Wilkes University

2015-2016

UNDERGRADUATE BULLETIN

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STATEMENT OF DISCLAIMER

The statements in this bulletin are for the purposes of information. The University reserves the right to change any provisions or requirements, including tuition and fees, any time within the student's term of residence. No contract is created or implied. Students must fulfill all prevailing degree or program requirements.

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Wilkes University
Undergraduate Bulletin
Baccalaureate Studies

WILKES UNIVERSITY
Wilkes-Barre, Pennsylvania 18766

- Introduction
- Policy Statement of Nondiscrimination
- Federal and State Act Compliance
- Schools and Colleges
- Degrees and Programs
- Course Descriptions
- University Personnel

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. 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.

INTRODUCTION

Wilkes University

- Message from the Provost
- Mission, Vision, and Values
- A Guide to Learning
- Institutional Student Learning Outcome
- Student Life at Wilkes: An Inclusive Community
- Campus Resources, Services, and Programs
- Undergraduate Admissions
- Financial Matters
- Academic Matters
- Academic Policies and Procedures
- Academic Requirements and Regulations
- Academic Resources and Support Services
- Degree Programs & Curricula

A Message from the Provost

As the Chief Academic Officer of the University, it is with pleasure that I extend a welcome to you on behalf of the members of the Faculty, Staff, and Administration of Wilkes University. The Wilkes' Mission is to prepare our students to be life-long learners. All of us at the University are dedicated to the future success of our students. That dedication is reflected in the quality of teaching, thoughtful advising, and mentorship of the University faculty and staff.

Wilkes faculty and advisors will guide you through the course work that is outlined in the pages of this document. The lecture or on-line courses, writing seminars, laboratories, discussion groups, service learning and research projects are only a portion of your overall educational experience. You will be challenged by a variety of pedagogical approaches by the Wilkes faculty who are active scholars in their respective fields. Wilkes students are expected to be active participants in this scholarly activity which will contribute to your intellectual and professional growth. Community engagement, citizenship, ethics, leadership, and the development of effective communication skills are integral components of the Wilkes undergraduate experience. A general education in the liberal arts and sciences along with the depth of knowledge in your field of study, will prepare you for success in an ever changing world.

You will be exposed to many curricular and extra-curricular experiences that will contribute to your personal growth in the next few years. Take this time in your life to experiment with new activities and get out of your comfort zone. All of us are dedicated to helping you make your learning journey a great success and your Wilkes experience one of excitement and continuous discovery. Enjoy your time with the Wilkes family, work hard, and make these next few years the best that they can be. The time will go quickly so cherish it and realize that the friendships you forge here with faculty and classmates are friendships that will last a lifetime. You will become part of the ever growing Wilkes family.

Anne A. Skleder, Ph.D.

Senior Vice-President/Provost
Wilkes University

Wilkes University

A Guide To Learning

Wilkes University is a dynamic community of learners that encourages students to take an active role 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 at quantitative reasoning and the use of contemporary technology as they prepare to become productive and responsible citizens of the global society. Mindful of the rapidly expanding body of knowledge and the vast array of learning and teaching styles in this academic environment, the University remains committed to the values articulated by Dr. Eugene S. Farley, Wilkes University's 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 the Wilkes University Mission, Vision, and Values and are projected in the Institutional Student Learning Outcomes, which guide all learning opportunities and experiences at Wilkes.

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; and
- interpersonal skills and knowledge of self as a learner that contribute to effective teamwork, mentoring, and lifelong learning

Our 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.

Undergraduate Admissions

- Application for Admission
- Acceptance for Admission and Advanced Deposit
- Recommended High School Preparation
- Standardized Tests
- Admission of Transfer Students
- Admission of International Students
- Early Admission of High School Students
- Admission of Part-time Students
- Changing from Part-time to Full-time Status
- Readmission to the University

- Campus Visits

Application for Admission

Applications for admission to Wilkes University may, generally, be completed and submitted online or sent directly to the Wilkes University Office of Admissions.

Students who wish to enroll at the University part-time must contact the Office of Admissions to obtain an Application for Admission. 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: Several degree programs have special application procedures.

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 departmental faculty to gain admission into these programs.

In all cases, invitations to interview or audition for these identified degree programs are extended by the academic departments at their discretion.

Acceptance for Admission and Advanced Deposit

All applicants for admission to the University must submit the following:

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 application fee (see Student Expenses, "Undergraduate Application and Admission Fees" in this bulletin).

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. An applicant 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 1 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.

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. Although not required, the faculty of the University recommends

this schedule of progressive course work 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.

Elective courses in the secondary educational experience should be drawn from academic subject areas and chosen with care to reflect individual interest 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 college 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.

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.

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 the Wilkes Nursing program. Qualified Nursing transfer applicants will receive an acceptance letter asking them to schedule an interview with the Nursing Admissions Committee.

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.

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.

Degree Completion and Graduation Requirements for Transfer Students

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.

Additionally, all transfer students must satisfy the University's General Education Requirements. (See the bulletin section entitled "General Education: The First Curricular Component" for an explanation of these requirements and associated student learning outcomes.). The University makes every effort to recognize course work and apply credits that are transferred into the University from an accredited 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 to Wilkes may, with the approval of the appropriate Dean, be permitted to apply these courses or course sequences to the requirements for Area II (The Scientific World) of the General Education Curriculum. Approval of the application of credits for 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.

Students who hold a baccalaureate degree from Wilkes University or another regionally accredited institution and who seek a second baccalaureate degree will be considered exempt from the Wilkes General Education Curriculum for the purposes of seeking a second bachelor's degree.

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

Prior Learning Assessment for Transfer and Adult Degree Completion Students

A special office, the Office of Prior Learning Assessment (PLA), has been created to help students in their transition into the Wilkes University academic community and in the evaluation of their prior learning in the award of academic credit for demonstrated competency. The Office of Prior Learning Assessment works in collaboration with the Office of Admissions and with academic departments to inform and advise entering students about opportunities by which academic credit might be awarded for learning that takes place outside of the "traditional" college classroom (e.g., CLEP, DSST, and Excelsior exams, departmental challenge exams, and experiential learning portfolio) and to familiarize students and their advisors with the policies and procedures associated with the award of credit for demonstrated learning and Prior Learning Assessment at Wilkes. The Office of Prior Learning Assessment is housed in University College, Conyngham Hall.

An important note for all students regarding the transfer of credits to Wilkes University:

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

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 in order 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, IELT) 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 of the materials listed under the "Acceptance for Admission and Deposit" section of this bulletin and must submit at least one letter from a high school official granting permission for early admission. Applicants must also successfully complete an interview with a counselor in 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 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 the GED as evidence of readiness to pursue college-level studies. All documentation should be sent to the Office of Admissions.

Changing from 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

Applications for admission to Wilkes University may, generally, be completed and submitted online or sent directly to the Wilkes University Office of Admissions. Students who wish to enroll at the University part-time must contact the Office of Admissions to obtain an Application for Admission. 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.

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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 departmental faculty to gain admission into these programs.

In all cases, invitations to interview or audition for these identified degree programs are extended by the academic departments at their discretion.

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 department 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 website: http://www.wilkes.edu.

Student Life at Wilkes

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, theatre productions, readings, and lectures;
- specialized and individualized support for international and minority students;
- an 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.

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.

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.

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 Art 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 understanding 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.

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.

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 First-Year Student 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.

All resident students are required to participate in the University Meal Plan, and Wilkes offers a variety of meal-plan and dining options. These options are described on the Dining Services Web site: http://www.wilkes.edu/campus-life/dining-on-campus/.

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. Student Government and Wilkes University recognize more than 60 clubs and campus organizations. The University requires that clubs and 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. 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 Amnicola, 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.

