD 201 Personal and Professional Development III
- PPD 202 Personal and Professional Development IV
- PPD 301 Personal and Professional Development V

PPD 302 Personal and Professional Development VI
PPD 401 Personal and Professional Development VII

**Meets a requirement in the University core*

The third tier requires completion of twelve credits of elective courses within the major (Both BA and ENT prefixed courses can be used). Students wishing to satisfy the requirements for a particular concentration area must complete at least six of their third-tier credits within that concentration area (See below for a complete description of these concentration areas.)

The Bachelor of Business Administration degree program also contains nine credits of free electives for further customization of one's educational program. A student who wishes to declare a minor in an area such as computer science, communication studies, foreign languages, political science, psychology, or sociology can easily do so. Through a judicious selection of elective concentration courses and use of the free electives courses, it is possible for a student to fulfill two concentrations without the necessity of adding extra credits or extra semesters to one's program. Academic, personal, and career advisors are available to assist students in the selection of concentration areas and coursework. In much the same way, minors, double majors, or a personalized package of electives can be constructed around the interests of the students with the concerned, caring advice of these counselors.

Business Administration alumni can be found in positions of leadership in organizations throughout the world. They are leaders in both the public and private sectors. In addition, our alumni are educators, researchers, scholars, entrepreneurs, and other professionals. For the next generation of executives and professionals seeking similar realizations of their ambitions, the Bachelor of Business Administration degree program at Wilkes will prepare them admirably for their demanding futures as leaders of our global and diverse environment in the 21st century.

Closely linked to the Jay S. Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for business students to apply what they study in classroom settings to functioning

organizations under the direction of senior staff at each unit.

The following course sequence is recommended for students pursuing the Bachelor of Business Administration degree. By following this recommendation, all University core and School core requirements will be completed in their proper sequences. Students transferring into Wilkes and/or the Bachelor of Business Administration degree program can use this semester-by-semester outline as guidance for completing coursework.

MARKETING MINOR

For students in Business Administration and other disciplines, the Jay S. Sidhu School of Business and Leadership offers a minor program in Marketing. Students considering careers in or involving aspects of the marketing profession will find the Minor in Marketing an excellent complement to their primary academic and career interests. All students seeking the Minor in Marketing will be required to complete a minimum of eighteen (18) credits from the following list of courses:

- BA 321 Marketing
- BA 322 Advertising
- BA 324 Retailing
- BA 326 The Selling Process
- BA 327 Marketing Seminar
- BA 328 Consumer Behavior
- BA 198/298/398 Topics in Marketing
- BA 395/396 Independent Study in Marketing
- COM 302 Public Relations
- ENT 203 Opportunity Recognition: Creativity and Innovation
- ENT 252 The Entrepreneurial Leader
- ENT 321 Analyzing Markets and Competition
- ENT 384 Small Business Consultancy

BUSINESS ADMINISTRATION MINOR

For majors in other disciplines, the Jay S. Sidhu School of Business and Leadership offers the minor program in Business Administration. Thus, students who may be contemplating a career in business as a means of fully utilizing their already chosen majors will find that the Business Administration minor can complement their other academic and career interests. All students wishing to minor in Business Administration will be required to complete a minimum of eighteen credits, or six courses, to include three required courses, BA 153, ACC 161 and BA 351, plus any three other courses (a) having the BA prefix and/or (b) approved by the Chairperson of the Jay S. Sidhu School of Business and Leadership.

The Jay S. Sidhu School of Business and Leadership

BUSINESS ADMINISTRATION MAJOR-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
BA 151 Integrated Management Experience I	3
CS 115 Survey of Computers	3
Eng 101 Composition or Distribution Requirement	3-4
FYF 101 First-Year Foundations	3
Distribution Requirement	3
PPD 101 Personal and Professional Development I	1
	<hr/>
	16-17
Second Semester	
BA 152 Integrated Management Experience II	3
Com 101 Public Speaking	3
ENG 101 or Distribution Requirement	3-4
Distribution Requirement	3
Distribution Requirement	3
PPD 102 Personal and Professional Development II	1
	<hr/>
	16-17
Third Semester	
Acc 161 Financial Accounting and Decision Making	3
BA 351 Management of Organizations and People	3
EC 101 Economics I	3
MTH 107 Business Mathematics	3
Distribution Requirement	3
PPD 201 Personal and Professional Development III	1
	<hr/>
	16
Fourth Semester	
Acc 162 Managerial Accounting and Decision Making	3
BA 257 Management Information Systems	3
BA 309 Business Correspondence and Reports	3
BA 321 Marketing	3
EC 102 Economics II	3
PPD 202 Personal and Professional Development IV	1
	<hr/>
	16
Fifth Semester	
BA 233 The Legal Environment of Business	3

BA 319 Business Statistics	3
BA 354 Organizational Behavior	3
Distribution Requirement	3
Free Elective	3
PPD 301 Personal and Professional Development V	1
	<hr/>
	16
Sixth Semester	
BA 234 Business Law	3
BA 341 Managerial Finance	3
BA 352 Production & Operations Mgt.	3
BA 356 Social Responsibility	3
Free Elective	3
PPD 302 Personal and Professional Development VI	1
	<hr/>
	16
Seventh Semester	
BA 358 International Business	3
BA 361 Bus Strategy & Decision Making	3
Concentration Electives	6
Distribution Requirement	3
PPD 401 Personal and Professional Development VII	1
	<hr/>
	16
Eighth Semester	
BA 362 Management Field Experience	3
Concentration Electives	6
Free Elective	3
	<hr/>
	12
<i>Bachelor of Business Administration Degree</i>	
<i>Note:</i> Students who pursue the Bachelor of Business Administration degree must complete 12 credits from any of the concentration areas or other elective courses having ACC, BA, EC, or ENT prefixes. Students who wish to satisfy the requirements for a particular concentration area must complete at least 9 of their 12 credits within that concentration area. Students are not required to satisfy the requirements for a concentration area, but they may choose to do so. Students will receive credit for no more than two concentration areas.	
Concentration Areas	
<i>Business Economics</i>	
Any EC prefixed course in addition to EC 101, EC 102 and EC/BA 319; includes EC 198/298/398 (Topics in Economics), EC 395-396 (Independent Study in Economics), and EC 399 (Co-Op Ed in Economics).	
<i>Finance</i>	
ACC 201 Intermediate Accounting I	
BA 342 Property and Life Insurance	

BA 343 Investments and Portfolio Management
 BA 345 Long-Range Financial Planning
 BA 198/298/398 Topics in Finance
 BA 395/396 Independent Research in Finance
 ENT 342 Entrepreneurial Finance
International Business
 BA 395/396 Independent Research in International Business
 EC 340 International Trade and Finance
 BA 198/298/398 Topics in International Business
Marketing
 BA 322 Advertising
 BA 324 Retailing
 BA 326 The Selling Process
 BA 327 Marketing Seminar
 BA 328 Consumer Behavior
 BA 198/298/398 Topics in Marketing
 BA 395-396 Independent Study in Marketing
 COM 302 Public Relations
 ENT 203 Entrepreneurial Identification: Innovation and Creativity
 ENT 252 The Entrepreneurial Leader
 ENT 321 Analyzing Markets and Competition

ACCELERATED BBA PROGRAM- COURSE SEQUENCE

Term	Block A (7 weeks)	Block B (7 weeks)
First Year		
1st	ABA 100 Integrated Management Exp.	ABA 110 Leadership and Org. Mgmt
2nd	ABA 161 Financial Accounting	ABA 190 Integrated Econ. for Business
3rd	ABA 130 Marketing and Retailing	ABA 150 The Legal Environment of Bus. and Bus. Law
Second Year		
4th	ABA 140 Integrated Bus. Math & Stat.	ABA 120 Effective Comm. for Business
5th	ABA 162 Managerial Accounting	ABA 170 Human Res. & Cust. Rel. Mgmt.
6th	ABA 180 Financial Management	ABA xxx Emphasis Elective 1
Third Year		
7th	ABA xxx Emphasis Elective 2	ABA 200 Bus. Strategy & Decision Making
8th	ABA 210 Professional Bus. Experience	

ACCELERATED BBA PROGRAM

The Sidhu School offers a Bachelor of Business Administration degree through an accelerated degree completion option for adult learners, ages 25 and older, who have already earned credit for a substantial amount of prior college coursework. Candidates must have earned at least thirty credit hours of college credit to enter the program. A total of sixty credit hours, covering the general education requirements for a Wilkes undergraduate degree and free electives, must be earned outside the courses specifically included in the Accelerated BBA.

The program provides preparation that is equivalent to the regular BBA in business administration. It consists of sixty credits earned through twelve core courses and three concentration electives, each worth four credits. The design assures that students will receive complete equivalent coverage of all learning outcomes delivered through the existing BBA program, in compliance with the standards of the Association of Collegiate Business Schools and Programs (ACBSP.) Students will take two courses each term, including fall, summer and spring, leading to completion of the program in seven and a half terms, over two and a half years.

ENTREPRENEURSHIP MAJOR

COORDINATOR: DR. ALVES

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENTREPRENEURSHIP LEADING TO THE B.B.A. DEGREE — 125.

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

Entrepreneurship creates value and improves society's standard of living. It is an integrating discipline that draws on knowledge and skills developed in a variety of areas. Entrepreneurial endeavors are successful when they identify opportunities, assess those opportunities, and take action to pursue the opportunities. Students earning the Bachelor of Business Administration in Entrepreneurship will understand the motivations, behaviors, and strategies necessary to create, implement, and sustain new ideas and ventures.

The Association of Collegiate Business Schools and Programs (ACBSP) accredited the undergraduate and graduate business administration programs as well as the undergraduate program in accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional

schools as well as potential employers and therefore serves as a major competitive advantage for students completing the entrepreneurship major at Wilkes.

The entrepreneurship curriculum blends the traditional components of a management education with the study of those content, skill, and sensitivity areas that uniquely define entrepreneurship. Through a combination of academic and clinical experiences students will develop an appreciation and understanding of the entrepreneurial process. The entrepreneurship major curriculum is composed of three blocks: the general education or university core, the Entrepreneurship core, and electives. The university core provides the liberal arts foundation that is necessary for a well-balanced education and perspective.

The Entrepreneurship core is the second block or tier. It begins with the year-long foundation course, The Integrated Management Experience, ENT151 and ENT152, a course designed to provide an overview of the functions of management and their interrelatedness, to plan and operate a business integrated with and grounded in understanding financial accounting, and the entrepreneurial process. The Entrepreneurship core requires the following 30 courses. Four of them fulfill general education requirements and are counted as meeting university core requirements.

- ACC 161 Financial Accounting and Decision Making
- ACC 162 Managerial Accounting and Decision Making
- ENT 151 The Integrated Management Experience I
- ENT 152 The Integrated Management Experience II
- BA 233 Legal Environment of Business
- BA 234 Business Law
- BA 309 Business Correspondence and Reports
- BA 321 Marketing
- BA 341 Managerial Finance
- BA 356 Social Responsibility of Business
- COM 101* Public Speaking
- CS 115* Survey of Computers
- Ec 101 Principles of Economics I
- Ec 102* Principles of Economics II
- ENT 201 Nature and Essence of Entrepreneurship
- ENT 203 Opportunity Identification: Creativity and Innovation
- ENT 252 The Entrepreneurial Leader
- ENT 321 Analyzing Markets and Competition

- ENT 342 Financing the Entrepreneurial Venture
- ENT 361 Practicing Entrepreneurship
- ENT 362 Entrepreneurship Internship
- ENT 385 Opportunity Assessment: Technical, Economic, and Market Feasibility
- Mth 107* Business Mathematics
- PPD 101 Personal and Professional Development I
- PPD 102 Personal and Professional Development II
- PPD 201 Personal and Professional Development III
- PPD 202 Personal and Professional Development IV
- PPD 301 Personal and Professional Development V
- PPD 302 Personal and Professional Development VI
- PPD 401 Personal and Professional Development VII

** Meets requirement in the University core*

The Third block includes major elective courses. Twelve credits of Entrepreneurship major electives are required. Nine credits must come from the following courses:

- BA 322 Advertising
- BA 327 Marketing Seminar
- BA 328 Consumer Behavior
- ENT 198/298/398 Topics Seminar
- ENT 384 Small Business Consultancy
- ENT 395/396 Independent Research

The final three Entrepreneurship major elective credits must come from disciplines with course number prefixes: ART, COM, EGM, DAN, ENG, MUS or THE.

In addition to the twelve Entrepreneurship major elective credits, nine free elective credits are required.

ENTREPRENEURSHIP MINOR

For majors in other disciplines, the Jay S. Sidhu School of Business and Leadership offers a minor in Entrepreneurship. Students who may be contemplating pursuit of entrepreneurial opportunities will find the Entrepreneurship Minor an excellent complement to their chosen majors. Required courses to complete the Entrepreneurship Minor are:

- ENT 151 Integrated Management Experience I
- ENT 152 Integrated Management Experience II
- BA 321 Marketing
- ENT 201 Nature and Essence of Entrepreneurship
- ENT 361 Practicing Entrepreneurship
- ENT 384 or ENT 362 Small Business Consultancy or Entrepreneurship Internship

The Entrepreneurship program is closely affiliated with the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both offer academic and experiential opportunities under the direction of senior professional staff.

Change is an accepted constant in today's world. And change, whether it is gradual or radical, is a rich source of opportunity. The entrepreneurship Major and Minor will prepare students to recognize and act upon opportunities and meet the challenges that lie ahead.

The following course sequence is recommended for students pursuing the Bachelor of Business Administration in Entrepreneurship degree. By following this recommendation, all University and Entrepreneurship core requirements will be completed in their proper order. Students transferring into Wilkes and/or the Bachelor of Business Administration in Entrepreneurship degree program can use this semester-by-semester outline as guidance for completing coursework.

ENTREPRENEURSHIP MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

ENT 151 Integrated Management Experience I	3
CS 115 Survey of Computers	3
Eng 101 Composition	4
FYF 101 First-Year Foundations	3
Distribution Requirement	3
PPD 101 Personal and Professional Development I	1
	<hr/>
	17

Second Semester

ENT 152 Integrated Management Experience II	3
COM 101 Public Speaking	3
Mth 107 Business Mathematics	3
Distribution Requirements	6
PPD 102 Personal and Professional Development II	1
	<hr/>
	16

Third Semester

ENT 201 Nature and Essence of Entrepreneurship	3
ENT 203 Opportunity Identification: Creativity and Innovation	3
Acc 161 Financial Accounting and Decision Making	3

EC 101 Principles of Economics I	3
Distribution Requirement	3
PPD 201 Personal and Professional Development III	1
	<hr/>
	16

Fourth Semester

ENT 252 The Entrepreneurial Leader	3
Acc 162 Managerial Accounting and Decision Making	3
BA 309 Business Correspondence and Reports	3
BA 321 Marketing	3
EC 102 Principles of Economics II	3
PPD 202 Personal and Professional Development IV	1
	<hr/>
	16

Fifth Semester

ENT 321 Analyzing Markets & Competition	3
BA 233 The Legal Environment of Business	3
BA 341 Managerial Finance	3
Distribution Requirement	3
Free Elective	3
PPD 301 Personal and Professional Development	1
	<hr/>
	16

Sixth Semester

ENT 342 Financing Entrepreneurial Ventures	3
ENT 385 Opportunity Assessment: Technical, Economic, and Market Feasibility	3
BA 234 Business Law	3
BA 356 Social Responsibility of Business	3
Entrepreneurship Elective	3
PPD 302 Personal and Professional Development VI	1
	<hr/>
	16

Seventh Semester

ENT 361 Practicing Entrepreneurship	3
Entrepreneurship Electives	6
Distribution Requirement	3
Free Elective	3
PPD 401 Personal and Professional Development VII	1
	<hr/>
	16

Eighth Semester

ENT 362 Entrepreneurship Internship	3
Entrepreneurship Elective	3
Distribution Requirement	3
Free Elective	3

THE NESBITT COLLEGE OF PHARMACY AND NURSING

THE SCHOOL OF PHARMACY

THE SCHOOL OF NURSING

THE NESBITT COLLEGE OF PHARMACY AND NURSING

DEAN: DR. BERNARD W. GRAHAM, R.PH.

The Nesbitt College of Pharmacy and Nursing combines the two clinically based academic programs of Wilkes University. These programs, administered by the School of Pharmacy and the Department of Nursing, have a theme centered on the development of skills needed to care for patients in a 21st-century health care system.

The School of Pharmacy is the home for the two-year Prepharmacy Guaranteed Seat program and the four-year professional program. Students who successfully complete the Prepharmacy Guaranteed Seat program matriculate directly into the accredited program leading to the Doctor of Pharmacy degree. The School also accepts a limited number of Wilkes and other students into this professional program. The department of Pharmaceutical Sciences offers the B.S. in pharmaceutical sciences. This degree will prepare students for entry-level positions in the pharmaceutical industry or advanced study in graduate school.

The School of Nursing houses a multitude of accredited nursing programs both undergraduate and graduate. Students of nursing may matriculate directly into the Bachelor of Science or from careers as LPNs or RNs. Students who already have a baccalaureate degree in another discipline and wish to pursue a career in the nursing profession may compete for a seat in the Professional Master's Program. Practicing professional nurses may choose to pursue the RN-MS program which leads into the advanced practice master's degree.

SCHOOL OF PHARMACY

DEAN: DR. BERNARD W. GRAHAM, R.PH.

Assistant Dean: Dr. Harvey A. Jacobs

Chairperson, Department of Pharmaceutical Sciences: Dr. Arthur H. Kibbe

Chairperson, Department of Pharmacy Practice: Dr. Edward F. Foote

Faculty: Professors: Foote, Graham, Kibbe, Witczak

Associate Professors: Bohan, Jacobs, Kristeller, Longyore, McCune, McManus, Malinowski, Olenak, Roke-Thomas, Trombetta, Welch, Wright

Assistant Professors: Bolesta, Bommarreddy, J. Ference, K. Ference, Manning, Metka, Patel, Russell, VanWert

Instructors: Billek, Holt-Macey, Musheno, Nanstiel

The School of Pharmacy offers a program of professional study leading to the Doctor of Pharmacy (Pharm.D.) degree. The purpose of the program is to prepare graduates for successful pharmacy practice in the health care environment of the twenty-first century. The U.S. health care system has been undergoing rapid, even dramatic, change. This transformation is expected by most observers to continue for some time. Those individuals and organizations responsible for the delivery of pharmaceutical care have not been and will not be sheltered from the forces of change. It becomes necessary, therefore, to provide new practitioners with the necessary knowledge base and skills required in a transformed health care system.

With the rapid transformation of health care delivery, a strong foundation in the basic sciences (e.g., pharmaceuticals, pharmacology, medicinal chemistry, anatomy and physiology) remains essential while clinical knowledge (e.g., therapeutics, pharmacokinetics, pathophysiology) and skills (e.g. physical assessment, patient counseling, clinical decision-making) become even more important. Successful practice will demand an improved understanding of the social sciences (e.g., psychology, sociology, economics, health policy, management). Most importantly, the future pharmacy practitioner must have outstanding interpersonal skills. Among these are the abilities to communicate effectively and to function in a team environment.

OUR MISSION

Our mission is to educate and develop highly qualified professionals and notably contribute to the ever-changing science and practice of pharmacy.

OUR VISION

We aspire to be recognized as a premiere School of Pharmacy through progressive education, cutting-edge practice, and significant contribution to the science of pharmacy.

OUR VALUES

Personalized education

We are committed to educating future professional pharmacists. We demonstrate this through our emphasis on communication, team-building, personal mentoring, close interprofessional relationships, and interdisciplinary curriculum, service-learning, and small class size.

Cornerstone Scholarship

Scholarly pursuits support our commitment to educational excellence, faculty development, quality patient care, and the advancement of the practice and science of pharmacy.

Ultimate Service and Practice

We regard progressive pharmacy care, committed professionalism, and civic engagement as essential to cultivating a dedication to the health and wellness of the community in which we live.

PREPHARMACY GUARANTEED SEAT PROGRAM

The two-year, prepharmacy course sequence is intended to prepare the student for the challenges of Wilkes University's four-year Doctor of Pharmacy curriculum. The prepharmacy program at Wilkes University is outlined below.

Admission to the Prepharmacy Guaranteed Seat Program (Enrollment limit: up to 70)

Students may only enter the Prepharmacy Guaranteed Seat Program as freshmen from high school. Minimum criteria for consideration for admission are listed below.

Applicants for the *Prepharmacy Guaranteed Seat Program* must first complete a Wilkes

The Nesbitt College of Pharmacy and Nursing

University Application which can be obtained from the University's Admissions Office. Applicants who meet the SAT criteria and class rank criteria will be forwarded an application for the School of Pharmacy. These applications will be reviewed by the School of Pharmacy and top applicants will be invited for a personal interview. Final admission into the program will be based on a thorough evaluation of students based on high school rank (or GPA if school does not rank), SAT scores, and the results of the personal interview. Interviewed applicants not selected for immediate admission will be placed on a wait list. Wait-listed students will be offered seats in the Guaranteed Seat Prepharmacy Program as they become available. In some instances, students may not be notified of an available seat in the Prepharmacy Guaranteed Seat Program until the summer.

School of Pharmacy applications for the *Prepharmacy Guaranteed Seat Program must be completed by February 1. There are typically many more applicants than seats in the entering Prepharmacy Guaranteed Seat Program. As applicants are admitted on a rolling basis, all seats may be awarded before the February 1 deadline. Applicants are encouraged to complete the application process as early as possible.*

Minimally, each candidate must:

- Be a graduate of, or near graduation from, an accredited high school or academy;
- Rank in the upper half of his or her class;
- Attain a combined SAT score of 1000 (Math and Verbal);
- Complete the School of Pharmacy Prepharmacy Application. (This is separate from the Wilkes University Admissions Application.);
- Have worked in a pharmacy or have shadowed a pharmacist for at least eight hours;
- Submit one recommendation letter from a pharmacist;
- Submit two recommendation letters from teachers, employers, or other individuals who can provide an objective appraisal of the student's ability; and
- Successfully complete an interview with the School of Pharmacy.

PLEASE NOTE: *attaining minimum academic requirements does not infer or promise an interview or admission into the Prepharmacy Guaranteed Seat program!*

PREPHARMACY*- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

Eng 101 Composition or	4
MTH 105 Calculus I	4
Bio 121 Principles of Modern Biology I	4
Chm 113 Elements & Compounds Lab	1
Chm 115 Elements and Compounds	3
FYF 101 First-Year Foundations	3
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	15

Second Semester

Eng 101 Composition or	4
MTH 105 Calculus I	4
Bio 122 Principles of Modern Bio II	4
Chm 114 The Chemical Reaction Lab	1
Chm 116 The Chemical Reaction	3
Distribution Requirements	6
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	18

Third Semester

Chm 231 Organic Chemistry I	3
Chm 233 Organic Chemistry Lab	1
Com 101 Fundamentals of Speech	3
Ec 102 Principles of Economics II	3
Distribution Requirements	6
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	16

Fourth Semester

Chm 232 Organic Chemistry II	3
Chm 234 Organic Chemistry Lab	1
Phy 174 Classical and Modern Physics	4
Mth 150 Elementary Statistics	3
Distribution Requirements	6
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	17

**Some requirements may be satisfied via satisfactory achievement on advanced placement tests or Wilkes' challenge exams.*

PHARMACY PROFESSIONAL PROGRAM

The Professional Program is four years and leads to the Doctor of Pharmacy (Pharm.D.) degree. Graduates of the program are eligible for state examination to become licensed pharmacists after completing appropriate internship hours. The four years of education consist of three years of in-class (i.e., lecture, laboratory, discussion group) and one year of experiential education.

Admission into the Professional Program (Enrollment limit: 65)

To be admitted into the Professional Program of the School of Pharmacy, a student must have either enrolled in and successfully completed

the Prepharmacy Guaranteed Seat Program at Wilkes University as outlined above or have submitted a successful application to the School of Pharmacy.

I. Admission through the Prepharmacy Guaranteed Seat Program

Students enrolled in the Wilkes University Prepharmacy Guaranteed Seat Program who meet the following conditions are automatically admitted to the Professional Program:

- complete four semesters as a full-time pre-pharmacy student and successfully complete, with a 2.0 or higher, **ALL** prerequisite courses at Wilkes University by the spring of the fourth semester (sophomore year). Pre-requisite courses taken must include 8 credits of general chemistry, 8 credits of organic chemistry, 4 credits of general physics, 8 credits of general biology, 4 credits of calculus, 3 credits of statistics, 3 credits of microeconomics and 3 credits of oral communications.
- maintain a **prerequisite cumulative GPA of 3.0** or better for the prerequisite courses listed above through the Spring of your fourth semester (sophomore year).
Failure to maintain your prerequisite cumulative GPA of 3.0 or better in the prerequisite courses listed above through the Spring of your fourth semester (sophomore year) will result in losing the guaranteed seat.
- maintain a cumulative Grade Point Average (GPA) of 3.0 or better for all courses taken through the Spring of fourth semester (sophomore year).
Failure to maintain a cumulative Grade Point Average (GPA) of 3.0 or better in all courses taken through the Spring of your fourth semester (sophomore year) will result in losing the guaranteed seat.
- earn grades of 2.0 or greater in all prerequisite courses through the spring of fourth semester (sophomore year). One prerequisite course grade less than 2.0 may be repeated at Wilkes University with the higher grade replacing the lower grade on the official transcript.
All prerequisite courses must be recorded with a grade of 2.0 or greater by the end of the Spring of your fourth semester (sophomore year). Earning a grade of 2.0 or less in a course that cannot be repeated by the end of the Spring of your fourth semester (sophomore year) will result in losing your guaranteed seat. Also, earning two or more prerequisite course grades less than 2.0, even if one is successfully repeated, will result in

losing the guaranteed seat. (Please see below, Admission through the Application Process.)

- maintain the highest levels of academic and personal honesty throughout the prepharmacy program.
Students caught in the act of cheating, collusion, plagiarism or other and all acts violating the Wilkes University Honesty Policy and/or the Student Code of Conduct may be subject to dismissal from the Guaranteed Seat Program.
- score at least the 25th percentile score in the composite Pharmacy College Admission Test (PCAT).

The School of Pharmacy will accept the highest PCAT scores of multiple attempts.

In addition, advanced placement courses may be accepted in fulfillment of some of these requirements. However, grades for AP-accredited courses will not be factored into the prerequisite or overall GPAs.

A majority of General Education Core Requirements must be completed prior to entering the Pharmacy Program. There is no room in the Pharmacy Curriculum to complete General Education Core Requirements. General Education Core Requirements may be completed at other accredited colleges or Universities and transferred into Wilkes University.

Students in the Wilkes University Prepharmacy Guaranteed Seat Program who do not meet these conditions must compete for available seats in the Professional Program through the application process.

II. Admission through the Application Process

Faculty reserve the right to select from among the applicants who will have the best opportunity to complete the curriculum within four years and have productive professional lives. Admission is based upon the student's academic ability as reflected in grades from prepharmacy courses, number of courses repeated, typical course loads, PCAT scores, total academic career, and references, as well as a successful interview. If applicable, the committee will also consider the most recent academic performance for those non-traditional students returning to college life after hiatus. Each Spring a select group of applicants are invited for an interview, based upon a complete evaluation of all submitted application materials. Any missing documentation will compromise the application.

The number of seats in the professional program available through the application

process is dependent on the number of Prepharmacy Guaranteed Seat Students able to claim a seat. A portion of remaining seats are available on an academically competitive basis to Wilkes students with overall and prerequisite GPAs above a 3.0, and a portion are available to transfer students with overall and prerequisite GPAs above a 3.0 on a competitive basis. To be classified as a Wilkes student, the student must complete and be enrolled at Wilkes University for two full-time consecutive semesters before enrollment in the professional program AND must complete 18 credits of prerequisite courses at Wilkes University by the end of the Spring semester prior to enrollment in the professional program. Failure to meet both of these criteria will result in classification as "transfer student."

How to Apply

To obtain a School of Pharmacy application, you may call or write:

School of Pharmacy
Wilkes University
Wilkes-Barre, PA 18766
(570) 408-4280
1-800-WILKESU ext. 4280
pharm@wilkes.edu

The application can be downloaded from:
www.wilkes.edu/include/academics/pharmacy/apply.doc

Please note: the School of Pharmacy application is different from the Wilkes University application. All applicants must complete the application and return it before February 1 for the upcoming Fall semester.

Pharmacy Minimum Admission Requirements

To be considered for admission to the Professional Program of the School of Pharmacy, the applicant:

- should complete the Wilkes University General Education Course Requirements or have completed a baccalaureate degree;
- must complete all Pharmacy Prerequisite Courses listed below by the end of the Spring semester prior to admission;
- must obtain a minimum overall GPA of 2.50 and a minimum GPA of 2.50 in the Pharmacy Prerequisite Courses listed below (Wilkes student). Preferential consideration will be given to Wilkes students with GPAs of 3.0 or higher.
- must obtain a minimum overall GPA of 3.00 and a minimum GPA of 3.00 in the Pharmacy Prerequisites listed below for preferential consideration (non-Wilkes student);

- obtain a grade of C (2.0) or better in each of the Pharmacy Prerequisite Courses listed below;

Prerequisite grades less than 2.0 may be repeated with the higher grade factoring into the GPA. However, applications will not be considered if more than 2 grades less than 2.0 in prerequisite courses are recorded. In addition, repeating courses in which a grade above a 2.0 was earned will not factor into the GPA. However, exceptions to the above rules will be considered on an individual basis and only if students can provide written explanation of extenuating circumstances.

(Note: admission into the Pharmacy Program is extremely competitive. Earning the minimum academic criteria necessary to submit an application does not in any way infer or promise an interview or admission into the program.)

- must provide three completed recommendation forms, one of which must be from a pharmacist;
- must successfully complete the interview process;
- must demonstrate acceptable written communication skills; and
- must submit scores on the Pharmacy College Admission Test (PCAT) by February 1.

Pharmacy prerequisites:

Two semesters (8 credits) of General Chemistry with labs
Two semesters (8 credits) of Organic Chemistry with labs
Two semesters (8 credits) of General Biology with labs
One semester (4 credits) of Calculus
One semester (3 credits) of Statistics
One semester (4 credits) of General Physics with lab
One semester (3 credits) of Microeconomics
One semester (3 credits) of Oral Communications

III. Pharmacy Organization

Professional Standards

Students enrolled in the program of the School of Pharmacy are expected to endorse professional standards by subscribing to the Oath of the Pharmacist. Students are also expected to abide by the American Pharmacists Association's Code of Ethics of the Profession.

Progression Requirements

All students in the Professional Program of the School of Pharmacy are required to meet minimum standards for progression. Academic progression requirements include a minimum

semester and a cumulative pharmacy GPA of 2.0. In addition, no student shall be allowed more than 8.0 credits of less than 2.0 grades in required professional courses both inside and outside of the School. Any course with a grade of 0.0 must be repeated. At the end of each semester the progress of each student in the Professional Program will be reviewed. Students failing to meet minimal academic standards at the end of any semester must petition the Student Review Subcommittee through the Assistant Dean to further progress in the School. More inclusive policies, including but not limited to acceptable classroom and experiential site behavior, alcohol and substance abuse, and other issues impacting the image of the professional program and the student, adopted within these guidelines are distributed to all students in the school of pharmacy.

Experiential Curriculum Component

Experiential learning is a critical component of the curriculum at Wilkes. Before being placed in an experiential setting, all students are required to:

- possess professional liability insurance,
- have documentation of immunizations,
- pass a physical examination,
- be certified in Basic Cardiac Life Support and Basic First Aid,
- possess an active Pennsylvania Pharmacy Intern License, and
- pass a drug test.

The Introductory Pharmacy Practice Experience (IPPE) consists of a number of different experiences. During the summer following successful completion of the P-1 year, students will complete a 2-week (80 hour) Introductory Pharmacy Practice Experience (IPPE I). The second professional year (the P-2 year) includes 40 hours of IPPE II during the fall and/or spring semester. In addition, students will complete a 2-week (80 hour) IPPE III during the summer after the P-2 year. In the third professional year (P-3) of the professional program, the curriculum includes a two-semester course in service learning (longitudinal care), and 40 hours of IPPE IV. These P-2 and P-3 experiences are in the Wilkes-Barre/Scranton area, but are away from campus.

The fourth professional year (the P-4 year) of the professional program is devoted to Advanced Pharmacy Practice Experience (APPE). Each student will be assigned to 1

six-week rotation, plus 6 five-week rotations, some of which may be at some distance from the Wilkes-Barre area. As much as possible, The School of Pharmacy will assist in locating safe, affordable housing for clerkships. Since patient care is a continuous activity, some experiences may be conducted outside of regular school/business hours. Note also that APPE start and end dates do not adhere to the regular university calendar. The student is responsible for paying all transportation and housing costs for all experiential components of the curriculum.

Graduation, Degree and Licensure Requirements

It is the student's responsibility to meet all graduation requirements, and it is expected that all students accepted into the Pharm.D. Program will meet regularly and frequently with their advisors to ensure timely progress toward their Doctor of Pharmacy degree. Graduation is dependent on successful completion of all required and elective course requirements in the School of Pharmacy (see Progression Requirements) AND completion of all General Education Requirements mandated by Wilkes University.

A student entering the Professional Program with a bachelor's degree from a four-year accredited college or university is exempted from the University's General Education Requirements, but is not exempted from the prerequisite entry requirements prescribed by the School of Pharmacy for entry into the Professional Program.

All non-degreed students entering the Professional Programs are encouraged to complete the General Education Requirements prior to beginning the Professional Curriculum, and especially before the completion of the second professional year (P-2). As a matter of record, non-degreed students who have successfully completed the second professional year (P-2) in the School of Pharmacy AND completed all General Education Requirements will be awarded a generic Bachelor of Science degree. The pass-through B.S. degree does not meet eligibility requirements for licensure as a pharmacist; it is only intended to acknowledge the academic achievement of students completing four years of university-level education.

Pharmacy licensure is governed by state law. All states require graduation from an accredited School or College of Pharmacy. Additional requirements for licensure should

The Nesbitt College of Pharmacy and Nursing

be requested from the state in which licensure is sought. It is the student's responsibility to fulfill all requirements for the state in which they seek licensure. Students must contact that State Board of Pharmacy for all appropriate paperwork. For further information, please contact the Dean's Office in the School of Pharmacy.

The School of Pharmacy reserves the right to revise the Pharmacy Curriculum at any time in order to prepare students for future practice roles, meet new accreditation requirements and to incorporate innovations in instruction.

**DOCTOR OF PHARMACY PROGRAM
REQUIRED COURSES AND RECOMMENDED
COURSE SEQUENCE FOR PROFESSIONAL
PROGRAM**

P-1 Fall Semester	
PHA 301 Found. of Pharm. Practice I	2
PHA 308 Pharm. and Health Care Delivery	3
PHA 311 Pharmaceutics I	4
PHA 313 Pharm. Calculations	1
PHA 327 Medical Microbiology	4
PHA 331 Anatomy/Physiology I	4
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	18
P-1 Spring Semester	
PHA 302 Pharmacy Care Lab I	1
PHA 304 Found. of Pharm. Practice II	2
PHA 310 Clinical Research Design	3
PHA 312 Pharmaceutics II	4
PHA 332 Anatomy & Physiology II	4
PHA 365 Medical Biochemistry	4
	<hr/>
	18
P-1 Summer	
PHA 335 Intro. Pharmacy Practice Exp (IPPE I)	2
P-2 Fall Semester	
PHA 401 Pharmacy Care Lab II	1
PHA 405 Pharmaceutical Care Systems	2
PHA 411 Biopharm/Clinical Kinetics	4
PHA 421* Pharmacotherapeutics I	2
PHA 423* Pharmacotherapeutics II	2
PHA 425* Pharmacotherapeutics III	3
Elective	2-3
	<hr/>
	16-17
P-2 Spring Semester	
PHA 410 Biotechnology/Immunology	3
PHA 412 Mgt. of Pharm. Operations	3
PHA 426* Pharmacotherapeutics IV	2

PHA 428* Pharmacotherapeutics V	4
PHA 430* Pharmacotherapeutics VI	2
PHA 440 IPPE II	1
Elective	2-3
	<hr/>
	17-18

P-2 Summer	
PHA 445 IPPE III	2

P-3 Fall Semester	
PHA 501 Pharmacy Care Lab III	1
PHA 503 Longitudinal Care I	1
PHA 505 Pharmacy Law	2
PHA 509 Economic Evaluation of Pharm.	3
PHA 521* Pharmacotherapeutics VII	2
PHA 523* Pharmacotherapeutics VIII	4
PHA 525* Pharmacotherapeutics IX	2
Elective	2-3
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	17-18

P-3 Spring Semester	
PHA 502 Pharmacy Care Lab IV	1
PHA 504 Longitudinal Care II	1
PHA 526* Pharmacotherapeutics X	2
PHA 528* Pharmacotherapeutics XI	2
PHA 530* Pharmacotherapeutics XII	4
PHA 532 Alternative Medicine/Nutrition	3
PHA 555 IPPE IV	1
Elective	2-3
	<hr/>
	16-17

***Sequential Courses**

**P-4 Advanced Pharmacy Practice Experiential
Year
Duration: 36 Weeks Credits: 36**

APPE Rotations

The APPE portion of the curriculum consists of 7 rotations in various settings. Rotation #1 is 6 weeks in duration. Rotations #2-7 are 5 weeks in duration.

There are four required APPE rotations.

- PHA 510 Internal Medicine
- PHA 511 Ambulatory Care
- PHA 512 Community Practice
- PHA 513 Health System

In addition, there are three elective APPE rotations. Information will be provided during the P-3 year.

SCHOOL OF NURSING

DEAN: DR. MARY ANN MERRIGAN

Faculty: *Associate Professors:*

Merrigan, Zbegner, Zielinski

Assistant Professors: Darby, Daughtry,

Golder, Havrilla, McCormick, Malkemes,

Rosenquist, Ruppert, Sheikh, Soprano,

Stewart

Nursing Associates: Bilder, Grandinetti

Adjunct Faculty: Babcock

Faculty Emeriti: Castor, Druffner, Schreiber,

Telban

Director of Clinical Nursing

Simulation Center: Chmil

Clinical Associate: Dennis

Director of Experiential Learning: Drozdis

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED
FOR A MAJOR IN NURSING LEADING TO THE B.S.
DEGREE — 127.**

ACCREDITATION

The baccalaureate program in Nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by the Commission on Collegiate Nursing Education (CCNE).

Philosophy and Curriculum

The practice of professional nursing is a deliberative process of assessing, analyzing, planning, implementing, and evaluating care with clients that promotes and restores health and prevents illness. The baccalaureate program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care.

Professional nursing is based upon the integration of knowledge from the humanities, the physical and social sciences, nursing theories and research. The curriculum is based on the development of the individual throughout the life cycle.