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, the Center for Global Education and Diversity, 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, however, that students sometimes need additional guidance in resolving personal, social, or academic problems, 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.

University Activities

In addition to the curricular and co-curricular activities sponsored by specific organizations and academic units, many all-campus and campus-community events are 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 student 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.

Advising 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 Study Abroad as well as 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.

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. This "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.

Campus Counseling

The Office of Campus Counseling assists students in resolving personal concerns or problems. Appointments are available throughout the day, and, if needed, during the evenings and on weekends. 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 topics of special interest or concern. Testing services are also available to Wilkes students.

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 groups and international students, faculty, and staff, and for those seeking an international experience as part of the Wilkes education. Services 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).

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 that coverage.

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.

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 in learning about the curriculum, available student activities, and about the campus and its many resources. Orientation sessions provide opportunities 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.

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.

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

If, upon admission to the University, the student has indicated a preferred major, that student 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.

Financial Matters: Tuition, Fees, and Financial Aid

Student Expenses for 2015-16

The following chart summarizes student expenses for the 2015-16 academic year, which officially begins with the Summer Session, 2015. 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.

Full-time Undergraduate Tuition & Fees	Assessment	Per Semester	Annual Total
Tuition (12 - 18 credits)*	Per semester	$15,396.00	$30,792.00
General University Fee	Per semester	$782.00	$1,564.00
Total Full-time Undergraduate Tuition & Fees		$16,178.00	$32,356.00

School of Pharmacy First Professional Tuition & Fees	Assessment	Per Semester	Annual Total
Tuition (12–18 credits)*	Per Semester	$16,362.00	$32,724.00
General University Fee	Per Semester	$782.00	$1,564.00
Pharmacy Professional Fees			
Professional Fee - P1	Per Semester	900.00	1,800.00
Professional Fee - P2	Per Semester	900.00	1,800.00
Professional Fee - P3	Per Semester	800.00	1,600.00
Professional Fee - P4	Per Semester	600.00	1,200.00
Total School of Pharmacy First Professional Tuition & Fees		$17,144.00*	$34,288.00*
**Plus the applicable P1 - P4 fees detailed above.*			

Part-time Undergraduate Tuition & Fees	Assessment	Rate
Summer Study (all sessions)	Credit hour	$495.00
Fall & Spring Sessions (1 - 11 credit hours)	Credit hour	$855.00
Intersession	Credit hour	$495.00
Excess Credit Hours	Credit hour	$855.00
Accelerated BBA Degree	Credit hour	$386.00
General University Fee	Credit hour	$ 70.00

Audit Fees (Undergraduate Courses)	Assessment	Rate
Full-time Undergraduate and Pharmacy Students	No charge	---
Part-time Undergraduate Students	Credit hour	$ 427.50
Senior Citizens	Credit hour	$ 20.00

Other Mandatory Fees		
Applied Music Fees @ $395 per credit • 1 credit (14 30-minute private lessons) • 2 credits (14 60-minute private lessons)	 Credit hour Credit hour	 $395.00 $790.00
Graduation Fee	One time	$165.00
Graduation Fee (Late)		$330.00
Matriculation Fee	One time	$135.00
Undergraduate Application & Admission Fees		
Undergraduate Application	One time	$40.00
Online Application	One time	$20.00
Online International Graduate	One time	$65.00
Online Transfer Admission	One time	$20.00
Online International Undergraduate	One time	$40.00
Online Freshman Admission	One time	$20.00

Miscellaneous University Fees	Assessment	Rate
Acceptance Tuition Deposit	One time	$300.00
Assessment Fee (Nursing Majors - Traditional)	Per Semester	$225.00
Challenge Examinations	Credit hour	$90.00
Disciplinary Fine	Each	$200.00
Miller Analogies Testing Fee	Per semester	$60.00
Parking Fees and Fines:		
Parking on campus	Per semester	$120.00
Ralston Field Parking	Per semester	$40.00
Parking Tickets	Each	$25.00
Lost Parking Tag	Per semester	$5.00
Storage Fee	Each	$15.00
Towing Fee	Each	$45.00
Replacement of Lost ID Card	Each	$30.00
Returned Check Charge	Each	$50.00
Study Abroad	Per Semester	$75.00
Transcript/Verification (same day)	Each	$20.00
Transcript Fee	Each	$15.00
Transcript Surcharge (FAX)	Each	$20.00
Young Scholars	Credit Hour	$80.00

Exceptions	Assessment	Rate
Senior Citizen Audit, no attached fees	Credit hour	$20.00
Senior Citizens Discount (62 and older) all attached fees full price	Credit hour	$413.00
Summer Co-op and Internship* all attached fees full price	Credit hour	$413.00
Audit Courses	Credit hour	$427.50

Residence Hall Rates	Assessment	Per Semester
Residence Hall - Dorm Style	Per semester	$3,987.00
Residence Hall - Single Room	Per semester	$4,191.00
Residence Hall - University Towers	Per semester	$4,422.00
Residence Hall - Barre Hall	Per semester	$4,422.00
Residence Hall - Rifkin	Per semester	$4,208.00
Residence Hall - YMCA	Per semester	$4,635.00
Summer Room Rent	Per week	$232.00

Meal Plans	Assessment	Per Semester
Colonel Blue	Per semester	$2,260.00
Colonel Blue Plus	Per semester	$2,360.00
Colonel Gold	Per semester	$2,596.00
Colonel Gold Plus	Per semester	$2,646.00
Senior Plan	Per semester	$1,147.00
25-Meal Plan	Per request	$185.00
40-Meal Plan + $100 Dining Dollars	Per request	$401.00
50-Meal Plan	Per request	$361.00
Summer Meal Plans:		
Creative Writing: 10-Meal Block & Residency Meals	Per week	$200.00
10-Block Summer Meal Plan	Per request	$72.00
25-Block Summer Meal Plan	Per request	$176.00

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 opportunities 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 and students seeking applications for financial aid should contact the Student Services Center or the Office of Admissions. More detailed information regarding the financial aid programs and requirements is included in theConsumer's Guide to Financial Aid available on the Wilkes University Web site at:

Consumer's Guide to Financial Aid

Financial Aid Application Procedures

NOTE: Students applying for financial aid must be currently re-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;
2. complete the appropriate state application for financial aid;
3. if applying for University administered aid, complete applications for the Federal Pell Grant and for 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.

Financial Aid for Part-time Students

The Pell Grant, Supplemental Educational Opportunity Grants (S.E.O.G.), 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 qualify 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 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 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 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 Assistance Programs - Summary

Scholarships

Scholarship	Criteria, Qualifications, Requirements, Application(s), and Information	Filing Deadline
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	Incoming student priority deadline – March 1
Wilkes University Transfer Student Scholarship	• Admission to the University • Transfer credit evaluation • Continued eligibility for undergraduate upperclassmen • Questions? Con Wilkes Office of Admissions or Wilkes Student Services Center	Incoming student priority date – March 1
Wilkes University Leadership Scholarship	• Based on appointment to or achievement of leadership roles in student organizations	Upperclassmen priority deadline – May 1
Wilkes University Named Scholarships	• Awarded by various academic and administrative departments based on criteria set by the scholarship donor • For a complete listing of Named Scholarships, contact the Development Office • Incoming students contact the Wilkes Office of Admissions	Upperclassmen priority deadline- May 1 Incoming student priority deadline- March 1
Performance Award	• Determination of merit eligibility and audition required • Limited to Theatre Arts or Musical Theatre majors and participants in music ensembles • Questions? Contact the Wilkes Office of Admissions.	Upperclassmen priority deadline- May 1 Incoming student priority deadline- March 1
Room & Board Scholarship	• Awarded to Resident Assistants. • For Resident Assistant Application, contact the Office of Residence Life.	Available to upperclassmen only Application deadline - contact the Office of Residence Life
ROTC Scholarship	• Apply for scholarship through the Wilkes ROTC Office	Upperclassmen priority deadline- May 1 Incoming student priority deadline- March 1

Grants

- All students applying for Federal, State, and Wilkes grants must first complete and file the 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

Grant	Criteria, Qualifications, Requirements, Application(s), and Information	Filing Deadline
Federal Pell Grant	• FAFSA http://www.fafsa.ed.gov • Questions? Contact the Wilkes Student Services Center.	June 30
PHEAA Grant	• FAFSA http://www.fafsa.ed.gov • Application and Information available at http://www.pheaa.org/ • Questions? Contact the Wilkes Student Services Center	May 1
Federal Supplemental Education Opportunity Grant (S.E.O.G.)	• FAFSA http://www.fafsa.ed.gov • Questions? Contact the Wilkes Student Services Center	Upperclassmen priority deadline - May 1 Incoming student priority deadline - March 1
Wilkes Need-Based Grant	• FAFSA http://www.fafsa.ed.gov • For information, contact the Wilkes Student Service Center	Upperclassmen priority deadline- May 1 Incoming student priority deadline- March 1
Office of Vocational Rehabilitation Grant	• FAFSA http://www.fafsa.ed.gov • Application required through the Office of Vocational Rehabilitation • Questions? Contact the Office of Vocational Rehabilitation.	Prior to start of aid year

Loans

- All students applying for loans must first complete and file the Free Application for Federal Student Aid (FAFSA).
- The FAFSA must be filed prior to application for all loans.
- For information and a copy of the application form, go to: http://www.fafsa.ed.gov

Loan	Criteria, Qualifications, Requirements, Application(s), and Information	Filing Deadline
Federal Nursing Student loan	• FAFSA http://www.fafsa.ed.gov • No additional application required. • Based on major and extreme financial need. • Limited funds available. • Questions? Contact the Wilkes Student Services Center.	Upperclassmen priority deadline - May 1 Incoming student priority deadline - March 1
Gulf Oil Loan	• FAFSA http://www.fafsa.ed.gov • No additional application required. • Based on extreme financial need. • Limited funds available. The Gulf Oil Loan is offered at the discretion of the Financial Aid Director. Contact the Wilkes Student Services Center.	Upperclassmen priority deadline - May 1 Incoming student priority deadline - March 1
Rullison Evans Loan	• FAFSA http://www.fafsa.ed.gov • No additional application required. • Based on extreme financial need. • Limited funds available. The Rullison Evans Loan is offered at the discretion of the Financial Aid Director. Contact the Wilkes Student Service Center.	Upperclassmen priority deadline - May 1 Incoming student priority deadline - March 1
Federal Direct Stafford Loan	• FAFSA http://www.fafsa.ed.gov • Online Student Loan Entrance Counseling: First-time borrowers must complete Federal Student Loan Entrance Counseling at https://studentloans.gov/myDirectLoan/index.action • 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. Contact the Wilkes Student Services Center.	Six to eight weeks prior to need for loan proceeds
Federal Direct Unsubsidized Stafford Loan	• FAFSA http://www.fafsa.ed.gov • Online Student Loan Entrance Counseling: First-time borrowers must complete Federal Student Loan Entrance Counseling at www.studentloans.gov • 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. Contact the Wilkes Student Services Center.	Six to eight weeks prior to need for loan funds
Federal Direct Parent Loan for Undergraduate Students (PLUS)	• FAFSA http://www.fafsa.ed.gov • Federal Direct PLUS Loan Application to be completed annually. • Online Student Loan Entrance Counseling - First-time borrowers must complete Federal Direct Student Loan Entrance Counseling at www.studentloans.gov • 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. Contact the Wilkes Student Services Center.	Apply on or after July 1 for the aid year OR apply six to eight weeks prior to need for loan funds
Federal Direct Graduate PLUS Loan (Graduate level loan for independent students)	• FAFSA http://www.fafsa.ed.gov • Online Student Loan Entrance Counseling - First-time borrowers must complete Federal	Apply on or after July 1 for the aid year

Student Employment

- All students applying for Federal, State, and Wilkes work-study programs must first complete and file the Free Application for Federal Student Aid (FAFSA).
- The FAFSA must be filed prior to application for all work-study programs.
- For information and a copy of the application form, go to http://www.fafsa.ed.gov/index.htm

Program	Criteria, Qualifications, Requirements, Application(s), and Information	Filing Deadline
Federal College Work-Study Program	• FAFSA http://www.fafsa.ed.gov • Wilkes Position Hiring Form to be completed during the hiring process • Verified Employment documents: I-9; W4 forms Questions? Contact the Wilkes Student Services Center.	Prior to beginning work on campus
State College Work-Study Program	• FAFSA http://www.fafsa.ed.gov • State Work-Study Program Application • Verified Employment documents: I-9; W-4 forms Questions? Contact the Wilkes Student Services Center.	Prior to beginning work on campus
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.	Prior to beginning work on campus

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, which is available on the Wilkes University Web site.

Merit-based scholarships are renewable for four years, provided that all terms and conditions of the scholarship 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 described below. 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 65% of the first and second academic years and 70% of subsequent academic years 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.

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 online 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.

Veterans' Assistance (VA) Programs

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 the Office of Admissions, the Student Services Center, and 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. Wilkes University is a participant in the Yellow Ribbon Program of the U.S. Department of Veterans Affairs. For details about this special program, go to:

http://wilkes.edu/admissions/financial-aid/yellow-ribbon-program-for-veterans

Withdrawal -- Return of Financial Aid Funds

In accordance with federal regulations, 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, 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 funds to be returned has been calculated, the funds will be returned in the following order:

- Unsubsidized Stafford Loans
- Subsidized Stafford Loans
- PLUS Loans
- Pell Grant

- Supplemental Educational Opportunity Grants (S.E.O.G.)
- 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.

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.

Payment of Charges

Payment Due Date

August 11, 2015

Payment Options

1. Cash or check payment – Payments may be made at the Student Service Center located at 141 South Main Street during regular business hours (Monday through Friday, 9:00 am – 4:00 pm) or payments may be mailed to:

Wilkes University – Student Lockbox
P.O. Box 824696
Philadelphia, PA 19182-4696

2. Credit Card payments – No credit card payments will be processed in person or over the phone. To pay with a credit card, log on to the Web site at http://mywilkes.wilkes.edu. Enter your user name and password. Select "Student Services" and follow the remaining prompts. A password should have been assigned by the time the bill is due; if, however, a password has not been issued, please call (570) 408-4357 or 1-800-WILKES-U ext. 4357. Wilkes University accepts credit or debit cards with MasterCard, Discover, Visa, American Express. A 2.75% processing fee will be added to your total credit card payment by the credit card processor.

Students who fail to pay all indebtedness to the University shall not be permitted to receive any degree, certificate, or transcript or grades.

Financial aid shown on the invoice has been applied against the account balance. Any outstanding documentation not received by October 31, 2015 will result in the cancellation of awarded financial aid and an adjustment to the account balance.

Promissory Notes for Federal, Perkins, Nursing, Rullison Evans, and Gulf Oil Loans are signed electronically at www.signmyloan.com. You will be notified by e-mail when the Promissory Notes are available.

Fall and Spring Full-time Tuition

The unfunded cost of full-time tuition and fees will be paid or financial clearance obtained 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

1. enrollment in the Installment Payment Plan (call the Office of the Controller at (570) 408-4658 for more information);
2. participation in the deferred employer Reimbursement plan; and
3. 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. In addition, 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.

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.