The curriculum flows from the philosophy and covers a four-year academic period. It includes integrated nursing courses, electives and the General Education Requirements. Due to the cultural diversity of clients, it is suggested that students consider taking a foreign language. Written agreements with the cooperating hospitals and agencies in Northeastern Pennsylvania ensure clinical facilities for the student's practice, which is concurrent with the classroom theory. **(STUDENTS ARE RESPONSIBLE FOR THEIR OWN TRANSPORTATION TO ASSIGNED CLINICAL AREAS.)**

In addition, opportunities for learning are provided in the Clinical Nursing Simulation Center, which is equipped with audio-visual and computer-assisted instructional materials. A simulated clinical environment allows the student to practice the psychomotor skills necessary in nursing practice. A faculty member is available to assist the students.

Advanced Placement

The School of Nursing provides advanced placement for applicants to enter the program at their level of competency. Previous education and/or practical experience which would involve repetitive learning justify advancing the applicant to higher level responsibilities.

Transfer and professional master's students, registered nurse students and licensed practical nurses are required to have a personal interview with the school chairperson or her designee to plan their program and to determine their placement status before they can be accepted into the Wilkes Nursing Program.

SPECIFIC REQUIREMENTS FOR THE NURSING PROGRAM

Students majoring in Nursing are required to have completed courses in English (4 units), Social Studies (three units), Mathematics (two units including Algebra), and Science (two units including Biology and Chemistry) during their secondary school program.

The student of nursing assumes all the financial obligations listed in the section on fees in this Bulletin. Additional expenses incurred in the Nursing Program are listed in the Nursing Student Handbook. A price list for these items follows.

Students must obtain from the Department Secretary, early each May, the appropriate health examination forms to be completed and returned to the School of Nursing by June 15th. Failure to have all examinations completed and documented by June 15th results in a \$100 late fee.

In order to progress into clinical nursing courses, students must complete the Kaplan Nursing Admission Test from Kaplan and LWW Integrated Testing Program with a composite score at the 55th percentile or better in each of the following: Essential Math Skills, Science Reading Comprehension, and Written Comprehension.

Clinical nursing courses are introduced in the sophomore year. Satisfactory clinical performance is an essential component of each nursing course. All nursing majors must earn a 2.0 or better in all nursing courses, the required science courses (BIO 113, 115-116; Physics 170; EES 242), and English 101 to continue in the program. A nursing student who earns less than a 2.0 in a nursing course may repeat that course once. A nursing student who earns less than a 2.0 in a second nursing course is ineligible to continue in the nursing program.

A student may be required to submit, at any time, to a health evaluation by a physician, or nurse practitioner, if evident limitations interfere with the student's practice or learning.

In addition to fulfilling the academic requirements of the University, students majoring in Nursing are required to successfully complete comprehensive examinations and required studies as assigned by the School of Nursing before being eligible to graduate.

LPN-BS PROGRAM

Licensed Practical Nurse (LPN) students have the opportunity to challenge the first clinical year in Nursing by successfully completing examinations and the National League for Nursing (NLN) Mobility Examinations. These examinations are used to facilitate the LPN to RN transition.

For details and enrollment information, contact the Dean of the School of Nursing.

RN-BS PROGRAM

This program is designed for students who are already Registered Nurses (RNs) and have graduated from AD or diploma nursing programs. This practice is in compliance with the Pennsylvania Articulation Plan to promote educational mobility of RNs based on a common core of knowledge that is recognized without special testing. Upon successful completion of NCLEX-RN and Nursing 299 the student is awarded 36 Wilkes Nursing credits. Registered Nurse students meet the same academic requirements as the basic students with the exception of the total number of credits required (RNs' total number of credits is 120, a reduction of seven elective credits).

RN-MS PROGRAM

This program is designed for the experienced, practicing professional who plans to earn an advanced degree in nursing. Acceleration through the baccalaureate portion of the

program allows this professional to enter into advanced practice efficiently.

For details and enrollment information, contact the Dean of the School of Nursing.

PROFESSIONAL MASTER'S PROGRAM

This program admits students with baccalaureate degrees, but no previous nursing education, and prepares them for entry into the nursing profession. Upon successful completion of the program, students are awarded a Master's Degree in Nursing (THIS IS NOT AN ADVANCED PRACTICE DEGREE.)

The program is designed for students who already hold a baccalaureate degree in a discipline other than nursing. Completion of the requirements for this master's-level program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care. The curriculum is designed for the adult learner and builds upon earlier educational experiences in the humanities, social studies and sciences. It is based on the development of the individual throughout the life cycle.

The curriculum flows from both the University's and the Department's philosophies and addresses the nursing needs of the region and the nation. It provides opportunity for individuals with changing career aspirations, and it is designed to prepare the learner for a variety of roles in professional practice. Following completion of the prerequisite courses, the program can be completed in three full-time semesters.

Graduates of the Professional Master's Program will earn a Master of Science degree and will be educationally eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN), which must be successfully completed for registration as a professional nurse. A pass-through Bachelor of Science degree with a major in Nursing will be entered on the student's transcript upon completion of all Clinical Nursing courses.

PREREQUISITES:

- Applicants must have received a baccalaureate degree from an accredited institution with a minimum undergraduate GPA of 3.0.
- A 3-credit elementary statistics course is required and two semesters of anatomy and physiology and one semester of microbiology, with a related laboratory

experience in each of these courses, are required.

- A self-study Medical Terminology module (details and information provided by the Nursing Department) must be completed.
- The Kaplan Nursing Admission and LWV Integrated Testing Program must be completed with a composite score in the 60th percentile or better in each of the following: Essential Math Skills, Science Reading Comprehension, and Written Comprehension.
- Applicants whose native language is not English or who hail from non-English-speaking countries must submit satisfactory scores on the TOEFL along with their applications.
- Nutrition, a co-requisite course, is to be completed no later than the student's first semester in the Professional Master's Program.

**Clinical hours will be distributed among Acute, Chronic and Community settings.*

LENGTH OF PROGRAM:

- The total number of credits to complete the Professional Master's Program, beyond the pre- and co-requisite requirements, is 48.
- The Program can be completed in three full-time semesters.

ACADEMIC PROGRESSION:

- Any grade below 80 in a nursing course is a failure. A student who is unsuccessful in a nursing course is ineligible to continue in, and may not return to, the Professional Master's Program.

PROFESSIONAL MASTER'S PROGRAM*-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

NSG 401 Nursing Practice I	12
NSG 505 Current Perspectives in Nursing	3
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Second Semester

NSG 402 Nursing Practice II	12
NSG 406 Advanced Health Assessment	3
NSG 498 Pharmacotherapeutics and Clinical Decision-Making in Nursing A	2
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Third Semester

NSG 403 Nursing Practice III	12
NSG 502 Application of Nursing Research	3
NSG 498 Pharmacotherapeutics and Clinical Decision-Making in Nursing B	1
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The Nesbitt College of Pharmacy and Nursing

License to Practice

Candidates for a license to practice in the health field are required to have "good moral character." The Pennsylvania State Board of Nursing takes into consideration, when deciding on the applications for registration and a license to practice under their jurisdiction, whether candidates have been convicted of any felony or misdemeanor. Candidates are referred to the regulations specified in the Professional Nurse Law (P.L. 317, No. 69).

Additional Nursing Expenses and Fees

Items	Freshman	Sophomore	Junior	Senior
National Student Nurses Association (NSNA)	\$80		\$80	
Uniform Shirt		\$25-30		
Uniform Pants		\$15-25		
Lab Coat/Scrub Jacket		\$20-40		
Scrubs		\$20-30		
Uniform Shoes		\$40 and up		
Stethoscope		\$30 and up		
Bandage Scissors		\$6		
Hemostats		\$6		
Pen Light		\$2-6		
BP Cuff		\$30		
AHA CPR Certification for Health Care Providers		\$30		\$30
Criminal Record Check		\$40 and up		
PA Child-Abuse-History Clearance		\$10		
Physical, Immunizations, and PPD		\$100 and up*	\$100 and up*	\$100 and up*
Liability Insurance		\$30-40**	\$30-40**	\$30-40**
Comprehensive Examinations		\$70 per semester**	\$70 per semester**	\$70 per semester**
Field Trip				Approx. \$100**

*May be covered by student's medical insurance.

**Will be billed by Financial Management Office.

THE SCHOOL OF NURSING FACULTY RESERVES THE RIGHT TO REVISE THE NURSING MAJOR REQUIREMENTS AS DEEMED NECESSARY AT ANY TIME TO PREPARE STUDENTS FOR NEW AND EMERGING ROLES IN NURSING.

NURSING MAJOR- REQUIRED COURSES
AND RECOMMENDED COURSE SEQUENCE

First Semester

NSG 171 Health Care Terminology
 BIO 115 Human Anatomy and Physiology I
 ENG 101 Composition* or Distribution Requirement
 PSY 101 General Psychology or
 SOC 101 Intro. to Sociology or
 ANT 101 Intro. to Anthropology*
 FYF 101 First-Year Foundations

NSG 310 Nursing Care of the Older Adult Client

NSG 305 Intro. to Nursing Research

Electives

1

Eighth Semester

NSG 320 Senior Practicum

NSG 303 Contemporary Issues and Trends in Nursing

Electives

* Please note students must take Eng 101 and both
 Psy and Soc/Ant 101 during their freshman year.

**Please note: Math 150 is required and prerequisite
 to Nsg 305.

4

4

4

3

3

17

Second Semester

BIO 113 Microbiology
 BIO 116 Human Anatomy and Physiology II
 ENG 101 Composition* or Distribution Requirement
 PSY 101 General Psychology or
 SOC 101 Intro. to Sociology or
 ANT 101 Intro. to Anthropology*
 ANT 101, 212, SOC 251 or 263 or Distribution Requirement

Third Semester

NSG 200 Principles of Normal Nutrition
 NSG 210 Principles of Nursing
 NSG 273 Physical Assessment
 PHY 170 Concepts in Physics and Chemistry

3

6

3

4

16

Fourth Semester

NSG 220 Nursing Care of the Childbearing Family
 NSG 230 Nursing Care of the Childrearing Family
 EES 242 Environmental Health
 PSY Elective
 ANT 101, 212, SOC 251 or 263 or Distribution Requirement

4

4

4

3

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18

Fifth Semester

NSG 240 Nursing Care of the Adult Client I
 NSG 268 Pathophysiology for the Professional Nurse
 MTH 150 Elementary Stats**
 Distribution Requirement

8

3

3

3

17

Sixth Semester

NSG 250 Nursing Care of the Adult Client II
 NSG 260 Nursing Care of the Psychiatric Mental Health Client
 NSG 272 Pharmacotherapeutics and Decisionmaking in Nursing
 Distribution Requirement

4

4

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17

Seventh Semester

INTERDISCIPLINARY MAJORS, INTERDISCIPLINARY MINORS, AND SPECIAL PROGRAMS

INTERDISCIPLINARY MAJORS

Individualized Studies Major

INTERDISCIPLINARY MINORS

Women's Studies Minor

SPECIAL PROGRAMS

Army ROTC (Military Science)

Cooperative Education

Pre-Law Studies

Pre-MBA Studies

Study Tour Experience

INTERDISCIPLINARY MAJORS

INDIVIDUALIZED STUDIES MAJOR

This program is designed for those capable and motivated students who wish to undertake a course of study that cannot be provided by any of the offered bachelor's degree programs. The student will be responsible for submitting a coherent written proposal for a program of study which must be attached to an Individualized Studies form available in the Registrar's Office and submitted to the Academic Standards Committee no later than the first semester of the student's junior year. The proposal should articulate what the course of study is, why the existing degree alternatives do not fulfill that course of study, and how the student will make use of existing Wilkes courses to accomplish his or her degree requirements. The proposal may be composed solely by the student; however, the student should seek the advice of his or her advisor in formulating the plan. The program of studies must take minimally three additional full-time semesters to complete, and may include courses offered by all departments at the University. The student's record must demonstrate previous academic excellence at Wilkes University. In addition, credit may be assigned for appropriate off-campus study, work, and/or travel, or for knowledge or experience obtained prior to enrollment, with approval of the appropriate department and the Academic Standards Committee. The proposal must be approved by an appropriate advisor, and then by the Academic Standards Committee.

Degree Requirements

The basic requirements for the degree in Individualized Studies are the accumulation of at least 120 credits, the completion of the Wilkes University General Education Requirements, and the completion of an appropriate number of Junior/Senior-level courses.

See also Majors in Applied and Engineering Sciences; Biology Major/Marine Science Option/Minor in Earth and Environmental Sciences; Computer Information Systems; Criminology; Earth and Environmental Sciences Major/Marine Science Option/Biology Minor; Health Sciences; Integrative Media; International Studies; Medical Technology; Musical Theatre; and Nursing.

INTERDISCIPLINARY MINORS

WOMEN'S STUDIES MINOR

Women's Studies Coordinating Committee: Professors Anthony, Batory, Bracken, Elmes-Crahall, Garr, Hamill, Kalter, Stanley, Taylor, Tindell, Tuttle

TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.

The Women's Studies Program at Wilkes University welcomes students interested in the study of women, gender, sexuality, and feminism. This interdisciplinary program offers courses in a wide range of subject areas in the social sciences, humanities, sciences and contemporary arts.

The Women's Studies Minor focuses on expanding traditional scholarship by studying the ways gender has structured intellectual and social traditions. The minor is designed to add a professionally and personally valuable concentration for students majoring in such areas as business, sociology, English, communications, psychology, and nursing, as well as for students in pre-medical and pre-law courses of study.

Students may earn the minor by taking Women's Studies 101 and 15 credit hours of designated Women's Studies eligible courses. Students are additionally required to complete a major research project in their senior year that addresses gender as a category of analysis; ideally, the project will be integrated with the Capstone in the student's major. Students who intend to pursue a minor in Women's Studies should take WS 101 before taking more than two other courses offered in the minor.

Students who wish to declare the minor should contact the Women's Studies Program Coordinator, Professor Holley Hansen, 321 Breiseth Hall, holley.hansen@wilkes.edu to aid them in the selection of courses and assist in the development of the senior-year research project.

See also Minors in Aerospace Studies; Computer Engineering; Criminology; International Studies; Neuroscience; Policy Studies; Statistics.

SPECIAL PROGRAMS

ARMY ROTC (MILITARY SCIENCE)

CHAIRPERSON: LIEUTENANT COLONEL HAINES

Faculty: Professor Major Ramsey

Wilkes University offers students the opportunity to participate in Army ROTC at

Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

nearby King's College through the Northeast Pennsylvania Officer Training Corps Battalion. The classes are given in Benaglia Hall at King's College, a 5-minute walk north on Franklin Street from Wilkes University. Students that participate in this program do so without penalty to their full-time academic status at Wilkes University.

The primary objective of the Army Reserve Training Program is to develop leadership capabilities in students and to train future officers for the active Army, US Army Reserve and the Army National Guard.

Army ROTC is a flexible program that can be tailored to the individual student's schedule particularly in the freshman and sophomore years. Military Science instruction is offered at King's College with both two- and four-year programs leading to a commission as an officer in one of the three components of the United States Army.

To obtain a commission, qualified male and female students must pass a physical examination and complete either the two- or four-year program of Military Science courses. Students normally take one course per semester during their four-year course of study.

All students receiving ROTC scholarships, as well as juniors and seniors and some sophomores participating in Army ROTC, are contracted with the Army and receive a monthly stipend. The stipend starts as \$300 per month during their freshman year, increases to \$350 during their sophomore year, \$450 during their junior year and \$500 during their senior year. The stipend is paid directly to the student each month that the student is in school.

The Army ROTC Department provides all uniforms, equipment and textbooks required for the classes. In addition to the academic classes, students may also participate on a voluntary basis in many additional training opportunities such as physical training and hands-on equipment training each week. Each semester there is a military social event and at least one optional weekend training session that includes such events as military marksmanship, cross country orienteering, military rappelling, leadership application courses and obstacle/confidence courses. During breaks and vacations students can volunteer for active army training such as military parachute operations, helicopter operations, military mountain climbing and training with active Army units in the United States and overseas. All training is cost-free to

the student and students are paid for some summer training courses.

The ROTC program consists of two programs, the basic course normally given during the freshman and sophomore years and consisting of MS 211, MS 212, MS 221 and MS 222, and the advanced course, normally taken during the junior and senior years and consisting of MS 231, MS 232, MS 241, MS 242 and MS 251.

Students who have completed basic training in any U.S. service may qualify for placement in the advanced course. Additionally, students who have not completed the ROTC basic course may qualify for the advanced course by attending a paid four-week Leadership Training Course conducted at Fort Knox, Kentucky.

Freshman and sophomore students can compete for two-, three-, and four-year ROTC scholarships that pay full tuition and up to \$1200 per year for books. The Army will commission graduates as second lieutenants with a starting salary of over \$40,000 per year plus medical and dental benefits as well as 30 days paid vacation per year.

For more information on the Army ROTC program at Wilkes University contact the Army ROTC Department at 570-208-5900 ext 5305 or ext 5301.

The Basic Course constitutes a two-year program for freshmen and sophomores and is designed to provide a general knowledge of the roles, organization, missions, and basic leadership techniques. Students enrolled in the Basic course who are not receiving Army ROTC scholarships incur no military obligations.

Basic Course

Consists of two one-credit and two two-credit courses, which provide students with a basic level of military knowledge and are open to all freshmen and sophomores. Students enrolling in basic level courses incur no military service obligation. Course credit values are shown with each course.

First Semester

MIL 211 Concepts of Leadership I	1
MIL 251 Leadership Laboratory	0
	1

Second Semester

MIL 212 Concepts of Leadership II	1
MIL 252 Leadership Laboratory	0
	1

Third Semester

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MIL 221 Dynamics of Leadership I	2
MIL 251 Leadership Laboratory	0
	2
Fourth Semester	
MIL 222 Dynamics of Leadership II	2
MIL 252 Leadership Laboratory	0
	2

Army ROTC is a flexible program and variations of this schedule are possible. Sophomores and second-semester freshmen with no prior military experience can enroll in more than one basic level class under the ROTC Compression Program. Students who have not completed the basic courses and have at least two years remaining until graduation may still apply for entry into the Advanced Course, but must qualify for advanced placement credit.

Advanced Course

Consists of two two-credit and six one-credit courses open to students who have three or four semesters of college remaining. Course credit values are shown with each course.

Fifth Semester

MIL 100 Physical Fitness Training	1
MIL 231 Military Leadership I	2
MIL 251 Leadership Laboratory	0
	3

Sixth Semester

MIL 100 Physical Fitness Training	1
MIL 232 Military Leadership II	1
MIL 252 Leadership Laboratory	0
	2

Seventh Semester

MIL 100 Physical Fitness Training	1
MIL 241 Advanced Military Leadership I	2
MIL 251 Leadership Laboratory	0
	3

MIL 251/252 (Leadership Laboratory) and MIL 100 (Physical Fitness Training) are mandatory for all cadets enrolled in the Army ROTC Advanced Course as well as ROTC scholarship recipients and must be taken concurrently with each Military Leadership course.

COOPERATIVE EDUCATION AND INTERNSHIPS

Cooperative Education is a program that formally integrates a student's studies with work experiences in employing organizations. Students may alternate semesters of full-time study and full-time professional work experience or they may combine work and

study in the same term; in either case, students earn academic credit and, in many cases, a salary while gaining valuable experience in a work environment. Internships are available throughout the United States in the summer, spring and/or fall, and assistance with internship placements is readily available to eligible students. Students are urged to explore the various possibilities with the Coordinator of Cooperative Education as early as their sophomore year.

PRE-LAW STUDIES

Pre-law Advisory Council: Professors Hepp, Kuhar, Liuzzo, Whitman

Coordinating Pre-Law Advisor: Kreider

Wilkes University has developed a carefully designed Pre-law Advisory Program which has proved able to provide exceptionally effective support for students seeking admission to graduate schools of law. The Pre-law Program at Wilkes is based on the principle that admission to, and success in, law school depends upon completion of a rigorous curriculum at the undergraduate level as well as an up-to-date understanding of the law school admission process. One of the greatest strengths of Wilkes University is its ability to provide students from different educational backgrounds with a sound education that prepares them for the challenges of leading professional schools.

Law schools do not prescribe a specific undergraduate major but rather suggest a broadly-based educational program that enhances the student's ability to reason, read analytically, and write effectively. Students interested in law school may major in any field, but the most frequently chosen areas are: political science, English, history and business administration. Majors such as Philosophy, Sociology, Nursing, Biology, Engineering, Computer Science, Psychology, or Earth and Environmental Sciences also provide appropriate preparation for legal studies. Indeed, a major in a technical field may be especially useful in particular aspects of legal practice.

Advising

Wilkes students are assigned to faculty advisors in the areas of their majors. These advisors guide them regarding degree requirements in particular fields. Pre-law students also consult with a designated pre-law advisor, who acquaints them with aspects of legal study and practice. The pre-law advisor has available law school catalogs and information on the Law School Admission Test (LSAT). We strongly

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recommend that the LSAT be taken during June between the junior and senior year.

As the senior year approaches, the pre-law advisor can provide suggestions as to which law schools are most likely to admit students with particular academic records and LSAT scores. Most importantly, the pre-law advisor helps to overcome the myths which too often affect student thinking about law schools.

PRE-MBA STUDIES

The Jay S. Sidhu School of Business and Leadership offers a nationally accredited Master of Business Administration program that expands business knowledge, management skills and leadership capability of current and future professionals from many disciplines, functions, and jobs to enhance their success at work, adding value both for the student and for the organizations with which the student is associated. The program offers advanced training in the functional areas of business and also provides the opportunity for specialization in a selected field through additional training in Accounting, Entrepreneurship, Finance, Health Care Administration, Human Resources Management, International Business, Marketing, Operations Management, or Organizational Leadership and Development. An MBA degree is appropriate for students of any academic discipline who would like to receive the analytical and strategic skills they need to step confidently into the business world.

Undergraduate students who are interested in pursuing an MBA degree can register for the Pre-MBA program during any year of undergraduate study. This program is designed to prepare students with a variety of academic backgrounds for the MBA program. Undergraduate students may use undergraduate required and elective courses to satisfy MBA prerequisite Foundation Courses. These courses, each bearing one credit, represent fundamental business competencies. Up to twelve credits may be waived. This gives students the opportunity to earn an undergraduate degree and an MBA within five and one-half years. Listed below are the Foundation Competencies and the Undergraduate Course(s) that satisfy each.

Foundation Competency	Undergraduate Course Equivalent(s)
Financial Accounting	ACC 161
Managerial Accounting	ACC 162
Finance	BA 341 or EGM 320
Management	BA 351, PHA 412 or ENT

201

Marketing	BA 321
Law	BA 233 or 234 or PHA 505
Macroeconomics	EC 101 or PHA 509
Microeconomics	EC 102
International Business	BA 358
Statistics	BA 319, PSY 200, MTH 150 or ENT 321
Operations Management	BA 352 or EGM 336
MIS	BA 257 or ACC 341 or EGM 321

Students who enter the Pre-MBA program will be counseled by a graduate advisor. Advising sessions are used as an opportunity to prepare students for entrance into the MBA program through communication of student career ambitions and strengths and identification of course scheduling options. It is recommended that entrance into the program occurs within the freshman or sophomore years in order to maximize the number of Foundation courses that will be waived upon degree completion. Students interested in the Pre-MBA program should contact the Office of Graduate Studies at (570) 408-4235 or graduatestudies@wilkes.edu in order to arrange an appointment with a graduate advisor.

STUDY ABROAD

Study Abroad is an elective option to all students in good academic standing who wish to study at foreign institutions. Earned academic credit may be applied toward the requirements for a bachelor's degree at Wilkes. Overseas study may be for a period of a year, a semester, or a summer. Information regarding the specific programs available to Wilkes students is available from the Study Abroad Coordinator. Students wishing to use financial aid to assist with the costs of study abroad must see the Director of Financial Aid and must complete the "Consortium Financial Aid Agreement" form, available in the Registrar's Office. Students must also complete all required application materials of the desired program before registering for Study Abroad. Course selection and preregistration take place with the student's academic advisor in coordination with the Study Abroad Coordinator. Students must complete the "Transfer Credit Request Form" (with all the appropriate signatures) and register for Study Abroad before conducting their study abroad.

STUDY TOUR EXPERIENCE

Study Tour Experience Coordinating Committee: Professors Arora, Hamill, Merryman, Morrison, Starner.

The Study Tour Experience is a unique learning experience recently developed for students who wish to travel but who cannot afford the time to spend an entire semester abroad. The Study Tour Experience is a three-credit course with a variety of sections designed to give students the opportunity to experience another culture through an intensive period of study and travel abroad under the guidance of a knowledgeable instructor. Offered during summer sessions or winter break intercessions, current sections include tours to China, India, Africa, England, and Malaysia. New sections are being developed continuously.

The Study Tour Experience has four components: a pre-travel orientation, the concentrated group travel experience, a writing emphasis, and a post-travel follow-up session. The five- to ten-day period of on-campus pre-travel orientation includes an overview of the geography, ecology, history, language, art, and culture of the country or area of study. The group travel portion of the course consists of a ten- to fourteen-day study tour guided by a course instructor who is particularly well experienced in the culture. Students will be more than tourists; they will be afforded an up-close, interactive, hands-on experience that will be memorable, enjoyable,

and educational. In addition, students will be expected to keep a detailed travel journal and, after the trip, write a paper or conduct a short project appropriate to the area of study. Finally, upon return to campus a follow-up session will be held in which students will meet for a joint class debriefing to share insights and reflections.

One unique feature of this learning experience is that it is available for credit or without credit. Students may receive three elective credits for the study tour at the significantly reduced tuition of \$500, in addition to travel expenses. Those who elect to travel but receive credit will pay only touring costs, generally not to exceed a maximum of \$3,000. Travel fees are intended to include all costs, including air and overland travel, hotels, meals, transfers, visas and inoculations where required. These credits may then be used in a variety of ways, to be determined by each division of the University. Furthermore, the course is open to alumni and community members who might wish to accompany friends and family members abroad, or who might simply want to travel in the comfort and safety of a Wilkes University program.

Anyone who is interested in further details about the Study Tour Experience should contact the Center for Continued Learning or any member of the coordinating committee.

COURSE DESCRIPTIONS

ACCOUNTING COURSES

ACC 151. INTEGRATED MANAGEMENT EXPERIENCE I
THREE CREDITS

Same as BA 151 and ENT 151. See BA 151 for course description.

ACC 152. INTEGRATED MANAGEMENT EXPERIENCE II
THREE CREDITS

Same as BA 152 and ENT 152. See BA 152 for course description. *Prerequisite: ACC 151 or BA 151 or ENT 151.*

ACC 161. FINANCIAL ACCOUNTING AND DECISION-MAKING
THREE CREDITS

This is a study of the nature, function, and environment of accounting, including the accounting information system, account analysis and decision-making. The course provides an understanding of accounting issues and objectives for proper interpretation and analysis of financial accounting information.

ACC 162. MANAGERIAL ACCOUNTING AND DECISION-MAKING
THREE CREDITS

Managerial accounting is an internal tool to generate information for managerial planning and control. Students will develop an understanding of operating and capital budgets, standard costs, incremental concepts, relevant costs, transfer pricing, and responsibility and profit center reports as a means of analysis as well as techniques of measurement. *Prerequisite: ACC 161.*

ACC 201. INTERMEDIATE ACCOUNTING I
THREE CREDITS

A study of the accounting information system and the accounting standards applicable to corporate balance sheet accounts and their related counterparts that result in revenue and expense recognition on the income statement and statement of retained earnings. Course topics include the financial accounting standards, financial statement preparation, cash and receivables, inventories and cost of goods sold, and plant and depreciation. *Prerequisite: ACC 161.*

ACC 202. INTERMEDIATE ACCOUNTING II
THREE CREDITS

This course is a study of the accounting standards applicable to intangible assets, liabilities, and stockholders' equity. Also, it focuses on the application of generally accepted accounting principles that relate to various technical reporting areas within financial statements. Emphasis is placed on technical standards and the necessary disclosure requirements for these reporting areas. Course topics include earnings per share, securities that can dilute earnings per share, corporate investments and accounting for corporate income taxes and pensions. *Prerequisite: ACC 201.*

ACC 301. ADVANCED FINANCIAL ACCOUNTING
THREE CREDITS

A comprehensive review and analysis of various accounting issues relating to corporate consolidations, partnerships, governmental units, non-profit organizations, estates, trusts, and bankruptcies. Extensive computerized applications are an integral part of this course. *Prerequisite: Acc 202.*

ACC 311. ADVANCED MANAGERIAL ACCOUNTING
THREE CREDITS

Advanced treatment of managerial accounting topics with emphasis on generation, communication, and use of information to assist management in performance of the planning and control function. Information systems design, budgeting, variance analysis, and direct costing concepts are covered. *Prerequisite: ACC 162.*

ACC 321. TAXES
THREE CREDITS

Introduction to the Internal Revenue Code for individuals and sole-proprietorships. Preparation of individual tax returns based on the current tax law, regulations, and revenue ruling letters. Introduction to tax research using various traditional and electronic reference services. *Prerequisite: Acc 161.*

Course Descriptions

ACC 322. ADVANCED TAXES THREE CREDITS

Introduction to certain tax laws as they apply to Corporations, S Corporations, and Partnerships. This involves developing a thorough understanding of tax research and how tax planning may help the financial entity to minimize the tax liability. *Prerequisite: Acc 321.*

ACC 331. AUDITING THREE CREDITS

To understand the most important concepts in auditing and how they are used in decision making, evidence accumulation and reporting. This entails understanding the concepts, methods and processes of control that provide for the accuracy and integrity of financial data and the safeguarding of business assets; along with understanding the nature of attest services and the conceptual and procedural bases for performing them. *Prerequisite: Acc 202.*

ACC 341. ACCOUNTING INFORMATION SYSTEMS THREE CREDITS

To develop a solid understanding of and appreciation for the use of accounting information employed to process and sort business events so as to provide information for the functions of financial reporting, internal responsibility accounting and decision support. This understanding includes applications via spreadsheets, databases, general ledgers, and the internet. *Prerequisite: Acc 162 and BA 351.*

ACC 362. ACCOUNTING INTERNSHIP THREE OR SIX CREDITS

This course provides job experience as an entry-level accountant through a minimum of 170 (3 credits) or 340 (6 credits) hours working experience with either certified public accounting firms, governmental agencies, or private businesses. Internships are offered on a competitive basis following student interviews with interested employers. (All courses listed through the seventh semester should be taken prior to this course.) *Prerequisite: ACC 202.*

ACC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

ACC 397. SEMINAR ONE TO THREE CREDITS

ACC 198/298/398. TOPICS VARIABLE CREDIT

Special offerings designed to introduce students to subjects of current interest in accounting which are not covered in other courses.

AIR AND SPACE STUDIES COURSES

AS 101-102. FOUNDATIONS OF THE USAF I/II TWO CREDIT HOURS EACH

This survey course briefly covers topics relating to the Air Force and defense. It focuses on the structure and missions of Air Force organizations, officership and professionalism. It is also a good introduction into the use of communication skills.

AS 103/104. LEADERSHIP LABORATORY NO CREDIT

This course (to be taken in conjunction with AS 101 and 102) is a weekly laboratory that touches on the topics of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies.

AS 201-202 EVOLUTION OF USAF AIR AND SPACE POWER I/II TWO CREDIT HOURS EACH

This survey course is concerned with the beginnings of manned flight and the development of aerospace power in the United States, including the employment of air power in WWI, WWII, Korea, Vietnam, the Gulf War and the peaceful employment of U.S. air power in civic actions, scientific missions and support of space exploration.

AS 203/204. LEADERSHIP LABORATORY
NO CREDIT

This course (to be taken in conjunction with AS 201 and 202) provides you with the opportunity to demonstrate fundamental management skills and prepares you for Field Training.

AS 240. AFROTC FIELD TRAINING (4-WEEKS) (SUMMER)
TWO CREDITS

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics. *Prerequisites: AS 101, 102, 201, 202; an interview by Professor of Air and Space Studies and other military requirements.*

AS 250. AFROTC FIELD TRAINING (5-WEEKS) (SUMMER)
THREE CREDITS

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics. *Prerequisite: Interview by Professor of Air and Space Studies and other military requirements.*

PROFESSIONAL OFFICER COURSES

The Professional Officer Courses (POC) constitute a four-semester program, normally taken during the junior and senior years, leading to commissioning as a U.S. Air Force officer. The POC concentrates on concepts and practices of management and leadership, national defense policy, and communicative skills.

AS 301-302. AIR FORCE LEADERSHIP STUDIES I/II
THREE CREDITS EACH

This course is a study in the anatomy of leadership, the need for quality and management leadership, the role of discipline in leadership situations and the variables affecting leadership. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts. Deal with actual problems and complete projects associated with planning and managing the Leadership Laboratory. *Prerequisite: AFROTC approved membership in the POC or permission of instructor.*

AS 303/304. LEADERSHIP LABORATORY
NO CREDIT

This course (taken in conjunction with AS 301 and 302) provides you the opportunity to develop your fundamental management skills while planning and conducting cadet activities.

AS 401-402 NATIONAL SECURITY AFFAIRS/PREPARATION FOR ACTIVE DUTY I/II
THREE CREDITS EACH

Learn about the role of the professional military leader in a democratic society; societal attitudes toward the armed forces; the requisites for maintaining adequate national defense structure; the impact of technological and international developments on strategic preparedness and the overall policy-making process; and military law. In addition, you will study topics that will prepare you for your first active-duty assignment as an officer in the Air Force.

Prerequisite: AFROTC approved membership in the POC or permission of instructor.

AS 403/404. LEADERSHIP LABORATORY
NO CREDIT

This course (taken in conjunction with AS 401 and 402) provides you with the opportunity to use your leadership skills in planning and conducting cadet activities. It prepares you for commissioning and entry into the active-duty Air Force.

ANTHROPOLOGY COURSES

ANT 101. INTRODUCTION TO ANTHROPOLOGY
THREE CREDITS

A general survey of the processes that generate human cultural and biological variation through time and among contemporary human groups. An introduction to cultural and physical anthropology, archaeology, and anthropological linguistics.

Course Descriptions

ANT 102. CULTURAL ANTHROPOLOGY

THREE CREDITS

A detailed examination of the methods and theories employed in the description and comparison of human cultures, as applied to problems in intercultural relations. Course content is based upon case and cross-cultural studies.

ANT 211. ANTHROPOLOGY THROUGH FILM

THREE CREDITS

A general survey of the use of still photography and cinematography in the depiction of the content of various cultures.

ANT 212. PEOPLES AND CULTURES OF THE WORLD

THREE CREDITS

An overview of social organizations, ethnicity, and cultural developments in various regions of the world: North American Native Americans, the Middle East, Africa, Latin America, Asia. Topics are rotated. The contributions of ecological, economic, political and ideological factors to the region's social system are examined in regard to present cultural obligations.

ANT 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

Prerequisite: By arrangement with an instructor and approval of department chairperson.

ANT 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ANT 198/298/398/498. TOPICS

THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

ART COURSES

ART 101. EXPERIENCING ART

THREE CREDITS

Lectures and discussion on the elements of art and the forerunners of modern and contemporary art. Two and three dimensional studio work is explored through the creative process in a variety of media. Fee: \$40.

ART 111. FUNDAMENTALS OF COLOR AND DESIGN

THREE CREDITS

A basic level design course involving the elements and principles of two-dimensional design and the study of color systems. Fee: \$40.

ART 113. DRAWING

THREE CREDITS

An introductory course exploring the organization and potential of line, space, and texture through a variety of media and subject matter. Fee: \$40.

ART 120. PAINTING I

THREE CREDITS

An introduction to painting methods and materials with an emphasis on composition and basic color theory. Oil, watercolor, and acrylic painting techniques are explored in both realistic and abstract styles. Fee: \$40.

ART 121. PRINTMAKING
THREE CREDITS

An introduction to monotype, intaglio and relief printmaking processes. Traditional and creative contemporary approaches to printing original works on paper in a print workshop environment. Fee: \$40.

ART 122. SCULPTURE
THREE CREDITS

An introductory to the basic concepts of three-dimensional form and space. Modeling in clay from life; and casting, carving and direct building techniques in plaster among other traditional methods of sculpture will be explored. Fee: \$40.

ART 123. CERAMICS
THREE CREDITS

Exploration into the basic methods and techniques of hand building and wheel work. Experimentation in surfaces decoration, glazing, and kiln firing. Fee: \$40.

ART 133. PHOTOGRAPHY
THREE CREDITS

An introduction to the fundamentals of photography; camera usage, subject consideration, lighting, darkroom techniques, and the preparation of photographs for exhibit. Fee: \$40. **NOTE: Each student must have access to an adjustable 35mm camera and provide their own black and white film and photo paper.**

ART 134. COMPUTER GRAPHICS I
THREE CREDITS

A foundation course that introduces the basics of Photoshop, Illustrator, InDesign and Adobe Acrobat, as well as the theory, terminology, and genres of graphic design. Fee: \$40.

ART 140. HISTORY OF ART I
THREE CREDITS

A survey of the art and architecture of Western Civilization from pre-history through the Early Renaissance. Non-western cultures will also be introduced. Slide lectures and discussion will focus on major artworks and trends within their cultural setting.

ART 141. HISTORY OF ART II
THREE CREDITS

A survey of the art and architecture of Western Civilization from the High Renaissance to the present. Slide lectures and discussions will focus on major artists, artworks, and trends within their cultural setting.

ART 220. PAINTING II
THREE CREDITS

Increased emphasis on development of style and experimentation in contemporary art methods and techniques. Fee: \$40. **Prerequisite: Art 120 or permission of instructor.**

ART 234. COMPUTER GRAPHICS II
THREE CREDITS

A continuation of Graphic Design I designed to reinforce further development in Photoshop, Illustrator, InDesign, and Adobe Acrobat, as well as theory, terminology, and genres of graphic design. Includes the use of media and processes of scanning, collage, typography, and layouts for print. Fee: \$40. **Prerequisite: Art 134 or permission of instructor.**

ART 240. MODERN ART AND DESIGN
THREE CREDITS

20th century art and design will be considered in relation to central themes in modern civilization, such as science and technology, social and political revolution, historicism, and formalism. Slide lectures and discussions will treat objects as diverse as paintings and refrigerators, buildings and billboards.

Course Descriptions

ART 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and creative work for advanced students in the field of the major under the direction of a staff member. *Prerequisite: Approval of department chairperson is required.*

ART 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ART 198/298/398. TOPICS

VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Recent studio topics have included Life Drawing, Mural Painting, Color Photography, and Ceramic Sculpture. Past topics in art history have included Modern Architecture, A History of Surrealism, and Nineteenth Century Art. Fee \$40.

BIOLOGY COURSES

BIO 105. THE BIOLOGICAL WORLD

THREE CREDITS

This course presents concepts and modern ideas pertaining to the natural world and the life sciences. Each semester a selected topic will be addressed and explored from an investigative set of perspectives. While the scientific method will be emphasized in each offering, the range of topics, identified as a subtitle in the course offering data, will include for example (1) Genetics, Evolution and Ecology: Implications for a Changing Society, or (2) Human Biology, or (3) Contemporary Issues in the Life Sciences, among others. This course is intended for students who are not majoring in science, engineering, prepharmacy, nursing or B.S. programs in mathematics or computer science. Fall semesters: Human Biology—two hours of lecture and two hours of laboratory per week. Dissections of specimen may be required in the laboratory component. Fee: \$105. Spring semesters: Contemporary Issues in the Life Sciences—three hours of lecture each week.

BIO 113. MICROBIOLOGY

FOUR CREDITS

This course presents the basic principles of bacteriology and the relationship of micro-organisms to disease and its prevention, control, and treatment. It considers the effects of microbes within the body and the body's reaction to them. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$105. Offered every spring semester.

BIO 115-116. HUMAN ANATOMY AND PHYSIOLOGY

FOUR CREDITS EACH

This course provides a general study of the human body, its structure and normal function. It provides an appreciation of the complex nature of the human body with relation to the promotion of a healthy organism. Dissections of specimens are required in the laboratory portion of these courses. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$105 each course. *Prerequisite for Bio 116: Bio 115 or permission of instructor.* Bio 115: Offered every fall semester. Bio 116: Offered every spring semester.

BIO 121. PRINCIPLES OF MODERN BIOLOGY I

FOUR CREDITS

An introduction to concepts of modern biology for students majoring in biology and other sciences. Topics covered include the origin of life, basic biochemistry, cell structure and function, energetics, reproduction and heredity, molecular genetics, and evolution. Four hours of lecture and three hours of laboratory per week. Required of all Biology majors. Laboratory fee: \$105. *Corequisite: Chm 115. Offered every fall semester.*

**BIO 122. PRINCIPLES OF MODERN BIOLOGY II
FOUR CREDITS**

An introduction to biological diversity and mammalian structure and function for science majors, usually taken as a continuation of BIO 121. Topics include organismal classification, a survey of biological diversity (including characteristics, ecology, phylogenetic relationships, and economic and biomedical uses) of plants, animals and microbes, and an overview of the mammalian body addressing the form and function of key organ systems. Dissections of specimens are required in the laboratory portion of this course. Four hours of lecture, three hours of laboratory per week. Required of all Biology majors. Laboratory fee: \$105. *Offered every spring semester.*

**BIO 225. POPULATION AND EVOLUTIONARY BIOLOGY
FOUR CREDITS**

This course emphasizes the patterns and processes of evolutionary change in living systems in an ecological context. It reviews the basic characteristics and dynamics of populations, and the relevance of population ecology and population genetics to the evolution of species. Human evolution, sociobiology and other controversial issues are also covered. Laboratory exercises emphasize an experimental approach to more in-depth study of specific topics covered in lecture. Four hours of lecture, three hours of laboratory. Required of all biology majors. Laboratory fee: \$105. *Prerequisite: Bio 121-122. Offered every fall semester.*

**BIO 226. CELLULAR AND MOLECULAR BIOLOGY
FOUR CREDITS**

Cell structure in relation to function. Biochemistry and physiology of animal, plant, and bacterial cells and their viruses are presented in a molecular biology context. The cell in division and development. Four hours lectures, three hour of laboratory. Required of all biology majors. Laboratory fee: \$105. *Prerequisite: Bio 121-122. Offered every spring semester.*

**BIO 306. INVERTEBRATE BIOLOGY
FOUR CREDITS**

This course is a study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology, and ecology. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 311. COMPARATIVE PHYSIOLOGY
FOUR CREDITS**

Comparative Physiology encompasses the study of organ functions and organ system functions in different animal groups. Emphasis will be on the systemic physiology of vertebrate animals. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 312. PARASITOLOGY
FOUR CREDITS**

Parasitology is the study of organisms that live on or within other organisms and the relationship of these organisms to their hosts. This course deals with the common parasites that infect man and other animals. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 314. COMPARATIVE VERTEBRATE ANATOMY
FOUR CREDITS**

This course deals with the evolution and anatomy of the organ systems of vertebrates. Lectures survey the comparative anatomy of the vertebrate classes. Laboratory Dissections include the Lamprey, Shark, Mud Puppy, and Cat in detail. Lecture three hours per week, laboratory three hours per week. Laboratory fee: \$105. *Prerequisites: BIO 121-122, 225. Offered in alternate years.*

**BIO 321. MAMMALIAN PHYSIOLOGY
FOUR CREDITS**

This course examines the function of mammalian systems with regard to homeostasis, metabolism, growth and reproduction. Normal physiological processes as well as some pathophysiological situations are covered. The emphasis is on human physiology; however, other mammalian systems are discussed to demonstrate physiological adaptability to various environmental situations. Laboratory exercises include physiological experimentation in living systems and in computer

Course Descriptions

simulations. Lecture: three hours; Laboratory: three hours. Fee: \$105. *Prerequisites: Bio 121-122, 226, or permission of instructor. Offered in alternate years.*

BIO 323. FUNCTIONAL HISTOLOGY FOUR CREDITS

This course emphasizes the microscopic examination of mammalian tissues from morphological and physiological perspectives. Reference is made to organ embryogenesis to support the understanding of organ form and function. Tissue preparation for histological examination is included. Lecture, three hours; laboratory, three hours per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 325. ENDOCRINOLOGY FOUR CREDITS

This course will focus on the structure, biochemistry, and function of mammalian hormones and endocrine glands; avian, amphibian and invertebrate hormones will also be discussed, where relevant. Clinical pathologies resulting from excess or insufficient hormones will be discussed, as this is essential to mastering an understanding of Endocrinology. Laboratory exercises include experimentation in living systems and computer simulations. Lecture: three hours per week; Laboratory: three hours per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 226, or permission of instructor. Offered in alternate years.*

BIO 326. IMMUNOLOGY AND IMMUNOCHEMISTRY FOUR CREDITS

This course is concerned with the biologic mechanisms and chemistry of reactants and mediators associated with natural and acquired states of immunity, tissue and blood serum responses to infection and immunization, and related patho-physiologic alterations of hypersensitivity phenomena in vertebrate animals and man. Three lectures and one three-hour laboratory per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 327. MEDICAL MICROBIOLOGY FOUR CREDITS

Medical Microbiology provides a professional-level introduction to microbiology that is focused on application of microbiology to the study of infectious disease etiology and epidemiology. The laboratory covers techniques used in isolation and identification of microorganisms. Lecture: three hours a week; Laboratory: three hours per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, Chm 231-232*

BIO 328. DEVELOPMENTAL BIOLOGY FOUR CREDITS

A course dealing with the principles of animal development from descriptive, experimental, and evolutionary perspectives. Laboratory work includes both descriptive and experimental embryology as well as more molecular techniques. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

BIO 329. VIROLOGY THREE CREDITS

Virology provides an introduction to the biology of animal viruses. Description of viral molecular architecture and genome organization is followed by a survey of strategies employed for multiplication and regulation of gene expression. Pathogenesis of viral infections is considered from perspectives of viral reproduction strategies and host defense. *Prerequisites: Bio 121-122, 225-226, Chm 231, 232, 233, 234.*

BIO 330. INTRODUCTION TO BIOINFORMATICS THREE CREDITS

An introduction to the ways computers are used to make sense of biological information, especially the data generated by the human genome project. Topics covered include databases and data mining, pair-wise and multiple sequence alignment, molecular phylogeny, finding genes in raw DNA sequences, predicting protein and RNA secondary and tertiary structures, generating and analyzing microarray data, DNA fingerprinting, rational drug design, metabolic simulation and artificial intelligence. *Offered online alternate spring semesters, with one assignment each week.*

**BIO 341. FRESHWATER ECOSYSTEMS
THREE CREDITS**

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$105. (same as EES 341) *Prerequisites: EES 211 or 240 or BIO 121-122, or consent of instructor. Offered in alternate years.*

**BIO 343. MARINE ECOLOGY
THREE CREDITS**

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$105. (Cross-listed with EES 343) *Prerequisites: EES 230 (Ocean Science) and Bio 121-122. Students must have formal course experiences in oceanography and biology at the science major level or have completed their sophomore year as a biology major. Offered in alternate years.*

**BIO 344. ECOLOGY
FOUR CREDITS**

An examination of contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. (Cross-listed with EES 344) *Prerequisites: Bio 121-122, or permission of instructor. Offered in alternate years.*

**BIO 345. GENETICS
FOUR CREDITS**

This course presents a detailed treatment of genetics beyond the introductory level in the areas of both transmission and molecular genetics. Includes discussion of the role of genetics in such areas as developmental medicine. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every fall semester.*

**BIO 346. ANIMAL BEHAVIOR
FOUR CREDITS**

Animal Behavior is a course emphasizing behavior as the response of an organism to physical and social environmental change, and covering the processes that determine when changes in behavior occur and what form the changes take. Laboratories, using local fauna, demonstrate principles discussed in lecture. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 361. PLANT FORM AND FUNCTION
FOUR CREDITS**

An introduction to the morphology, anatomy, cytology and physiology of vascular plants. Structural and functional aspects of plants are interpreted in relation to each other and within ecological and evolutionary contexts. Offered in a workshop format of two three-hour sessions per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every fall semester.*

**BIO 362. PLANT DIVERSITY
FOUR CREDITS**

A comprehensive survey of algae, bryophytes, and vascular plants emphasizing their structure, reproductive biology, natural history, evolution, and importance to humans. Offered in a workshop format of two three-hour sessions per week. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every spring semester.*

**BIO 366. FIELD BOTANY
THREE CREDITS**

A specialized summertime field course that emphasizes a taxonomic, phylogenetic, and ecological survey of vascular plants indigenous to Northeastern Pennsylvania. Course includes field trips to a diverse array of habitats in Northeastern Pennsylvania. (Cross-listed with EES 385) *Prerequisites:*

Course Descriptions

Bio 121-122, or permission of instructor. Offered in alternate years.

BIO 368. MEDICAL BOTANY THREE CREDITS

A specialized summertime course that provides a scientifically-based overview of the ways that plants affect human health. Topics include cultural and historical perspectives of plants and medicine, plants that treat human ailments, and psychoactive plants. Lecture two hours per day for five weeks.

Prerequisites: Bio 121-122, 225, Chm 231-232 or permission of instructor. Offered in alternate years.

BIO 391-392. SENIOR RESEARCH PROJECTS ONE CREDIT, TWO CREDITS

The student will pursue independent research as a member of a team of senior biology majors. Each team will be responsible for the identification of an original research problem, a thorough literature review of the problem, a detailed prospectus prepared in the format of a grant proposal, complete execution of the research project, a formal oral presentation, and a final manuscript prepared in standard journal format. Senior research is required of all biology majors seeking a four-year degree in biology. *Prerequisite: Open only to senior biology majors. Bio 391. Offered every fall semester. Bio 392. Offered every spring semester.*

BIO 394. BIOLOGICAL FIELD STUDY ONE TO THREE CREDITS

On-site study of biological problems or situations incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour of lecture per week plus field trip. Fee: variable. *Prerequisites: Bio 121-122, or permission of instructor.*

BIO 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

This course involves independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required; it must also be orally presented at an appropriate off-campus science meeting. *Prerequisite: Written approval of department chairperson is required. Candidates for Independent Research must have a minimum GPA of 3.00 and be of upper class standing.*

BIO 397. PROFESSIONAL PREPARATION TECHNIQUES TWO CREDITS

Professional Preparation Techniques introduces biology majors to biology as a profession. Students learn how to read, write, and analyze research papers, and how to make oral presentations and posters using electronic and paper-based supplements. Career development issues, including effective presentation of credentials, are also addressed. *Prerequisite: Junior-level standing. Offered every fall and every spring semester.*

BIO 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 minimum cumulative average, consent of academic advisor, approval of placement by department chairperson.*

BIO 198/298/398. TOPICS VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Laboratory fee: \$105. *Prerequisites: Bio 121-122, 225-226, or permission of instructor.*

BUSINESS ADMINISTRATION COURSES

ABA 100. INTEGRATED MANAGEMENT FOUR CREDITS

The first module takes you through the entrepreneurial process from creating a business concept to

planning the venture to launching and operating the business to harvest and closure of the firm. In the second module you learn how businesses operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. Most importantly, you will learn and experience how the pieces fit together through integrating the functional areas and tracking information and performance using financial accounting principles.

ABA 110. LEADERSHIP AND ORGANIZATIONAL MANAGEMENT

FOUR CREDITS

This course takes an interdisciplinary approach combining the major theories of management and organizational behavior. The theories and practices of planning, organizing, controlling and leading the organization are incorporated into a behavioral approach including ethical decisionmaking. Understanding of individual, formal, and informal group behavior; macro- and microorganizational structures, motivation and leadership theories, group influences, conflicts, decision-making, communication, with emphasis on behavioral science applications in developing organizational effectiveness are explored with an emphasis on the global business environment. *Prerequisite: ABA 100.*

ABA 120. EFFECTIVE COMMUNICATIONS FOR BUSINESS

FOUR CREDITS

An emphasis on written and oral communications. Students practice writing major business correspondence including letters, persuasive requests and refusals, inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing. Students learn the major techniques of effective oral presentations such as, organizing for impact, gaining and keeping audience attention, multimedia applications, and adapting to cross-cultural audiences. *Prerequisite: ABA 100.*

ABA 130. MARKETING AND RETAILING

FOUR CREDITS

Marketing and Retailing (BA 130) an introduction to the planning and activities of marketing. The course will provide an understanding of the dynamic role marketing plays in the global and national economy as well as the organization. You will have the opportunity to build a knowledge base about the following areas: strategic marketing, research, consumer behavior, segmentation and targeting, marketing mix planning, the selling process, implementation, and evaluation. We will identify marketing and retailing challenges, ethical thinking and action, and global dimensions of the practice of marketing and retailing. *Prerequisite: ABA 100.*

ABA 140. INTEGRATED BUSINESS MATH AND STATISTICS

FOUR CREDITS

This course serves as an introduction to the primary calculations and tools needed in business and economics. Topics include, but are not limited to: algebraic functions, interest rates, defining and describing data, numerical and graphical summaries of data, hypothesis testing, and regression and correlation analysis. Emphasis on mathematical modeling in the business environment.

ABA 150. THE LEGAL ENVIRONMENT AND BUSINESS LAW

FOUR CREDITS

This course provides a foundation for business managers to operate within the legal environment in which all businesses in our society function. It provides an overview of law and our legal system, the lawmaking and adjudicatory processes, and the roles of economic, social, and political forces in the shaping of constraining legal rules and regulations. It also provides an in-depth study of contracts, commercial transactions, the Uniform Commercial Code, business organizations, property law, liability and accountants, and debtor-creditor relationships.

ABA 161. FINANCIAL ACCOUNTING

FOUR CREDITS

This course will communicate an understanding of the nature, function and environment of accounting and the accounting information system within an organization. Through analysis of both financial accounting information and supporting accounting principles, students will study decision-making and how those decisions affect the organization and its financial statements.

ABA 162. MANAGERIAL ACCOUNTING

FOUR CREDITS

Managerial accounting is an internal tool used to generate information for managerial planning and

Course Descriptions

control. Students will develop an understanding of how costs flow through the manufacturing process and how financial and non-financial information is used to make budgeting and other managerial accounting decisions.

Prerequisite: ABA 161.

ABA 170. HUMAN RESOURCES AND CUSTOMER RELATIONSHIP MANAGEMENT

FOUR CREDITS

This course deals with acquiring skills and understanding of the legal aspects, as well as the planning and technologies involved with local, regional, national, and global human resource management. Topics such as global human resource management, selection and recruitment, job analysis and design are explored. Also included are appraising and rewarding performance, compensation and benefits, and labor management relations. Along with these topics customer relationship management is explored from a human resources perspective. *Prerequisite: ABA 100.*

ABA 180. FINANCIAL MANAGEMENT

FOUR CREDITS

A study of the financial theories and decision-making models relating to: financial analysis and planning; working capital management; cash budgeting; capital asset acquisitions; capital asset financing; cost of capital; capital structuring; acquisitions; divestitures; and reorganizations.

Prerequisite: ABA 100 and ABA 140.

ABA 190. INTEGRATED ECONOMICS FOR BUSINESS

FOUR CREDITS

This course introduces the student to both macroeconomic and microeconomic theories. Core issues in both disciplines such as supply and demand, fiscal policy, employment, and monetary policy are explored in a business environment context. *Prerequisites: ABA 100.*

ABA 200. BUSINESS STRATEGY AND DECISION MAKING

FOUR CREDITS

This is a capstone course which integrates the functional areas of business from the perspective of top management. Emphasis is on the role of management in the formation and execution of strategic plans and a particular emphasis on improving a company's performance. *Prerequisites: ABA 100, ABA 130 and ABA 180.*

ABA 210. PROFESSIONAL BUSINESS EXPERIENCE

FOUR CREDITS

This course is part of a two-session (14 Week) professional business experience in which students apply their accumulated knowledge, skills, and abilities in a private or public organization related to the students' academic objectives and career goals. The course will include cooperative education, independent study, and/or an experiential component. Components of the Personal and Professional Development Program will be explored during class time. *Prerequisites: ABA 100, ABA 140 and ABA 180.*

BA 151. INTEGRATED MANAGEMENT EXPERIENCE I

THREE CREDITS

Integrated Management Experience is a two-semester sequence that takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. You learn how businesses plan and operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. Most importantly, you will learn and experience how the pieces fit together through integrating the functional areas and tracking information and performance using financial accounting principles. (Same as ACC 151 and ENT 151).

BA 152. INTEGRATED MANAGEMENT EXPERIENCE II

THREE CREDITS

Integrated Management Experience is a two-semester sequence that takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. You learn how businesses plan and operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. You develop a clear understanding of the importance of accounting cycles and how financial accounting principles provide not only information but an integrating thread for all types of organizations. (Same as ACC 152 and ENT 152). *Prerequisite:*

ACC/BA/ENT 151.

BA 153. MANAGEMENT FOUNDATIONS

Management Foundations provides the framework for further study in accounting, business administration, and entrepreneurship programs. Functional areas of management are examined. This class is closed to freshmen and any student who completed ACC/BA/ENT 151 and ACC/BA/ENT 152.

THREE CREDITS

BA 198/298/398. TOPICS

VARIABLE CREDIT

Lectures on subjects of special current interest in business which are not covered in other courses.

BA 230. MONEY AND BANKING

THREE CREDITS

A study of money credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent developments in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships. (Cross listed as EC 230).

BA 233. THE LEGAL ENVIRONMENT OF BUSINESS

THREE CREDITS

This course provides a foundation for business managers to operate within the legal environment in which all businesses in our society function. It provides an overview of law and our legal system, the lawmaking and adjudicatory processes, and the roles of economic, social, and political forces in the shaping of constraining legal rules and regulations.

BA 234. BUSINESS LAW

THREE CREDITS

An in-depth study of contracts, commercial transactions, the Uniform Commercial Code, business organizations, property law, liability and accountants, and debtor-creditor relationships. Provides the necessary legal background for those entering the accounting profession.

BA 257. MANAGEMENT INFORMATION SYSTEMS

THREE CREDITS

This course introduces the fundamental concepts underlying the design, implementation, control, and evaluation of business-oriented computer based information systems, office automation, information reporting, and decision making.

BA 309. BUSINESS CORRESPONDENCE AND REPORTS

THREE CREDITS

An emphasis on written communications: practice in writing major classification of business letters; persuasive requests and refusals, inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing.

BA 319. BUSINESS STATISTICS

THREE CREDITS

An introduction to the primary tools of research in business and economics; the collection, summarization, analysis, and interpretation of statistical findings relevant to business decisions. Two hours of lecture and one hour of individualized laboratory. Topics covered will include, but not be limited to, descriptive statistics, probability, sampling theory, hypothesis testing, and regression and correlation analysis. (Cross-listed as Ec 319.)

BA 321. MARKETING

THREE CREDITS

An introduction to the planning and activities of marketing. Emphasis on budgeting, product conception and development, pricing, distribution channels and promotion.

BA 322. ADVERTISING

THREE CREDITS

A managerial analysis of the decisions involved in advertising. Topics include research, ethics, campaign design, copy, art, media, budgeting, and effectiveness. *Prerequisite: BA 321.*

Course Descriptions

BA 324. RETAILING

THREE CREDITS

A basic course that discusses opportunities in retailing; types of retail institutions; problems of store policy, store location; study of organizational structure of department stores; organization and functions of all store divisions. *Prerequisite: BA 321.*

BA 326. THE SELLING PROCESS

THREE CREDITS

Examines the buyer-seller relationship process of marketing products and services to consumers and organizations. Emphasis is placed on sales techniques, presentation styles and sales management skills appropriate to the business interaction. *Prerequisite: BA 321.*

BA 327. MARKETING SEMINAR

THREE CREDITS

In-depth examination of selected issues and problems in marketing. Specific topics alternate depending on student and faculty interests in areas such as marketing strategy formulation, marketing research, new product development, international marketing and sports marketing. *Prerequisite: BA 321.*

BA 328. CONSUMER BEHAVIOR

THREE CREDITS

This course presents a survey and integration of concepts and theories that help explain or predict consumer behavior. Emphasis is on the implications of this information for marketing planning. *Prerequisite: BA 321.*

BA 341. MANAGERIAL FINANCE

THREE CREDITS

A study of the financial theories and decision-making models relating to: financial analysis and planning; working capital management; cash budgeting; capital asset acquisitions; capital asset financing; cost of capital; capital structuring; acquisitions; divestitures; and reorganizations. *Junior/Senior standing recommended.*

BA 342. PROPERTY AND LIFE INSURANCE

THREE CREDITS

A study of principles of life, health, property, and liability insurance applied to the needs of individuals and organizations *Prerequisite: BA 341.*

BA 343. INVESTMENTS AND PORTFOLIO MANAGEMENT

THREE CREDITS

A survey of the features and characteristics of investment instruments; the operation and regulation of security markets; the techniques of security analysis and valuation; financial intermediaries; modern and traditional portfolio theory and management. *Junior/Senior standing recommended.*

BA 345. LONG-RANGE FINANCIAL PLANNING

THREE CREDITS

A survey of the tools and techniques currently employed by financial decision-makers when evaluating organizational performance and developing future courses of action. Emphasis will be placed upon long-range planning and capital budgeting techniques. *Prerequisites: BA 341 and BA 343.*

BA 351. MANAGEMENT OF ORGANIZATIONS AND PEOPLE

THREE CREDITS

Introduction to the theory and practice of managing organizations, including planning, organizing, and controlling. Interdisciplinary in nature, social and ethical dimensions of managing are examined. *Junior standing or ACC/BA/ENT 151 recommended.*

BA 352. PRODUCTION AND OPERATIONS MANAGEMENT

THREE CREDITS

Principles of decision-making, systems design, introduction to quantitative tools of analysis; fundamentals of production, inventory, financial, and distribution management. *Prerequisite: BA 319 and BA 351.*

**BA 354. ORGANIZATIONAL BEHAVIOR
THREE CREDITS**

A behavioral science approach to understanding individual, formal, and informal group behavior; macro- and micro-organizational structures, motivation and leadership theories, group influences, conflicts, decision-making, communication, with emphasis on behavioral science applications in developing organizational effectiveness. *Prerequisite: BA 351.*

**BA 356. THE SOCIAL RESPONSIBILITY OF BUSINESS
THREE CREDITS**

A course dealing with the problems faced by managers in responding to issues such as: the kinds and extent of social responsibility to be assumed by businesses, employee rights, consumerism, and the balance of public and private interests. *Junior standing recommended.*

**BA 358. INTERNATIONAL BUSINESS
THREE CREDITS**

An introduction to the field of international business. The empirical dimensions of the world economy; business enterprise in international trade; trade channels; effects of economic, political and social environment on international management problems of international operations; the role of government in fostering international business. A substantial amount of writing is required. *Prerequisite: BA 351 and senior standing.*

**BA 359. BUSINESS LEADERSHIP THEORY AND PRACTICE
THREE CREDITS**

This course offers the student an introduction to leadership theory and practice. The course addresses the use and usefulness of various leadership styles and models in the decision-making process. Emphasis is placed on the student's personal growth and development. Through a series of self-assessments, students explore their personal leadership style. The class includes presentations and projects focused on increasing leadership skills. *Prerequisite: BA 151, BA 351 or permission of instructor.*

**BA 361. BUSINESS STRATEGY AND DECISION-MAKING
THREE CREDITS**

The first of a two-semester capstone experience. This course integrates the functional areas of business from the perspective of top management. Emphasis is on the role of management in the formation of strategic and long-range plans. *Prerequisite: BA 321, BA 341, and BA 351.*

**BA 362. PROFESSIONAL BUSINESS EXPERIENCE
THREE CREDITS**

This course is part of a two-semester professional business experience in which students apply their accumulated knowledge, skills and abilities in a private or public organization related to the students' academic objectives and career goals. The course will include cooperative education (see Cooperative Education section of this Bulletin for placement procedures), independent study, and/or an experiential component. (Credits in excess of 3 may be applied toward the degree's Free Elective requirement.) *Prerequisite: BA 321, BA 341, and BA 351.*

**BA 390. E-BUSINESS I
THREE CREDITS**

The course is designed to help develop your knowledge and understanding of the fluid field of e-commerce. The internet is a key platform facilitating commerce and communication on a global basis. After the slow introduction phase and the incredibly fast growth stage, e-commerce has matured and is transforming the value chain of virtually every industry in the United States. This course will provide you with the opportunity to learn and experience e-marketing, security and privacy issues associated with the legal/regulatory environment in cyberspace, and ethics and public policy issues. *Prerequisites: BA 321, BA 351.*

**BA 393 E-BUSINESS II
THREE CREDITS**

The content and process of the capstone course provides a rigorous, integrative experience of all areas of management and transnational management in a variety of environments. Through lectures and discussions of articles, students are exposed to seminal theory on a given topic. In addition, topic-specific, integrative thinking and communication skills are developed throughout the discussions of the articles and cases. The main topics will include competitive strategy and

Course Descriptions

formulation, industry analysis, globalization of management, information systems, e-commerce, manufacturing as a competitive strategy, horizontal and vertical integration, computer integrated manufacturing and capacity expansion. *Prerequisites: BA 390, CS 383.*

BA 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

CAREERS COURSES

CAR 101. LIFE/CAREER PLANNING ONE CREDIT

A study of the components of career decision-making, including the influence of personal goals, values, interests, and perceived skills. The practical application of theory results in a portfolio of information essential to deliberate and effective decision-making.

CHEMISTRY COURSES

CHM 95. PREPARATION FOR GENERAL CHEMISTRY THREE CREDITS

This course is designed to serve the remedial needs of students who require a "preparatory" course to General Chemistry (CHM 115/116). It provides an introduction to and practice with the principles and concepts essential for understanding chemistry. Key topics covered in this course include reviewing basic mathematical tools and improving problem-solving skills. In addition, a discussion of the fundamental chemical laws, the structure of matter, and the periodic table is presented. Finally, the use of chemical formulas to describe various chemical reactions and their stoichiometry is covered. Please note, however, that this course does not satisfy any chemistry requirements in any major.

CHM 105. CHEMISTRY AND MODERN SOCIETY THREE CREDITS

This course will emphasize consumer applications of chemistry with some emphasis on environmental consequences of the use of various forms of energy (nuclear, coal, petroleum, natural gas) and everyday chemicals including food, drugs, agricultural chemicals, and chemicals used in pest control. Details are given separately.

CHM 113. ELEMENTS AND COMPOUNDS LAB ONE CREDIT

Three hours a week. Fee: \$105. *Corequisite: Chm 115.*

CHM 114. THE CHEMICAL REACTION LAB ONE CREDIT

Three hours a week. Fee: \$105. *Corequisite: Chm 116.*

CHM 115. ELEMENTS AND COMPOUNDS THREE CREDITS

Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure. Class, three hours a week; problem session, one hour a week. *Corequisite: Chm 113.*

CHM 116. THE CHEMICAL REACTION THREE CREDITS

A detailed study of chemical equilibria in aqueous solution. Class, three hours a week; problem session, one hour a week. *Prerequisites Chm 113, Chm 115; Corequisite: Chm 114.*

CHM 231. ORGANIC CHEMISTRY I THREE CREDITS

An introduction to the chemistry of carbon compounds which develops the interconnected relationship between bonding, structure and reactivity in organic compounds. Instrumental methods will be presented as a means to determine the structure of reaction products. Class, three hours a week; pre-lab session, one hour a week. *Prerequisite: Chm 114, 116; Corequisite: Chm 233.*

CHM 232. ORGANIC CHEMISTRY II
THREE CREDITS

A continuation of Chm 231 with emphasis on organic syntheses. Class, three hours a week; pre-lab session, one hour a week. *Prerequisite: Chm 231, 233; Corequisite: Chm 234.*

CHM 233. ORGANIC CHEMISTRY I LAB
ONE CREDIT

After an introduction to standard organic reaction, purification, physical characterization, and spectroscopic techniques, students will investigate concepts discussed in CHM 231. Three hours a week. Fee: \$105. *Corequisite: Chm 231.*

CHM 234. ORGANIC CHEMISTRY II LAB
ONE CREDIT

Weekly labs that parallel the lecture topics and emphasize organic synthesis and characterization, including multistep synthesis. Three hours a week. Fee: \$105. *Corequisite: Chm 232.*

CHM 246. ANALYTICAL CHEMISTRY LAB
ONE CREDIT

Laboratory for CHM 248. One three hour laboratory per week. Lab fee \$105. *Corequisite: Chm 248.*

CHM 248. ANALYTICAL CHEMISTRY
THREE CREDITS

A course in the application of the principles of chemical equilibria to obtain the qualitative and quantitative information about the composition and structure of matter. An introduction to the importance of sampling is included along with methods for the statistical treatment of data. The course focuses primarily on the analyses of elemental and ionic species using electrochemical, spectroscopic and chromatographic techniques. Three one-hour lecture sessions per week. *Prerequisite: Chm 116 and Chm 114 Corequisite: Chm 246*

CHM 322. INORGANIC CHEMISTRY
THREE CREDITS

CHM 322 presents a survey of current topics in Inorganic Chemistry. The first half of the course offers a survey of main group chemistry, including individual group trends. The second half of the course covers Crystal Field Theory, Ligand Field Theory, reaction mechanisms and organometallic compounds. *Prerequisites: Chm 116, Chm 114.*

CHM 341. INSTRUMENTAL METHODS FOR CHEMICAL ANALYSIS
THREE CREDITS

A course in the fundamental principles that provide the basis for the design and fabrication of chemical instrumentation. The underlying physical basis for each method is introduced through an exploration of the capabilities, limitations, and applications of a wide range of separations, spectroscopic, and electrochemical methods. Two one-hour lecture periods and one hour of on-line instruction. *Corequisite: CHM 343, CHM 351.*

CHM 351. PHYSICAL CHEMISTRY I
THREE CREDITS

This course emphasizes the molecular approach to physical chemistry. It begins discussing the principles of quantum mechanics and their applications in chemistry, leading to atomic and molecular structure, and chemical bonding. These concepts are then used in the development of atomic and molecular spectroscopy. Photochemistry is introduced. Three one-hour lecture sessions per week. *Prerequisites: CHM 116, MTH 212, PHY 202.*

CHM 352. PHYSICAL CHEMISTRY II
THREE CREDITS

Statistical mechanics is used to formulate Thermodynamics in terms of atomic and molecular properties. A molecular interpretation of the laws of thermodynamics

Course Descriptions

CHM 353. PHYSICAL CHEMISTRY I LAB

ONE CREDIT

Laboratory experiments are performed in order to reinforce concepts in CHM351. Bench as well as computational experiments are carried out, including photoelectric effect, resonance states in the particle in a one-dimensional box system, molecular orbital theory applications and molecular spectroscopy. Fee: \$105. *Corequisite: CHM 351*

CHM 354. PHYSICAL CHEMISTRY II LAB

ONE CREDIT

Laboratory experiments are performed in order to reinforce concepts in CHM352. Bench as well as computational experiments are carried out, including calorimetry, phase equilibrium, colligative properties, kinetics and applications of the Monte Carlo method to chemical kinetics. Fee: \$105. *Corequisite: CHM 352*

CHM 361. BIOCHEMISTRY: STRUCTURE AND FUNCTION

THREE CREDITS

This course is a study of the physical and chemical properties of proteins, nucleic acid, fatty acids, and carbohydrates emphasizing the relationship between the chemical structure and the biological function. The course includes the physical methods of biochemistry, enzyme kinetics, bioenergetics and nucleic acid transcription and translation. *Prerequisite: Chm 232.*

CHM 362. BIOCHEMISTRY: METABOLISM

THREE CREDITS

This course is a study of the catabolism and anabolism of carbohydrates, fatty acids and amino acids. The course emphasizes the regulation and integration of major metabolic pathways, including glycolysis, the Krebs' cycle, electron transport, gluconeogenesis, pentose phosphate pathway, fatty acid metabolism and amino acid metabolism. *Prerequisite: Chm 232.*

CHM 370-372. INTEGRATED LABORATORY I-III

ONE-TWO CREDITS EACH

Laboratory experiments related to the five major areas of chemistry. Labs will be chosen in order to show proficiency in each of the required areas. Labs will include synthesis, isolation and characterization of chemical compounds, spectroscopy, kinetics, calorimetry, chromatography, electrophoresis, and other chemical and biochemical methods. Laboratory 3 hours a week per credit hour. Fee: \$105. *Prerequisites: CHM 232, CHM341*

CHM 390. JUNIOR SEMINAR

ONE CREDIT

CHM 390 is a 1 hour course offered during the spring semester and designed to prepare chemistry/biochemistry students for: their careers after graduation, and for their capstone research projects undertaken in their fourth year. The course will cover topics such as résumé preparation, communication of scientific information, internships, job searches, and preparation for graduate school. Students will prepare a topical literature review on their chosen project in conjunction with their selection of a research advisor. *Prerequisite: Junior standing and declared Chemistry/Biochemistry major.*

CHM 391. SENIOR RESEARCH I

TWO CREDITS

The planning and execution of a chemistry research project under the direction of a faculty member. It is expected that this will be a laboratory research project. Students will also learn how to search the chemical literature using modern computer methods. Students are required to attend weekly Department seminars and present at least one seminar. Fee: \$105. *Prerequisite: Senior standing in a Chemistry curriculum.*

CHM 392. SENIOR RESEARCH II

TWO CREDITS

Students will carry out a chemistry research project under the direction of a faculty member. It is expected the project will be a laboratory research project. The project must culminate in a written report and the results must be presented at a Department seminar. Students are required to attend weekly Department seminars and present at least one seminar. Fee: \$105.

CHM 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS EACH

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper is required. Fee: \$105.

CHM 398. TOPICS
ONE TO THREE CREDITS

A study of topics of special interest, such as advanced physical chemistry, advanced analytical chemistry, advanced organic chemistry, surface and colloid chemistry, nuclear chemistry, chemical kinetics, polymer chemistry, or spectroscopy.

CHM 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson. Students without the indicated prerequisites for 200- and 300-level chemistry courses may enroll after written permission of the instructor has been approved by the department chairperson.*

COMMUNICATION STUDIES COURSES

COM 101. FUNDAMENTALS OF PUBLIC SPEAKING
THREE CREDITS

Principles of study, application, and evaluation of public speaking. Emphasis will be upon meeting the needs of students through individualized instruction in oral communication settings. The course is taught each semester.

COM 102. PRINCIPLES OF COMMUNICATION
THREE CREDITS

A study of the theory and process of communication. Required of all department majors. Taught every spring semester.

COM 124. MASS MEDIA LITERACY
THREE CREDITS

This is a survey course that takes a literacy approach to the study of mass media and their role in society. Taught every spring semester.

COM. 144. DEPARTMENT PRACTICUM
ONE TO TWO CREDITS

A - Debate and Forensics, B - P.R. Agency, C - WCLH Radio, D - The Beacon, E - Television, F - Department. The Department Practicum may be taken for one to two credits per semester with the total not to exceed six. Students may earn credit for major roles and positions of major responsibility in the above cocurricular activities. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Credits earned are applicable toward graduation but do not count toward the requirements of any concentration in COM. Written approval of credit must be by advisor and Department Chairperson.

COM 201. ADVANCED PUBLIC SPEAKING
THREE CREDITS

Inquiry into the practice and principles of speech composition and presentation. Detailed analysis of the areas of invention, arrangement, style, and delivery, and an introduction to speech criticism. *Prerequisite: COM 101 or consent of instructor.*

COM 202. INTERPERSONAL COMMUNICATION
THREE CREDITS

The course focuses on interpersonal communication theory and its application to improving the student's interpersonal skills in managing conflict, negotiating, interviewing, and in developing

Course Descriptions

relationships. Taught fall semesters. *Prerequisite: COM 102 or consent of instructor*

COM 203. SMALL GROUP COMMUNICATION THREE CREDITS

The course is designed to expand the student's knowledge of the theories and types of small group communication. Emphasis on the task, leadership, and interpersonal skills of participants. *Prerequisite: COM 102.*

COM 204. ARGUMENTATION AND DEBATE THREE CREDITS

Training in the fundamentals of argumentation and debate, with practice in gathering and organizing evidence and support materials. Course taught every other fall semester. *Prerequisite: COM 101 or consent of instructor.*

COM 206. BUSINESS AND PROFESSIONAL COMMUNICATION THREE CREDITS

Course will concentrate on communication theory as applied to business and professional settings. Students will make several oral presentations and participate in interviewing and conferences. *Course taught fall semester alternate years.*

COM 220. INTRODUCTION TO TELECOMMUNICATIONS THREE CREDITS

Study of the radio, television, and cable industries. Emphasis on their development as public and commercial institutions. Consideration of economic and regulatory issues affecting programming.

COM 221. DIGITAL AUDIO PRODUCTION THREE CREDITS

A study of the principles and techniques of audio production. A special emphasis is placed on radio-related issues, skills, and projects. Consideration of the sound media as tools of artistic expression. Lecture and laboratory. *Taught every fall semester.*

COM 222. BASIC VIDEO PRODUCTION THREE CREDITS

A study of the principles and techniques of TV Studio Production. A special emphasis is placed on the utilization of these techniques in a broadcast setting. Included will be: Camerawork, Switching, Studio Equipment, Set Design, Directing and Producing. Every semester. Fee: \$40.

COM 223. THE ART OF FILM THREE CREDITS

An introduction to the esthetics, techniques, and critical analysis of cinematic art through the study of representative films of current and past film directors. Screenings and writing intensified.