Payment Plans, Loans, and Scholarships

Participation in the Installment Payment Plan

Enrollment in the Installment Payment Plan should be completed immediately upon receipt of the University invoice. The current outstanding balance will be divided into three equal installments for the Summer Semester, with the first payment due June 30th, and five equal installments for the Fall and Spring Semesters, with the first payment due August 15th. Access to the plan can be made via Wilkes' secure Web site. Please seen the enclosed document for enrollment instructions.

Participation in the Deferred Employer Reimbursement Plan

Deferred payments for employer reimbursement and third party payer arrangements will be permitted, provided the student has made application and received approval for this plan at least two weeks before the first day of the semester. Applications for Deferred Employer Reimbursement are available at the Part-time Office, the Controller's Office, and on the Wilkes Web site. Graduating seniors are not eligible for the deferred payment option.

Enrollment in a Third Party Sponsored Tuition Coverage Plan

If the student is expecting to receive financial support from ROTC, Veterans Rehabilitation, The Bureau of Vocational Rehabilitation, or other third party sponsored tuition plan, which is not already listed on the invoice, deduct the approved amount from the "Calculated Total Due." Please indicate the source and the anticipated amount of coverage on a copy of the invoice when remitting payment for the adjusted balance.

Private Educational Loans

If the student has applied for and been approved for a private educational loan that is not listed on the invoice, subtract the approved amount (less applicable fees) from the calculated amount due before sending in your remittance. Please indicate the amount of the approved loan on a copy of the invoice when sending in the payment. If application for a loan has not yet been made or if approval for a requested loan has not yet been received, pay the "Calculated Total Due" by the due date.When Wilkes receives the loan funds from a private loan vendor, the amount will be applied to the student's account. Any credit balance from the receipt of the loan funds will be refunded to the student.

Private Scholarships

If the student anticipates receipt of a private scholarship that is not already listed on the invoice, deduct the amount from the "Calculated Total Due" only if documentation of the scholarship award has been provided to the Controller's Office.

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Financial aid shown on the invoice has been applied against the account balance. Any outstanding documentation not received by October 26, 2015 (Fall semester) or March 13, 2016 (Spring semester) will result in the cancelation of awarded financial aid and an adjustment to the account balance.

Promissory Notes for Federal, Perkins, Nursing, Rullison Evans, and Gulf Oil Loans are signed electronically at www.signmyloan.com. You will be notified by e-mail when the Promissory Notes are available.

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QUESTIONS? Call (570) 408- plus the extension number indicated below or call 1-800-WILKES-U and ask for the extension number shown below:

Call extension 2000 for:

- Questions about credit card payments
- Questions about tuition or fee charges
- Questions about payment options
- Questions about financial aid
- Questions about registration status
- Other miscellaneous questions about the invoice

For questions about:

- room assignments, call extension 4350;
- meal plan options, call extension 4350; or
- signing documents for Nursing, Rullison Evans, or Gulf Oil Loans, call extension 4653

Refund Schedule

Circumstances

Cancellation of Enrollment

Time of Withdrawal

On or before the first day of classes

Tuition and Fees

The University will cancel 100% of the tuition charges and fees, 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

Time of Withdrawal

Policy guidelines for refunds processed after the first day of classes are as follows.

Tuition and Fees

Beginning with the 2013-2014 academic year, students who withdraw from Wilkes University will be entitled to an adjustment of tuition according to the following schedule:

Fall and Spring Semester	First week	100%
Second week	75%	
Third week	50%	
Fourth week	25%	
After the Fifth week	No Refund	
Summer Sessions	Sessions I & II: first week	50%
Evening Session: first two weeks	50%	
After stated period, all sessions	No refund	
Weekend College	Through the second week	50%
After the second week	No refund	
Change from Full-time to Part-time Status and Reduction of Part-time Load	See schedule for Total Withdrawal	Adjusted charges are based on the number of credits remaining after the change of status or reduction of course load.

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 of Residence Life on or before the first day of classes each semester. Upon withdrawal from University Housing, housing is refundable on a daily proration basis. Withdrawal from University Housing means that all paperwork and keys have been handed in to the Office of Residence Life.

Board

The institution will refund board charges in full, so long as written notification of cancellation is made to the Director of Residence Life on or before the first day of classes each semester. Upon withdrawal from University Housing, board is refundable on a daily proration basis. Withdrawal from University Housing means that all paperwork and keys have been handed in to the Office of Residence Life.

** 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.*

Refunds

Withdrawal from Courses

Students who officially withdraw from courses may be eligible for a partial refund of tuition charges (see "Official Withdrawal" section in this bulletin). 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 on "Financial Aid" in this Bulletin regarding adjustment to financial aid based on withdrawal.

Students who withdraw from the University or from specific classes during the semester will be entitled to an adjustment of tuition.

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

Military Leave Refund Policy

A student in the military reserves who is called into active status on an emergency basis and cannot complete course work for a given semester

1. will receive an automatic late withdrawal in each course with full tuition and fee refund if call-up is within the first 12 weeks of the semester; and
2. may elect to receive an incomplete in each course or receive a W in each course with a full tuition and fee refund, if call-up is during the thirteenth or fourteenth week of the semester.
   Ordinarily, the incompletes are to be finished during the semester the student returns to classes.

Room and board charges will be adjusted according to the refund schedule. The student should present his or her orders to the Office of Student Affairs. If the student does not yet have written orders, he or she will have 60 days in which to present the orders. A family member or friend may bring a copy of the orders in the student's absence. If this deadline is not met, a grade of "0.000" will be recorded for each course in which the student remains enrolled, and he or she will not be eligible to receive a refund.

Summer, Fall, and Spring Part-time Tuition

Charges for summer and part-time tuition and fees must be paid in full two weeks from the first day of classes unless covered by the Deferred Employer Reimbursement policy. See "Deferred Payment Policy (Employer Reimbursed) & Third Party Payment Policy" in this section of the bulletin.

Tuition Exchange

Wilkes University is a member of The Tuition Exchange and the Council of Independent Colleges (CIC) tuition-exchange plans. These programs provide limited opportunities for children of employees of one member college or university to enjoy tuition remission benefits at another member institution. Students who are dependents of employees of other colleges should consult the Tuition Exchange Liaison Officer at their home institutions to determine eligibility for this program.

Academic Matters

General Information

Wilkes' University's 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 non-traditional degree- and non-degree-seeking students.

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 Office of Summer Sessions for specific course and scheduling information. Please request special summer discount information through the Office of Summer Sessions at (570) 408-4239

Commencement exercises are held three times annually, at the close of the fall semester, spring semester and at the close of the Summer Sessions.

For a copy of the 2015-16 Approved Academic Calendar, go to the end of this bulletin or click 2015-2016 Academic Calendar.

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 (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 Accreditation Council for Business Schools and Programs (ACBSP). The School of Pharmacy was fully reaccredited in January 2006 to grant the Doctor of Pharmacy degree (Pharm.D.) by the Accreditation Council for Pharmacy Education. For further information on the School of Pharmacy, please see the discussion under "School of Pharmacy" in this bulletin.

Course Numbering

Courses are designated by a course number code comprising two or three 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 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

Wilkes University offers a full schedule of day classes during the 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 virtue 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. Direct all inquiries pertaining to continued learning opportunities to the Admissions Office at (570) 408-4400.

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 Admissions Office at (570) 408-4400. 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

- **Academic Policies and Procedures**
  - Registration
  - Attendance
  - Student Course Load
  - Wilkes-Misericordia-King's Cross-Registration
  - Auditing Courses
  - Change of Major
  - Transfer of Credits
  - Withdrawal from Courses
  - The Family Educational Rights and Privacy Act of 1974

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 other 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 might be sent to faculty members and arrangements made with them to assist students in making up work missed.

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 extended absence will be sent to the students' instructors.

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

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 before 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.