COM 252. INTERNSHIP THREE TO SIX CREDITS

A supervised program of work and study in any of the concentrations. Written permission of the department is required. *Every semester.*

COM 260. BASIC NEWSWRITING THREE CREDITS

Fundamentals of newsgathering, newswriting, and news judgment for all media; study of news sources; fieldwork, research, and interview techniques. Fee: \$40. *Prerequisite: Eng 101.*

COM 262. VISUAL RHETORIC THREE CREDITS

This course offers a rhetorical approach to visual design theory and application. Through readings, discussions, and assignments, students will learn the specialized language of visual design strategies and theories; to experiment with specific design software programs (PageMaker, Adobe Photoshop, QuarkXPress); to analyze rhetorical elements of visual and verbal design choices; to apply creative and ethical design strategies; to work with a real client, problem-solve and troubleshoot for design needs; to understand the interdependency between visual and verbal persuasive appeals in all forms of print and web communication. *Prerequisite: COM 260.*

COM 300. COMMUNICATION CRITICISM
THREE CREDITS

Theories from classical to contemporary will be applied to the analysis of written, visual and electronic messages. Emphasis on speech writing and criticism. *Prerequisite: COM 101.*

COM 301. PERSUASION
THREE CREDITS

Study and practice of persuasive speaking. General theories of persuasion, the role of persuasion in a democratic society, and an introduction to modern experimental research in the field. *Prerequisite: COM 101.*

COM 302. FUNDAMENTALS OF PUBLIC RELATIONS
THREE CREDITS

An introduction to the fundamentals of public relations practice, including program planning and evaluation, working with the media, writing for PR, and coordinating special events and functions. Taught fall semesters. *Prerequisite: COM 260.*

COM 303. ORGANIZATIONAL COMMUNICATION
THREE CREDITS

Course focuses attention on traditional and modern concepts of communication channels in simple and complex organizations. Considerable attention is given to interviewing and conducting communication audits. *Prerequisite: COM 102 or permission of instructor.*

COM 304. INTERCULTURAL COMMUNICATION
THREE CREDITS

Intercultural Communication is a systematic study of what happens when people from different cultural backgrounds interact face-to-face. The course is a balance between theoretical and practical knowledge, with emphasis on immediately usable knowledge. Guest speakers, in-class simulations, cross-cultural interviews, and research projects ask students to apply communication skills to actual intercultural situations. *Prerequisite: COM 102 or permission of instructor.*

COM 320. MEDIA MANAGEMENT
THREE CREDITS

This course will provide a framework for understanding the functions and methods of media managers in both print and non-print media. *Prerequisites: COM 220, or permission of instructor.*

COM 321. BROADCAST JOURNALISM
THREE CREDITS

A study of the principles and methods of broadcast journalism. *Prerequisites: COM 221 and COM 222.*

COM 322. ADVANCED VIDEO PRODUCTION
THREE CREDITS

A study of the principles and techniques of video production. Scripting, producing, and editing videography are subjects covered extensively by this course. Each student will produce several video productions. Taught every spring semester. *Prerequisite: COM 222.*

COM 324. COMMUNICATION RESEARCH METHODS
THREE CREDITS

Study of research methods in various areas of communication. Emphasis on ability to research literature and critique a research design. Consideration of content analysis and empirical design. Required of all majors. *Prerequisite: COM 102 and completion of departmental writing requirement. Course taught every fall semester.*

COM 352. ADVANCED PUBLIC RELATIONS CAMPAIGNS
THREE CREDITS

COM 352 is an advanced course in public relations, taught in seminar format. Emphasis is placed on planning, researching, budgeting, carrying out and evaluating actual public relations campaigns. The course is both writing and speaking intensive. In cooperation with various community-based businesses and non-profit clients, student "teams" conduct actual, semester-long promotional campaigns. Students should be competent in basic news writing, interviewing and fundamentals of public relations. Course taught alternate spring semesters. *Prerequisite: COM 302.*

Course Descriptions

COM 360. ADVANCED NEWSWRITING THREE CREDITS

A study of specialized reporting and an introduction to news editing. *Prerequisite: COM 260.*

COM 361. FEATURE WRITING THREE CREDITS

A study of feature articles for newspapers, syndicates, magazines, and specialized publications. Practice in research, interviewing, and writing. *Prerequisite: COM 260.*

COM 362. MASS COMMUNICATION LAW THREE CREDITS

Current legal problems, theory of controls in journalism, television, and radio; libel, copyright, privacy law, and other legal issues affecting the mass media. A case study approach will be used.

COM 370. WRITING FOR MAGAZINES AND E-ZINES THREE CREDITS

This course will introduce students to writing and publishing processes, particularly as they pertain to trade, consumer and electronic magazines. The course investigates various publishing avenues including freelance submissions; research, writing and editing roles on established publications; and ghost writing. Students will develop a variety of articles for both traditional print and electronic publications, as well as develop the necessary query letters and electronic inquiry messages. In addition, students will hone existing research, interview and editing skills. Final projects will have students collaborate in writers' workshop settings to develop an original electronic publication as well as write and revise a publishable portfolio to freelance articles for consumer or trade publications. *Prerequisite: COM 260.*

COM 372. MANAGING A PUBLIC RELATIONS AGENCY THREE CREDITS

Focus on difference between in-house public relations and agency operators. Students work with several clients. *Prerequisite: COM 302.*

COM 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the speech and communication programs under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. Written permission of department is required.

COM 397. SENIOR SEMINAR/COMMUNICATIONS THREE CREDITS

An in-depth investigation of current research and ethical issues in communication. A research paper and senior project required. Required of all majors. Prerequisite: COM 324 and junior/senior standing. *Course taught every spring semester.*

COM 398. TOPICS ONE TO THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

COM 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.). *Prerequisites: Sophomore standing, 2.25 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

COMPUTER SCIENCE COURSES

To see a tentative list regarding the timing of our 300-level offerings in Computer Science, please refer to the following URL: <http://mathcs.wilkes.edu>.

**CS 115. COMPUTERS AND APPLICATIONS
THREE CREDITS**

An introduction to computers and computing, with emphasis on personal computing in both the Windows and OSX operating systems. Extensive hands-on experience will involve the application of current commercial software (including word processing, database, and spreadsheet). *Not open to students who have received credit in any 200-level CS course. Students majoring in either Computer Science or Computer Information Systems will not receive credit for this course.*

**CS 125. COMPUTER SCIENCE I
FOUR CREDITS**

Introduction to information technology and programming (history of computing, Unix, text editors, word processing, spreadsheets, introduction to programming), basic data types, functions, decision structures, loops, one-dimensional list structures, testing, debugging, and an introduction to computer graphics). 3 hours lecture, 2 hours laboratory each week. *Prerequisite: Secondary mathematics including geometry and algebra II. Offered every fall, spring and summer.*

**CS 126. COMPUTER SCIENCE II
FOUR CREDITS**

A study of advanced programming concepts, structures, and techniques (professional/ethical issues, testing/debugging, fundamentals of programming, basic data structures: strings, lists, multidimensional arrays, objects, hashes, objects/inheritance/polymorphism, recursion, divide and conquer, machine representation of data, hardware components, machine instructions). 3 hours lecture, 2 hours laboratory each week. *Prerequisite: CS 125 or equivalent programming experience. Offered every fall and spring.*

**CS 224. COBOL AND FILE MANAGEMENT
THREE CREDITS**

A study of file management techniques using ANS COBOL. Introductory and advanced programming techniques are presented using problems commonly found in a business environment. Topics include control break processing, tables and arrays, file processing, and interactive processing. *Prerequisite: CS 126 or previous programming experience. Offered in the fall semester of even years when demand warrants.*

**CS 225. COMPUTER SCIENCE III
THREE CREDITS**

A study of the use of a high-level language to implement basic data structures such as strings, lists, arrays, objects, and hashes and their application to searching, sorting, and hashing. Representation of numbers and strings at the machine level. The course will also include an introduction to the concepts of algorithm design and problem solving with an emphasis on algorithm development, analysis and refinement. *Prerequisite: CS 126. Offered every fall.*

**CS 226. COMPUTER SCIENCE IV
THREE CREDITS**

A continuation of CS 225. Topics include programming language paradigms, advanced use of word processors and spreadsheets, including macros, linked data structures, and an introduction to discrete mathematics, including counting, probability, and graphs. *Prerequisite: CS 225. Offered every spring.*

**CS 265. MEDICAL INFORMATICS
THREE CREDITS**

This course will cover basic principles of computer use and information management in health care (including general medicine, dentistry, optometry, pharmacy). Topics will include basic computing concepts, the characteristics of medical data, and the use of computers in the administrative, diagnostic, and research-oriented medical tasks. The course is primarily directed towards students who intend to pursue careers in health-related fields. *Offered every spring.*

**CS 283. WEB DEVELOPMENT I
THREE CREDITS**

An introduction to the development of interactive web sites, including HTML, Javascript, forms and CGI programs, server side includes, cookies, web server configuration and maintenance, and Java Applets. *Prerequisites: CS 126. Offered in the fall semester of odd years when demand warrants.*

Course Descriptions

CS 317. SOFTWARE INTEGRATION

THREE CREDITS

An introduction to the integration of application programs, including email clients, word processors, spreadsheets, and database systems using Microsoft Office and Visual Basic. *Prerequisite: CS 126. Offered every fall.*

CS 319. PRINCIPLES OF PROGRAMMING LANGUAGES

THREE CREDITS

A study of the principles that govern the design and implementation of programming languages. Topics include language structure, data types, and control structures. Programming projects will familiarize students with features of programming languages through their implementation in interpreters. *Prerequisite: CS 226.*

CS 321. SIMULATION AND DATA ANALYSIS

THREE CREDITS

Methods of handling large data bases including statistical analysis and computer simulations. The emphasis will be upon discrete simulation models with a discussion of relevant computer languages, ARENA, GPSS, and/or SIMSCRIPT. Prerequisites: CS 125 and either Mth 105 or Mth 111.

CS 323. THEORY OF COMPUTATION

THREE CREDITS

This course formalizes many topics encountered in previous computing courses. Topics include languages, grammars, finite automata, regular expressions and grammars, context-free languages, push-down automata, Turing machines and computability. *Prerequisites: Mth 231 and CS 126.*

CS 324. SYSTEMS ANALYSIS

THREE CREDITS

A study of the design and implementation of large computer projects. Special emphasis is placed on applications to business systems. Students will use a CASE tool for automated systems analysis and design. *Prerequisite: CS 217 or CS 224 or CS 226.*

CS 325. DATABASE MANAGEMENT

THREE CREDITS

Practical experience in solving a large-scale computer problem including determination of data requirements, appropriate data organization, data manipulation procedures, implementation, testing and documentation. *Prerequisite: CS 126.*

CS 326. OPERATING SYSTEM PRINCIPLES

THREE CREDITS

Analysis of the computer operating systems including Batch, Timesharing, and Realtime systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices. *Prerequisite: CS 226.*

CS 327. COMPILER DESIGN

THREE CREDITS

A study of compiler design including language definition, syntactic analysis, lexical analysis, storage allocation, error detection and recovery, code generation and optimization problems. *Prerequisite: CS 226.*

CS 328. ALGORITHMS

THREE CREDITS

Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication of real numbers, and various combinatorial algorithms. *Prerequisites: CS 226 and Mth 202.*

CS 330. COMPUTER ARCHITECTURE

THREE CREDITS

A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers". An emphasis will be placed on machine language, instruction formats, addressing modes, and machine representation of numbers. *Prerequisite: CS 226.*

CS 334. SOFTWARE ENGINEERING
THREE CREDITS

A course in "programming in the large." Topics include software design, implementation, validation, maintenance, and documentation. There will be one or more team projects. *Prerequisite: CS 226.*

CS 335. ADVANCED DATABASE CONCEPTS
THREE CREDITS

A continuation of CS 325. Concentration on the design of a large scale database system, current special hardware and software, and the role of a DBMS in an organization. *Prerequisite: CS 325.*

CS 340. ARTIFICIAL INTELLIGENCE
THREE CREDITS

This course will provide an overview of artificial intelligence (AI) application areas and hands-on experience with some common AI computational tools. Topics include search, natural language processing, theorem proving, planning, machine learning, robotics, vision, knowledge-based systems (expert systems), and neural networks. *Prerequisite: CS 126.*

CS 350. OBJECT-ORIENTED PROGRAMMING
THREE CREDITS

Object-oriented concepts and their application to human-computer interaction. Concepts to be covered include object, classes, inheritance, polymorphism, design patterns, GUI interface guidelines, and design of interfaces. There will be programming projects in one or more object-oriented languages using one or more GUI interface guidelines. *Prerequisite: CS 226.*

CS 355. COMPUTER NETWORKS
THREE CREDITS

This course introduces basic concepts, architecture, and widely used protocols of computer networks. Topics include the Open System Interconnection (OSI) model consisting of physical link layer, data layer, network layer, transport layer, session layer, presentation layer, and application layer; medium access sublayer and LAN; various routing protocols; Transmission Control Protocol (TCP) and Internet Protocol (IP) for internetworking. *Prerequisite: Either CS 225, or CS 126 and CS 224.*

CS 360. LINEAR PROGRAMMING
THREE CREDITS

Graphical linear programming, simplex algorithm sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with MTH 360). *Prerequisites: CS 125, and either Mth 105 or Mth 111.*

CS 363. OPERATIONS RESEARCH
THREE CREDITS

A survey of operations research topics such as decision analysis, inventory models, queuing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with Mth 363). *Prerequisites: CS 125, and either Mth 105 or Mth 111.*

CS 364. NUMERICAL ANALYSIS
THREE CREDITS

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with MTH 364). *Prerequisites: Mth 112 and CS 125 (or equivalent programming experience). Offered when demand warrants.*

CS 366. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION
THREE CREDITS

This course will explore the foundations of 3 dimensional animation processes as they apply to multiple mediums. Students will build computer-based models and environments, texture, light, animate and render content for Integrative Media projects or as stand-alone pieces. (Cross-listed with IM 350). *Prerequisite: CS 126 or IM 201.*

Course Descriptions

CS 367. COMPUTER GRAPHICS

THREE CREDITS

Introduction to equipment and techniques used to generate graphical representations by computer. Discussion of the mathematical techniques necessary to draw objects in two- and three-dimensional space. Emphasis on application programming and the use of a high-resolution color raster display.

Prerequisite: CS 226.

CS 368. 3 DIMENSIONAL GAME DEVELOPMENT

THREE CREDITS

An overview of simulation, engine-based, and real-time game systems with a focus on theory, creation and animation of three-dimensional models used within a game context. (Cross-listed with IM 368)

Prerequisite: CS 366 (IM 350) or CS 367.

CS 370. SPECIAL PROJECTS

VARIABLE CREDIT

The definition, formulation, programming, solution, documentation, and testing of a sophisticated problem or project under close faculty supervision. The project will be drawn from industry, business, or governmental agency in the greater Wilkes-Barre area. The student will be expected to present a written report at the conclusion of the project. This course may be taken as part of the Cooperative Education Program. A student may apply at most six credits of CS 370 and a maximum of twelve credits in CS 370 and Cooperative Education 399 toward the graduation requirement in the computer science major. *Prerequisite: Senior standing and approval of department chairperson.*

CS 383. WEB DEVELOPMENT II

THREE CREDITS

An introduction to the development of dynamic, database-driven sites, including active server pages, PHP, authentication, session tracking and security, and the development of shopping cart and portal systems. *Prerequisite: CS 283, CS 325.*

CS 391. SENIOR PROJECTS I

ONE CREDIT

Design and implementation of a software project under the direction of a faculty member. Students will normally work in teams. Detailed requirements and design documents are required, and will be presented at the end of the semester. *Prerequisite: CS 334 or CS 325. Offered every fall.*

CS 392. SENIOR PROJECTS II

TWO CREDITS

Design and implementation of a software project under the direction of a faculty member. Students will normally work in teams. Production of a finished product, including software and documentation, is required. There will be an open-forum presentation of the project at the end of the semester. *Prerequisite: CS 391. Offered every spring.*

CS 395-396. INDEPENDENT STUDY IN COMPUTER SCIENCE

VARIABLE CREDIT

Individual study in a chosen area of computer science under the supervision of a faculty member. May be repeated for credit. *Prerequisite: Approval of department chairperson.*

CS 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures. *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

CS 198/298/398. TOPICS IN COMPUTER SCIENCE

VARIABLE CREDIT

Study of one or more special topics in computer science. May be repeated for credit, if involving different topics. *Prerequisite: Varies with selected topics. Offered when demand warrants.*

DANCE COURSES

DAN 100. DANCE APPRECIATION: COMPREHENSIVE DANCE FORMS
THREE CREDITS

A general introduction to the various types of dance: (classical ballet, modern, jazz, and theatrical). This course is appropriate for the person who has had absolutely no participatory experience in this art form. It is designed to cultivate especially an appreciation of the aesthetic dimensions of dance, perceived for the first time as an opportunity for personal physical engagement.

DAN 120. TAP DANCE
THREE CREDITS

An introduction to the fundamentals of tap dancing, with special reference to the techniques of great American artists.

DAN 150. CLASSICAL DANCE FOR THE STAGE
TWO CREDITS

An introductory course entailing lecture/demonstration and studio exercises designed to explore the movement dynamics appropriate to dramatic presentation. Special emphasis is given to the development of sound classical ballet technique (per a modified Vaganova methodology) as the foundation for the cultivation of poise, stage presence, kinetic flexibility, and physical stamina – valuable qualities for the acting profession. Particular attention is given to pantomime and non-dance movement such as fencing and hand-to-hand combat in a stage-space setting.

DAN 153. POINTE I
TWO CREDITS

Basic techniques of ballet on pointe; introduction to variations from the classical repertory. This course is designed to help the female dancer make the transition from demi-pointe dancing.

DAN 157. PAS DE DEUX I
TWO CREDITS

The basic techniques required for male and female dancers to perform as a unit. This course is intended to provide a gradual and individually-paced introduction into the techniques as well as the psychology of classical ballet partnering. *Prerequisite: Audition.*

DAN 210. MODERN DANCE I
THREE CREDITS

This course builds on the foundation provided the student in DAN 110, elaborating further on the fundamentals of modern dance according to the Graham method. It is designed to provide an experimentation structured and professionally informed exploration of the art of modern dance. Its objective is the acquisition, at each individual student's pace, of the qualities of grace, physical stamina, muscular and ligament flexibility, and movement musicality.

DAN 211. MODERN DANCE II
THREE CREDITS

This course is the sequel to DAN 210, providing the truly committed student with the opportunity, at an intermediate level, for an even more substantive and diversified participatory engagement in modern dance. It engages the student/dancer in highly individualized movements based on personalized, multi-faceted and changing artistic standards. *Prerequisite: DAN 210 or permission of instructor.*

DAN 220. ADVANCED TAP
THREE CREDITS

The acquisition and development of advanced tap dance technique through drills and exercises and the appreciation of the rich history of tap dance in America through lecture, video/demonstrations, and readings. *Prerequisite: DAN 120 or permission of instructor.*

DAN 230. JAZZ DANCE I
THREE CREDITS

The first course involving an intensive and progressively challenging engagement in jazz technique and performance utilizing a fusion of methodologies all of which are ballet based. This course is designed for the student with limited dance experience, still having a basic understanding of ballet terminology and body placement. Core skills as well as body conditioning are emphasized, investigating different genres within the context of the jazz discipline. Classical Jazz, Musical Theatre

Course Descriptions

Jazz, Musical Video style jazz and lyrical styles of jazz will be introduced.

DAN 231. JAZZ DANCE II THREE CREDITS

The second in the progressively demanding courses in the four-semester sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills by utilizing a fusion of methodologies, all of which are ballet based. Through the study of jazz dance techniques as systematized using various methods, students are encouraged to perceive the nature of dance movement and to acquire some proficiency in its application to stage performance and achieve greater awareness of body structure and function. Select choreographers, directors, and teachers will play a significant role in the material chosen for this course. *Prerequisite: DAN 230 or permission of instructor.*

DAN 250. CLASSICAL BALLET I THREE CREDITS

The first course in the study of the theory and techniques of Russian classical ballet, as pursued in the curricula of the schools of the Bolshoi and Kirov Ballets and derived from the methodology devised by Agrippina Vaganova and Cecchetti.

DAN 251. CLASSICAL BALLET II THREE CREDITS

This course is designed to build on the foundation acquired in DAN 250 for an intensive intellectual, emotional, and physical engagement in the study of the theory and techniques of Russian classical ballet, as pursued in the curricula of the schools of the Bolshoi and Kirov Ballets and derived from the methodology devised by Agrippina Vaganova and Cecchetti. *Prerequisite: DAN 250 or permission of instructor.*

DAN 261. DANCE IMPROVISATION I TWO CREDITS

Designed to develop creativity in dance by exercising the student in movement in free forms while training the body as a disciplined instrument. Exploration of the broad range of dance movement in a choreographical context is intended to introduce the student into the elementary aspects of dance perception and design.

DAN 310. MODERN DANCE III THREE CREDITS

This is an advanced course in modern dance, affording the student the opportunity to engage, experientially, in some of the more technically and choreographically demanding and innovative aspects of modern dance. In the exploration of these movement elaborations, the aesthetic vision of the choreographers may be perceived, especially in terms of how they adapted much of the disciplined technique of classical ballet in an exciting syncretic fusion. *Prerequisite: DAN 211 or permission of instructor.*

DAN 311. MODERN DANCE IV THREE CREDITS

An advanced level course in Modern Dance technique. In addition to continued study of the concepts from DAN 310, specific contemporary styles will be explored.

DAN 320. DANCE COMPOSITION THREE CREDITS

An introduction to the craft of making dance works. Class emphasis is on developing movement material, structuring solid dance works and documenting the creative process. A writing component is required. *Prerequisite: DAN 120 or permission of instructor.*

DAN 330. JAZZ DANCE III THREE CREDITS

Jazz Dance III is third in the progressively demanding courses in the four-semester elective sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills using various methodologies, all of which are ballet based. Students at this level are expected to have a greater understanding of ballet terminology and body placement. Emphasizing a blending of theory and practice, this course is intended to encourage students to explore another dimension of personal fulfillment while cultivating realistically their potential as physically coordinated, aesthetically sensitive, poised and graceful persons, with a deeper understanding of dance as

recreation vs. dance in a professional environment relating to theatre studies. Within this course the student will investigate the intent of the choreographer/director as well as experience the choreographic process itself. Creativity, logic and reasoning skills will be enhanced, with the intention of aiding the student in transferring these aspects to their chosen major. Select choreographers, directors, and teachers will play a significant role in the material presented, with the expectation of the student delving deeper into the creative process of dance. *Prerequisite: DAN 231 or permission of instructor.*

DAN 331. JAZZ DANCE IV
THREE CREDITS

The fourth level in the progressively demanding courses in the four-semester elective sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills per various methodologies, all of which are ballet based. At this level the student is expected to have an adequate knowledge of ballet terminology, body placement, and body conditioning, with a focus on transferring these skills to choreography, improvisation, class structure and the creative process itself. This course is intended to take the dance student to a higher level of physical and creative awareness. A greater understanding of physics, as it relates to dance, kinesiology, anatomy, and the processing of more intricate exercises and combinations are a major focus. Once again, select choreographers, directors and teachers will play a significant role in the material presented. A deeper understanding of a person's creative potential will be investigated, using life experiences of selected persons. *Prerequisite: DAN 330 or permission of instructor.*

DAN 350. CLASSICAL BALLET III
THREE CREDITS

This course is designed to build on the foundation laid in DAN 250-251. Course presentation will employ lecture/demonstration and studio exercises designed to explore the movement dynamics which are especially appropriate to the classical dance genre. The objective of this course is the continued individually paced development of the qualities of grace, physical stamina, muscular and ligament flexibility, and movement musicality, especially via direct and active engagement in classical dance technique. *Prerequisite: DAN 251 or permission of instructor.*

DAN 351. CLASSICAL BALLET IV
THREE CREDITS

This course is designed to continue to build on the foundation laid in DAN 250-251, 350. Special emphasis will be given in this course to the development of sound classical ballet technique (per a modified Vaganova methodology) as the foundation for the cultivation of poise, stage presence, kinetic flexibility, and physical stamina. *Prerequisite: DAN 350 or permission of instructor.*

DAN 198/298. TOPICS
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses.

EARTH AND ENVIRONMENTAL SCIENCES COURSES

EES 105. PLANET EARTH
THREE CREDITS

The nature of our planet and how it works are examined in the context of Earth as a constantly changing dynamic system. An emphasis on global scale processes and the interaction of humans and their physical environment is coupled with in-depth coverage of how science is done and the scientific principles that influence our planet, its rocks, mountains, rivers, atmosphere and oceans. Major subtropical areas in the Planet Earth series may include geology (Forces of Geologic Change), oceanography (The Restless Ocean), astronomy (The Cosmic Perspective), and the relationship between people and their physical surroundings (The Global Environment). Intended for students who are not majoring in science, engineering, prepharmacy, nursing, or B.S. programs in mathematics or computer science. Two hours lecture and two hours laboratory per week. Fee: \$95. *Prerequisite: No previous background in science or college-level mathematics is required.*

EES 202. BIOGEOCHEMISTRY
THREE CREDITS

Fundamentals of the circulation of materials through the earth's air, soils, waters, and living organisms are examined from the perspective of introductory chemical principles. Global cycles of

Course Descriptions

water, carbon, nitrogen, phosphorus, and sulfur are investigated in detail with emphasis on the roles of microorganisms, chemical equilibrium, and oxidation-reduction processes in biogeochemical cycling. Laboratory focuses on (1) student designed projects to gather data which illustrate key concepts in chemical weathering processes in aqueous solutions, oxidation-reduction reactions, and microbial mediation of elemental cycling and (2) building problem solving skills. Two hours lecture and three hours laboratory per week. Fee: \$95. *Prerequisite: CHM 115.*

EES 210. GLOBAL CLIMATIC CHANGE THREE CREDITS

The nature and function of earth's global climate are examined from a unified system perspective. Major questions focus on scientific versus public understanding of trends in global temperature, precipitation, and sea level. The course emphasizes negative and positive feedback processes that force key changes in the earth's climate system: past, present, and future. Topics include fundamentals of global and regional heat and water balance; the role of elemental cycles in controlling climate (e.g. the carbon cycle); descriptive climate classification; long-term, short-term, and catastrophic climatic change (e.g. ice ages and bolide impacts); and human effects on climate (e.g. enhanced greenhouse, rising sea level). This course integrates a scientific understanding of climatic change and explores contemporary social and economic policy responses to change scenarios.

EES 211. PHYSICAL GEOLOGY FOUR CREDITS

Description, analysis, and laboratory studies of earth materials, structures, and processes, including earth's surface, interior, age, and origin. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only).

EES 212. HISTORICAL GEOLOGY THREE CREDITS

A study of the geologic record of the earth's formation and evolution, including methods of dating. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisite: EES 211 or permission of instructor.*

EES 218. ENVIRONMENTAL ETHICS THREE CREDITS

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism, and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as PHL 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

EES 230. OCEAN SCIENCE FOUR CREDITS

An interdisciplinary approach to the study of the fundamentals of oceanography emphasizing physical, chemical, and biological interrelationships. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only).

EES 240. PRINCIPLES OF ENVIRONMENTAL ENGINEERING & SCIENCE FOUR CREDITS

A study of physical, chemical, and biological components of environmental systems and a discussion of processes involved in water quality management, air quality management, waste management, and sustainability. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only). *Prerequisite: MTH 105 or higher.*

EES 242. ENVIRONMENTAL HEALTH FOUR CREDITS

To provide students with an understanding of man's impact on the environment and how those impacts can be controlled or mitigated. Students completing this course should be able to recognize environmental problems and understand control and preventative measures. Three hours lecture, three hours laboratory. Fee: \$95. *Prerequisites: Introductory physics and chemistry. Students who have taken EES 240 will be admitted only with the consent of the instructor.*

EES 244. INSTRUMENTAL ANALYSIS**FOUR CREDITS**

Primarily a laboratory course in the applications of instrumental techniques for obtaining quantitative information about the composition and structure of matter. Lab work includes chromatographic, spectroscopic and electrochemical techniques. Emphasis is placed on the use of computers for data acquisition, management and analysis. The course serves students in biochemistry, chemistry, biology, geology, health-related sciences, engineering and environmental sciences who desire experience with these techniques and how they are applied to problem solving. Two 1-hour lecture and one 3-hour laboratory sessions per week. Fee \$95. (Cross-listed with CHM 246/248). *Prerequisite: CHM 116.*

EES 251. SYNOPTIC METEOROLOGY**FOUR CREDITS**

Topics include surface and upper-air weather systems, weather phenomena, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Three hours lecture and three hours laboratory. Fee: \$95. (For CS/Engineering/Math/Science majors only).

EES 261. REGIONAL GEOGRAPHY**THREE CREDITS**

Topics covered include maps and charts, and basic elements of physical, cultural, historical, and economic geography as applied to specific geographic regions. Three hours lecture.

EES 271. ENVIRONMENTAL MAPPING I: THE GLOBAL POSITIONING SYSTEM**THREE CREDITS**

An introduction to the Global Positioning System (GPS) and environmental mapping concepts and applications. Topics include coordinate systems, reference ellipsoids, geodetic datums, and map projections. Practical field use of GPS is emphasized within the context of understanding system components, satellite signal processing, selective availability, base station differential correction, and data export to a geographical information system. Two hours lecture and three hours laboratory. Fee: \$95.

EES 272. ENVIRONMENTAL MAPPING II: GEOGRAPHIC INFORMATION SYSTEMS**THREE CREDITS**

An introduction to Geographic Information Systems (GIS). Topics include history of GIS, relational database management, data input/output, quality control, integration with CAD and remote sensing technologies, data analysis, and GIS as a decision support tool. Laboratory component emphasizes practical skills in GIS data management and analysis. Two hours lecture and three hours laboratory. Fee: \$95.

EES 280. PRINCIPLES OF ASTRONOMY**FOUR CREDITS**

Topics include orbital mechanics, results of planetary probes, spectra and stellar evolution, and cosmology. Three hours lecture and three hours laboratory. Fee: \$95. (For science majors only)

EES 302. LITERATURE METHODS**ONE CREDIT**

The nature and use of important sources of information in earth and environmental sciences are developed through retrospective searching methods and current awareness techniques. The use of computer data bases, the design of personal computer information files, information search strategies, and manual search procedures are included. Literature preparation for Senior Projects (EES 391-392). *Prerequisite: Junior standing.*

EES 304. ENVIRONMENTAL DATA ANALYSIS**TWO CREDITS**

To acquaint students majoring in earth and environmental sciences with the techniques and methods of data acquisition and analysis, including environmental sampling methodology and data management. Emphasis will be placed on examination of real data sets from various areas of the earth and environmental sciences with particular emphasis placed on using and applying graphical and statistical procedures used in EES 391-392 (Senior Projects). *Prerequisite: MTH 150 and junior standing or permission of instructor.*

Course Descriptions

EES 341. FRESHWATER ECOSYSTEMS

THREE CREDITS

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$95 (same as BIO 341) *Prerequisites: EES 211 or 240 or BIO 121-122, or permission of instructor. Offered in alternate years.*

EES 343. MARINE ECOLOGY

THREE CREDITS

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$95. (Same as BIO 343). *Prerequisites: EES 230 (Ocean Science) and BIO 121-122 or permission of instructor.*

EES 344. ECOLOGY

FOUR CREDITS

Ecology examines contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$95. (Same as BIO 344). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

EES 366. FIELD BOTANY

THREE CREDITS

This is a specialized summertime field course which emphasizes a taxonomic, phylogenetic, and ecological survey of higher plants indigenous to Northeastern Pennsylvania. Due to the extensive field work, enrollment is somewhat more restricted than in other courses; therefore, written permission from the instructor is the prime prerequisite of those upperclassmen wishing to register for the course. (Same as BIO 366). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

EES 370. GEOMORPHOLOGY

THREE CREDITS

Land forms, their evolution, and the human role in changing the surface of the earth, utilization of geologic and hydrologic information, and field investigations. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 211.*

EES 381. MINERALOGY

THREE CREDITS

Ionic structure of minerals; physical properties and external form as consequences of structure; determination of minerals by physical tests. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 211 and CHM 115.*

EES 382. PETROLOGY

THREE CREDITS

A study of the identification, classification, composition, genesis, and alteration of igneous, sedimentary, and metamorphic rocks and their relation to crustal processes and environments. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 381.*

EES 391. SENIOR PROJECTS I

ONE CREDIT

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in EES.*

EES 392. SENIOR PROJECTS II

TWO CREDITS

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be

considered in the design. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EES 391 or permission of the instructor.*

EES 394. FIELD STUDY
ONE TO THREE CREDITS

On-site study of an earth or environmental problem or situation incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour lecture, plus field trip(s). Fee: \$90. *Prerequisites: EES 211 and EES 240.*

EES 395-396. INDEPENDENT RESEARCH I & II
ONE TO THREE CREDITS EACH

Independent study or research of a specific earth or environmental science topic at an advanced level under the direction of a departmental faculty member. For three credits, a defensible research paper is required. *Prerequisites: Upper-class standing and approval of academic advisor, research advisor, and department chairperson.*

EES 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures). *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EES 198/298/398. TOPICS IN EES
VARIABLE CREDIT

Departmental courses on topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. May be repeated for credit. *Prerequisite: Varies with topic studied.*

EES 498. ADVANCED TOPICS
ONE TO THREE CREDITS

Departmental courses on advanced topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. Available for either undergraduate or graduate credit. May be repeated for credit. *Prerequisite: Senior or graduate standing.*

ECONOMICS COURSES

EC 101. PRINCIPLES OF ECONOMICS
THREE CREDITS

Presents basic economic problems and shows how these problems are solved in a free enterprise economy; the effects of the increasing importance of the economic role of government; the nature of national income and the modern theory of income determination; how money and banking, fiscal policy, and monetary policy fit in with income analysis and keep the aggregate system working. The course deals mainly with macroeconomic problems.

EC 102. PRINCIPLES OF ECONOMICS II
THREE CREDITS

Based upon a broad microeconomic foundation concentrating on such units as the consumer, the firm, and the industry. A general view of the free market system; the economics of the firm and resource allocation under different market structures; production theory; pricing and employment of resources; economic growth and development.

EC 230. MONEY AND BANKING
THREE CREDITS

A study of money, credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent developments in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships. (Cross listed with BA 230.)

Course Descriptions

EC 320 THE ECONOMICS OF CRIME THREE CREDITS

A study of the economic approach to crime and crime prevention. The course will apply economic analysis to such areas of interest as deterring crime, the impact of criminal activity, the allocation of crime-fighting resources, crimes against people, property crime, and victimless crimes. Controversial issues such as the desirability of the death penalty and gun control legislation will be featured. *Prerequisite: EC 102*

EC 330. PUBLIC FINANCE THREE CREDITS

Fundamental principles of public finance; government expenditures; revenue; financial policies and administration; taxation; principles of shifting and incidence of taxation; public debts and the budget; fiscal problems of federal, state, and local government; the relation of government finance to the economy. *Prerequisites: Ec 101 and 102.*

EC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a full-time faculty member. A research paper at a level significantly beyond a term paper is required. *Prerequisites: Ec 101 and 102.*

EC 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EC 198/298/398. TOPICS VARIABLE CREDIT

Lectures on current issues and developments in economics.

EDUCATION COURSES

ED 190. EFFECTIVE TEACHING WITH FIELD EXPERIENCE THREE CREDITS

This course emphasizes concepts and skills for effective teaching. These skills include instructional techniques, library research, writing, and field experience. Students will be involved in their first 30-hour practicum experience. *Departmental permission is required.*

ED 200. EDUCATIONAL PSYCHOLOGY

This course has been replaced with ED 180. See Course Description for ED 180.

ED 210. TEACHING STUDENTS WITH SPECIAL NEEDS

This course is now offered as EDSP 210. See course description for EDSP 210.

ED 215. INTEGRATING TECHNOLOGY INTO THE CLASSROOM

This course has been replaced by ED 191. See Course Description for ED 191.

ED 220. TEACHING CULTURALLY AND LINGUISTICALLY DIVERSE LEARNERS (OPO COURSE) THREE CREDITS

This course will address the urgent need for multicultural education by covering topics such as racism, bias, and cultural information in order to help students develop strategies for creating within their classrooms knowledge of, appreciation of, and respect for diversity. Teaching strategies for English Language Learners and issues relevant to ELLs, particularly immigration and globalization, will be discussed. The course will also help students develop the knowledge base and instructional skills necessary to teach their future students basic world geography in order to understand the cultural/political effects that geography has had on the diverse cultural groups included in the American educational system. *Prerequisite: ED 190. Effective Teaching.*

ED 263. CHILD DEVELOPMENT
TWO CREDITS

This course is designed for students to understand developmental patterns of change: physical, cognitive, and psychosocial areas for each stage of development (birth to age 5). Multiple influences on the development and learning will be studied, including biological, psychological, and sociological, cultural, familial, environmental, gender, family, and community, language differences, brain development, and health, nutrition, and safety. Students will observe and record children's behavior in their field experience. *Prerequisite: Completion of ED 190. Effective Teaching. Departmental permission is required.*

ED 310. HEALTH, PHYSICAL EDUCATION AND SAFETY
THREE CREDITS

This course is a study of methods and materials appropriate for teaching health, physical education, and safety. Emphasis is on understanding the developmental levels, needs, and interests of children in these areas from infancy to early adolescence. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 321. LITERACY FOUNDATIONS I
THREE CREDITS

This course will provide students with basic concepts of literacy instruction: emphasis on the nature of literacy development; the nature of the learner; and literacy development as an interactive process. This course requires completion of a 30-hour field experience. Departmental permission is required. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program. Departmental permission is required.*

ED 322. LITERACY FOUNDATIONS II
THREE CREDITS

The course is designed to investigate and analyze major instructional methods for teaching literacy. The material is based upon current research theories and findings and includes topics recognized by theorists and practitioners as being most critical to developing effective school literacy programs. The course will include literature based on reading programs, classroom organization, and assessment. The class will also require students to become more familiar with Pennsylvania standards and anchors and apply that knowledge to their planning. *Prerequisite: ED 190. Effective Teaching, admission to the Teacher Education Program, and successful completion of Ed 321.*

ED 323. DIFFERENTIATED READING
THREE CREDITS

The purpose of this course is to develop knowledge and skill in classroom-based reading assessment to diagnose students' reading strengths and needs. A range of assessment devices and their use in the diagnosis of reading difficulties will be studied. An analysis of data and the determination of instructional interventions will be emphasized. *Prerequisites: Successful completion of Ed 190 Effective Teaching, ED 321, and admission to the Teacher Education Program.*

ED 324. CHILDREN'S AND ADOLESCENT LITERATURE
THREE CREDITS

This course will involve students in actively reading a wide range of children's and adolescent's literature accompanied with an analysis of literary elements and genre. Emphasis will be placed on instructional methods that incorporate the use of literature across the curriculum with attention given to the careful selection of books to match the instructional levels of readers. *Prerequisites: Successful completion of Ed 190. Effective Teaching, ED 321. Literacy Foundations I, and admission to the Teacher Education Program.*

ED 325. APPLIED READING STRATEGIES
THREE CREDITS

This course is designed to extend the foundational knowledge of reading instruction learned in ED 321. Literacy Foundations I with an emphasis on the application of this knowledge in the design of instructional planning and delivery. Application of the course content is demonstrated in the teaching of children enrolled in the Wilkes University Reading Academy or in a regional school. The ability to develop effective reading plans and activities and apply these strategies with children in an interactive setting is the essence of this course. *Prerequisites: Successful completion of ED 321. Literacy Foundations I, admission to the Teacher Education Program, and instructor permission.*

Course Descriptions

ED 330. MATHEMATICS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

This course is designed to present a study of research, concepts, and methodologies pertinent to the teaching of mathematics from the PK through 4th grade levels. In this course emphasis is placed on 1) the knowledge necessary to guide children to become mathematically literate; 2) the implementation of planning and instructional techniques based on the NCTM Curriculum Standards, the PA Academic Standards, and the PDE Assessment Anchors, as well as principles of the NAEYC; 3) the use of concrete manipulatives to facilitate the learning process. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Committee.*

ED 338. TEACHING ESL: MATERIALS AND METHODOLOGY THREE CREDITS

This three-credit course will address the methodology and materials needed for professional educators who wish to teach English as a Second Language to non-native speakers, grades K-12. Students will explore the mechanics involved in second language acquisition and will apply that knowledge in developing instructional strategies appropriate for the ESL classroom. Students will examine cross-cultural information in order to develop an understanding of the richly diverse members of the ESL classroom, with the goal of creating a supportive and safe classroom environment, free from cultural or political bias, in which English usage is developed and acculturation is supported. Students will review current ESL instructional materials and software. All classroom activities are designed to develop the students' knowledge of and respect for diversity while enhancing their instructional skills. A fifteen-hour field experience in ESL is incorporated into this course. *Prerequisite: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 341. LANGUAGE ARTS (OPO COURSE) THREE CREDITS

The purpose of this course is to inform and actively involve prospective teachers in the most developmentally effective methods for teaching language arts at the early childhood and elementary school levels. The course focuses on the language arts skills of writing, speaking, listening, viewing, and reading with emphasis on the writing process, literature-based lesson planning, and integrated language arts approaches. The incorporation of children's literature and the study of various genres are fundamental to this course. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 345. ASSESSMENT IN EDUCATION THREE CREDITS

This course will address a number of different professional areas both of theoretical importance and practical significance. Assessment concepts will provide a framework to critically analyze any assessment, whether commercial or teacher-made. Practical skills will enable the pre-service teacher to assess a wide variety of learning goals and teaching experiences within cognitive, affective, and psychomotor domains. Finally, these assessment concepts and skills will be examined within the context of Pennsylvania Academic Standards and the Pennsylvania mandated assessment (PSSA). *Prerequisites: Completion of ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 350. THE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

This course is designed as an exploration of the importance of the arts in the development of children in the cognitive, affective, and psychomotor domains. Students will discover how the arts are directly related to our natural and manmade environments and learn specific teaching methodologies that foster creativity and the integration of art with other subject areas. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 360. SOCIAL STUDIES IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

In this course, students will gain an understanding for teaching social studies at the early childhood and elementary school levels. Students will develop their personal philosophy of the purpose of social studies, review National curriculum guidelines and Pennsylvania state standards, and explore a variety of teaching strategies. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 370. SCIENCE IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
THREE CREDITS

This course presents a study of the methods and curriculum for teaching science to young children. Emphasis is placed on instruction that is activity oriented and leads to the development of science process skills, problem-solving strategies, and well-developed conceptual frameworks. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 380. CONTENT AREA LITERACY
THREE CREDITS

This course is designed to provide literacy instruction theory and skills for teaching content area subjects in grades 4 through 12. The course's strategy-based approach includes developing vocabulary, evaluation reading materials, constructing meaning in texts, developing comprehension skills, and learning techniques for the adaptation and development of study materials to address the diverse reading levels of students in middle level and secondary schools. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

ED 385. CLASSROOM MANAGEMENT
THREE CREDITS

This course is designed for students to establish and maintain a positive social context for learning in Pre-K through Grade 4 education by applying developmentally appropriate motivational and management strategies. Researches and theories will be identified, analyzed, evaluated, and demonstrated. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.*

EDSP 388 INCLUSIONARY PRACTICES
THREE CREDITS

This course is designated for student teachers in ED 390 to apply knowledge of accommodations and adaptations for students with disabilities in an inclusive academic setting. Emphasis will be placed on literacy and cognitive skill development for students with various exceptionalities. *Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program. Corequisite: will be completed in conjunction with ED 390.*

ED 390. STUDENT TEACHING WITH SEMINAR [PK-4], [4-8], [7-12], AND [K-12] (OPO COURSE)
TWELVE CREDITS

Student teaching is the capstone learning experience for prospective teachers. Student teachers are assigned to work with experience classroom teachers. Under supervision, they assure responsibility for teaching and for managing a classroom. Conference are regularly scheduled with cooperating teachers and college supervisors. In addition to fieldwork, students attend regularly scheduled seminars designed to facilitate the integration of theory and practice.

As a part of the seminar experience the student teachers receive workshop training in areas as follows: classroom management strategies and techniques; health and emergency guidelines; legal, ethical, and professional issues; and career and certification procedures. In addition, the Gardners' *Issues in Education Forum Series* offers candidates workshops and lectures based on current topics in teaching and learning. Fee: \$70. *Prerequisites: ED 190. Effective Teaching, admission to the Teacher Education Program, and completion of ED course requirements. Corequisite: will be completed in conjunction with EDSP 388. Departmental permission is required.*

ED 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Approval of department chairperson is required.*

ED 198/298/398. TOPICS IN EDUCATION
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses.

SECONDARY METHODS IN EDUCATION
FOUR CREDITS

A study of instructional methodology in concentration areas at the secondary level. 30 hours practicum.
ED 300—Foreign Languages (G 7-12)

Course Descriptions

ED 351—Communication (G 7-12)
ED 371—Sciences (G 7-12)
ED 381—Social Studies (G 7-12)
ENG 393—English (G 7-12)
MTH 303—Mathematics (G 7-12)

Departmental permission is required.

SPECIAL EDUCATION COURSES

EDSP 225. SPECIAL EDUCATION METHODOLOGY I WITH FIELD EXPERIENCE (OPO COURSE) THREE CREDITS

This course is designed to address the development, implementation, and monitoring of individualized management, instruction, curricular, and environmental strategies and adaptations for students with special needs. Pedagogical recommendations and research-based effective teaching practices are reiterated from prerequisite courses. Emphasis is placed on a needs based model incorporating the cognitive, language, attentional, affective, physical, and sensory needs of higher incident populations (learning disabilities, mild mental retardation, speech disorders, and behavioral challenges) within included settings, resource room, segregated, and learning support environments. A field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content. All education students will take this class. *Prerequisites: ED 190. Effective Teaching and EDSP 210. Teaching Students with Special Needs. Departmental permission is required.*

EDSP 226. SPECIAL EDUCATION METHODOLOGY II WITH FIELD EXPERIENCE THREE CREDITS

This three-credit course is designed to address the development, implementation, and monitoring of individualized management, instructional, curricular, and environmental strategies and adaptations for students with special needs. Pedagogical recommendations and research based effective teaching practices are reiterated from prerequisite courses. Emphasis is placed on a needs based model incorporating the cognitive, language, attentional, affective, physical, and sensory needs of lower incident populations (multiple disabilities, autism, hearing and vision impairments, and orthopedic and health conditions) within included settings, resource room, learning support, and segregated environments. A field experience component facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content. *Prerequisites: ED 190. Effective Teaching and EDSP 210. Teaching Students with Special Needs. Departmental permission is required.*

EDSP 227. BEHAVIORAL MANAGEMENT IN SPECIAL EDUCATION WITH FIELD EXPERIENCE THREE CREDITS

This three-credit course will assist pre-service teachers in developing a working framework of social, behavioral, environmental, individualized, and collective management techniques. Techniques practiced in the course will focus on approaches for classroom organization, constructive discipline, and proactive responses to intervention, including applied behavior analysis and functional behavioral assessments. A field experience component facilitates direct interaction with learners with special needs, supplemented by cooperative discussions of experiential applications to course content. *Prerequisites: ED 190. Effective Teaching and EDSP 210. Teaching Students with Special Needs. Departmental permission is required.*

EDSP 300. SPECIAL EDUCATION ASSESSMENT AND EVALUATION THREE CREDITS

This three-credit course will provide direct experience with selecting, administering, and interpreting formal and informal assessment measures for analysis of student learning profiles. Assessments will include ecological inventories, norm-referenced, performance-based, and curriculum-based testing, standardized achievement and intelligence measures, and vocational and transition-related evaluations. Cooperative discussions and use of case studies will focus on instructional decision-making based upon student learning profiles.

Prerequisites: ED 190. Effective Teaching and admission to the Teacher Education Program.

ELECTRICAL ENGINEERING COURSES

EE 211. ELECTRICAL CIRCUITS AND DEVICES

THREE CREDITS

Various techniques for circuit analysis of resistive networks. Inductance and capacitance. Sinusoidal steady-state analysis and power calculations. Introductory principles of three-phase circuits, electronic circuits, operational amplifiers, filters, digital logic circuits, transient circuits, and energy conversion schemes. *Corequisites: EE 283, Mth 112.*

EE 241. DIGITAL DESIGN

THREE CREDITS

The electronics of digital devices, including Bipolar TTL and CMOS; digital logic functions, such as AND, OR, INVERT; Boolean algebra; combinational logic; minimization techniques; digital storage devices; synchronous sequential design; state machines; programmable logic. Three one-hour lectures and one two-hour lab per week. Fee: \$80.

EE 251. ELECTRONICS I

THREE CREDITS

Circuit concepts involving nonideal dependent and constant voltage and current sources. Operational amplifiers. Development of physics, operating principles, and terminal characteristics of diodes, bipolar and field-effect transistors. Development of typical design applications and other considerations like conception, analysis, simulation, interference, small and large signal modeling, power, temperature, and frequency effects. Three hours lecture per week. *Prerequisite: EE 211.*

EE 252. ELECTRONICS II

FOUR CREDITS

Multi-transistor amplifiers. Building blocks of an operational amplifier. Frequency response and bandwidth of BJT, FET, and operational amplifiers. Filters. Power amplifiers. Feedback circuits. Three one-hour lectures and one three-hour lab per week. Fee: \$80. *Prerequisite: EE 251.*

EE 271. SEMICONDUCTOR DEVICES

THREE CREDITS

Basic properties of semiconductors and their conduction processes, with special emphasis on silicon and gallium arsenide. Physics and characterizations of p-n junctions. Homojunction and heterojunction bipolar transistors. Unipolar devices including MOS capacitor and MOSFET. Microwave and photonic devices. *Prerequisites: Physics 202, Chm 115.*

EE 283. ELECTRICAL MEASUREMENTS LAB

ONE CREDIT

A laboratory for the development of measurement techniques and use of electrical instruments for the measurement of various electrical quantities. One two-hour laboratory per week. Fee: \$80. *Corequisite: EE 211.*

EE 298. TOPICS IN ELECTRICAL ENGINEERING

ONE TO THREE CREDITS

Selected topics in the field of electrical engineering. *Prerequisite: Sophomore standing and permission of instructor.*

EE 314. CONTROL SYSTEMS

THREE CREDITS

Laplace transforms and matrices. Mathematical modeling of physical systems. Block diagram and signal flow graph representation. Time-domain performance specifications. Stability analysis; Routh-Hurwitz criterion. Steady state error analysis. Root-locus and frequency response techniques. Design and compensation of feedback systems. Introductory state space analysis. Two hours lecture and one two-hour laboratory per week. *Prerequisite: EE 211 and EGR 214.*

EE 325. ENERGY CONVERSION DEVICES

THREE CREDITS

Magnetic circuit calculations. Principle of operation and applications of transformers, DC machines, synchronous machines, and induction motors. Applications of power electronics. Direct energy conversion schemes. *Prerequisite: EE 251*

Course Descriptions

EE 337. ENGINEERING ELECTROMAGNETICS I FOUR CREDITS

Waves and phasors; concepts of flux and fields; transmission line, Smith chart, and impedance matching; vector calculus; Maxwell's equations for electrostatic and magnetostatic fields. Three hours of lecture and one two-hour laboratory per week. Fee: \$80. *Prerequisites: EGR 214, PHY 202.*

EE 339. ENGINEERING ELECTROMAGNETICS II FOUR CREDITS

Maxwell's equations for time-varying fields; boundary conditions and boundary value problems; plane wave propagation; reflection, refraction and wave guides; stripline; s-parameters and microwave devices; directional coupler, attenuator; radiation and antennas; satellite communication systems and radar sensors. Three hours of lecture and one three-hour laboratory per week. Fee: \$75. *Prerequisite: EE337*

EE 342. MICROCOMPUTER OPERATION AND DESIGN THREE CREDITS

Microprocessor architecture, microcomputer design, and peripheral interfacing. Microprogramming, software systems, and representative applications. Associated laboratory experiments consider topics such as bus structure, programming, data conversion, interfacing, data acquisition, and computer control. Two hour lecture and one two-hour laboratory a week. Fee: \$80. *Prerequisite: EE 241.*

EE 345. COMPUTER ORGANIZATION THREE CREDITS

Number representation, digital storage devices and computational units, bus structures; execution sequences and assembly language concepts; control units with horizontal and vertical microcoding; addressing principles and sequencing; microprocessors; basic input and output devices; interrupts; survey of RISC principles including pipelined execution. *Prerequisite: EE 241.*

EE 346. COMPUTER ARCHITECTURE THREE CREDITS

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest "supercomputers." (Same as CS 330) *Prerequisite: CS 230 or EE 342.*

EE 373. CAD FOR MICROFABRICATION ONE CREDIT

Simulation tools in transistor process design and extraction of device parameters. Examples covered include the following technologies Bipolar, NMOS, CMOS, and BICMOS. Process design project for a bipolar junction transistor. One two-hour lecture laboratory a week. *Prerequisite: Junior engineering standing. Corequisite: EE 381.*

EE 381. MICROFABRICATION LAB THREE CREDITS

The theoretical and practical aspects of techniques utilized in the fabrication of bipolar junction transistors (BJTs). Includes crystal characteristics, wafer cleaning, oxidation, lithography, etching, deposition, diffusion, metallization, process metrics, and device characterization. One-and-a-half hour lecture and one, four-hour lab a week. Fee: \$80. *Prerequisite: Junior engineering standing.*

EE 382. MODERN COMMUNICATION SYSTEMS FOUR CREDITS

Introduction to probability and statistics and their use in communication systems. Fundamental properties of signals, principles of signal processing, multiplexing, modulator/demodulator design, noise and its effects. Sampling theorem and Nyquist's criteria for pulse shaping; signal distortion over a channel; line coding, signal to noise ratios, and performance comparison of various communication systems. Three hours lecture and one three-hour laboratory a week. Fee: \$80. *Prerequisite: EE 252, EE 337, EGR 214*

EE 391. SENIOR PROJECTS I ONE CREDIT

Design and development of selected projects in the field of electrical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in*

*engineering.*EE 392. SENIOR PROJECTS II
TWO CREDITS

Design and development of selected projects in the field of electrical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of the EE 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EE 391.*

EE 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS EACH

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson is required.*

EE 398. TOPICS IN ELECTRICAL ENGINEERING
THREE CREDITS

Selected topics in the field of electrical engineering. These may include one or more of the following: control systems; information theory; signals and noise measurements; communication systems; network design and synthesis; magnetic and non-linear circuits; digital and analog systems; computer systems; medical engineering; power systems and generation. May be repeated for credit. *Prerequisite: Junior engineering standing.*

ENGINEERING COURSES

EGR 140. COMPUTER UTILIZATION IN ENGINEERING
THREE CREDITS

An introduction to computer techniques for engineering design and analysis of components, mechanisms, systems, and processes. Utilization of computer software packages in problem solving, performance evaluations, demonstration, trouble shooting, and determination of the interrelationships among system components as well as processes. Two hours lecture and one two-hour laboratory per week. Fee: \$75.

EGR 200. INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING
THREE CREDITS

Application of materials properties to engineering design. Introduction to atomic arrangements, crystal structures, imperfection, phase diagrams, and structure-property relations. Fundamentals of iron, steel, and non-ferrous materials. The behavior of materials in environmental conditions.

EGR 201. PROFESSIONALISM AND ETHICS
ONE CREDIT

Responsibility of an engineer as a professional; ethics in science and engineering; role of professional societies; recent trends in technological innovations; career planning. Review of professional exam. *Prerequisite: Junior engineering standing.*

EGR 214. LINEAR SYSTEMS
THREE CREDITS

Modeling of physical systems. Engineering applications of Laplace transforms, Fourier series, matrices, statistics and probability, and related topics to solve problems in electromagnetics, heat and mass transfer, control systems, fluid mechanics, robotics, engineering management, and communication systems. Emphasis on the use of simulation packages. Two hours lecture and one two-hour laboratory per week. *Prerequisites: EE 211, MTH 112.*

EGR 222. MECHATRONICS
THREE CREDITS

Introduction to mechatronics system design with emphasis on using sensors to convert engineering system information into an electrical domain, signal conditioning and hardware integration, programming, and using actuators to effect system changes. Two one-hour lectures and one three-hour laboratory per week. Fee: \$80. *Prerequisites: EE 211, EE 283.*

Course Descriptions

EGR 327. THIN FILM PROCESSING

THREE CREDITS

Nucleation and growth theory; crystalline, amorphous, epitaxial growth morphology. Deposition techniques like DC, RF, magnetron sputtering, ion beam sputtering, evaporation, chemical vapor deposition, physical vapor deposition. Structure, properties and applications for specific thin film processing techniques. Two hours lecture and two hours laboratory a week. Fee: \$80. *Prerequisite: EGR 200, Phy 203.*

EGR 391. SENIOR PROJECTS I

ONE CREDIT

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in engineering.*

EGR 392. SENIOR PROJECTS II

TWO CREDITS

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of the EGR 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EGR 391.*

EGR 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENGINEERING MANAGEMENT COURSES

EGM 320. ENGINEERING PROJECT ANALYSIS

THREE CREDITS

Economic analysis of evaluating cash flows over time. Depreciations: techniques and strategies. Replacement analysis, break even analysis, benefit-to-cost ratio evaluation. Evaluating a single project: deterministic criteria and techniques. Multiple projects and constraints. Risk analysis and uncertainty. Models of project selection. Project selection using capital asset pricing theory. *Prerequisite: Junior engineering standing.*

EGM 321. QUANTITATIVE ANALYSIS AND PROGRAMMING METHODS

THREE CREDITS

Discussion of various quantitative analysis and optimization methodologies. Analytical numerical approaches are used in solving linear and nonlinear optimization problems. Emphasizes the development of ability in analyzing problems, solving problems by using software, and post solution analysis. *Prerequisite: Junior standing or consent of instructor.*

EGM 336. ENGINEERING AND MANAGEMENT MODELS

THREE CREDITS

Discussion of the techniques in and the art of modeling practical problems encountered by engineers and managers. *Prerequisite: Junior standing or consent of instructor.*

EGM 391. SENIOR PROJECTS I

ONE CREDIT

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required.

EGM 392. SENIOR PROJECTS II

TWO CREDITS

Design and development of selected projects in the field of engineering management under the direction of a staff member. Technical as well as economic factors will be considered in the

design. A professional paper to be presented and discussed in an open forum is required.
Prerequisite: EE/EGM/ME 391.

ENGLISH COURSES

ENG 101. COMPOSITION FOUR CREDITS

Practice in writing for specific purposes and audiences to develop a coherent voice for engaging in academic and professional discourse; practice in writing with the support of computer technology; study of primary texts, models, and principles of expository and argumentative writing to develop critical reading, writing, and thinking skills; introductory bibliographic instruction and practice in writing that incorporates library research.

ENG 120. INTRODUCTION TO LITERATURE AND CULTURE THREE CREDITS

An introduction to literature through critical reading, writing, and discussion of the major forms of literary and cultural expression. Students will explore works in Western and Non-Western literary traditions. Major subtopic areas for the course will include: Reading Classical Traditions; Reading Great Works; Reading Cultural Crossroads; and Reading American Experience:

Reading Classical Traditions

Study of major works from the ancient world to the Renaissance, emphasizing the impact these texts have had on our literary tradition and our culture.

Reading Great Works

Study of major works since the Renaissance, emphasizing the principal modes of literary expression (poetry, drama, fiction and film).

Reading Cultural Crossroads

Study of works emphasizing a variety of cultural values, intercultural relationships, global perspectives, and aesthetic experiences.

Reading American Experience

Study of works from American literature, emphasizing the multicultural heritage and nature of American writers and American culture.

Prerequisite: Eng 101

ENG 190. PROJECTS IN WRITING AND EDITING ONE TO THREE CREDITS

Independent projects in writing, editing, and/or peer consulting connected to the English program newsletter, student literary magazine, and university Writing Center.

ENG 201. WRITING ABOUT LITERATURE AND CULTURE FOUR CREDITS

Introduction to conventions, theoretical approaches, research methods, and practice of literary and cultural studies. Application of contemporary critical perspectives and research methodology in reading and writing about literary and cultural texts. *Prerequisite: Eng 101.*

ENG 202. TECHNICAL AND PROFESSIONAL WRITING THREE CREDITS

Practice in "real world writing." Students write on subjects associated with their major or intended careers. Students learn to perform as self-aware writers who have something to say to someone, to adapt their roles and voices to various audiences, and to marshal and present persuasively data that is relevant to a particular purpose and context. *Prerequisite: Eng 101.*

ENG 203. INTRODUCTION TO CREATIVE WRITING THREE CREDITS

Analysis and practice of various forms of creative writing. Study of the writer's tools and choices in creating poetry, short fiction, and dramatic scenes. *Prerequisite: Eng 101.*

ENG 218. WRITING PRACTICUM AND COMPOSITION THREE CREDITS

An integration of writing and composition theory and practice for particular audiences.
Prerequisite: Eng 101.

Course Descriptions

ENG 225. COMPARATIVE GRAMMAR

THREE CREDITS

A comparative and critical study of traditional, structural, and transformational-generative grammar.

Prerequisite: Eng 101.

ENG 228. PROFESSIONAL AND WORKPLACE WRITING

THREE CREDITS

Study and practice of effective writing techniques related to writing at work for the professional world that focuses on producing polished documents, enhancing research techniques, and fine-tuning oral communication skills. *Prerequisite: Eng 101.*

ENG 233. SURVEY OF ENGLISH LITERATURE I

THREE CREDITS

A study of the major works and movements in English literature from the Anglo-Saxon period through the eighteenth century. *Prerequisite: Eng 101.*

ENG 234. SURVEY OF ENGLISH LITERATURE II

THREE CREDITS

A study of the major works and movements in English literature from the Romantic movement to the present. *Prerequisite: Eng 101.*

ENG 281. SURVEY OF AMERICAN LITERATURE I

THREE CREDITS

Overview of writers, works, and movements represented in indigenous and European colonial writers in North and Central America from the 1490s to the Civil War. *Prerequisite: Eng 101.*

ENG 282. SURVEY OF AMERICAN LITERATURE II

THREE CREDITS

Study of the major writers, works, and movements from the Civil War to the present. *Prerequisite: Eng 101.*

ENG 303. ADVANCED WORKSHOP IN CREATIVE WRITING

THREE CREDITS

Seminar experience where students write and critique poetry, fiction, nonfiction, or scripts. Specific genre designated in each course. *Prerequisite: Eng 203 or permission of instructor.*

ENG 308. RHETORICAL ANALYSIS AND NONFICTIONAL PROSE WRITING

THREE CREDITS

The study and practice of strategies for producing responsibly written public information, including persuasive and argumentative propositions for particular audiences. *Prerequisite: Eng 101.*

ENG 324. HISTORY OF THE ENGLISH LANGUAGE

THREE CREDITS

A chronological study of the origins of the English language and the systematic changes that have made it the language we speak and write today. *Prerequisite: Eng 101.*

ENG 331. STUDIES IN MEDIEVAL ENGLISH LITERATURE

THREE CREDITS

A study of English literature to 1500, exclusive of Chaucer. *Prerequisite: Eng 101.*

ENG 332. STUDIES IN SIXTEENTH-CENTURY LITERATURE

THREE CREDITS

The study of texts produced by the English Renaissance, focused on the evolution of literary, dramatic, and cultural works from about 1485 to 1603. *Prerequisite: Eng 101.*

ENG 333. STUDIES IN SEVENTEENTH-CENTURY LITERATURE

THREE CREDITS

The study of seventeenth-century texts, focused on literary, dramatic, and cultural works from about 1603 to 1660. *Prerequisite: Eng 101.*

ENG 334. STUDIES IN EIGHTEENTH-CENTURY LITERATURE

THREE CREDITS

Study of eighteenth-century authors and culture. *Prerequisite: Eng 101.*

ENG 335. STUDIES IN ROMANTIC LITERATURE
THREE CREDITS

Study of chief poets and prose writers of the Romantic Period. *Prerequisite: Eng 101.*

ENG 336. STUDIES IN VICTORIAN LITERATURE
THREE CREDITS

Study of major writers, works, and topics of the Victorian Age. *Prerequisite: Eng 101.*

ENG 340. STUDIES IN CHAUCER
THREE CREDITS

A study of selected major and minor works by Chaucer. *Prerequisite: Eng 101.*

ENG 342. STUDIES IN SHAKESPEARE
THREE CREDITS

A study of selected plays by Shakespeare. *Prerequisite: Eng 101.*

ENG 344. STUDIES IN MILTON
THREE CREDITS

A study of Milton's selected poetry and prose. *Prerequisite: Eng 101.*

ENG 350. STUDIES IN THE ENGLISH NOVEL
THREE CREDITS

Study of the novel in English, excluding American writers. *Prerequisite: Eng 101.*

ENG 351. STUDIES IN POSTMODERNISM
THREE CREDITS

A study of the major postmodern writers from the 1960s to the present. *Prerequisite: Eng 101.*

ENG 352. STUDIES IN THE AMERICAN NOVEL
THREE CREDITS

Study of the American novel from its eighteenth-century beginnings to the present. *Prerequisite: Eng 101.*

ENG 353. STUDIES IN POSTCOLONIAL LITERATURE
THREE CREDITS

Study of colonial and postcolonial literature that examines the effects of British imperial pursuits and provides an overview of major issues within postcolonial studies. *Prerequisite: Eng 101.*

ENG 355. STUDIES IN THE MODERN NOVEL
THREE CREDITS

Study of twentieth-century texts focused on a particular theme or movement, as determined by instructor. *Prerequisite: Eng 101.*

ENG 358. STUDIES IN CONTEMPORARY FICTION
THREE CREDITS

A study of fiction, including the novel, short story, and novella, written since World War II. Works from English, American, and world literature may be included to reflect the diversity of contemporary literature and the emergence of post-modernist themes and forms. *Prerequisite: Eng 101.*

ENG 361. STUDIES IN EARLY ENGLISH DRAMA
THREE CREDITS

Study of the drama from the tenth century to 1642; reading of plays by medieval and early modern dramatists exclusive of Shakespeare. *Prerequisite: Eng 101.*

ENG 365. STUDIES IN MODERN DRAMA
THREE CREDITS

Studies in major theatrical genres, themes, and playwrights of modern world drama through the mid-twentieth-century. *Prerequisite: Eng 101.*

ENG 366. STUDIES IN AMERICAN OR BRITISH DRAMA
THREE CREDITS

A study of major American and/or British playwrights and movements, focus to be determined by instructor. *Prerequisite: Eng 101.*

Course Descriptions

ENG 368. STUDIES IN CONTEMPORARY DRAMA THREE CREDITS

A study of major playwrights and theatrical movements in contemporary world drama from the mid-twentieth-century to today. *Prerequisite: Eng 101.*

ENG 370. STUDIES IN MODERN BRITISH POETRY THREE CREDITS

Study of major British poetry of the twentieth century. *Prerequisite: Eng 101.*

ENG 376. STUDIES IN MODERN AMERICAN POETRY THREE CREDITS

Study of major movements and representative figures in modern American poetry. *Prerequisite: Eng 101.*

ENG 390. PROJECTS IN WRITING ONE TO THREE CREDITS

Independent projects in writing for advanced students. *Prerequisite: Six credits in advanced writing courses and permission of department chair.*

ENG 391-392. SENIOR PROJECTS ONE CREDIT EACH

An independent project in the area of the student's concentration culminating in a formal written and oral presentation. The project serves as a capstone experience demonstrating the student's learning in the major. *Prerequisite: Open only to senior English majors.*

ENG 393. THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS FOUR CREDITS

The course deals with the theory and practice of teaching composition, literature, and English language studies on the secondary school level (grades 7 through 12). Topics include planning, methodology, presentation, and assessment of lessons. The course includes 40 hours of field experience. *Prerequisites: Junior standing in English and admission to the Teacher Education Program.*

ENG 394. LITERARY CRITICISM THREE CREDITS

A study of literary theory and the techniques of analysis. *Prerequisite: Eng 101.*

ENG 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chair is required.*

ENG 397. SEMINAR THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chair is required.*

ENG 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENG 198/298/398. TOPICS VARIABLE CREDIT

The study of a special topic in language, literature, or criticism. *Prerequisite: Eng 101.*

ENTREPRENEURSHIP COURSES

ENT 151. INTEGRATED MANAGEMENT EXPERIENCE I
THREE CREDITS

Same as ACC 151 and BA 151. See BA 151 for course description.

ENT 152. INTEGRATED MANAGEMENT EXPERIENCE II
THREE CREDITS

Same as ACC 152 and BA 152. See BA 152 for course description. *Prerequisite: ACC 151 or BA 151 or ENT 151.*

ENT 201. NATURE AND ESSENCE OF ENTREPRENEURSHIP
THREE CREDITS

An introduction to entrepreneurs and self-career creation in small and large entrepreneurial organizations. The importance of entrepreneurs in the local, national and world economies and personal characteristics of successful entrepreneurs will be studied. Guest speakers and a case study are included.

ENT 203. OPPORTUNITY IDENTIFICATION: INNOVATION AND CREATIVITY
THREE CREDITS

An introduction to the creative and innovative processes. Emphasis on forms of creativity and how they are interrelated, psychology and behavioral aspects of creativity, recognizing creativity, and the practice of managing innovation and creativity in different environments. Direct experience with two or more forms of creativity.

ENT 252. THE ENTREPRENEURIAL LEADER
THREE CREDITS

Examines leadership characteristics and behaviors of entrepreneurs. Emphasis on authentic and integrity-based leadership, role of emotional intelligence, and effective leadership strategies in entrepreneurial environments.

ENT 321. ANALYZING MARKETS AND COMPETITION
THREE CREDITS

In-depth study of identification and assessment of markets and competition. Sources of information, key analytical techniques, and evaluation strategies are examined. *Prerequisite: BA 321.*

ENT 342. ENTREPRENEURIAL FINANCE
THREE CREDITS

The study of the financial dimensions of launching and growing ventures. Topics include financial characteristics and requirements of growth, venture capital, angel capital and private investment, equity markets and public offerings, and specialized funding programs. *Prerequisite: BA 341.*

ENT 361. PRACTICING ENTREPRENEURSHIP
THREE CREDITS

Advanced essentials and elements of becoming an entrepreneur, or intrapreneur, will be examined through current classic "real life" entrepreneurial case readings and entrepreneur and guest faculty lectures. Students will create their own entrepreneurial enterprise as a team project. *Prerequisites: Senior standing, ENT 201, or permission of instructor.*

ENT 362. ENTREPRENEURIAL INTERNSHIP
THREE CREDITS

The course content provides on-the-job multi-discipline experience assisting a working local entrepreneur in the development and operation of a business enterprise.

ENT 384. SMALL BUSINESS CONSULTANCY
THREE CREDITS

Teams of students diagnose, analyze, and recommend solutions for problems defined by small business clients. Course requires students to apply a range of classroom skills in a real situation and present oral and written reports to the client firm. *Prerequisites: Senior standing and instructor permission.*

ENT 385. OPPORTUNITY ASSESSMENT: TECHNICAL, ECONOMIC AND MARKET FEASIBILITY
THREE CREDITS

Theory and practice of assessing market, economic, and technical feasibility. Use of project

Course Descriptions

management techniques to develop an in-depth feasibility analysis plan for expected outcomes.

ENT 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

ENT 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENT 198/298/398. TOPICS

VARIABLE CREDIT

Special offerings designed to introduce students to subjects of current interest in entrepreneurship.

ENVIRONMENTAL ENGINEERING COURSES

ENV 305. SOLID WASTE MANAGEMENT

THREE CREDITS

Assessment of the scope of the solid waste problem and engineering and management strategies. Lecture topics include: solid waste sources, characterization and generation rates; collection and transportation technologies and management options; sanitary landfill design and operation and recycling strategies and technologies. Three hours lecture. *Prerequisites: EES 240, CHM 116 or EES 202, or permission of instructor.*

ENV 315. SOILS

THREE CREDITS

Study of the structure, properties, and classification of soils. Fundamental concepts of soils science are applied to the environmental management of terrestrial ecosystems. Topics include soil genesis, classification and physical properties of soils; soil chemistry; and soil moisture relationships. Two hours lecture and three hours laboratory. Fee: \$95. *Prerequisites: EES 211, CHM 116 or EES 202.*

ENV 321. HYDROLOGY

FOUR CREDITS

A quantitative analysis of the physical elements and processes which constitute the hydrologic cycle. Topics include precipitation, infiltration, evaporation, runoff, streamflow, and ground water flow. Ground water modeling and advanced treatment of Darcy's Law is presented within the context of migration of ground water pollutants. Three hours lecture and three hours laboratory. Fee: \$95. *Prerequisite: EES 211.*

ENV 322. WATER RESOURCES ENGINEERING

THREE CREDITS

Engineering aspects of hydrologic systems including flood control, reservoir systems, open channel design, surface and groundwater development. Three hours lecture/demonstration. *Prerequisite: ENV 321.*

ENV 330. WATER QUALITY

FOUR CREDITS

The physical, chemical and biological processes that affect the quality of water in the natural environment. The measurement of water quality parameters in water and wastes. The behavior of contaminants in ground and surface water. Three hours lecture and three hours lab per week. Fee: \$95. *Prerequisites: CHM 116 or EES 202, EES 240.*

ENV 332. AIR QUALITY

THREE CREDITS

Study of atmospheric pollutants, their sources and effects; measurement and monitoring techniques for air pollutants; atmospheric chemical transformations; regulatory control of air pollution; meteorology of air pollution; transport and dispersion of air pollutants; and introduction to indoor

air pollution. Lab work includes both problem-oriented and hands-on exercises. Exercises include basic gas concepts; volume measuring devices; flow, velocity and pressure measuring devices; calibration of such devices; various sampling techniques. Three hours lecture and a three hour-lab per week. Fee: \$95. *Prerequisites: CHM 116 or EES 202, EES 240, or permission of instructor.*

**ENV 351. WATER AND WASTEWATER TREATMENT
FOUR CREDITS**

Design of water and wastewater treatment systems. Estimation of demands. Physical, chemical, biological and land-based treatment processes. Sludge handling and disposal. Three hours lecture and three hours lab. Fee: \$95. *Prerequisite: ENV 330.*

**ENV 352. ENVIRONMENTAL ENGINEERING HYDRAULICS
THREE CREDITS**

Water distribution, sewage collection, pipe network models, piping materials, pumps and pumping stations, valves and tanks. Design and operation. *Prerequisite: ME 321.*

**ENV 353. AIR POLLUTION CONTROL
THREE CREDITS**

This course provides the philosophy and procedures for design of air pollution control systems. Methods used for controlling air-borne emissions of gases, aerosols, and organic vapors are covered. Designs are carried out based on data for typical systems. Evaluations of alternatives with cost comparisons are also presented. Three hours lecture/ demonstration. *Prerequisite: ENV 332, or permission of instructor.*

**ENV 354. HAZARDOUS WASTE MANAGEMENT
THREE CREDITS**

An overview and application of engineering principles to management of hazardous wastes and the remediation of contaminated sites. Introduction to regulatory compliance and environmental laws. Three hours lecture. *Prerequisite: ENV 351 or permission of instructor.*

**ENV 373. OCCUPATIONAL HEALTH
THREE CREDITS**

Appraisal of environmental health hazards, sampling techniques, instrumentation and analytic methods. Principles of substitutions, enclosure and isolation for the control of hazardous operations in industry. Three hours lecture/demonstration. *Prerequisite: Junior or senior standing in engineering or science.*

**ENV 391. SENIOR PROJECTS I
ONE CREDIT**

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in environmental engineering.*

**ENV 392. SENIOR PROJECTS II
TWO CREDITS**

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of ENV 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: ENV 391.*

**ENV 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students in the field of their major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

**ENV 397. SEMINAR
ONE TO THREE CREDITS**

Presentations and discussions of selected topics and projects. *Prerequisite: Senior environmental engineering standing.*

Course Descriptions

ENV 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENV 198/298/398. TOPICS IN ENGINEERING

VARIABLE CREDIT

Selected topics in the field of engineering and related areas. These may include: mechanical engineering; civil engineering; engineering management; geotechnology; radiation, etc. *Prerequisite: Permission of instructor.*

FIRST-YEAR FOUNDATIONS COURSES

FYF 101. FIRST-YEAR FOUNDATIONS

The mission of the First-Year Foundations Program is to provide rigorous learning experiences that challenge first-year students to develop the strategies essential for a successful transition into the Wilkes campus community. Each section of FYF is unique and constitutes a special topics course, in which faculty members are encouraged to explore topics that are of special interest to them.

All sections of FYF, regardless of topic, share a common core of objectives that facilitate significant learning experiences (inside and beyond the classroom) through which first-year students develop self-knowledge and intellectual curiosity, openness to diversity, and a commitment to lifelong learning and civic responsibility. Activities designed to foster and develop effective writing, critical thinking, and information literacy skills are integral components of all FYF sections.

In addition, the FYF Program connects students to a wide variety of University resources, including the exceptional advising and tutoring services of University College, the extensive resources of the Eugene S. Farley Library, and the rich array of cultural events sponsored by the University.

HISTORY COURSES

HST 101. THE HISTORICAL FOUNDATIONS OF THE MODERN WORLD

THREE CREDITS

A thematic survey of the forces shaping the modern world. Topics studied include: world religions, science, rationalism, industrial capitalism, liberalism, socialism, global discovery, imperialism, nationalism and totalitarianism.

HST 102. EUROPE BEFORE 1600

THREE CREDITS

A survey of European history from Ancient times through the Reformation.

HST 125. AMERICAN HISTORY I

THREE CREDITS

A survey of North American/U.S. history from European-Native American contact to the Civil War.

HST 126. AMERICAN HISTORY II

THREE CREDITS

A survey of U.S. history from the Civil War to the present

HST 297 HISTORICAL RESEARCH AND METHODS SEMINAR

THREE CREDITS

An introduction to the skills and methods needed for successful research and writing about history. Enrollment is limited to history majors and minors except by permission of instructor.

**HST 321. AMERICAN CULTURAL AND SOCIAL HISTORY (A)
THREE CREDITS**

An examination of differences and divisions within American society through such topics as social movements, demographic trends, gender, ethnicity and class, effect of industrialization and immigration, cultural expressions, religion, and the family.