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 the Financial Matters section of this bulletin). Additional information on registration procedures and the exact dates of the orientation sessions for new students can be found online or obtained from the Office of Admissions or from the Student Services Center.

Student Course Load

Full-time students may register for 12-18 credits in a single 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 consider "part-time" students. Students should be aware that student load status (full- or part-time) affects eligibility for financial aid.

The Family Educational Rights and Privacy Act of 1974

(excerpted and adapted from the Wilkes University Student Handbook)

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. Students acquire these rights upon attendance at Wilkes University. Attendance at Wilkes University begins with either the first day of class or the date the student moves into student housing, whichever is earlier. Wilkes University has chosen to assume that all students have reached the age of legal majority (18) as stated in the document.

In accordance with the provisions of The Family Educational Rights and Privacy Act, students, upon request, will be given access to all their evaluative or opinion records that have been established by Wilkes. Such records might typically include those maintained by the Career Services Office, Health Services, Registrar, and the Office of Student Affairs. These records will be open to inspection in the presence of the appropriate University official. Procedurally, appointments must be made by students in advance to review their file, and the University has a maximum of 45 days following the request to produce the records.

For complete information about The Family Educational Rights Act of 1974 and the implementation of this act at Wilkes University, see the Wilkes University Student Handbook.

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 before 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.

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

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. Any student who wishes to withdraw from a course should first discuss the matter with the instructor. A grade of "W" is given for approved withdrawal from a course; failing to withdrawal by stated policy will result in a grade of "0.00."

Fall and Spring Semesters

Withdrawal Period 1: During the first week of the semester, the student may withdraw from a course by informing his or her advisor, securing all required signatures on the withdrawal form, and then returning the completed withdrawal form to the Student Services Center. Any withdrawal made during Period 1 is deleted from the student’s record and will not appear on the transcript.

Withdrawal Period 2: After the first week of the semester, withdrawal is allowed through the tenth week of the semester (66% of semester completed) and requires the approval of both the course instructor and the student’s academic advisor. Any withdrawal made after Period 1 will result in a "W" on the student’s transcript.

Withdrawal Period 3: After the 10th week of the semester, the student may withdraw only for medical reasons or other extremely serious circumstances. Withdrawal requests based upon medical circumstances must be supported by a written excuse from a health care provider.

Poor academic progress, in and of itself, will not be considered sufficient reason for granting 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 Dean of the school or college 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 Dean of school or college 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. A grade of "0.00" is assigned by the instructor and recorded for all courses in which no official withdrawal, as specified above, has been completed by the student. Any withdrawal made after Period 1 will result in a "W" on the student's transcript.

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 the appropriate 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. For more details, please refer to the Academic Progress Requirements area in the Financial Aid Award Guide under the Student Services tab on the portal. Students should also be mindful of the University Refund Schedule, which allows for adjustments to tuition through the fourth week of the semester. Fees are not refundable.

Summer, Pre-Session, and Intersession Semesters

Summer, Pre, and Intersessions represent full curriculum content in a compressed format. The table below reflects the policy for required signatures needed for withdrawal during Period 1, 2, and 3 for these sessions, as described for the Fall and Spring semesters.

	Deadline for Withdrawal Period 1	Deadline for Withdrawal Period 2	Deadline for Withdrawal Period 3
	Signatures: Advisor	Signatures: Course Instructor and Advisor	Signatures: Course Instructor and Dean of College in which courses is taken
Fall or Spring semester (15 week duration)	End of Week 1 (6.6% of course completed)	End of 10th week of semester (66% of course completed)	After 10th week (greater than 66% of course completed)
First and Second Summer session (20 class-day duration)	End of second day of class	End of 14th day of class	After 14th day of class
9-week evening Summer session (18 class-day duration)	End of the second day of class	End of the 12th day of class	After the 12th day of class
Pre-session (15 class-day duration)	End of the first day of class	End of the 10th day of class	After the 10th day of class
Intersession (variable class-day duration)	End of the first day of class	Determined by Registrar	Determined by Registrar

Guidelines for Implementation

1. If a student is permitted to withdraw from a course after the ten-week period (Period 3), 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 Center, 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 "0.00" for the course.
4. It should be noted that from the second 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 (for information about this procedure, see the Wilkes University Student Handbook).

Academic Requirements and Regulations

- Academic Honesty
- Grades
- Course Credit and Grade Point Averages
- Academic Honors and Awards

- Academic Standing, Probation, and Ineligibility
- GPA Adjustment Policy
- Academic Credit for Demonstrated Competency
- Graduation Requirements
- Degree Honors

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 (AP) tests, military educational and training programs, challenge examinations, the College-Level Examination Program (CLEP), Excelsior Exams, DANTES Subject Standardized Tests (DSST), 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.)

The Office of Prior Learning Assessment (PLA) has been established to advise students and faculty about the policies pertaining to the award of academic credit for demonstrated competency and works with a team of departmental faculty transfer liaisons to guide students through the various associated processes. The Office of Prior Learning Assessment is housed in University College

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 AP 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 of the examination and applicant's scores by the academic department concerned. The award 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 under "Advanced Placement." Additional information is available from the advisors in the Office of Prior Learning Assessment.

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 to the chairperson of the department in which the examination is to be administered a receipt from the Financial Management Office; 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.

Credit for Military Experience

Students who have completed the special education 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 Office of Admissions at (570) 408-4400.

Experiential Learning

Experiential learning is defined as knowledge and skills acquired and developed outside the traditional collegiate setting by means of experiences including, but not limited to, study abroad programs, internships, undergraduate research, service learning, scholarly and creative activities for which the student has not received academic credit, as well as professional work experiences and professional development self-study programs.

A maximum of 12 credits may be granted for demonstrated and documented college-level learning acquired and developed experientially, not for the experiences themselves. Credit will be awarded for existing courses in the, General Education, Major, and Elective (including "general electives") components of the Wilkes

curriculum and only on the basis of critical evaluation by appropriate faculty of the demonstrated learning presented in the petition and upon approval of the appropriate dean.

As soon after admission to the University as is practical, students who wish to petition for experiential learning credit must notify the Prior Learning Assessment Coordinator, the appropriate academic advisor, and the dean of the college and chair of the department or division in which the course is delivered for which credit is to be requested. Notification must be presented to all aforementioned parties in writing. Experiential Learning "Intent to Petition" forms are available on line and in the Office of Prior Learning Assessment; a copy of the completed form must be filed with the Prior Learning Assessment Coordinator, the student's academic advisor, and with the dean of the college and the chair of the department or division in which the course is delivered for which credit is to be requested.

Specific guidelines and procedures for the petitioning and awarding of experiential learning credits are listed below. The Academic Standards Committee of the Faculty maintains the guidelines and procedures of the Policy on Experiential Learning, and makes the final decision on the awarding of credit.

Guidelines

The student must be admitted to Wilkes University and enrolled in a degree program of the University.

All other means of securing credit for demonstrated competencies must have been exhausted before applying for experiential learning credit. The student must have applied for academic credit and demonstrated competence by such means as

1. departmental challenge exams;
2. CLEP subject area (not general) exams;
3. Credit for military experience;
4. RN validation of prior learning; and
5. Advanced Placement (AP) exams.

Experiential learning credit will not be awarded for

1. courses taken or credit awarded at another institution and accepted for transfer to Wilkes;
2. courses taken at another institution but not accepted for transfer to Wilkes; and
3. credit for life experience awarded by another college or university.

Academic policies pertaining to residency requirements, transfer, and level of course work are maintained for all students. Students who are awarded experiential learning credit must still

1. complete 60 credits at a baccalaureate degree-granting
2. institution (including experiential learning credits awarded by Wilkes);
3. complete a minimum of 30 credits at Wilkes;
4. complete at least one-half of the major field credits at Wilkes; and
5. meet all graduation requirements approved by the Faculty of the University.

Credits awarded for experiential learning may not exceed 12 credit hours.

Students should expect a time frame of one semester from the time the petition is received by the appropriate dean until a final decision is rendered by the Academic Standards Committee.

Procedure

Students who wish to petition for experiential learning credit must

meet with their assigned academic advisor and an advisor in the Office of Prior Learning Assessment (in University College) to discuss their intent to petition for experiential learning credit;

complete the "Experiential Learning Intent to Petition" form and submit one copy to each of the following:

1. the Prior Learning Assessment Coordinator;
2. the academic advisor;
3. the dean of the college in which the course is delivered for which credit is requested; and
4. the chair of the department or division in which the course is delivered for which credit is requested

obtain from the appropriate department or division chair a copy of the syllabus of the course for which credit is requested;

The "Petition for Experiential Learning Credit" (hereinafter referred to as the "Petition") must be completed within one calendar year from the date of filing the "Intent to Petition" form. Students who do not complete the "Petition" within the stated time period may reapply by submitting another "Intent to Petition" form.

A separate "Petition" must be submitted for each course for which credit is requested.

prepare, in consultation with the academic advisor, the "Petition," which includes the following:

1. General Information (Cover Page)

- Name and date of birth
- Wilkes Identification Number
- Course for which credit is requested (including Course Number and Course Title)
- Number of credits sought
- High school and year of graduation
- Degree sought at Wilkes and major area of study
- A copy of the student's Wilkes University transcript, along with copies of transcripts from any other external institutions attended, showing degrees awarded (if any)
- Relevant formal training courses attended which were conducted by business, industry or military organizations (include dates, titles and topics)
- Occupational experience (include name of organization, dates of employment, duties and responsibilities)

2. Evaluation and Signature Page
3. Specific Requests and Justification (Narrative)
    - A coherent and comprehensive narrative of not more than five typewritten pages forms the basis for the request and must include a detailed and substantive discussion of the experiences to be considered and the specific learning acquired and developed by means of these experiences. The student must demonstrate that the knowledge, skills, and values acquired experientially addresses the student learning outcomes of the course for which credit is sought;
    - documentation of learning acquired and developed experientially must accompany the narrative (examples may include letters or performance reports from supervisors, copies of papers written, reviews of scholarly work, performances, or artistic exhibitions, programs, samples of work, and the like);

NOTE: At the discretion of the appropriate college dean and department or division chair, students petitioning for experiential learning credit may be required to provide additional information, attend an interview, and give a demonstration of knowledge or skills associated with the specific course for which credit is requested.

Students must submit the "Petition" to the Registrar not later than the first week of the fall or spring semester. The Registrar will acknowledge receipt of the "Petition" and forward the completed "Petition" to the dean of the college in which the course is delivered for which credit is being requested.

The college dean, in consultation with the appropriate department or division chair, will evaluate the "Petition" for merit. The unit dean will complete the applicable section of the Evaluation and Signature Page and forward, with recommendation, to the Academic Standards Committee for consideration and final approval.

The Academic Standards Committee may accept, modify, or reject the evaluation and recommendations of the dean. The chairperson of the Academic Standards Committee will complete the Evaluation and Signature Page, which shall constitute written notification of the Committee's decision. The "Petition," including the written notification of the Committee's decision, will be returned to the unit dean, who will present the decision to the student. The "Petition" will be kept on file in the Office of the Dean for a period of seven years.

The chairperson of the Academic Standards Committee will forward a signed photocopy of the Evaluation and Signature Page to the University Registrar for posting of credit, if awarded.

Standardized Examinations of College-Level Learning: CLEP,DANTES, and Excelsior

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.

Scores earned on other standardized examinations, specifically DANTES and Excelsior, are evaluated on a case-by-case basis.

Additional information about CLEP, DANTES, and Excelsior examinations is available in the Office of Prior Learning Assessment.

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 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. Plagiarism, collusion, and cheating are considered to be serious violations of academic and intellectual integrity and will not be tolerated at the University. Each of these violations of academic and intellectual integrity is defined as follows.

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

According to the Little, Brown Handbook (seventh ed.), plagiarism "is the presentation of someone else's ideas or words as your own" (578). Similarly, the MLA Handbook for Writers of Research Papers (seventh ed.) states, "using another person's ideas, information, or expressions without acknowledgement of that person's work constitutes intellectual theft. Passing off another person's ideas, information, or expressions as your own to gain an advantage constitutes fraud" (26).

Students assume the responsibility for providing 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, which centers on the issue of intent. If students deliberately claim another's language, ideas, or other intellectual or creative work as their own, 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 student will be subject to the severest penalties. Acts of intellectual theft are not tolerated in academic, business, or professional communities, and confirmed instances of plagiarism usually result in serious consequences.
- Unintentional plagiarism often results from a misunderstanding of conventional documentation, oversight, or inattentive scholarship. Instances of unintentional plagiarism may include forgetting to give authors credit for their ideas, transcription from inaccurate and poorly written 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 particular assignment 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 should be directed to the department chairperson.

Collusion: improper collaboration with another in preparing assignments, computer programs, or in the completion of quizzes, tests, and examinations.

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

Falsifying: the fabrication, misrepresentation, or alteration of citations, experimental data, laboratory data, or data derived from other empirical methods.

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.

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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.

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 School or 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

Many national and international honor societies have established chapters 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 and accomplishments. Honor societies at Wilkes University include

ALPHA CHI (Upper division students) PI KAPPA DELTA (Forensics)

ALPHA KAPPA DELTA (Sociology) PI SIGMA ALPHA (Political Science)

ALPHA SIGMA LAMBDA (Part-time Students) PHI ALPHA THETA (History)

BETA BETA BETA (Biology) PSI CHI (Psychology)

CHI ALPHA EPSILON (Act 101 Students) RHO CHI (Pharmacy)

DELTA MU DELTA (Business and Accounting) SIGMA PI SIGMA (Physics)

ETA KAPPA NU (Electrical Engineering) SIGMA TAU DELTA (English)

KAPPA DELTA PI (Education) SIGMA THETA TAU (Nursing)

LAMBDA PI ETA (Communications) SIGMA XI (Scientific Research)

OMICRON DELTA EPSILON (Economics)

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 seniors 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 he or she 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. These 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.

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

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 (30 hours); 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.

Length of Semester:

- 14 weeks of classes, excluding final examination periods and vacations.

Credit hour:

- 1 credit hour = 50 minutes of lecture or recitation per week (along with two hours of out of class activities) or 2 or more hours of laboratory per week throughout the semester.

Laboratory: Courses with a focus on experimental/experiential learning where in the student performs substantive work in a laboratory or studio setting. The minimum contact time per credit is 1680 minutes or 2 hours per week for the length of a regular semester.

Independent study/research: Courses offered as directed studies with approval and supervision of faculty member. Student(s) meet periodically as agreed upon during the duration of the course. Semester hour credit awarded must be comparable in scope, content, academic rigor and student study time as courses offered in lecture format.

Internships, practicum, clinical, field/cooperative experience, externships: Courses developed for experiential and hands-on learning involving off-site placement. Employers work collaboratively with the appropriate university staff or faculty to develop outcomes, learning experiences, and expectations in order for students to meet credit level requirements. Such credit is awarded at the rate of 45 hours per credit.

Accelerated Courses: Courses offered in sessions less than a traditional 15 week semester. These courses offer the same semester credit hours as traditional semester-length classes. Within the shortened time frame, accelerated courses must meet the minimum contact hour requirements of the lecture format. In the event that courses do not meet the expected contact hour requirements, credit can be awarded for equivalent instructional activities, which can include but are not limited to online videos, online discussions or chats, quizzes and/or exams, article summaries, case analyses, online group activities, etc.