**HST 324. AMERICAN ECONOMIC HISTORY (A)
THREE CREDITS**

A survey of the evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the development of the United States as an industrial world power since about 1850.

**HST 325. DIVERSITY IN PENNSYLVANIA HISTORY (A)
THREE CREDITS**

A study of the history of the Commonwealth with particular focus on ethnic and racial diversity.

**HST 328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES (A)
THREE CREDITS**

A selective treatment of major themes in American foreign policy from the founding of the Republic to the present.

**HST 329. AMERICAN WOMEN'S HISTORY (A)
THREE CREDITS**

A study of the role, status, and culture of women in America beginning with the First Americans and European contact up to the present time.

**HST 331. COLONIAL AMERICA (A)
THREE CREDITS**

Discovery, exploration, and settlement; development of social, political, religious, and intellectual institutions; independence and political reorganization.

**HST 332. THE NEW NATION (A)
THREE CREDITS**

A study of America's social, cultural, economic and political development in the first generations of nationhood, 1783-1840.

**HST 333. VICTORIAN AMERICA (A)
THREE CREDITS**

A study of the development of the United States from the end of the Civil War through the end of World War I. Special attention will be paid to urbanization and industrialization and their effects on everyday life.

**HST 334. THE UNITED STATES, 1900-1945 (A)
THREE CREDITS**

The emergence of the United States as a world power and the corresponding development of its political, economic, social, and religious institutions.

**HST 335. THE UNITED STATES SINCE 1945 (A)
THREE CREDITS**

An examination of the political, social, and economic changes in the United States since World War II. Special attention is paid to America's dominant role in the immediate post-war world and how changing conditions over the past forty years have altered this role.

**HST 341-342. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH (N)
THREE CREDITS EACH**

A study of British history from the Neolithic period to present times. The first semester will cover social, economic, and political developments to 1783, including expansion overseas. The second semester will cover the consequences of the industrial revolution and the evolution of the Empire into the Commonwealth.

**HST 345. HISTORY OF NORTHEASTERN EUROPE (N)
THREE CREDITS**

A study of the cultural, political and intellectual history of the Poles, Czechs, Slovaks, Croats, Slovenes and Hungarians, who occupy the northern tier of Eastern Europe. Special attention is given

Course Descriptions

to the roles of the Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences of the forces of nationalism in the region.

HST 346. HISTORY OF THE BALKANS (N) THREE CREDITS

A study of the cultural, political and intellectual history of the Bulgarians, Serbs, Croats, Slovenes, Albanians, Greeks, Romanians and Turks, who occupy the southern, or Balkan, tier of Eastern Europe. Special attention is given to the roles of the Ottoman Turkish, Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences in the region of such forces as Christian-Muslim cultural interrelationships and nationalism.

HST 348. HISTORY OF RUSSIA (N) THREE CREDITS

A study of the political, social, and intellectual history of Russia. Emphasis is placed upon the emergence of Russia as a major power after 1700.

HST 352. THE RENAISSANCE AND REFORMATION (N) THREE CREDITS

Within the political and economic framework of the period, study will be made of the culture of the Renaissance, the religious reforms and conflicts resulting from the crisis in the sixteenth century.

HST 353. AGE OF ABSOLUTISM (N) THREE CREDITS

The political, social, economic, intellectual, and cultural development of Europe and dependencies from 1600 to about 1750.

HST 354. THE ERA OF THE FRENCH REVOLUTION AND NAPOLEON (N) THREE CREDITS

A study of the structure of the Ancien Regime and an examination of the causes, events, and consequences of the French Revolution culminating in the Napoleonic Empire.

HST 355. EUROPE IN THE NINETEENTH CENTURY (N) THREE CREDITS

A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

HST 356. EUROPE, 1900–1960 (N) THREE CREDITS

Against a background of the internal and international developments of the leading powers, students will study the origins and results of the two World Wars.

HST 357. THE WORLD SINCE 1945 (N) THREE CREDITS

This course examines many important events and developments in the modern world since 1945. It considers incidents of largely historical significance, such as the Cold War between the United States and the Soviet Union, and those of continuing relevance, like the globalization and privatization of the economy.

HST 367. HISTORY OF MODERN INDIA (N)

HST 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

HST 397. SEMINAR THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of instructor is required.*

HST 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are

required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

HST 198/298/398. TOPICS
VARIABLE CREDIT

Special topics in history. This course will be offered from time to time when interest and demand justify it.

INTEGRATIVE MEDIA COURSES

IM 101. INTEGRATIVE MEDIA FOUNDATIONS I
THREE CREDITS

This course is an introduction and multiple media survey of artists, styles and techniques, influential in the development of contemporary media. Through this exposure and readings, a creative process will be developed and absorption will stimulate, motivate and inspire a personal aesthetic vision. In addition, through intensive thought, analysis and critique we will explore media as it affects our society and our responsibility as media content generators.

IM 201. INTEGRATIVE MEDIA FOUNDATIONS II
THREE CREDITS

This course is an introduction to the foundational design principles as they apply to digital new media applications. Students will produce digital projects through the introductory application of various digital tools with a continued focus on the constant evolution of a personal aesthetic vision. A survey of new media applications, terminology and techniques will be researched and discussed along with our responsibility as communicators to mass media markets. *Prerequisite: IM 101*

IM 255. INTEGRATIVE MEDIA PRACTICUM
ONE TO TWO CREDITS

The Department Practicum may be taken for one to two credits per semester. Students may earn credit for major roles and positions of major responsibility in the cocurricular activities in the Creative Production Studio, Studio020. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Credits earned are applicable toward graduation, but do not count toward the requirements of the IM core. Written approval for credit must be by advisor or Department Chairperson.

IM 301. INTEGRATIVE MEDIA PRINCIPLES OF MOTION AND LAYERING
THREE CREDITS

This course will address the foundational concepts of assembling digital imagery; relational to short format projects, focusing on historical and contemporary principles of montage, timing and pacing. In addition, the technical and aesthetic principles of compositing will be covered producing multi-layered projects for a variety of mediums. *Prerequisite: IM 201.*

IM 302. INTEGRATIVE MEDIA PRINCIPLES OF INTERACTIVITY
THREE CREDITS

Technical and aesthetic principles of interactivity will be conveyed and practiced to produce a range of interactive mediums. Addressing issues of human static and dynamic interactive ergonomics as they apply to contemporary commercial and artistic applications. *Prerequisite: IM 201.*

IM 320. INTEGRATIVE MEDIA CONCEPT DEVELOPMENT AND PRACTICES
THREE CREDITS

Through research, writing and example, students will gain an advanced understanding of the creative generating processes in a new media environment. These processes will be used to formulate solid, cohesive concepts and present storyboards that are visually communicative and professional. With discussion, critique and reiteration, the concepts are refined and reinforced. *Prerequisite: IM 201.*

IM 350. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION
THREE CREDITS

This course will explore the foundations of 3 dimensional animation processes as they apply to

Course Descriptions

multiple mediums. Students will build computer-based models and environments, texture, light, animate and render content for Integrative Media projects, stand-alone projects or 3D foundations used within the CS gaming track. (Cross-listed with CS 366). *Prerequisite: IM students - IM 301; CS students - CS 125.*

IM 355. DIGITAL AUDIO PRINCIPLES AND EDITING THREE CREDITS

The foundational concepts behind music theory, sound design and digital audio editing techniques will be addressed in this course. This knowledge can then be applied to creating and adapting sound components for use within the variety of Integrative Media projects. *Prerequisite: IM 201.*

IM 368. 3 DIMENSIONAL GAME DEVELOPMENT THREE CREDITS

An overview of simulation, engine-based, and real-time game systems with a focus on theory, creation and animation of three-dimensional models used within a game context. (Cross-listed with CS 368). *Prerequisites: IM 350 (CS 366) or CS 367.*

IM 391. INTEGRATIVE MEDIA PROJECT I THREE CREDITS

This project-based course will begin to assemble production teams to produce project(s) from concept to completion. Students will develop storyboards, and through creative and organizational work sessions define a completion plan and production schedule. All phases of the production process will be addressed under creative, financial and deadline benchmarks. *Prerequisite: IM 320.*

IM 392. INTEGRATIVE MEDIA PROJECT II THREE CREDITS

Students will initiate new or continue team oriented integrative media productions. The production process will be optimized to continue the experience of industry scenarios. Expanded business practices and production techniques will build upon prior skill-sets. *Prerequisite: IM 391.*

IM 399. COOPERATIVE EDUCATION ONE-SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) Integrative Media majors will be required to complete a minimum of 3 credit hours of Cooperative Education.

IM 400. INTEGRATIVE MEDIA PORTFOLIO CAPSTONE THREE CREDITS

As the capstone of the IM curriculum, this course will focus on the compilation of visual materials produced throughout the set of courses, as necessary in the job submission process. Creating a self "brand" will be a concentration along with the compilation of written works, flatbook and reel. Understanding the perspective of the employer will be heavily discussed and the various positions, procedures and environments that produce IM products. *Prerequisite: IM 391.*

INTERCOLLEGIATE ATHLETICS COURSES

IA 101. INTERCOLLEGIATE ATHLETICS NO CREDIT

This course is limited to students participating in intercollegiate athletics during their sport season. This course may be repeated.

INTERNATIONAL STUDIES COURSES

IS 380. INTERNATIONAL STUDIES SENIOR PROJECT THREE CREDITS

This course is the capstone experience for International Studies majors. Students will coordinate the writing of a capstone with a faculty member from an International Studies content area. Throughout the semester, the student will work closely with that faculty member to gather data and write a formal paper. The student will present the findings in a public forum to content-area faculty and

students. *Prerequisites: Senior standing, permission of instructor.*

MATHEMATICS COURSES

MTH 84. COLLEGE PREPARATORY MATHEMATICS THREE CREDITS*

Designed for students who need to review basic mathematics skills before taking Mth 94, 101 or 103. Topics include a review of arithmetic, introductory algebra, and quantitative reasoning. Only P (passed) or F (failed) grades are given. **Credits in this course will not be counted toward the graduation requirement in any degree program at Wilkes.*

MTH 94. COLLEGE ALGEBRA THREE CREDITS

Designed for students who need to review basic algebra before taking Mth 100 or Mth 150. Topics include polynomials, solution of equations and inequalities, exponents and radicals, graphing, and solution of systems of equations. *Offered every fall.*

MTH 100. PRECALCULUS THREE CREDITS

A course in advanced algebra and trigonometry designed to prepare students for calculus. Topics include functions, inverse functions, logarithms, exponentials, and trigonometry. *Prerequisite: Mth 94 or meet Department of Mathematics and Computer Science criteria.*

MTH 101. SOLVING PROBLEMS USING MATHEMATICS THREE CREDITS

An introduction to the methodology of mathematical modeling as a technique in working towards the solution to real world problems. In an effort for the nonspecialist to gain an appreciation of the use of mathematics in our society, topics are selected from among the following: basic voting theory, fair division schemes, routing problems, population growth, and descriptive statistics and probability.

MTH 103. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS THREE CREDITS

A study of the theory of arithmetic, structure of the number systems, and other topics relevant to the teaching of mathematics in elementary schools. *Prerequisite: Admission to the Teacher Education Program or consent of instructor. Offered every fall.*

MTH 104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS II THREE CREDITS

A continuation of Mth 103. Topics include elementary probability, statistics, and geometry. *Prerequisite: Admission to the Teacher Education Program or consent of instructor. Offered every spring.*

MTH 105. CALCULUS FOR LIFE SCIENCES I FOUR CREDITS

Topics include: algebra review, limits, differentiation, and integration. Students cannot enroll for credit if credit for Mth 111 has been earned. *Prerequisites: Student must have completed Mth 100 or meet Department of Mathematics and Computer Science placement criteria.*

MTH 106. CALCULUS FOR LIFE SCIENCES II FOUR CREDITS

A continuation of Mth 105. Topics include: partial differentiation, differential equations, and probability. Major credits cannot be granted for both Mth 106 and Mth 112. *Prerequisite: Mth 105.*

MTH 107. BUSINESS MATHEMATICS THREE CREDITS

Designed for business and accounting majors. Emphasis on mathematical modeling in the business environment. Topics include algebraic functions; mathematics of finance; systems of linear equations; linear programming; average and instantaneous rates of change. *Prerequisite: MTH 94 or meet the Math/CS Department's placement criteria.*

Course Descriptions

MTH 111. CALCULUS I

FOUR CREDITS

Calculus of functions of one variable. Topics include: functions, limits and continuity, derivatives and their applications, and definite integrals. Students cannot enroll for credit if credit for Mth 105 has been earned. *Prerequisites: Student must have completed Mth 100 or meet Department of Mathematics and Computer Science placement criteria.*

MTH 112. CALCULUS II

FOUR CREDITS

A continuation of Mth 111. Topics include inverse functions, techniques of integration, applications of the integral, and infinite sequences and series. Not open to students with credit in Mth 106. *Prerequisite: Mth 111.*

MTH 150. ELEMENTARY STATISTICS

THREE CREDITS

Elementary statistical inference, with an emphasis on ideas, techniques, and applications in the life, physical, and social sciences. Topics include descriptive statistics, confidence intervals, hypothesis testing, contingency tables, multiple regression, and analysis of variance. Not open to mathematics majors or students with credit in Mth 351. *Prerequisite: Mth 94 or two years of high school algebra.*

MTH 202. SET THEORY AND LOGIC

FOUR CREDITS

Provides a foundation in logic and set theory for upper-level courses in mathematics and computer science. Topics include the logic and language of proofs, the axiomatic method, sets, relations, and functions. *Prerequisite: Mth 106 or Mth 112 or consent of instructor. Offered every fall.*

MTH 211. INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS

FOUR CREDITS

First-order and linear higher-order differential equations; matrices, determinants, and systems of differential equations; numerical and power series methods of solution; the Laplace transform. *Prerequisite: Mth 112. Offered every fall.*

MTH 212. MULTIVARIABLE CALCULUS

FOUR CREDITS

Differential and integral calculus of real and vector valued functions. Topics include continuity, partial differentiation, implicit functions, Taylor's Theorem, gradient, curl, line, surface and multiple integrals, inverse functions, theorems of Green and Stokes. *Prerequisite: Mth 112. Offered every spring.*

MTH 214. LINEAR ALGEBRA

THREE CREDITS

An axiomatic approach to vector spaces, linear transformations, systems of linear equations, Eigen values and Eigen vectors. *Prerequisite: Mth 112 or consent of instructor. Offered every spring.*

MTH 231. DISCRETE MATHEMATICS

THREE CREDITS

Designed to provide background in discrete mathematics for upper-level courses in computer science. Topics include: basic counting principles; introduction to recurrence relations and their application in analyzing algorithms; basic properties of graphs, trees, and networks; AND, OR, and NOT gates and designing combinatorial circuits, finite-state automata, transducers and Turing machines *Prerequisites: Mth 202 and CS 125 or consent of the instructor. Offered every spring.*

MTH 303. THE TEACHING OF MATHEMATICS IN MIDDLE LEVEL AND SECONDARY SCHOOLS

FOUR CREDITS

This course deals with educational perspectives which pertain to the teaching of mathematics at the middle and secondary levels (grades 4 through 12). Topics of discussion include recommendations by the National Council of Teachers of Mathematics (NCTM) regarding instructional methods, assessment techniques, and curricular issues. 40 hours practicum. *Prerequisites: Junior standing in mathematics and admission to the Teacher Education Program. Offered in the fall semester of odd years.*

MTH 311. REAL ANALYSIS
FOUR CREDITS

A rigorous study of the topology of the real line, limits, continuity, differentiation, integration, and series of functions. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of even years.*

MTH 314. COMPLEX ANALYSIS
THREE CREDITS

Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues. *Prerequisite: Mth 212 or consent of instructor. Offered when demand warrants.*

MTH 331. ABSTRACT ALGEBRA I
FOUR CREDITS

A rigorous study of elementary number theory, groups, rings, and fields. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of odd years.*

MTH 343. GEOMETRY
THREE CREDITS

A study of selected topics from Euclidean and non-Euclidean geometry. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of even years.*

MTH 351. PROBABILITY AND MATHEMATICAL STATISTICS I
THREE CREDITS

Random variables, probability distributions, expectation and limit theorems, introduction to confidence intervals and hypothesis testing. *Prerequisite: Mth 106 or 112 or consent of instructor. Offered every fall.*

MTH 352. PROBABILITY AND MATHEMATICAL STATISTICS II
THREE CREDITS

Hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models. *Prerequisite: Mth 351 or consent of instructor. Offered in the spring semester of odd years when demand warrants.*

MTH 354. STATISTICAL METHODOLOGY
THREE CREDITS

This course emphasizes applications, using statistical computer packages (such as BMDP, SPSS, and JMP) and real data sets from a variety of fields. Topics include estimation and testing; stepwise regression; analysis of variance and covariance; design of experiments; contingency tables; and multivariate techniques, including logistic regression. *Prerequisite: Mth 150 or Mth 351 or consent of instructor. Offered in the spring semester of even years when demand warrants.*

MTH 360. LINEAR PROGRAMMING
THREE CREDITS

Graphical linear programming, simplex algorithm and sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with CS 360). *Prerequisites: CS 125, and either MTH 105 or MTH 111.*

MTH 361. APPLIED MATHEMATICS I
THREE CREDITS

Intended for physical science and engineering students. Topics include inner product spaces, operator algebra, Eigen value problems, Sturm-Liouville theory, Fourier series and partial differential equations. *Prerequisites: Mth 211 and 212, or consent of instructor. Offered in the fall semester of odd years when demand warrants.*

MTH 362. APPLIED MATHEMATICS II
THREE CREDITS

Intended for physical science and engineering students. Topics include systems of linear differential equations, nonlinear differential equations; qualitative, numerical, and finite difference methods; theorems of Green and Stokes and the Divergence Theorem. *Prerequisites: Mth 211 and 212, or consent of instructor. Offered in the spring semester of even years when demand warrants.*

Course Descriptions

MTH 363. OPERATIONS RESEARCH

THREE CREDITS

A survey of operations research topics such as decision analysis, inventory models, queuing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with CS 363). *Prerequisites: Mth 106 or Mth 112 and CS 125 (or equivalent programming experience), or consent of instructor. Offered in the spring semester of odd years when demand warrants.*

MTH 364. NUMERICAL ANALYSIS

THREE CREDITS

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science, and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with CS 364). *Prerequisites: Mth 112 and CS 125 (or equivalent programming experience), or consent of instructor. Offered when demand warrants.*

MTH 391-392. SENIOR SEMINAR

ONE CREDIT, TWO CREDITS

Presentations and discussions of selected topics in mathematics, conducted by students and faculty. *Prerequisite: Senior standing in mathematics and either Mth 311 or Mth 331.*

MTH 395-396. INDEPENDENT STUDY IN MATHEMATICS

VARIABLE CREDITS

Individual study in a chosen area of mathematics under the supervision of a faculty member. May be repeated for credit. *Prerequisite: Approval of department chairperson.*

MTH 397. SEMINAR

ONE TO THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson.*

MTH 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

MTH 413. FUNCTIONS OF SEVERAL VARIABLES

THREE CREDITS

A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration on manifolds leading to the classical theorems of Green and Stokes. *Prerequisites: Mth 214 and 311. Offered when demand warrants.*

MTH 432. ABSTRACT ALGEBRA II

THREE CREDITS

A continuation of Mth 331. Polynomial rings, ideals, field extensions, and Galois Theory. *Prerequisite: Mth 331. Offered when demand warrants.*

MTH 442. TOPOLOGY

THREE CREDITS

Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces. *Prerequisite: Mth 311 or consent of instructor. Offered when demand warrants.*

MTH 470. READING COURSE

ONE TO THREE CREDITS

Advanced study of special topics under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics. May be repeated for credit. *Prerequisites: Senior standing and approval of department chairperson.*

MTH 198/298/398/498. TOPICS IN MATHEMATICS

VARIABLE CREDITS

A study of topics of special interest. It may be a continuation and intensive study of topics begun in

the upper-level courses in analysis, topology, algebra, and probability. May be repeated for credit.
Prerequisite: Varies with selected topics. Offered when demand warrants.

MECHANICAL ENGINEERING COURSES

ME 175. INTRODUCTION TO MANUFACTURING AND MACHINING

ONE CREDIT

Familiarizing with traditional machining processes and measuring equipment used in manufacturing. Hands-on experience with traditional and numerical control (NC) machines; various manufacturing processes and fundamentals of metrology. Three-hour lab per week. Fee: \$75.

ME 180. CADD LAB

ONE CREDIT

An introduction to the symbolic and visual languages used in the various engineering fields. The use of the computer in design and drafting, and familiarization with various software packages in the CADD (Computer Aided Design and Drafting) laboratory. Blueprint reading and printed circuit layouts. Emphasis will also be placed on the representation and interpretation of data in graphical form as well as the fundamentals of 2-dimensional and 3-dimensional graphic formats. Two hours lecture/laboratory per week. Fee: \$75.

ME 215. INTRODUCTION TO MANUFACTURING PROCESSES

THREE CREDITS

An introduction to manufacturing that examines traditional processes such as metal forming and casting, and advanced manufacturing processes associated with thin film deposition, microfabrication, and piezoelectric devices. Quality assurance and quality control issues in manufacturing. *Prerequisites: EGR 200, ME 180, ME 232.*

ME 231. STATICS AND DYNAMICS I

THREE CREDITS

Statics of particles; including resolution of forces into components, vector sums, concurrent force systems. Statics of rigid bodies and the study of moments. Equilibrium of bodies in two and three dimensions and determination of reactions. Analysis of trusses and frames. Determination of centroids and moments of inertia. Kinematics of particles; including displacement; velocity; and acceleration. *Prerequisite: Phy 201. Corequisite: Mth 112.*

ME 232. STRENGTH OF MATERIALS

THREE CREDITS

Analysis of statically determinate and indeterminate structural systems; computation of reactions, shears, moments, and deflections of beams, trusses, and frames. Bending and torsion of slender bars; buckling and plastic behavior. *Prerequisite: ME 231.*

ME 234. STATICS AND DYNAMICS II

THREE CREDITS

This course continues the development of Newtonian mechanics with application to the motion of free bodies and mechanisms. Topics include: rectilinear motion, vector calculus, particle motion, inertial and rotating reference frames, rigid body motion, rotational dynamics, linear and rotational momentum, work and kinetic energy, virtual work and collision. *Prerequisite: ME 231.*

ME 298. TOPICS IN MECHANICAL ENGINEERING

ONE TO THREE CREDITS

Selected topics in the field of mechanical engineering. *Prerequisite: Sophomore standing and permission of instructor.*

ME 312. MANUFACTURING SYSTEM ENGINEERING

THREE CREDITS

Fundamentals of manufacturing processes and systems. Analytical models of manufacturing processes including: metal removal rate, tool wear, setup and tool change times. Analysis and optimization of manufacturing productivity and throughput. Automation and computer control of manufacturing processes. *Prerequisite: Junior standing in ME.*

Course Descriptions

ME 317. ROBOTICS

THREE CREDITS

The analysis and design of robots. Class covers the mechanical principles which govern the kinematics of robotics. Course topics include forward kinematics and the determination of the closed form kinematic inversion, as well as workspace and trajectory generation. Class also covers the formation and computation of the manipulator Jacobian matrix. *Prerequisites: Senior standing in ME.*

ME 321. FLUID MECHANICS

THREE CREDITS

Thermodynamics and dynamic principles applied to fluid behavior and to ideal, viscous, and compressible fluids under internal and external flow conditions. (same as Phy 213) *Prerequisite: ME 231. Corequisite: ME 322.*

ME 322. ENGINEERING THERMODYNAMICS

THREE CREDITS

The fundamental concepts and laws of thermodynamics, thermodynamic properties of perfect and real gases, vapors, solids and liquids. Applications of thermodynamics to power and refrigeration cycles, and flow processes. Development of thermodynamic relationships and equations of state. Review of the first and second laws. Reversibility and irreversibility. *Prerequisites: Math 112.*

ME 323. FLUID MECHANICS LABORATORY

ONE CREDIT

Experiments with and analysis of basic fluid phenomena, hydrostatic pressure, Bernoulli theorem, laminar and turbulent flow, pipe friction, and drag coefficient. One three-hour lab a week. Fee: \$75. *Prerequisite: Concurrent with or after ME 321.*

ME 324. HEAT AND MASS TRANSFER

THREE CREDITS

Fundamental principles of heat transmission by conduction, convection and radiation; application of the laws of thermodynamics; mass transfer; application of these principles to the solution of engineering problems. *Prerequisites: ME 322 and Mth 211.*

ME 325. ENERGY SYSTEMS

THREE CREDITS

Fundamental principles of energy transmission and energy conversion. Comprehension of the physical systems in which the conversion of energy is accomplished. Primary factors necessary in the design and performance analysis of energy systems. *Prerequisites: ME 322.*

ME 326. HEAT TRANSFER LABORATORY

ONE CREDIT

Basic heat transfer modes are demonstrated experimentally. This includes conduction, convection, and radiation of heat as well as fin and heat exchanger. One two-hour lab a week. Fee: \$75. *Prerequisite: Concurrent with or after ME 324.*

ME 328. COMBUSTION ENGINES

THREE CREDITS

Investigation and analysis of internal and external combustion engines with respect to automotive applications. Consideration of fuels, carburetion, combustion, detonation, design factors, exhaust emissions, and alternative power plants. *Prerequisite: ME 322.*

ME 332. VIBRATION OF DYNAMIC SYSTEMS

THREE CREDITS

An introductory course in mechanical vibration dealing with free and forced vibration of single and multi-degrees of freedom for linear and nonlinear systems. Two hours lecture and two hours lab per week. *Prerequisites: ME 234, Mth 211.*

ME 333. MACHINE DESIGN I

THREE CREDITS

A first course of a two-course sequence in design of machine elements dealing with theories of deformation and failure, strength and endurance limit, fluctuating stresses, fatigue and design under axial, bending, torsional, and combined stresses. A study of fasteners, welds, gears, ball roller bearings, belts, chains, clutches, and brakes. *Prerequisites: ME 232.*

**ME 335. ENGINEERING MODELING AND ANALYSIS
THREE CREDITS**

Introduction to finite element method for static and dynamic modeling and analysis of engineering systems. Finite element formulation and computer modeling techniques for stress, plane strain, beams, axisymmetric solids, heat conduction, and fluid flow problems. Solution of finite element equation and post processing of results for further use in the design problem. Two hours lecture and two hours lab per week. *Prerequisite: ME 232. Corequisite: Mth 211.*

**ME 337. MICRO-ELECTRO-MECHANICAL SYSTEMS ENGINEERING
THREE CREDITS**

This course explores the principles of MEMS by understanding materials properties, micro machining, sensor and actuator principles. The student will learn that MEMS are integrated micro-devices combining mechanical and electrical systems, which convert physical properties to electrical signals and, consequently, detection. This course provides the theoretical and exercises the hands-on experience by fabricating a micro-pressure sensor. Two hours lecture; three hours lab each week. Fee: \$75. *Prerequisite: Junior standing in engineering. Corequisite: EGR 222.*

**ME 338. MACHINE DESIGN II
THREE CREDITS**

The second course of a two-course sequence in design of machine elements dealing with theories of deformation and failure, strength and endurance limit, fluctuation stresses, fatigue and design under axial, bending, torsional, and combined stresses. A study of fasteners, welds, gears, ball roller bearings, belts, chains, clutches and brakes. *Prerequisite: ME 333.*

**ME 340. HEATING, VENTILATION AND AIR CONDITIONING
THREE CREDITS**

Introduction of fundamentals of HVAC design and construction. Study of the psychometric process and fundamental calculations and layout of HVAC systems. Calculations of heat loss and heat gain in commercial and residential structures. *Prerequisite: ME 322.*

**ME 384. MECHANICAL DESIGN LABORATORY
THREE CREDITS**

A laboratory for the development of hands-on experience dealing with open-ended problems in mechanical engineering applications. Topics include engineering mechanics, thermal sciences, and mechanical systems. Emphasis on experimental performance, data collection, evaluations, analysis, and design. Two hours lecture and four hours lab per week. Fee: \$75. *Prerequisite: Junior standing and ME 232.*

**ME 391. SENIOR PROJECTS I
ONE CREDIT**

Design and development of selected projects in the field of mechanical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required. *Prerequisite: Senior standing in mechanical engineering.*

**ME 392. SENIOR PROJECTS II
TWO CREDITS**

Design and development of selected projects in the various fields of mechanical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress reports are required. This is a continuation of ME 391. An open-forum presentation and discussion of the professional paper is required. *Prerequisite: ME 391.*

**ME 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students in the field of mechanical engineering under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Senior standing and approval of department chairperson is required.*

**ME 397. SEMINAR
ONE TO THREE CREDITS**

Presentations and discussions of selected topics. Prerequisite: Senior standing or by special departmental permission.

Course Descriptions

ME 398. TOPICS IN MECHANICAL ENGINEERING

ONE TO THREE CREDITS

Selected topics in the field of mechanical engineering. These may include one or more of the following: control systems, automation, robotics, manufacturing systems, solid mechanics, energy systems, fluid flow, acoustics, computer systems, bio-mechanics. May be repeated for credit.

Prerequisite: Junior or senior engineering standing.

MILITARY SCIENCE (ARMY ROTC) COURSES

MIL 100. PHYSICAL FITNESS TRAINING

ONE CREDIT

U.S. Army Master Fitness trainers supervise a modern fitness program based on the latest military fitness techniques and principles. The classes are conducted on Monday, Wednesday and Friday at the King's College Scandlon Fitness Center and are one hour each.

MIL 211/212. CONCEPTS OF LEADERSHIP I AND II

ONE CREDIT EACH

Instruction focuses on providing a basic understanding of the Army and general military knowledge and skills while concentrating on leadership skills and civic responsibilities important to everyone. Classes are one hour each week.

MIL 221/222. DYNAMICS OF LEADERSHIP I AND II

TWO CREDITS EACH

Instruction is designed to familiarize students with basic military leadership at the junior leader and immediate supervisor level. Classes are two hours each week.

MIL 231/232. BASIC MILITARY LEADERSHIP I AND II

TWO/ONE CREDITS

Instruction focuses on continued leadership development. Students are trained and evaluated on developing, managing and presenting training to the MS I and II cadets. The goal of the MS III year is to prepare students for the Leadership Development Assessment. Classes are two hours each week.

Prerequisite: Advanced placement credit.

MIL 241/242. ADVANCED MILITARY LEADERSHIP I AND II

TWO/ONE CREDITS

Instruction focuses on teaching students to function as a member of a staff and continues to develop leadership skills. This course covers public speaking, military briefing, and effective writing as well as training management and administrative and logistical support. Classes are two hours each week.

MIL 251/252. LEADERSHIP APPLICATION LABORATORY

NO CREDIT

This class focuses on hands-on application and reinforcement of classroom instruction as well as teaching weapons, first aid, land navigation and tactical leadership. This class meets at the University of Scranton for two hours each week; it is highly encouraged for students in the basic course and is required for students in the advanced course.

MUS 101. INTRODUCTION TO MUSIC I

THREE CREDITS

An introduction to the materials of music and their interrelationships, with an emphasis on developing active listening skills, recognizing and comparing the elements of differing musical styles, and exploring cultural contexts and differing functions of music in diverse groups. Three subtopic areas are offered: Western Art Music, Music in the United States, and The History of American Popular Music.

Western Art Music - An exploration of the traditional Western classical music canon.

Music in the United States - A broad approach that examines both American vernacular music (blues, jazz, folk, rock, pop, etc.) and the Western classical music canon.

The History of American Popular Music - An in-depth exploration of American popular music.

MUS 103 MUSIC THEORY I

THREE CREDITS

This course presents fundamental materials and structures of music theory. Theoretical, aural, and

keyboard skills are developed through practice and study of music examples. Prerequisite: Familiarity with music notation.

MUSIC COURSES

MUS 100-400. APPLIED PERFORMANCE ONE CREDIT OR TWO CREDITS

Instruction offered in all keyboard, band and orchestral instruments, guitar and voice. Individual instruction. Select areas conduct a weekly master class for discussion and performance. Participation is required. Additional fees apply. *Prerequisite: Consent of instructor.*

MUS 100. FRESHMAN LEVEL

MUS 200. SOPHOMORE LEVEL

MUS 300. JUNIOR LEVEL

MUS 400. SENIOR LEVEL

MUS 104. MUSIC THEORY II THREE CREDITS

A continuation of MUS 103: Music Theory I. This course presents materials and structures of music theory. Theoretical, aural, and keyboard skills are developed through practice and study of music examples. *Prerequisites: Successful completion of MUS 103 or placement by a diagnostic exam.*

MUS 110. MUSIC, THE ARTS, SOCIETY AND IDEAS THREE CREDITS

This course presents a multicultural study of music in the context of the humanistic tradition.

MUS 121. WILKES CIVIC BAND ZERO OR THREE CREDITS

Large symphonic band and small wind ensemble experience. The Wilkes Civic Band presents a minimum of two concerts per year with programming focusing on standards of the band repertoire, which may include contemporary and non-Western literature for large symphonic band. Students acquire and refine skills in the areas of reading musical notation, good tone production on his/her chosen instrument, and precision in all aspects of musical performance appropriate to a large instrumental ensemble setting. Membership open to all members of the University and surrounding community. May be repeated for credit.

MUS 125. UNIVERSITY CHORUS ZERO OR THREE CREDITS

The Wilkes University Chorus is a large mixed choral ensemble in which students develop musical skills and artistry through the regular rehearsal, discussion, and performance of a wide variety of choral repertoire. Membership is open to all members of the University and surrounding community, by audition. May be repeated for credit. *Prerequisite: Permission of instructor.*

MUS 126. CHAMBER SINGERS ONE-HALF CREDIT

The Wilkes University Chamber Singers provides students an opportunity to practice advanced ensemble skills through the regular rehearsal and performance of a wide variety of primarily *a cappella* choral repertoire. Membership is open to any student member of the University Chorus. May be repeated for credit. *Prerequisite: Permission of instructor.*

MUS 127. JAZZ ENSEMBLE ZERO OR THREE CREDITS

Open to all members of the University community. The ensemble rehearses and presents performances of literature encompassing a wide range of jazz styles and techniques.

MUS 128. CHAMBER PERFORMANCE ONE CREDIT

Students will study and publicly perform chamber literature appropriate to their instruments. Coaching and supervision by faculty members, as assigned. *Prerequisites: Permission of instructor.*

Course Descriptions

MUS 131. UNIVERSITY ORCHESTRA ZERO OR THREE CREDITS

Open to all members of the University community, by audition. The orchestra performs concerts of chamber and symphonic literature throughout the year. May be repeated for credit. *Prerequisite: Permission of instructor.*

MUS 210. MUSIC HISTORY I: ANCIENT THROUGH BAROQUE THREE CREDITS

A study of the history of music and the genres, styles, and forms of the stylistic periods of musical composition, Ancient through Baroque, and the movements, eras, and themes associated with these periods. *Prerequisites: MUS 103 or permission of the instructor.*

MUS 211. MUSIC HISTORY II: CLASSICAL THROUGH TWENTIETH CENTURY THREE CREDITS

A study of the history of music and the genres, styles, and forms of the stylistic periods of musical composition, Classical through 21st Century, and the movements, eras, and themes associated with these periods. *Prerequisites: MUS 103 permission of instructor.*

MUS 298. TOPICS THREE CREDITS

A study in topics of special interest not extensively treated in regularly offered courses.

MUS 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in music under the direction of a staff member. A research paper at a more substantial level beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

NURSING COURSES

NSG 171. HEALTH CARE TERMINOLOGY ONE CREDIT

This course is designed to have students study terms common to the health care professions. The emphasis is on analysis and understanding rather than on memorization.

NSG 200. PRINCIPLES OF NORMAL NUTRITION THREE CREDITS

An introduction of the basic science of human nutrition; principles of normal nutrition, meal planning, computation of diets, physiological, psychosocial, and social effects of food and its constituents; and some contemporary local, national, and international nutrition problems. *Corequisite: NSG 210.*

NSG 210. PRINCIPLES OF NURSING: INDIVIDUAL, FAMILY, AND COMMUNITY SIX CREDITS

This course introduces the student to the profession of nursing. Use of the nursing process is emphasized in meeting the basic human needs of clients within families and their communities. Nursing theory is correlated with clinical practice in the Clinical Nursing Simulation Center and selected clinical agencies. Hours weekly: 4 hours class, 6 hours clinical practice. Fee: \$90.

Prerequisites: BIO 113, BIO 115-116, ENG 101, NSG 171. Corequisites: NSG 200, PHY 170.

NSG 220. NURSING CARE OF THE CHILD-BEARING FAMILY FOUR CREDITS

The nursing process is utilized in assisting child-bearing families within their communities to meet their human needs. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45 *Prerequisites: NSG 200, 210. Corequisites: EES242, PSY 101, SOC 101/ANT 101.*

NSG 230. NURSING CARE OF THE CHILD-REARING FAMILY FOUR CREDITS

The nursing process is utilized in assisting child-rearing families within their communities to meet their human needs. Nursing theory is correlated with clinical practice in a variety of health care

settings. Hours weekly: 2 hours class, 6 hours clinical.

**NSG 240. NURSING CARE OF THE ADULT CLIENT I: INDIVIDUAL, FAMILY, AND COMMUNITY
EIGHT CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$90. *Prerequisite: NSG 220, NSG 230.*

**NSG 250. NURSING CARE OF THE ADULT CLIENT II: INDIVIDUAL, FAMILY AND COMMUNITY
FOUR CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected medical-surgical problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45. *Prerequisite: NSG 240.*

**NSG 260. NURSING CARE OF THE PSYCHIATRIC MENTAL HEALTH CLIENT, INDIVIDUAL, FAMILY,
AND COMMUNITY
FOUR CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45. *Prerequisite: NSG 240.*

**NSG 268. PATHOPHYSIOLOGY FOR THE PROFESSIONAL NURSE
THREE CREDITS**

This course focuses on altered cell functioning resulting in deviations from homeostasis. Topics of study include principles of homeostasis, and the immune, cardiopulmonary, renal, nervous, gastrointestinal, hematological, musculoskeletal, and endocrine systems. The student's ability to relate this to the individual's need for care is emphasized. Pathological alterations in health at the systems level and implications for nursing care are emphasized. *Prerequisite: Junior Nursing majors*

**NSG 270. RECENT TRENDS IN CLINICAL NUTRITION
THREE CREDITS**

This elective course is an introduction to diet therapy, with a discussion of the contemporary issues in clinical nutrition. Deals with the popular myths about nutrition and health and substantiates or refutes these claims with research evidence. *Prerequisite: NSG 200 or RN status.*

**NSG 272. PHARMACOTHERAPEUTICS AND CLINICAL DECISION-MAKING IN NURSING
THREE CREDITS**

This course is designed to assist students to understand the multidisciplinary science of pharmacology based on human systems. Content includes drug classifications, indications, adverse effects and contraindications, age-related variables, dosages, and nursing implications. Using critical thinking skills related to drug therapy, clinical decision-making is developed. *Prerequisite: NSG 220, NSG 230.*

**NSG 273. PHYSICAL ASSESSMENT
THREE CREDITS**

This course is designed to facilitate the integration of physical assessment skills as an essential element of the nursing process. The components of physical assessment, including the health history and physical examination, are organized to allow the student to proceed from an assessment of the overall functions of a client to the more specific functions of each body system. *Prerequisite: Sophomore Nursing majors*

**NSG 274. DIMENSIONS IN HEALTH AND WELLNESS
THREE CREDITS**

This elective course provides a framework for the exploration of the concepts of holistic health, wellness, and alternative health care modalities through experiential exercises, reading, journaling and lectures. During the course the student will assess his/her personal health and wellness status, develop a plan to modify a specified health behavior, implement the plan using a variety of holistic modalities, and evaluate the outcome of the plan. This is a wellness elective appropriate for any

Course Descriptions

student at any level. Lecture, discussion, class participation. No prerequisites. No corequisites. No fees.