Online: Courses offered entirely online without regard to face-to-face meetings. Students are expected to be academically engaged with comparable learning outcomes of a standard lecture course with alternate delivery methods. Contact time is satisfied through several means, which can include but is not limited to the following: a) web-based synchronous meetings using tele- and/or video-conferencing software at times scheduled in advance by the faculty member; b) academic engagement through interactive tutorials, video lectures, online chats, group discussions moderated by faculty, virtual study/group projects, engaging with class peers and computer tutorials graded and reviewed by faculty.

Hybrid: Courses offered in a blended format with one or more required face-to-face class sessions and with one or more required online sessions. These courses offer the same semester credit hours as traditional semester-length classes. Hybrid courses may also be in an accelerated format with the course length spanning less than the traditional semester. Contact time may be satisfied through several means, which can include but is not limited to the following, web-based synchronous meetings using tele- and/or video-conferencing software at times scheduled in advance by the faculty member, academic engagement through interactive tutorials, video lectures, online chats, group discussions moderated by faculty, virtual study/group projects, engaging with class peers, and computer tutorials graded and reviewed by faculty. Low residency courses and programs also fall into this category.

Graduation Requirements by Level

Requirements for Bachelor's Degree:

- All General Academic Requirements must be fulfilled.
- Minimum of 120 earned graduation credit hours.
- A cumulative average of not less than 2.00, based on the total number of credits attempted at Wilkes University.
- All other items as stated in the undergraduate bulletin: http://wilkes.edu/bulletin/current/undergraduate/introduction/academic-req-reg/grad-req.aspx

Requirements for graduate level degree (master's or doctoral):

- All General Academic Requirements must be fulfilled.
- Minimum of 30 earned graduation credit hours, depending upon the program. Some programs require more.
- A cumulative average of not less than 3.00, based on the total number of credits attempted at Wilkes University. Some programs may require a higher GPA.
- All other items as stated in the graduate bulletin: http://wilkes.edu/bulletin/current/graduate/introduction/academic-information/degree-requirements.aspx and within the appropriate program section.

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:

Credit Hours Quality Points Credit Hours

Course Attempted Grade Passed

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. Students may repeat a course in which a grade of 1.5 or lower is earned; if the course is completed a second time with a higher grade, the higher grade, if earned at Wilkes, will be "included"; that is, the higher grade will be used to calculate the grade point average, and the lower grade will be "excluded." The student may repeat the course at Wilkes University or at another accredited institution.

IMPORTANT: Grades from courses transferred to Wilkes University are not included in the calculation of grade point averages at Wilkes. 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 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 (1.5. or 1.0) 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 atWilkes 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.

NOTE: 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.

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

Summa cum laude (with highest honors) 3.800

Magna cum laude (with high honors) 3.600

Cum laude (with honors) 3.400

Grade point averages are not rounded for Degree Honors.

GPA Adjustment Policy

The GPA Adjustment Policy is a policy and procedure for a student to request removal of substandard grades in majors/programs for which they are clearly not suited. Removing grades of less than 2.0 may help the student gain confidence in his/her academic ability, choose another academic career path, increase their GPA to be removed from Academic Probation or Ineligibility, and, possibly, reinstate financial aid. This action will only be permitted if the student agrees to the specific conditions detailed below. The complete Policy and Procedure and the Form are available from the Registrar in the Student Services Center.

The student MUST change majors/programs. This can include changing between declared majors/programs, changing from declared majors/programs to "undeclared", or changing from "undeclared" to declared majors/programs.

The student MUST receive permission from the Department Chair of the new major to invoke this policy or the Director of University College if switching to undeclared. The Chairperson of the Department into which the student desires to transfer has the decision-making authority to accept the new change of major. If the Chairperson of the Department refuses to accept the student, or if the student decides upon "undeclared," the student may contact University College personnel and request a change to "undeclared" status.

The student may initiate the GPA Adjustment Policy anytime during his/her current academic career. A returning student may apply the Policy to previously completed courses with no time limit.

The student may only apply a maximum of 18 credit hours of courses to the GPA Adjustment Policy during his/her academic career at Wilkes. The student must follow the Director of Financial Aid's Federal Guidelines regarding the maximum number of acceptable credits earned each academic year and minimum GPA. This implies that the Policy may be applied more than once during his/her academic career at Wilkes as long as the student follows the Federal Guidelines and change majors/programs a second time.

If the student decides to return to a major for which the courses were excluded, the original course grades will be reinstated. The courses must be repeated (if needed) to satisfy the requirements of the major.

Courses to which the policy may be applied:

- Courses specific for majors/programs in which grades of less than 2.0 were recorded on the transcript.
- "Variable" General Education (GE) courses in which grades of less than 2.0 were recorded on the transcript.

Courses to which the policy CANNOT be applied:

- "Specific" General Education Courses that include FYF 101, ENG 101, HST 101 or ENG 120, even if grades of less than 2.0 were recorded on the transcript. These courses must be repeated at Wilkes to replace the grade.
- Courses in which a student received grades of less than 2.0 due to academic dishonesty (cheating, plagiarism, etc.). Faculty must indicate on the GPA Adjustment Form whether the student was accused of academic dishonesty.
- Courses in which a student received grades of less than 2.0 due to lack of attendance, as defined in the Wilkes University Bulletin or the specific syllabus. Faculty must indicate on the GPA Adjustment Form whether the student received the substandard grade for lack of attendance.

The GPA adjusted course(s) will remain on the transcript and will receive an "E" notation, meaning the grades and the credit hours will be "E"xcluded from GPA calculations. Also, the courses invoked in the policy will be noted in the "comments" section of the transcript. The Registrar will recalculate both the semester and overall GPA.

A student who changed majors/programs prior to the policy being adopted at Wilkes University would not be permitted to eliminate courses, unless s/he changes majors/programs again after the policy was implemented.

The student will follow the following procedure when invoking the GPA Adjustment Policy:

- The current advisor and the student must work together regarding substandard performance in current major/program, discuss changing majors/programs and initiate the GPA Adjustment Policy.
- The student must contact the Student Affairs Office regarding the implication of substandard grades on probation/eligibility status. The student must also consult with the Financial Aid Office regarding the effect of substandard grades on continued financial aid.
- If the advisor, the director of Student Affairs, and the Financial Aid Director feel the student may gain relief by invoking the GPA Adjustment Policy, the student will initiate the process by obtaining the GPA Adjustment Form from the Student Services Center.
    - See Form for specific details.
    - The required signatures on the form include: 1) the Chairperson of the new major/program or Director of University College (Undeclared) and 2) the Faculty of the course(s) involved. The faculty MUST verify on the GPA Adjustment Policy whether the grades were issued for academic dishonesty or lack of attendance. If a faculty member is no longer at Wilkes, the Chairperson may sign-off on this line. If the Chairperson, Dean and University Student Affairs are not familiar with the faculty or student, the student may appear before the Academic Standards Committee and petition for the Policy.
- The form must be completed and returned to the Student Services Center. The Registrar and Director of Financial Aid will make all necessary adjustments to the student's transcript and financial aid document.
- The Registrar will notify the Academic Standards Committee during regularly scheduled meetings of students invoking this policy.
- The student must also provide the completed Change of Major Form with the GPA Adjustment Policy Form.

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.

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 UniversityUndergraduate 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 Bulletinpublished when they entered the University or were admitted to their specific degree program, 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.

*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.

All students must apply for Graduation by registering for GRD 000 (Graduation Audit) in their final semester at the University. Completed appropriate paperwork must must be returned to the Registrar in order for a student to graduate.

No student shall receive a diploma 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.