NSG 299. NURSING FORUM SEVEN CREDITS

This course is designed to facilitate the transition of RN students from other educational routes into baccalaureate nursing education. Use of the nursing process is applied throughout the growth and development of clients. Nursing theory is correlated with clinical practice in community settings. Upon successful completion of NSG 299 (7 credits), 36 additional credits, (N171, N220, N 230, N 240, N 250, N 260, N 272, N 310), will be assigned in recognition of work completed. Hours weekly: 5 hours class, 3 hours clinical practice. Fee: \$90. *Prerequisites: RN status or NCLEX eligibility, Eng 101. Corequisites: Nsg 200 or challenge examination.*

NSG 303. CONTEMPORARY ISSUES AND TRENDS IN NURSING THREE CREDITS

This seminar course explores current issues and trends in nursing and health care. Designated oral presentation option (OPO). *Prerequisites: Nsg 250, 260 or RN students who have completed Nsg 299.*

NSG 305. INTRODUCTION TO NURSING RESEARCH THREE CREDITS

The research process is examined in this course. Emphasis is placed on studies in nursing which provide a foundation for critical reflection on research reports and application of findings to practice. Designated oral presentation option (OPO). Offered fall semester only. *Prerequisites: Mth 150, Nsg 250, Nsg 260, and RN students who have completed Nsg 299.*

NSG 310. NURSING CARE OF THE OLDER ADULT CLIENT: INDIVIDUAL, FAMILY, AND COMMUNITY EIGHT CREDITS

The nursing process is utilized in the care of older adult clients and their families within their communities in a variety of settings. Nursing theory is correlated with clinical practice. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 250, Nsg 260, Nsg 272.*

NSG 320. SENIOR PRACTICUM EIGHT CREDITS

This course prepares the student for professional role development in emerging health care delivery systems. The student synthesizes knowledge from all previous nursing and supportive courses to manage care in an area of clinical practice consistent with career goals. Hours weekly: 2 hours class, 19 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 310.*

NSG 395-396. INDEPENDENT STUDY ONE TO THREE CREDITS

Independent study for advanced students in nursing under the direction of a staff member. *Prerequisites: By arrangement with an instructor. Candidates for independent study must have a minimum cumulative and nursing G.P.A. of 3.00 and be of senior class standing.*

NSG 198/298/398. TOPICS IN NURSING VARIABLE CREDIT

A study in topics of special interest that are not exclusively treated in regularly offered courses.

NSG 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by School dean.*

PERSONAL AND PROFESSIONAL DEVELOPMENT COURSES

PPD 101. PERSONAL AND PROFESSIONAL DEVELOPMENT I

ONE CREDIT

Personal and Professional Development I is the first course in a required 7-course sequence of Personal and Professional Development opportunities in the Business Curriculum at Wilkes University. The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation.

PPD 102. PERSONAL AND PROFESSIONAL DEVELOPMENT II

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. *Prerequisite: PPD 101.*

PPD 201. PERSONAL AND PROFESSIONAL DEVELOPMENT III

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PPD 201 continues the Life Plan and prepares students for development of a Personal Learning Plan. *Prerequisite: PPD 102.*

PPD 202. PERSONAL AND PROFESSIONAL DEVELOPMENT IV

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 202 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 201.*

PPD 301. PERSONAL AND PROFESSIONAL DEVELOPMENT V

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 301 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 202.*

PPD 302. PERSONAL AND PROFESSIONAL DEVELOPMENT VI

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 302 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 301.*

PPD 401. PERSONAL AND PROFESSIONAL DEVELOPMENT VII

ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 401 continues the Life Plan and prepares students for development of a Personal Learning Plan. Emphasis will be on continued portfolio and resume development, interview skills, and job search strategies. *Prerequisite: PPD 302.*

PHARMACEUTICAL SCIENCE COURSES

PHS 301. ADVANCED PHARMACEUTICS

THREE CREDITS

An overview of the various dosage forms used in the pharmaceutical industry and their manufacture. Particular emphasis will be placed on the excipients used and the manufacturing process and how these affect the physical and chemical nature of the dosage form. *Prerequisite: CHM 351 & 352.*

Course Descriptions

PHS 331. MEDICAL ANATOMY AND PHYSIOLOGY I
FOUR CREDITS
Same as PHA 331. See PHA 331 for course description.

PHS 332. MEDICAL ANATOMY AND PHYSIOLOGY II
FOUR CREDITS
Same as PHA 332. See PHA 332 for course description.

PHS 365. MEDICAL BIOCHEMISTRY
FOUR CREDITS
Same as PHA 365. See PHA 365 for course description.

PHS 408. CLINICAL RESEARCH DESIGN
THREE CREDITS
Same as PHA 310. See PHA 310 for course description.

PHS 413. HETEROGENEOUS PHARMACEUTICAL SYSTEMS
TWO CREDITS
An introduction to the design of heterogeneous systems as dosage forms. Emphasis will be placed on the physical and chemical evaluation of creams, lotions, emulsions, suspensions, semisolids and aerosols. *Prerequisite: CHM 351 & 352, & PHS 301.*

PHS 414. PHARMACEUTICAL REGULATORY AFFAIRS
TWO CREDITS
An introduction to the regulation of the pharmaceutical industry by the Food and Drug Administration. It will focus on the requirements for product approval by the FDA and for the establishment of Good Manufacturing Practices and Good Laboratory Practices. *Prerequisite: Permission of Instructor.*

PHS 415. SOLID DOSAGE FORMS
TWO CREDITS
An introduction to the design and manufacture of traditional oral solid dosage forms and the design of sustained/controlled release dosage forms. *Prerequisite: CHM 351 & 352, PHS 301.*

PHS 416. OPERATION OF QUALITY CONTROL SYSTEMS
TWO CREDITS
An introduction to the design and operation of quality control or quality assurance systems. *Prerequisite: CHM 351 & 352, PHS 301.*

PHS 417. BIOPHARMACEUTICS AND PHARMACOKINETICS
THREE CREDITS
An introduction to the principles of biopharmaceutics and pharmacokinetics. The focus is on understanding the effect of dosage form design and selection on the therapeutic outcomes. The selection of the correct mathematical model to describe the fate of a drug substance in the body will also be covered. *Prerequisite: PHS 301, PHA 331 & 332.*

PHS 418. EXTERNSHIP IN PHARMACEUTICAL MANUFACTURE
EIGHT CREDITS
This is the capstone course for the BS in Pharmaceutical Sciences in which the classroom experiences are integrated and applied to a drug development project in a pharmaceutical company or a quality assurance testing laboratory at the Food and Drug Administration. *Prerequisite: PHS 301, 413, 414, 415, 416 & 417.*

PHS 498. SENIOR RESEARCH PROJECT
THREE CREDITS
The planning and execution of a formulation project under the direction of a faculty mentor. It is expected that students will search the literature and patent records, design a series of experiments and eventually develop a formula and method of manufacture that will be commercially viable. *Prerequisite: PHS 301, 413, 414, 415, 416 & 417.*

PHARMACY COURSES

INTRODUCTORY PHARMACY PRACTICE EXPERIENCE (IPPE)

PHA 335. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE I TWO CREDITS

This course will provide introductory practice experience to students in the community setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to community pharmacy. The student will take an independent learning approach under the supervision of a practicing community pharmacist. The course is two full-time weeks (80 hours) of experience.

Prerequisite: Successful completion of P-1 year.

PHA 440. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE II ONE CREDIT

This course will provide introductory practice experience to students in two health care settings: prescriber's clinics and a faculty practice site. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play.

Prerequisite: P-2 standing.

PHA 445. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE III TWO CREDITS

This course will provide introductory practice experience to students in the health-system setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to this area of practice. The student will take an independent learning approach under the supervision of a practicing pharmacist. The course is two full-time weeks (80 hours) of experience.

Prerequisite: Successful completion of P-2 year.

PHA 555. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE IV ONE CREDIT

This course will provide introductory practice experience to students in two health care settings: home health and long-term care. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play.

Prerequisite: P-3 standing.

PHARMACY GENERAL COURSES

PHA 301 & PHA 304. FOUNDATIONS OF PHARMACY PRACTICE TWO CREDITS EACH

The purpose of this course sequence is to provide the student with the foundational concepts and skills needed to practice pharmacy in the 21st century as the role of the pharmacist expands and continues to change. In addition to one's knowledge of the scientific basis of practice, the ability to communicate and be an effective team member is critical to the pharmacist's role as an educator, clinician, and member of the health-care team. As such, the student will experience the processes of self- and group-assessment, team development, and the use of effective communication strategies through discussions, assignments, role-playing, and case studies. A unique feature of this course sequence is the interdisciplinary faculty team. The expertise and perspective of each faculty member contribute to the development and teaching of this course. Furthermore, this approach demonstrates the relevance and importance of other disciplinary subject matter to the development and maturation of a pharmacy practitioner.

Prerequisite: P-1 standing.

PHA 302, 401, 501, 502. PHARMACY CARE LAB I - IV ONE CREDIT EACH

This four-semester sequence is designed to develop the student's ability to integrate and apply information as well as practice skills that are taught throughout the curriculum. The use of case studies, role-plays, presentations and other active-learning strategies engages students in the learning process and requires them to synthesize information at increasing levels of complexity as the student moves through the course sequence. Fee: \$30.

Prerequisite: P-1, P-2 or P-3 standing as appropriate for each laboratory.

Course Descriptions

PHA 308. PHARMACEUTICAL AND HEALTH CARE DELIVERY

THREE CREDITS

Examination of health and pharmaceutical delivery in the U.S. conducted from a societal perspective. Emphasis is on public policy, economic behavior and outcomes. Application will be made to various pharmaceutical sectors (e.g., retail, health systems, manufacturing). Students should gain an understanding of the factors driving transformation of health care delivery and the implications for future pharmacy practice. Lecture: Three hours per week. *Prerequisite: P-1 standing or consent of instructor.*

PHA 310. CLINICAL RESEARCH AND DESIGN

THREE CREDITS

Application of research design concepts and statistical techniques to design, critically analyze and interpret preclinical, clinical and economic studies of pharmaceuticals and treatment plans. Lecture: Three hours per week. *Prerequisite: MTH 150 or equivalent and P-1 standing or consent of instructor.*

PHA 311 & PHA 312. PHARMACEUTICS I & II

FOUR CREDITS EACH

The study and application of physico-chemical principles that are necessary for the design, development and preparation of pharmaceutical dosage forms. The study of quantitative skills necessary for an understanding of the basic and clinical pharmaceutical sciences, including skills in pharmaceutical calculations and extemporaneous preparation of dosage forms. Lecture: Three hours per week. Laboratory/Recitation: Three hours per week. Fee: \$80 *Prerequisite: P-1 standing or consent of instructor. PHA 311 is a prerequisite for PHA 312.*

PHA 313. PHARMACY CALCULATIONS

ONE CREDIT

The common mathematical processes that a pharmacist may encounter in professional practice are covered. Interpretation of the prescription, including Latin abbreviations, will be discussed. Medical terminology and the generic name, trade name, manufacturer and classification of the top 100 drugs will also be presented. Lecture one hour per week. *Prerequisite: P-1 standing or consent of instructor.*

PHA 327. MEDICAL MICROBIOLOGY

FOUR CREDITS

An overview of microbiology with special emphasis on pathogenic microbiology. Lecture: Three hours per week. Laboratory: Three hours per week. Fee: \$80. Cross listed with BIO 327. *Prerequisite: P-1 standing or consent of instructor.*

PHA 331 & PHA 332. MEDICAL ANATOMY AND PHYSIOLOGY I & II

FOUR CREDITS EACH

In-depth principles of human anatomy and physiology as well as an introduction to pathophysiology will be presented. Lecture: Two hours per week. Laboratory/Recitation: Three hours per week. Discussion/Recitation: two hours per week. Fee: \$80. *Prerequisite: P-1 standing or consent of instructor. PHA 331 is a prerequisite for PHA 332.*

PHA 405. PHARMACEUTICAL CARE SYSTEMS: DESIGN AND CONTROL

TWO CREDITS

Examines delivery of pharmaceutical products and services from a systems perspective in a variety of patient care settings. Focus is upon effectiveness, efficiency and quality. Covers design of systems, establishment and monitoring of key indicators, total quality management and quality assurance agencies (e.g., JCAHO, NCQA). Lecture: Two hours per week.

PHA 410. IMMUNOLOGY/BIOTECHNOLOGY

THREE CREDITS

A discussion of nonspecific host defense mechanisms and a detailed description of specific immunity. Products that impart artificial active and passive immunity are presented. The concept of biotechnology is discussed together with the currently available products of genetic engineering that relate to immunology. The various immunological disorders and the immunology of cancer and HIV are discussed. Lecture: Three hours per week. *Prerequisite: PHA 331, 332, 365 or consent of instructor.*

**PHA 411. BIOPHARMACEUTICS AND CLINICAL PHARMACOKINETICS
FOUR CREDITS**

The fundamentals of biopharmaceutics and pharmacokinetics are presented. The physical and chemical properties of the drug and dosage form and the impact of the route of administration and patient characteristics and disease state will be related to the absorption, distribution, metabolism and elimination in the body. Individual drugs and patient case histories will be used to familiarize the student to practice. Lecture: Three to four hours per week. Recitation: zero to three hours per week. *Prerequisite: PHA 311, PHA 312 or consent of instructor.*

**PHA 412. MANAGEMENT OF PHARMACY OPERATIONS
THREE CREDITS**

The principles of management, including personnel and financial management, will be covered as they apply to management of pharmacy operations in a variety of settings (e.g., community, health system, managed care). Lecture: Three hours per week. *Prerequisite: PHA 308 or consent of instructor.*

**PHA 503 AND PHA 504. LONGITUDINAL CARE LAB I & II
ONE CREDIT EACH**

Students will follow a patient or patients over an extended period of time in a medical or home setting. Pharmaceutical knowledge and skills will be applied in communications, health assessment, monitoring of pharmacotherapy, evaluation of both humanistic and clinical outcomes. Issues of health care, cost access and quality as revealed through each patient's interaction with health and pharmaceutical care systems will be addressed. Three hours per week. Students are responsible for transportation to and from all off-campus experiential sites. *Prerequisite: PHA 503 is prerequisite to PHA 504.*

**PHA 505. PHARMACY LAW
TWO CREDITS**

The study of federal and state statutes, regulations and court decisions which control the practice of pharmacy and drug distribution. Civil liability in pharmacy practice and elements of business and contract law will be covered. Lecture: Two hours per week.

**PHA 509 ECONOMIC EVALUATION OF PHARMACEUTICAL PRODUCTS AND SERVICES
THREE CREDITS**

Introduction to commonly used economic evaluation methods (e.g., cost-minimization, cost-utility, cost-benefit, cost-effectiveness) as applied to pharmaceutical products and services. Quality of life and outcomes research will also be explored. Emphasis is on understanding evaluation methods and research design and interpreting the relevant literature for practice applications. Lecture: Three hours per week. *Prerequisite: PHA 308 and PHA 310 or consent of instructor.*

**PHA 532. ALTERNATIVE MEDICINE AND NUTRITION
THREE CREDITS**

This course gives an overview of various alternative/contemporary medicine practices: homeopathy, herbal therapy, chiropractic, acupuncture, acupressure, body massage, ayurvedic, and shamanic practices. This course will also give an overview on the concept and practice of nutrition: parenteral and enteral nutrition. Lecture: Three hours. *Prerequisite: PHA 331, 332, 365 or consent of instructor.*

PHARMACY ELECTIVE COURSES

**PHA 395–396. INDEPENDENT STUDY
ONE TO SIX CREDITS**

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

**PHA 450. NEUROPHARMACOLOGY OF DRUGS OF ABUSE
THREE CREDITS**

In-depth analysis of drugs of abuse, including pharmacokinetics, pharmacodynamics, tolerance, sensitization, physical dependence, and effects of drug use during pregnancy. Drug testing and substance abuse treatment strategies will also be discussed. Lecture: Three hours. *Prerequisite: PHA 421 or consent of instructor*

Course Descriptions

PHA 452. EXTEMPORANEOUS COMPOUNDING

THREE CREDITS

Students will achieve basic and advanced skills in compounding pharmaceutical dosage forms for individualized patient therapy to replace a lack of commercially available products, and enhance therapeutic problem-solving between the pharmacist and physician to enhance patient compliance. Students will work independently on research assignments and compounding preparations. Lecture one hour, laboratory six hours per week. Fee: \$80. *Prerequisites: PHA 311 and PHA 312 and permission of instructor.*

PHA 495–496. INDEPENDENT STUDY

ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 595–596. INDEPENDENT STUDY

ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 534. INTRODUCTION TO HOSPITAL PHARMACY PRACTICE

TWO CREDITS

This course introduces a student to the practice of pharmacy within a hospital setting. The student will be introduced to the history of, management of, clinical services within, and career options in a hospital pharmacy. The student will need to complete a hospital site visit, a formulary evaluation, and a Drug-Use Evaluation (DUE). Didactic and active learning techniques will be employed throughout the course.

PHA 536. PRINCIPLES OF ADVANCED COMMUNITY PHARMACY MANAGEMENT

TWO CREDITS

This course is designed to provide a foundation for students interested in pursuing the development and implementation of advanced clinical programs in a community pharmacy. The student will be introduced to principles in pharmacy and fiscal management, professional development, and the management and legal issues relating to clinical pharmacy services. Didactic and active learning techniques will be employed throughout the course and the student will be required to develop a business plan.

PHA 538. PEDIATRIC PHARMACOTHERAPY

TWO CREDITS

This course is designed to expand the student's current knowledge base regarding the pediatric population and to introduce the core concepts involved in the care of this special population. The course prepares students to identify and address drug-related problems in pediatric patients and to demonstrate competency within those areas. This will be accomplished by completion of case scenarios, actual patient presentations, and a take-home examination. An on-site visit to the Children's Hospital of Philadelphia (CHOP) is required. *Prerequisite: P-3 Standing*

PHA 540. COMPREHENSIVE DIABETES MANAGEMENT

TWO CREDITS

This course provides a multidisciplinary foundation for health professionals in the principles of diabetes management. Students who successfully complete the course will have knowledge and the basic skill set that is needed to begin practicing diabetes management. The majority of this course is independent self-study of online lectures, but there are mandatory on-campus discussions/exams.

Prerequisite: P-3 standing or permission of instructor.

PHA 550. PRINCIPLES OF EXPERIMENTAL PHARMACOLOGY

THREE CREDITS

This course is designed to increase the student's appreciation of the science of pharmacology. The student will be exposed to principles and theories that are currently used to interpret pharmacological data about new drug products and physiological systems in both humans and animals. A series of articles will be used to demonstrate application of pharmacological techniques, and the student will be asked to suggest additional techniques to further clarify published hypotheses. The student will conduct experiments to apply pharmacological theories and techniques and to use the scientific method to gain data to support a hypothesis. Fee: \$80.

PHA 551. VETERINARY PRODUCTS

THREE CREDITS

Veterinary Products is designed to introduce pharmacy students to Veterinary Pharmacology and Therapeutics and the role of the pharmacist in the care of animals. The students will evaluate the most commonly used drugs in veterinary care and relate that evaluation to the use of these drugs in humans. The student will learn fundamental concepts that will allow the student to provide pharmaceutical care to animals and assist the veterinarian and owner in the care of pets and domestic animals. There will be a field trip to a zoo on one Saturday during the course.

Prerequisites: PHA 424 and 426.

PHA 552. PRINCIPLES OF BIOORGANIC AND MEDICINAL CHEMISTRY

THREE CREDITS

This will be an introductory course whose aims are to provide the principles of bioorganic and medical chemistry, including an understanding of drug structure-activity relationships, prediction of the physicochemical properties of a drug, basic knowledge of the major pathways of drug metabolism and factors that can contribute to drug-drug interactions. *Prerequisites: CHEM 231-232, PHA 327, 365.*

PHARMACOTHERAPEUTIC MODULES

A four-semester, twelve-module sequence (three modules per semester) that integrates pharmacology, medicinal chemistry, pathophysiology, and pharmacotherapy. This team-taught, interdisciplinary course provides students with the opportunity to learn and apply concepts from these four disciplines. Prerequisites: PHA 310, 327, 331, 332, 365.

PHA 421 PHARMACOTHERAPEUTICS I: PRINCIPLES OF PHARMACOLOGY & MEDICINAL CHEMISTRY

TWO CREDITS

PHA 423 PHARMACOTHERAPEUTICS II: PRINCIPLES OF PHARMACOTHERAPEUTICS

TWO CREDITS

Prerequisite: PHA 421.

PHA 425 PHARMACOTHERAPEUTICS III: SELF-CARE AND DERMATOLOGY*

THREE CREDITS

PHA 426 PHARMACOTHERAPEUTICS IV: GASTROINTESTINAL DISORDERS*

TWO CREDITS

PHA 428 PHARMACOTHERAPEUTICS V: INFECTIOUS DISEASES*

FOUR CREDITS

PHA 430 PHARMACOTHERAPEUTICS VI: HEMATOLOGY, JOINT DISORDERS, SURGERY*

TWO CREDITS

PHA 521 PHARMACOTHERAPEUTICS VII: PULMONARY DISORDERS*

TWO CREDITS

PHA 523 PHARMACOTHERAPEUTICS VIII: CARDIOVASCULAR DISORDERS*

FOUR CREDITS

PHA 525 PHARMACOTHERAPEUTICS IX: RENAL DISORDERS*

TWO CREDITS

PHA 526 PHARMACOTHERAPEUTICS X: ENDOCRINE DISORDERS & WOMEN'S HEALTH ISSUES*

TWO CREDITS

PHA 528 PHARMACOTHERAPEUTICS XI: NEOPLASTIC DISEASES*

TWO CREDITS

PHA 530 PHARMACOTHERAPEUTICS XII: CENTRAL NERVOUS SYSTEM DISORDERS*

FOUR CREDITS

** PHA 423 is prerequisite to PHA 425-530.*

Course Descriptions

ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE)

PHA 510. GENERAL MEDICINE

FIVE-SIX CREDITS

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in general medicine practice. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 511. AMBULATORY CARE ADVANCED PHARMACY PRACTICE EXPERIENCE

FIVE-SIX CREDITS

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in ambulatory care settings. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 512. COMMUNITY ADVANCED PHARMACY PRACTICE EXPERIENCE

FIVE-SIX CREDITS

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in community practice settings. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 513. HEALTH SYSTEM ADVANCED PHARMACY PRACTICE EXPERIENCE

FIVE-SIX CREDITS

Integration of advanced pharmacy related concepts to the delivery of pharmaceutical care in the health system setting. Clinical practice: Forty hours per week for five to six weeks. *Prerequisite: P-4 standing.*

PHA 599 A, B AND C. ELECTIVE ADVANCED PHARMACY PRACTICE EXPERIENCE ROTATIONS

FIVE-SIX CREDITS

Advanced pharmacy practice experience involved in different aspects of pharmaceutical care. (Courses to be determined.) Clinical practice 40 hours per week for a total of five weeks. *Prerequisites: P-4 standing.*

PHILOSOPHY COURSES

PHL 101. INTRODUCTION TO PHILOSOPHY

THREE CREDITS

An introduction to some of the major figures, problems, and concerns of philosophical thought. Students in this course typically examine a variety of philosophical questions and problems such as: the existence of God, human nature and the good life, freedom and responsibility, skepticism and the nature of knowledge, and theories of reality.

PHL 110. INTRODUCTION TO ETHICAL PROBLEMS

THREE CREDITS

An exploration of a series of basic ethical problems. Topics to be covered include basic ethical theories, how to evaluate ethical theories and moral arguments, the relationship between religion and ethics, and a selection of current moral problems such as abortion, capital punishment, affirmative action, animal rights, etc. Specific moral problems covered will vary. Other ethical questions such as "How should we live?" may also be covered in the course.

PHL 122. INTRODUCTION TO SYMBOLIC LOGIC

THREE CREDITS

An introduction to the nature of logical systems and deductive reasoning. The study of the syntax and semantics of formal languages; testing arguments for validity; and an examination of other important logical notions, such as proof and consistency.

PHL 214. MEDICAL ETHICS

THREE CREDITS

A selection of important issues facing health care providers, patients, and society in general are examined. Topics include euthanasia, abortion, doctor-patient relationships, the use and misuse of information, research on human and non-human animals, informed consent, patients' rights, truthfulness and the right to know, conflicts of obligations, the right to health care, the allocation of resources, mandatory testing for AIDS, and the use of genetic and reproductive technologies.

Prerequisite: PHL 101 or permission of instructor.

**PHL 216. PHILOSOPHIES OF NONVIOLENCE
THREE CREDITS**

An examination of the concept of nonviolence and arguments supporting nonviolence as a way of life. Historical and modern theories as well as applications of nonviolence will be considered including ideas from the Buddha, Jesus, Gandhi, Tolstoy, Martin Luther King, Jr., Thoreau, the Dalai Lama, Thich Nhat Hanh, and others. Students will be expected to consider the importance and relevance of these ideas for their own lives. *Prerequisite: PHL 101, 110 or permission of instructor.*

**PHL 217. THE QUESTION OF ANIMAL RIGHTS
THREE CREDITS**

An exploration of arguments supporting a wide variety of conclusions regarding our ethical obligations to nonhuman animals. We will examine standard moral theories, theories about the nature of current social practices, the history of our attitudes toward nonhuman animals, feminist arguments that our attitudes toward nonhuman animals are connected to negative views of female humans, and more. *Prerequisite: PHL 101, 110 or permission of instructor.*

**PHL 218. ENVIRONMENTAL ETHICS
THREE CREDITS**

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as EES 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

**PHL 236. AMERICAN POLITICAL PHILOSOPHY
THREE CREDITS**

See description under Political Science Department listing. (Same as PS 262). May not be used to meet Area I of the General Education Requirements.

**PHL 242. THE MEANING OF LIFE
THREE CREDITS**

A selection of culturally diverse classic and contemporary answers to the question of the meaning of life will be examined and the implications for our lives will be explored. Perspectives to be addressed include those of Epicurus, Epictetus, Aristotle, Lao-tzu, Buddha, Viktor Frankl, Albert Camus, A.J. Ayer, Peter Singer, and more. *Prerequisites: PHL 101, PHL 110, or permission of instructor.*

PHL 244. BUDDHIST THOUGHT

THREE CREDITS

An exploration and examination of basic ideas in Buddhist philosophy, considering all three main "vehicles" of Buddhist thought-Theravada, Mahayana, and Vajrayana schools. Comparisons to Western philosophical thought will be made and some Buddhist practices explored. *Prerequisites: PHL 101 or permission of instructor.*

**PHL 272. PHILOSOPHY OF RELIGION
THREE CREDITS**

An examination of various problems that arise when religion is made the object of philosophical reflection: the nature and forms of religious experience, the relationship between faith and reason, arguments for the existence of God, the problem of evil, arguments for immortality, the concepts of worship and miracle, the nature of religious language, and the possibility of religious knowledge. *Prerequisite: PHL 101 or permission of instructor.*

**PHL 298. TOPICS
THREE CREDITS**

The study of a topic of special interest not extensively treated in other courses. Topics chosen according to interest of instructor. Because of its variable content, this course may be repeated for credit. *Prerequisite: PHL 101 or permission of instructor.*

Course Descriptions

PHL 301. ORIGINS OF WESTERN THOUGHT THREE CREDITS

The development of Western philosophical thought from its beginnings in the Greek world to early Christian thought. Philosophers to be studied include the Pre-socratics, Plato, Aristotle, Plotinus, the Stoics, Epicurus, Sextus Empiricus, and St. Augustine. *Prerequisite: PHL 101 or permission of instructor.*

PHL 310. ETHICAL THEORY Three Credits

A study of classical and contemporary ethical theories, the problems that they raise and the problems they are intended to solve. The theories of Plato, Aristotle, Kant, Hume, and Mill will be examined as well as recent contributions by Ross, Harman, Moore, Ayer, Stevenson, and Hare. Questions addressing ethical relativism, the relationship of religion to ethics, skepticism, moral realism, egoism, and value judgments will also be discussed. *Prerequisite: PHL 101 or permission of instructor.*

PHL 314. ADVANCED TOPICS IN BIOETHICS THREE CREDITS

An in-depth exploration of the ideas of a selection of philosophers known for their often radical contributions in the field of bioethics. Topics include the appropriate and inappropriate use of moral principles and theories, public policies to change or maintain in the area of bioethics, and whether our attitudes toward personhood and life and death are defensible. *Prerequisite: PHL 214 or permission of instructor.*

PHL 316. MORAL PSYCHOLOGY THREE CREDITS

An analysis of some current questions in moral psychology, an area of philosophy that addresses normative issues regarding human psychology including motives, emotions, psychological reactions, etc. Questions to be addressed include questions about moral luck (whether it is possible for an agent to be caught in a situation, through no fault of her own, in which it is impossible to act rightly), about whether one's moral character may be subject to luck in important ways, about whether there are reasons to act morally if one does not care about reputation or morality, and questions about when judgments of responsibility for actions and character are appropriate. *Prerequisites: PHL 310 or permission of instructor.*

PHL 332. SOCIAL AND POLITICAL PHILOSOPHY THREE CREDITS

Social and political institutions as seen by such classic critics as Plato, Aristotle, Hobbes, Locke, Hume, Rousseau, Bentham, and others. More recent views such as those of Marx, Rawls, and Nozick will also be covered. Special attention is paid to the related questions of the role of the state and the relationship between the individual and the state. (Same as PS 263) *Prerequisite: PHL 101 or permission of instructor.*

PHL 344. ADVANCED TOPICS IN BUDDHIST THOUGHT THREE CREDITS

An examination of the history of Buddhist philosophy and the issues it raises with particular emphasis on *Shunyata*. *Prerequisite: PHL 244 or permission of instructor.*

PHL 350. PHILOSOPHY OF SCIENCE THREE CREDITS

A critical examination of various issues concerning scientific thought. Topics may include the nature of science, distinguishing science from pseudo-science, the nature of theories, scientific explanation, space and time, causality, the problem of induction, laws of nature, and the reality of theoretical entities. *Prerequisite: PHL 101 or permission of instructor.*

PHL 372. ADVANCED TOPICS IN PHILOSOPHY OF RELIGION THREE CREDITS

An intensive examination of a major problem or figure in the philosophy of religion. Because of its variable content, this course may be repeated for credit. *Prerequisite: PHL 272 or permission of instructor.*

**PHL 390. SENIOR PROJECTS: CAPSTONE
ONE CREDIT**

An independent project culminating in a formal essay and presentation. The project serves as a capstone experience demonstrating the student's learning in the major. *Open only to senior Philosophy majors.*

**PHL 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

**PHL 397. SEMINAR
ONE TO THREE CREDITS**

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson is required.*

**PHL 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS**

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

PHYSICS COURSES

**PHY 105. CONCEPTS IN PHYSICS
THREE CREDITS**

Basic concepts of physical science, including the scientific method, will be studied. Theories, laws, and experiments from mechanics, electricity and magnetism, thermodynamics, optics, and atomic and nuclear physics may be included. Viewpoints will be classical and modern, including quantum and relativistic. Class meets four hours a week: two hours of lecture and one two-hour lab per week. Fee: \$75. *Prerequisite: No previous background in science or college-level mathematics is required.*

**PHY 170. CONCEPTS IN PHYSICS AND CHEMISTRY
FOUR CREDITS**

An overview of Classical Mechanics, Thermodynamics, and the elementary principles of modern physics, including selected topics in basic chemistry and applications to human health. Emphasis is placed on basic physical and chemical principles and on algebraic calculations, scaling, units conversions, Cartesian graphing, acid and base reactions, and numerical problem solving. Three hours of lecture/discussion, one three hour lab per week. Fee: \$75. *Prerequisite: Previous courses in Chemistry, Algebra, Geometry.*

**PHY 171. PRINCIPLES OF CLASSICAL AND MODERN PHYSICS
FOUR CREDITS**

An introductory course designed to promote an understanding of the more important fundamental laws and methods of mechanics and electricity and magnetism. Laboratory work to emphasize basic principles and to acquaint the student with measuring instruments and their use, as well as the interpretation of experimental data. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$75. *Corequisite: Mth 105 or Mth 111.*

**PHY 174. APPLICATION OF CLASSICAL AND MODERN PHYSICS
FOUR CREDITS**

An introductory course designed to promote an understanding of the more important fundamental laws and methods of heat, optics and modern physics. Laboratory work to emphasize basic principles and to acquaint the student with measuring instruments and their use, as well as the interpretation of experimental data. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$75. *Corequisite: Mth 105 or Mth 111.*

Course Descriptions

PHY 201. GENERAL PHYSICS I

FOUR CREDITS

A thorough grounding in the concepts, principles, and laws of mechanics, thermodynamics, and wave motion. Instruction by demonstration-lecture, recitation, problem solving, and experimental work. Demonstration-lecture three hours a week, recitation one hour per week, and laboratory two hours a week. Fee: \$75. *Corequisite: Mth 111.*

PHY 202. GENERAL PHYSICS II

FOUR CREDITS

Electricity and magnetism, optics and light. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$75 *Prerequisite: Phy 171 or 201. Corequisite: Mth 112.*

PHY 203. GENERAL PHYSICS III

THREE CREDITS

Modern physics including the experimental basis, concepts, and principles of atomic and nuclear physics. Demonstration-lecture three hours a week. *Prerequisite: Phy 202.*

PHY 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of physics under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisites: Senior standing and approval of department chairperson.*

PHY 198/298/398. TOPICS IN PHYSICS

VARIABLE CREDIT

Selected topics in the field of physics. These may include one or more of the following: astronomy; geophysics; biophysics; nuclear power & waste; relativity; quantum mechanics; semi-conductors; cryogenics; health physics. May be repeated for credit. *Prerequisite: Varies with topic studied.*

POLITICAL SCIENCE COURSES

PS 111. INTRODUCTION TO AMERICAN POLITICS

THREE CREDITS

A descriptive and analytical study of the theory and practice of American government, its constitutional basis, organization, powers, functions, and problems. *Offered every semester.*

PS 141. INTRODUCTION TO INTERNATIONAL POLITICS

THREE CREDITS

An introduction to the field of international relations. Attention is given to basic theories of international relations as well as the issues and problems that confront contemporary world politics. Factors that determine a nation's foreign policy are also examined. *Offered every spring.*

PS 151. GOVERNMENTS OF THE WORLD

THREE CREDITS

This course is an introduction to the study of the politics and government of selected foreign countries. The course will begin with the examination of the various structures and concepts of government around the world and their regional variations. Progressing from the study of a number of alternative structures of politics and government, the course will examine several countries in detail providing a specific introduction to the political structures of a number of countries.

PS 212. URBAN GOVERNMENT AND POLITICS

THREE CREDITS

An examination of the structure and operation of urban governments. Metropolitan politics is also considered. Special attention is given to the politics and policy problems confronting American cities. (Same as SOC 263) Counts as Criminology elective.

PS 213. POLITICAL PARTIES AND POLITICAL PARTICIPATION

THREE CREDITS

An introduction to the role and function of political parties in democratic regimes, with particular attention given to the U.S. Extensive discussion of the political activities of the American electorate

in forms other than parties, such as interest groups, as well as grass roots movements. *Offered in fall semester in even years.*

**PS 221. INTRODUCTION TO PUBLIC ADMINISTRATION
THREE CREDITS**

An introduction to the principles and problems of public administration in an increasingly complex society. Attention to such topics as leadership, informal organizational processes (infrastructure), the relation of administration to its cultural context, and the question of administrative responsibilities. Survey of the technical problems of personnel, finance, and administrative law.

**PS 224. PUBLIC POLICY ANALYSIS
THREE CREDITS**

This course is an introduction to the study of public policy at the national level. It will examine approaches to public policy and the operation of the "policy process." A range of public policy examples will be employed from social welfare to foreign and defense issues.

**PS 232. CRIMINAL LAW
THREE CREDITS**

An introduction to the study of criminal law. The principles of criminal law are presented using the case method. The structure and operation of the criminal justice system are also reviewed. *Offered every fall.*

**PS 233. LAW AND SOCIETY
THREE CREDITS**

An introduction to the study of law and its role in social and political systems. Attention is given to theories of law, and the structure of the legal system. Students are given the opportunity to engage in hypothetical dispute resolutions using common law methods. *Offered every spring.*

**PS 242. INTERNATIONAL LAW AND ORGANIZATION
THREE CREDITS**

The study of the nature, application, and sources of international law and how it relates to the evolution of global and regional organizations and alliances, including international non-governmental organizations and other non-state factors. *Prerequisite: PS 141 or consent of instructor.*

**PS 251. EUROPEAN POLITICS
THREE CREDITS**

Comparison of the development, institutions, problems and prospects of democratic systems in Europe, both west and east. Attention is given to the European Community and its role in the transformation of Europe as well as the development of the former communist states in eastern Europe.

**PS 260. INTRODUCTION TO POLITICAL THINKING
THREE CREDITS**

An introduction to the study of politics through an examination of the crucial issues with which political scientists grapple: justice, equality, freedom, power, and the good life, to name a few. *Offered every fall.*

**PS 261. CONCEPTS AND METHODS IN POLITICAL SCIENCE
THREE CREDITS**

A survey of the major concepts, theories and methods of political science as a discipline. Preparation of a research design and a review of quantitative methods also included. *Offered every fall.*

**PS 262. AMERICAN POLITICAL THOUGHT
THREE CREDITS**

The study of the political ideas, ideals and ideologies which contributed to and developed from the American experience. An analysis of the ideas which underlie our political institutions and practices. (Same as PHL 236) May not be used to meet Area I of the General Education Requirements.

**PS 263. SURVEY OF POLITICAL PHILOSOPHY
THREE CREDITS**

See description under Philosophy Department listing. (Same as PHL 230). *Prerequisite: Phl 101 or*

Course Descriptions

permission of instructor.

PS 264. SURVEY RESEARCH METHODS THREE CREDITS

See description under Sociology Department listing. (Same as SOC 371).

PS 265. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES THREE CREDITS

This course is an introduction to quantitative analysis for the social sciences using SPSS, one of the most frequently and widely used statistical packages in the world. Students will learn how to enter and manipulate data in SPSS, apply and interpret statistics from descriptive through multiple regression, and test hypothesis using statistical methods (same as SOC 373). *Prerequisites: PS 111 or 141, PS 261 or SOC 371, or approval of instructor.*

PS 311. THE AMERICAN PRESIDENCY THREE CREDITS

An exploration and analysis of the development and powers of the American President as political leader, chief executive, and world leader. Special attention is given to the selection process and the effect of the process on the Presidency. *Prerequisite: PS 111 or consent of instructor. Offered in fall semester in odd years.*

PS 312. LEGISLATIVE BEHAVIOR THREE CREDITS

An analysis of the theory and practice of representative institutions in political systems with emphasis given to the American Congress. Legislative elections, floor procedures, committee functions, and ethics are all considered as well as their collective impact upon the formation of public policy. *Prerequisite: PS 111 or consent of instructor. Offered in spring semester in even years.*

PS 331. THE CONSTITUTION AND THE FEDERAL SYSTEM THREE CREDITS

The study of the growth and change of the American Constitution through analysis of the Continuation of the study of the meaning of the Constitution as interpreted by the Supreme Court. Analysis of the landmark decisions regarding free speech and press, separation of church and state, rights of persons accused of crimes, equal protection of the laws, voting rights. *Prerequisite: PS 111 or PS 233, or consent of instructor. Offered in spring semester in odd years.*

PS 332. CIVIL RIGHTS AND LIBERTIES THREE CREDITS

leading cases decided by the U.S. Supreme Court. Analysis of the powers of the three branches of government and of the relations between the states and the federal government. *Prerequisite: PS 111 or PS 233, or consent of instructor. Offered in fall semester in even years.*

PS 345. AMERICAN NATIONAL SECURITY POLICY THREE CREDITS

This course analyzes U.S. National Security Policy, the combination of foreign and defense policies. Using theories of international politics and foreign policy, students learn about the evolution of U.S. national Security from the War of Independence to the contemporary period. Theoretical approaches, such as geopolitics, balance of power, and force doctrines, are examined. The agencies and personnel that develop and implement security policy are also studied. *Prerequisite: PS 141 or permission of instructor.*

PS 350. COMPARATIVE POLITICS: THEORY AND ANALYSIS THREE CREDITS

This course is an introduction to the study of politics and governments from a comparative perspective. It is not a survey course of the governmental institutions of particular countries, but rather an examination of types of governments and regimes, the transitions that may occur between types of government, and approaches to studying these topics. We will also examine the ways that ethnicity and cultural ideas affect governments and regime transition. *Prerequisite: Sophomore Standing.*

**PS 380. POLITICAL SCIENCE SENIOR PROJECT
THREE CREDITS**

This course is the capstone experience for political science majors. During the semester, the student will complete the research project begun during PS 261 (i.e. data and/or information will be gathered and analyzed.), and the results written in a formal paper. The student will present the findings in public forum in which the department's faculty and students are present. *Prerequisite: Senior Standing. Offered every semester.*

**PS 394. PRACTICUM
ONE TO THREE CREDITS**

Educational experiences associated with faculty research, club activities, experiential learning are available to the student for credit depending upon the amount of time the student invests in the experience. Students may work in the University's Survey Center, assist in a major research project with a faculty member, or participate in the Model UN or some other educational simulation. (Maximum of nine credits can be accumulated by a student over four years). *Prerequisite: No course prerequisites but the permission of the instructor/faculty member is required in advance. Offered every semester.*

**PS 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS**

Independent study and research for advanced students in the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson. Offered every semester.*

**PS 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS**

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

**PS 198/298/398. TOPICS IN POLITICAL SCIENCE / TOPICS IN POLICY ANALYSIS
VARIABLE CREDIT**

A study of topics of special interest not extensively treated in regularly offered courses. Examples of possible topics would be: film and politics; minorities in the political process; American conservatism; the First Amendment in law and practice; war in the ancient era; Marxism, etc. May be repeated when topics differ. A topics course in a specific field of public policy, such as Energy, Environmental Science, Health Policy and Politics, etc., may be offered also. *Prerequisite: Permission of department chairperson, criterion depending on topic.*

PSYCHOLOGY COURSES

**PSY 101. GENERAL PSYCHOLOGY
THREE CREDITS**

An introduction to the field of psychology with emphasis on objective and systematic methods of inquiry. Extensive treatment of major psychological topics including sensation, perception, learning, motivation, intelligence, personality development, frustration, conflict, and mental health.

**PSY 200. RESEARCH DESIGN AND STATISTICS I
THREE CREDITS**

An introduction to the use of statistical procedures in the analysis of psychological data. Topics include descriptive statistics and inferential statistics. Techniques such as t-tests, correlation, regression, and chi-square will be used for hypothesis testing. *Prerequisites: PSY 101 and Math competency (MTH 101 or higher)*

**PSY 221. DEVELOPMENTAL PSYCHOLOGY
THREE CREDITS**

The course provides a general view of human growth and development from conception through the life span. Physical, cognitive, personal, and social development of the various stages of life will be presented. Discussions will include issues such as the influence of heredity versus environment and

Course Descriptions

how these issues can be studied using various developmental research techniques. *Prerequisite: Psy 101.*

PSY 222. ADOLESCENT PSYCHOLOGY THREE CREDITS

This course is designed as a study of the adolescent stage of life. Emphasis will be placed on the following areas of development: physical, emotional, cognitive, and social. *Prerequisite: Psy 101.*

PSY 242. PERSONALITY THREE CREDITS

An examination of the major theoretical perspectives on personality development and functioning, with additional emphasis on the assessment of personality and the treatment of disorders of personality. *Prerequisite: Psy 101.*

PSY 300. RESEARCH DESIGN AND STATISTICS II THREE CREDITS

A lecture and laboratory course designed to familiarize the student with the methods of psychological research. Hands-on experimental participation will give the student direct experience with research design and statistical analyses using SPSS. The student will prepare a formal APA style research proposal to be used for the capstone experience. *Prerequisite: PSY 101 and PSY 200. To be taken by psychology majors only.*

PSY 311. BEHAVIORAL NEUROSCIENCE FOUR CREDITS

A study of the physiological mechanisms mediating behavior and cognition. Emphasis on the structure and function of the nervous system and the neurophysiological bases of sensory processes, emotion, abnormal behavior, sleep, learning and memory, pain, and drug abuse. Laboratory experience includes brain dissection and psychophysiological techniques employed in human behavioral neuroscience research. Fee: \$30. *Prerequisites: Psy 101; junior or senior standing.*

PSY 312. SENSORY AND PERCEPTUAL PROCESSES FOUR CREDITS

Principles and phenomena of human sensory and perceptual processes are studied within the visual, auditory, olfactory, gustatory, proprioceptive and cutaneous systems. Students are familiarized with techniques used in the investigation of sensory and perceptual phenomena. *Prerequisite: Psy 101; junior or senior standing.*

PSY 331. COGNITION THREE CREDITS

A survey of human cognitive processes such as attention, pattern recognition, memory, language, and problem solving as well as other selected aspects of human cognition. The course includes historical as well as current perspectives on cognitive issues and emphasis on the research techniques used. *Prerequisite: Psy 101.*

PSY 333. CRITICAL THINKING IN PSYCHOLOGICAL SCIENCE THREE CREDITS

This course provides an opportunity to learn and practice the basic skills of critical thinking within the context of psychological science. Students will evaluate claims and theories in psychology, generate alternative explanations of psychological findings, identify common fallacies in thinking, construct and evaluate arguments, and learn how to become a more intelligent consumer of information. Additional topics include the interface of politics and the media with science, and the dangers of pseudoscience. *Prerequisite: Psy 101.*

PSY 341. INTRODUCTION TO SOCIAL PSYCHOLOGY THREE CREDITS

A general survey of the field of social psychology. Social factors in human nature; psychology of individual differences; social interaction; collective behavior, psychology of personality; social pathology. (Same as Soc 341) *Prerequisites: Soc 101 or Ant 101 or Psy 101.*

PSY 351. BEHAVIORAL MEDICINE THREE CREDITS

This course provides a survey of the basic theoretical concepts and major issues in Behavioral Medicine. Specifically, this course examines how the areas of health, illness and medicine can be

studied from a psychological perspective. Topics of emphasis include: the psychological aspects of wellness and illness, preventive medicine, stress, chronic and terminal diseases (such as cancer and AIDS), and the use of alternative medicine. *Prerequisites: Psy 101; junior or senior standing.*

PSY 352. PSYCHOPATHOLOGY
THREE CREDITS

A general survey of psychological disorders in children and adults with emphasis on symptomatology, etiology, and assessment. Forensic and classification issues are also examined. *Prerequisite: Psy 101, Psy 242.*

PSY 353. CLINICAL METHODS IN PSYCHOLOGY
THREE CREDITS

A survey of the clinical methods in psychology including general therapeutic models and specific clinical techniques. Issues of assessment and diagnosis of psychological disorders are examined. *Prerequisite: Psy 101, Psy 352.*

PSY 354. THE EXCEPTIONAL INDIVIDUAL
THREE CREDITS

A study of the psychological, physical, and social challenges and needs of exceptional individuals with an emphasis on etiology, assessment, impact and educational interventions. *Prerequisites: Psy 101, Psy 221.*

PSY 355. FORENSIC PSYCHOLOGY
THREE CREDITS

A survey of the role that psychology has played in the legal system from issues of morality and theories of crime, to eyewitness testimony, the evaluation of criminal suspects, and jury selection. The application of the methods and theories of psychology to the legal system will be emphasized. *Prerequisite: Psy 101; junior or senior standing.*

PSY 356. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY
THREE CREDITS

A survey of the applied areas of personnel, organizational, human factors, and consumer psychology. *Prerequisite: Psy 101.*

PSY 357. NEUROPSYCHOLOGY
THREE CREDITS

A survey of the relationship between nervous system physiology and human behavior with emphasis on neurological disorders, neuropsychological assessment, head injury, cerebral asymmetry, and rehabilitation. *Prerequisite: Psy 101.*

PSY 358. PSYCHOLOGICAL TESTS AND MEASURES
THREE CREDITS

A survey of the psychometric properties of various instruments and measures of psychological phenomena (especially intelligence and personality). a variety of group and individual tests are studied as to their reliability, validity and utility. *Prerequisite: Psy 101, Psy 200.*

PSY 359. PSYCHOPHARMACOLOGY
THREE CREDITS

A study of the effects and mechanisms of the action of psychoactive drugs on behavior. Focus will be placed on drugs used to treat psychopathological disorders and drugs of abuse. Topics of emphasis include a survey of: stimulants, depressants, antipsychotics, antidepressants, psychedelics, legal drugs such as caffeine, nicotine and alcohol. *Prerequisite: Psy 101.*

PSY 395-396. INDEPENDENT RESEARCH
ONE TO THREE CREDITS

Independent study and research under the direction of a faculty member. *Prerequisite: PSY 300; Approval of department chairperson is required.*

PSY 198/298/398. TOPICS IN PSYCHOLOGY
VARIABLE CREDIT

A study in topics of special interest not extensively treated in regularly offered courses.

Course Descriptions

PSY 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

PSY 400. SENIOR CAPSTONE

THREE CREDITS

This course is designed to provide a capstone experience for senior Psychology majors. Students will run an experiment, conduct the appropriate statistical analysis and present the results formally in an APA manuscript, a poster, and in an oral presentation. Issues related to the field, including careers and graduate school, will also be discussed. *Prerequisites: Senior status and departmental permission.*

SOCIOLOGY COURSES

SOC 101. INTRODUCTION TO SOCIOLOGY

THREE CREDITS

A systematic view of sociology, providing essentials for an approach to questions about man in society; analysis of social processes, structures, and functions.

SOC 211. THE FAMILY

THREE CREDITS

History and ethnological studies of family. Role of family in the development of the individual. Interrelation of church, state, and family. Social conditions and changes affecting the American family. Family stability and disorganization. *Prerequisite: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 212. HUMAN SEXUALITY

THREE CREDITS

A balanced and thoughtful introduction to what is currently known about human sexuality. Research in sexuality comes from a variety of disciplines including Psychology, Sociology, Biology, Medicine, Physical Education and Human Education. Without assuming that the student has an extensive background in any of these fields, this course draws liberally on all of them and works hard to show how the biology, psychology and sociology of sex are interrelated. *Prerequisite: Soc 101 or approval of instructor.*

SOC 214. SEX ROLES

THREE CREDITS

This course deals with the origins of sex roles, the historical changes in sex roles, the consequences of sex roles to the individual and to society, and the outlook for sex roles in the future. *Prerequisites: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 215. FAMILY VIOLENCE

THREE CREDITS

It is customary to think of violence between family members as infrequent and, when it does occur, as being the result of some mental defect or aberration. Research evidence shows that neither of these views is correct. This course examines the prevalence, experience, causes, and prevention of family violence. *Prerequisites: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 222. CRIMINOLOGY

THREE CREDITS

An analysis of the nature and extent of crime and the causes and prevention of criminality. Topic areas include the history of criminology, criminological research methods, the extent and patterns of crime, and theories of criminal behavior, and criminal law and its functions. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 223. DRUGS AND ALCOHOL IN AMERICAN SOCIETY
THREE CREDITS**

An examination of drugs and alcohol in American society as a major social problem. *Prerequisite: Soc 101 or approval of instructor. Offered every other year.*

**SOC 224. SOCIAL GERONTOLOGY
THREE CREDITS**

Considers major findings about the social organization of aging and dying. Reviews history, present and future implications of the rapidly expanding population of elderly. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of the instructor.*

**SOC 225. JUVENILE DELINQUENCY
THREE CREDITS**

An examination of the nature and extent of juvenile delinquency, its causes, and its prevention. Topics include the similarities and differences between juvenile and adult justice systems; trends in juvenile delinquency; theories of delinquency; gangs; and the roles of family, schools, and legal institutions as well as community-based programs and their role in delinquency prevention and control. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 226. CORRECTIONS, PROBATION AND PAROLE
THREE CREDITS**

A study of the agencies devoted to the correction and treatment of convicted offenders with a special focus on adult and juvenile probation, parole agencies supervising offenders in the community, as well as residential correction facilities including jails, prisons and juvenile institutions. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 228. DEVIANCE AND SOCIAL CONTROL
THREE CREDITS**

This course examines the nature of deviant behavior and the social responses to it. Topics covered are: what constitutes deviance, theories of deviance, varieties of deviant behavior, and the types of social responses to deviant behavior. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 231. FIELDS OF SOCIAL WORK
THREE CREDITS**

A survey of the main problems of social work and of agencies and methods that have developed to cope with them. The nature and requirements of the different fields of social work. *Prerequisite: Soc 101 or Ant 101 or 102 or Psy 101 or approval of instructor.*

**SOC 234. GROUP COUNSELING
THREE CREDITS**

Students enrolled in this course will learn about different types of group counseling services. Students will acquire knowledge of group practice issues for each phase in the evolution of groups. Students will develop initial competence in beginning work as a group leader/facilitator. *Prerequisite: Soc 101.*

**SOC 235. CORRECTIONS COUNSELING
THREE CREDITS**

Interviewing and intervention strategies in dealing with the criminal offender population in both prison and community settings as well as the social services available for this population. *Prerequisite: Soc 101 or approval of instructor.*

**SOC 236. INDIVIDUAL COUNSELING
THREE CREDITS**

Students enrolled in this course will gain knowledge of the counseling process including values, goals, methods, and limitations. Students will learn about various client characteristics that impact the counseling relationship. Students will develop initial competence in delivering counseling services. *Prerequisite: Soc 101.*

**SOC 251. SOCIOLOGY OF MINORITIES
THREE CREDITS**

A theoretical analysis of inter-group tensions and processes of adjustment with special reference to modern racial, national, and religious conflicts. *Prerequisite: Soc 101 or Ant 101 or 102 or approval of instructor.*

Course Descriptions

SOC 261. SOCIOLOGY OF SPORT THREE CREDITS

An examination of sport from a social and cultural perspective. Emphasis is placed on examining how the institution of sport is a microcosm of American society, reflecting society's major cultural beliefs, and how the organization of sport reflects that of society. *Prerequisite: Soc 101 or approval of instructor. Offered every other year.*

SOC 263. THE URBAN ENVIRONMENT THREE CREDITS

See description under Political Science listing, PS 212. (Same as PS 212).

SOC 341. INTRODUCTION TO SOCIAL PSYCHOLOGY THREE CREDITS

A general survey of the field of social psychology. Social factors in human nature; psychology of individual differences; social interaction; collective behavior; psychology of personality; social pathology. (Same as PSY 341) *Prerequisite: Soc 101 or Ant 101 or 102 or Psy 101 or approval of instructor.*

SOC 352. SOCIAL STRATIFICATION THREE CREDITS

A survey of the structure and dynamics of social inequality in American life. Attention is focused on the institutionalization of power arrangements that perpetuate intergenerational patterns of economic, political, and prestige inequalities among collectivities. A special effort is made to compare the consequences of structured social inequality for the very wealthy and the very poor. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of instructor.*

SOC 361. MEDICAL SOCIOLOGY THREE CREDITS

Surveys findings and methods in current applications of sociology to medicine. Includes a consideration of large and small scale social influences on the organization of medical institutions and practices. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of the instructor.*

SOC 371. METHODS OF RESEARCH IN SOCIOLOGY THREE CREDITS

Introduction to sociological research; selected problems of research in social relations; interviewing techniques; questionnaire design and case studies. *Prerequisite: Soc 101 or approval of instructor.*

SOC 373. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES THREE CREDITS

This course is an introduction to quantitative analysis for the social sciences using SPSS, one of the most frequently and widely used statistical packages in the world. Students will learn how to enter and manipulate data in SPSS, apply and interpret statistics from descriptive through multiple regression, and test hypotheses using statistical methods. (Same as PS 265). *Prerequisite: Soc 101, Soc 371 or PS 261, or approval of instructor.*

SOC 381. SOCIOLOGICAL THEORY THREE CREDITS

The aim of the course is to provide the student majoring in sociology, or in one of the related fields, with a historical background necessary for understanding of the current trends in sociology as well as for clarification of its distinct subject matter, problems, and methods. *Prerequisite: Soc 101 or approval of instructor.*

SOC 390. SENIOR CAPSTONE THREE CREDITS

This course is intended for senior sociology majors. In this course you will complete an empirical research paper, quantitative or qualitative, and present the results to an audience of faculty and peers. *Prerequisites: Soc 371, Soc 381.*

SOC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: By arrangement with an instructor.*

SOC 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

SOC 198/298/398/498. TOPICS
THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

SOC 491. SEMINAR
THREE CREDITS

Presentations and discussions of selected themes and issues in sociology. *Prerequisite: Criteria will vary according to content of seminar.*

SPANISH COURSES

SP 101-102. ELEMENTARY SPANISH
THREE CREDITS EACH

Fundamentals of spoken and written Spanish, and introduction to Spanish culture. Emphasis is placed on communicative proficiency. Work in language laboratory required.

SP 203-204. INTERMEDIATE SPANISH
THREE CREDITS EACH

Continuation of development of communicative skills in Spanish. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Work in language laboratory required. *Prerequisite: Sp 102 or permission of instructor.*

SP 205. CONVERSATION
THREE CREDITS

Practice in spoken Spanish, including discussions, oral presentation, and role-playing. Includes written exercises. *Prerequisite: Sp 204 or permission of instructor.*

SP 206. ADVANCED GRAMMAR, STYLISTICS, AND COMPOSITION
THREE CREDITS

Practice in written and oral skills with an emphasis on the refinement of grammatical and stylistic abilities. *Prerequisite: Sp 204 or permission of instructor.*

SP 208. CULTURE AND CIVILIZATION
THREE CREDITS

Systematic introduction to the political, social, economic, and cultural characteristics of Spain from the Middle Ages to Modern Times. Readings from a variety of sources including the Spanish press. *Prerequisite: Sp 204 or permission of instructor.*

SP 209. LATIN AMERICAN CULTURE AND CIVILIZATION
THREE CREDITS

Systematic study of the historical, cultural, economic, and political development of the countries of Latin America (Spanish-speaking countries and Brazil). Pre-Columbian cultures (Maya, Aztec, and Inca) will be examined. Use of audio-visual material and other activities included. *Prerequisite: Sp 204 or permission of instructor.*

SP 210. SPANISH FOR BUSINESS
THREE CREDITS

Introduction to language use in the contemporary Spanish business world, including practice in reading, understanding, and writing business communications. *Prerequisite: Sp 204 or permission of instructor.*

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SP 211. CONVERSATIONAL SPANISH FOR HEALTH AND SOCIAL SERVICES

THREE CREDITS

Designed to provide the students with the basic terminology and conversational skills in Spanish for the health care field, and the social services area. Work on special problems of grammar and idiomatic expression. *Prerequisite: Sp 204 or permission of instructor.*

SP 212. NON-LITERARY TRANSLATION

THREE CREDITS

In "Non-literary Translation" students will learn some translation strategies by practicing with actual data taken from documents in a variety of professional fields including medical, commercial and legal. Students will learn how to solve problems in technical translations: terminology, idiomatic expressions, verb usage and false cognates. The course will use a workshop approach and focus on practical issues in various professional fields. Includes a community service component. *Prerequisite: Sp 203-204 or equivalent.*

SP 220. SPANISH LISTENING AND COMPREHENSION

THREE CREDITS

"Listening and Comprehension" develops a better understanding of spoken, colloquial Spanish. Students will work with audio and audio-visual materials that engage cultural topics connected to language use in Hispanic countries. *Prerequisite: SP 204 or permission of instructor.*

SP 301. INTRODUCTION TO LATIN AMERICAN LITERATURE

THREE CREDITS

An examination of literary language, genre conventions, and critical approaches, as well as an introduction to Spanish literary history. *Prerequisite: Sp 204 or permission of instructor.*

SP 307. SURVEY OF SPANISH LITERATURE I

THREE CREDITS

Spanish 307 is a systematic survey of peninsular (Spanish) literature from the Middle Ages through the "Ilustración" or Neoclassicism literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history. *Prerequisite: Sp 203-204 or equivalent.*

SP 308. SURVEY OF SPANISH LITERATURE II

THREE CREDITS

Spanish 308 is a systematic survey of Spanish literature from Romanticism through the contemporary literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history. *Prerequisite: Sp 203-204 or equivalent.*

SP 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research in the field of the major under the direction of a staff member. *Prerequisite: Approval of department chairperson.*

SP 397. SEMINAR

ONE TO THREE CREDITS

Presentations and discussions of selected topics. Prerequisite: Approval of department chairperson. Maximum of three credits per student.

SP 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

SP 198/298/398. TOPICS

VARIABLE CREDIT

Examination of a special topic in Spanish language, culture, or literature. Possible topics include literature of exile, pre-and post-Franco literary works, Latin-American twentieth-century writings, Hispanic women writers, literature and art, social-protest literature, Latino issues through Hispanic

films, Hispanic literature in translation, aspects of bilingualism, problems in Spanish grammar, and history of the Spanish language.

STUDY TOUR EXPERIENCE COURSES

STE 300. STUDY TOUR EXPERIENCE THREE CREDITS

This course, intended for use by all departments, is designed to offer students the opportunity to experience another culture through an intensive period of study and travel abroad under the guidance of a knowledgeable instructor. The Study Tour Experience has four components: a pre-travel orientation, the concentrated group travel experience, a writing emphasis, and a post-travel follow-up session. Students will be expected to keep a journal during the entire experience that will serve as a reference for the post travel discussions and paper or project assignment. The travel itself ranges from ten to fourteen days and is scheduled during winter break intersession, spring break, or summer sessions. Scheduling is specifically intended to provide expanded travel opportunities for those students who might not otherwise be free to travel abroad within a semester due to the constraints of tightly sequenced courses within their majors. (10 classroom hours, 10-14 days of field work).

THEATRE ARTS COURSES

THE 100. APPROACH TO THEATRE THREE CREDITS

Attention will be directed to the importance of the dramatic imagination in reading and viewing plays, with the objective of developing a critical appreciation of the theatre. Lecture, discussion, demonstration, films, college and professional theatre performances.

THE 111. FUNDAMENTALS OF PLAY STRUCTURE AND CRITICISM THREE CREDITS

A study of critical techniques in interpreting plays and the application of such techniques to evaluating plays for stage presentation. *Prerequisite: Eng 101.*

THE 112. SCRIPT ANALYSIS THREE CREDITS

The cultivation of interpretative skills as an approach to dramatic literature for the purposes of production. Classical Literature. *Prerequisite: THE 111.*

THE 121. STAGECRAFT THREE CREDITS

An exploration of the many physical facets of theatrical production by introducing the student to the process of translating the concept of a design into physical actuality and of adapting a production to the requirements of a stage. Class and workshop.

THE 131. ACTING I THREE CREDITS

Basic acting techniques. Creating a variety of characters for the stage through the use of vocal interpretation, physical movement, improvisation, and theatre games.

THE 132. SPEECH FOR THE STAGE THREE CREDITS

Instruction and exercises in vocal development for the stage, including diction, delivery, and interpretation. Laboratory sessions.

THE 141. ORAL INTERPRETATION THREE CREDITS

Instruction in vocal delivery of prose, poetry, drama, and archaic language for the purposes of oral communication of the written text. *Prerequisite: THE 131 or permission of instructor.*

THE 190. THEATRE LABORATORY ONE TO THREE CREDITS

A study, through the application of various techniques of different facets of theatre such as auditioning, costuming, fencing, make-up, masks, mime, scene study, soliloquy, stage combat, textual

Course Descriptions

analysis, and voice. Guest lecturers, master classes, workshops. Required of all Theatre Arts majors every semester.

THE 191. DEPARTMENT PRACTICUM IN THEATRE PRODUCTION ONE TO THREE CREDITS

The Department Practicum in theatre production may be taken for one to three credits per semester with the total not to exceed six. Students may earn credit for major roles and positions of major responsibility in cocurricular activities. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Approval of credit must be by advisor and Department Chairperson.

THE 211. THEATRE HISTORY I THREE CREDITS

A survey of the historical development and background of theatrical art from ancient times through the seventeenth century.

THE 221. SCENE DESIGN THREE CREDITS

The nature and function of scenic art with emphasis on contemporary theories and techniques.
Prerequisite: THE 121.

THE 223 COSTUME DESIGN THREE CREDITS

Introduction to approach, methods and basic techniques for designing costumes for the Theatre.

THE 232. ACTING II THREE CREDITS

An introduction to the major theories, aims, and styles of acting through performing various roles and monologues in selected dramatic scenes. *Prerequisite: THE 131.*

THE 234. DIRECTING I THREE CREDITS

An introduction to the principles of directing including play selection, composition, casting, blocking, and rehearsing. Class and workshop. *Prerequisite: THE 131 or departmental permission.*

THE 312. THEATRE HISTORY II THREE CREDITS

A survey of the historical development and background of theatrical art from the eighteenth century to the present. *Prerequisite: THE 211.*

THE 331. ACTING III THREE CREDITS

Attention to special problems in acting in terms of classical style. Continued self-discovery through improvisation, kinesthetic awareness, and other basic acting techniques learned in THE 232 are expanded upon. *Prerequisites: THE 131, 132, 232 or permission of instructor.*

THE 335. DIRECTING II THREE CREDITS

A study of special problems in directing. Students will prepare a prompt book, critique productions, and direct a one-act play. *Prerequisite: THE 234.*

THE 393. SENIOR CAPSTONE ONE TO THREE CREDITS

Individual performance project intended to inspire students to take on responsibility for self governance and through effort create a meaningful expression of their aesthetic.

THE 394. THE BUSINESS OF THEATRE ONE TO THREE CREDITS

Discussion of information and preparation to navigate the theatrical and entertainment industries

THE 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in theatre under the direction of a staff

member. A research paper at a level significantly beyond a term paper is required.

**THE 431. ACTING IV
THREE CREDITS**

Scene study, analysis, and development of acting theories for a sophisticated preparation of audition material and rehearsal technique for the working actor. *Prerequisites: THE 131, 132, 232, 331 or permission of instructor.*

**THE 198/298/398. TOPICS
ONE TO THREE CREDITS**

A study of topics of special interest not extensively treated in regularly offered courses.

**THE 399. COOPERATIVE EDUCATION
ONE TO SIX CREDITS**

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

WOMEN'S STUDIES COURSES

**WS 101. INTRODUCTION TO WOMEN'S STUDIES
THREE CREDITS**

Introduction to Women's Studies is a lecture/discussion course. It introduces students to the theoretical assumptions and historical development of feminist thought. It examines a variety of contemporary issues related to race, gender, class, culture, sexuality, the family, reproduction, language and discourse in the light of these theoretical assumptions. *Offered every spring semester.*

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B.A. Columbia College, Columbia University, Ph.D. Massachusetts Institute of Technology, MDP
Harvard Graduate School of Education

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B.A., M.S. Wilkes, Ph.D. Pennsylvania

TBD, Vice President for Finance and Support Operations

B.S., M.B.A. St. Martin's University

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B.A., Alderson-Broaddus College

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B.A., M.Ed. Delaware, Ph.D. Michigan

PAUL C. BROWNE (2004), Interim Special Assistant to the President for Diversity Initiatives and Global Education

B.A. College of Wooster, M.P.A. Princeton, D.B.A., Harvard

JACK CHIELLI (2005), Assistant to the President for Government Relations and Executive Director of Marketing Communications

B.A. Roger Williams, M.A. Wilkes

BRIAN BOGERT (2000), Director of Information, Analysis, and Planning

B.A. York, M.S. Indiana State

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B.A. Columbia College, Columbia University, Ph.D. Massachusetts Institute of Technology

PAUL C. BROWNE (2004), Dean, Jay S. Sidhu School of Business and Leadership

B.A. College of Wooster, M.P.A. Princeton, D.B.A. Harvard

DALE A. BRUNS (1991), Dean, College of Science and Engineering

B.S. Xavier, M.S. Arizona State, Ph.D. Idaho State

HAROLD E. COX (1963), University Archivist

B.A. William and Mary, M.A., Ph.D. Virginia

ELLEN R. FLINT (1990), Director of Undergraduate Education

B.M. Virginia Commonwealth, M.M. Rice, Ph.D. Maryland, College Park

BERNARD W. GRAHAM (1994), Dean, Nesbitt College of Pharmacy and Nursing and Dean, School of Pharmacy

B.S. Albany, M.S., Ph.D. Purdue

HARVEY A. JACOBS (1996), Assistant Dean, School of Pharmacy

B.A. Wilkes, B.S., Ph.D. Utah

RHONDA A. WASKIEWICZ (2009), Assistant Dean for Academic Affairs and Assessment, Nesbitt College

B.S. Tufts, M.S. King's, Ed.D. Temple

VERNON B. HARPER Jr. (2009), Assistant Provost

B.A. Penn State, M.A. West Chester, Ph.D. Howard

SUSAN HRITZAK (1983), Registrar

B.S., M.B.A. Wilkes

ANNE PELAK (1999), Director of Grant Support

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B.A. University of Washington, LL.M. Florida College of Law, J.D. Willamette University
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B.A. King's College, M.B.A. Bloomsburg
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B.A. SUNY Geneseo, M.S., University at Albany
GISELE ROMANACE (2000), Computer Systems Librarian
B.A., M.L.S. SUNY, Albany
BRIAN SACOLIC (1987), Head of Reference & Public Services
B.S. Penn State, M.S.L.S. Clarion
HEIDI SELECKY (1973), Technical Services Librarian
B.A. Marywood, M.S.L.S. Villanova
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B.A. Midland Lutheran, M.A., M.P.H., Ph.D. Pittsburgh

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B.S. Wilkes, M.S.N. Misericordia
ELIZABETH ROVEDA (2006), Assistant Director, Residence Life
B.S., M.B.A. Wilkes

PHILIP RUTHKOSKY (1999), Associate Dean, Student Development
 B.S., M.B.A. Scranton
 BARBARA E. KING (1980), Associate Dean of Student Affairs
 B.S. Wilkes
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 B.S. East Stroudsburg, M.S. Wilkes
 KATY BETNAR (2005), Learning Specialist
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 B.S. Bloomsburg, M.S. Scranton
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 and Social Sciences
 B.A. Elizabethtown, M.S. Scranton, M.A. Wilkes

Athletics

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 B.S. Slippery Rock, M.Ed. East Stroudsburg
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 Assistant Coach Men's Basketball
 B.S. Rowan University
 TOM DUNSMUIR (1982), Facilities and Equipment Coordinator
 RACHAEL EMMERTHAL (2005), Administrative Staff, Women's Basketball Coach
 B.S. DeSales, M.Ed. East Stroudsburg
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 B.S. Slippery Rock, M.S. California U. of Pennsylvania
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 B.S. Wilkes
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 B.A. Texas A&M
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B.A. Skidmore, M.S. Ithaca

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B.S. Penn State, M.B.A. Lebanon Valley
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MARY KROPIEWNICKI	Coordinator of Doctorate in Educational Leadership

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RUTH HUGHES	Director of the Small Business Development Center

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BERNARD W. GRAHAM	Dean
HARVEY A. JACOBS	Assistant Dean

School of Nursing

MARY ANN MERRIGAN	<i>Dean</i>
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EDWARD F. FOOTE	Pharmacy Practice

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SHELLI HOLT-MACEY	Director of Experiential Programs
KRISTEN BILLEK	Experiential Coordinator

Department of Nursing

Department Chair

MARY ANN MERRIGAN	Chair
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Directors

JOYCE CHMIL	Director of the Nursing Simulation Center
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LORI DROZDIS

Director of Experiential Learning

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In alphabetical order, with date of appointment following the name.

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B.A. Columbia College, Columbia University, Ph.D. Massachusetts Institute of Technology, MDP
Harvard Graduate School of Education
- HIRO ABABON (2009), Assistant Professor of Air and Space Studies**
B.B.A. Campbell, M.B.A. Troy State
- JEFFREY R. ALVES (1997), Allan P. Kirby, Jr., Distinguished Professor of Free Enterprise
and Entrepreneurship**
B.S. Air Force Academy, M.B.A. Southern Illinois, Ph.D. Massachusetts (Amherst)
- MISCHELLE B. ANTHONY (2003), Associate Professor of English**
B.A. Central State University, M.A. Central Oklahoma, Ph.D. Oklahoma State
- VIJAY K. ARORA (1985), Professor of Electrical Engineering**
B.Sc., M.Sc. Kurukshetra University (India), M.S. Western Michigan, M.S., Ph.D. Colorado
- NAOMI HATSFELT BAKER (2006), Assistant Professor of Acting**
B.A. McNeese State, M.F.A. Ohio State University
- THOMAS J. BALDINO (1991), Professor of Political Science**
B.A. La Salle, M.A. Illinois, Ph.D. Pennsylvania
- ANNE HEINEMAN BATORY (1987), Professor of Marketing**
B.A. Wilkes, M.S., Ph.D. Maryland
- BARBARA N. BELLUCCI (1996), Assistant Professor of Education and Director of Student
Teaching**
B.S., M.S., M.S. Wilkes, Ed. D. Temple
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B.S. King's, Ph.D. Brown
- PAOLA BIANCO (1996), Associate Professor of Spanish**
B.A. Wilkes, M.A. SUNY-Binghamton, Ph.D. North Carolina (Chapel Hill)
- WILLIAM J. BIGGERS (2003), Associate Professor of Biology**
B.S., M.S. North Carolina State, Ph.D. Connecticut
- KARENBETH H. BOHAN (2003), Associate Professor of Pharmacy Practice**
B.C.P.S. Maryland (Baltimore County), Pharm. D. Maryland
- ROBERT W. BOHLANDER (1979), Professor of Psychology**
B.A. Lebanon Valley, M.A., Ph.D. Rochester
- SCOTT BOLESTA (2005), Assistant Professor of Pharmacy Practice**
B.S., Pharm. D. Wilkes
- AJAY BOMMAREDDY (2009), Assistant Professor of Pharmaceutical Sciences**
B.Pharm. Osmania University, Ph.D. South Dakota State
- BARBARA BRACKEN (1998), Associate Professor of Computer Science**
B.S., M.S., Ph.D. SUNY-Binghamton
- AMY L. BRADLEY (2004), Associate Professor of Chemistry**
B.A., Ph.D. University of New Orleans
- DALE A. BRUNS (1991), Professor of Earth and Environmental Sciences and Dean, College
of Science and Engineering**
B.S. Xavier, M.S. Arizona State, Ph.D. Idaho State
- GENE A. CAMONI (2007), Assistant Professor of Education**
B.A. Wilkes College, M.S. Scranton, Ed.D. Widener
- JAMES MICHAEL CASE (1978), Professor of Earth and Environmental Sciences and Biology**
B.S. Duke, M.S., Ph.D. Dalhousie, Halifax
- HENRY J. CASTEJON (2003), Associate Professor of Chemistry**
B.S., M.S. Simon Bolivar, Ph.D. Yale
- CARL J. CHARNETSKI (1976), Professor of Psychology**

University Personnel

B.A. Wilkes, M.A., Ph.D. Temple

CYNTHIA J. CHISARICK (1981), Associate Professor of Accounting

B.S. Wilkes, C.P.A. Commonwealth of Pennsylvania, M.B.A. Scranton

SHARON COSGROVE (1990), Associate Professor of Art

B.A. Shepherd College, B.F.A., M.A., M.F.A. New Mexico

BONNIE CULVER (1990), Associate Professor of English

B.A. Waynesburg, M.A., Ph.D. SUNY, Binghamton

EBONIE CUNNINGHAM-STRINGER (2006), Assistant Professor of Sociology/Criminology

B.A. Missouri-Columbia, M.A., Ph.D. Purdue

SUSAN BENSINGER DARBY (2005), Assistant Professor of Nursing

B.S. Lycoming, M.S. Syracuse

MICHAEL R. DAVIDSON (2007), Assistant Professor of History

B.S. Bates, Ph.D. Edinburgh

HELEN HOLTZCLAW DAVIS (2008), Assistant Professor of English

B.A. Duke, M.A. Wake Forest, Ph.D. CUNY

JOSEPH DAWSON (1994), Associate Professor of Theatre

B.A. Seton Hill, M.F.A. Catholic

ADRIANA DINESCU (2009), Assistant Professor of Chemistry

B.Eng. Polytechnic University of Bucharest, M.Sc., Ph.D. North Texas

JENNIFER EDMONDS (2004), Assistant Professor of Business Administration

B.S. Michigan, M.B.A., Ph.D. Rutgers

JANE M. ELMES-CRAHALL (1985), Professor of Communication Studies

B.A. Bloomsburg, Ph.D. Pittsburgh

THEODORE J. ENGEL (1966), Associate Professor of Business Administration

B.B.A., M.A. Miami

EVENE S. A. ESTWICK (2005), Assistant Professor of Communication Studies

B.A., M.A. Howard, Ph.D. Temple

DAVID EVERITTE (2009), Assistant Professor of Air and Space Studies

B.A. Valdosta, M.B.A. University of Colorado

MARCIA FARRELL (2006), Assistant Professor of English

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