Honors Program

The Wilkes University Honors Program provides an opportunity for talented and highly motivated students to participate in challenging learning experiences focused on the development of leadership, integrity, and self-awareness while pursuing academic excellence. Accepted first year students with SAT scores of 1,500 or higher or who rank in the top 20 percent of their high school class are invited to apply. Selected applicants will be invited for a personal interview based on the quality of their applications. Students accepted into the program are notified during the spring prior to their first semester in the fall.

Requirements

Students admitted to the program will be required to take a cohort-based, three credit class that will count towards University core requirements. They also will be required to take 18 additional credits – six at the upper level – in addition to the required number for graduation. All will participate in a one credit honors seminar as seniors.

There is an overall grade point average requirement of a 3.4 for students graduating from the program. The required grade point average is 3.0 after the freshman year, 3.2 after the sophomore year, 3.3 after the junior year, and a 3.4 in the senior year. A student will only be allowed one grade of a 2.5 in their honors courses to receive honors credit. All other grades must be a 3.0 or higher. A student who is below the required grade point average for any given year will have one semester to meet the necessary requirement before being removed from the program. Students removed from the program will no longer receive the benefits associated with the program.

Recommended Course Sequence

First Year Fall Semester

FYF 101H 3 credits

First Year Spring Semester

ENG 120H or HST 101H 3 credits

Second Year Fall Semester

Gen Ed or Major 3-4 credits

Second Year Spring Semester

Gen Ed or Major 3-4 credits

Third Year Fall Semester

Gen Ed or Major (300 level) 3-8 credits

Third Year Spring Semester

Major (300 level) 3-4 credits

Fourth Year Fall Semester

Major or Internship or Study Abroad 3-6 credits

Fourth Year Spring Semester

Honors Seminar 1 credit

Honors Course Offerings – First Year

Courses caring honors designations will address, minimally one of the core values of the program: leadership(LE), integrity (demonstrated learning of ethics and values)(IN), self-awareness (emphasis on self-reflection)(SA), academic rigor (beyond academic expectations of regular section offerings)(AR), importance of building community(CO) and appreciating diversity(DI).

FYF 101H

This course will serve as a platform for honors students to discover the dynamic aspects of leadership (LE), begin reflecting on individual leadership characteristics and develop a plan for self-discovery (SA) that will culminate in connecting the student as a leader in the context of his/her primary academic interests . Therefore, upon completion of the course, students will be able to:

- understand several leadership theories and apply them to a variety of contexts (IN)(AR)
- demonstrate an understanding of self in relation to past and future leadership opportunities (SA)
- understand the breadth and scope of leadership and apply it in an interdisciplinary context (AR)
- understand self-reflection as a tool for learning (SA)
- discuss opportunities to serve as change agents relative to careers and community (CO)
- understand basic research skills (AR)
- developed oral proficiencies as both a presenter and facilitator
- developed skills necessary for effective group collaboration (CO)
- developed deeper multicultural understanding (DI)

ENG 120H or HST 101H (Spring Semester)

Students will take either ENG 120H or HST 101H depending on individual program needs. Courses are designed to be cohort based and include the program's core values with 15-17 students in each.

*MTH 111 and MTH 112 (optional)
There is an Honors section of MTH 111in the fall (*for those needing calculus for their major) and an Honors section of MTH 112 in the spring. Honors students must meet the criteria outlined by the instructor to enroll.

Honors Course Offerings – 2nd through 4th Year

"And Honors" Course Requirements

"And Honors" (AH) are designed for students to go more deeply into the course theory/methodology/learning. Students will be asked to address more sophisticated material and required to deliver a supplemental project (or projects) as designed by the instructor and approved by the Honors Advisory Council (HAC). These courses may be part of the general education or major requirements.

The Honors Advisory Council solicit and approve faculty proposals for AH courses six months to one year in advance according to projected program needs. Proposals are approved based on how well the proposed AH course meets the core values of the Honors Program: leadership, integrity (demonstrated learning of ethics and values), self-awareness (emphasis on self-reflection), academic rigor (beyond academic expectations of regular section offerings), importance of building community and appreciating diversity. Examples of supplemental work include:

- researching a relevant topic and writing a scholarly paper
- preparing and delivering an oral presentation to the class or an external audience
- participating in extra service opportunities and/or field experiences and delivering an analysis of those experiences
- participating in extra laboratory research and reporting on findings

Honors Conversion Courses

Honors conversion courses differ from "and H" courses in that they are:

- offered to students during their junior and senior year to satisfy honors credit
- The additional supplemental work is determined following an individual assessment of needs of the student and available resources and time of the faculty member. Students and faculty would submit a request to be approved by the Honors Council within the first three weeks of a semester.
- Courses with sections (or equivalent courses) already offered for honors credit in the same semester cannot be converted, students must enroll in the honors section or equivalent course. [Students may convert courses where honors sections are full.]
- Study abroad and internships will be treated as conversion courses with a maximum of six credits applying towards honors credits

To convert a course, a student must:

- Contact the instructor and discuss the possibility of converting it to honors credit
- Develop a plan with the instructor to work individually, or as part of a group, to advance the curriculum
- Submit a Course Conversion Agreement within the first 3 weeks of the semester
- Successfully complete any additional assignments and earn a B, or higher, in the course

Culminating one credit course

This one credit course is designed to help Honors students work towards sharing their academic work with broader audiences and to allow them to reflect upon their experience in the program. Students will be encouraged to develop professional conference presentations, and/or publication submissions. Students will also receive guidance in applying for graduate programs and grant opportunities. Students will reflect on the development of their own skills in relation to the core values of the Honors program: leadership, integrity, self-awareness, academic rigor, community, and diversity. The course will be delivered using a seminar style format. The seminar will culminate in a public presentation of their research at Wilkes in the form of an Honors exhibition.

Academic Resources and Support Services

- University Library Services
- University Writing Center

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 the 200,000 volumes of books and bound journals, 7000 electronic books, over 430 journals and newspaper subscriptions, 45,000 full text online journals, microforms, instructional audio-video materials, and a growing collection of classic films on DVD. The library holds 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, fourteen wireless laptops, and 35 iPads 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, the University Teaching Commons, and the Information Technology Computer Clinic and Help Desk. The library also offers limited private office study space for graduate students.

Library hours during the academic year are from 8:00 am to 12:00 midnight, Monday through Thursday, 8:00 am – 5:00 pm on Friday, 11:00 am - 6:00 pm on Saturday, and 11:00 am - 12:00 midnight on Sunday. The Alden Learning Commons is opened on a 24/7 basis and is accessible to faculty and students via a University ID swipe card system. Patrons can get research help via SMS text message from any mobile phone via the library's Text A Librarian reference service. 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 Keystone College, King's College, Luzerne County Community College, Marywood University, Misericordia 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 - ENCORE. A book may be renewed twice. DVDs circulate for seven days (no renewal). Charges are levied for all overdue and damaged materials. 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 anticipated 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 to support faculty research is available by appointment through the Reference Department.

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, Monday through Friday, 8:30 am - 4:30 pm.

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. Many additional books that support the pharmacy curriculum, however, are housed in the Farley Library, and non-reference titles may be borrowed from the Library. 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 through 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 the center.

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.

University Writing Center

The University Writing Center, located in the Alden 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

Degree Programs & Curricula

Wilkes University offers undergraduate programs leading to the Bachelor of Arts, the Bachelor of Business of Administration, and the Bachelor of Science degrees. The University 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 specific 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 experiences.

Institutional Student Learning Outcomes

(adopted by the University 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 team work, mentoring, and lifelong learning.

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 concentration area, 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.

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, which is 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.

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 significantly enhance a graduate’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.

Second Baccalaureate Degree

Students who hold a bachelor's degree with a major in one discipline from Wilkes University or another regionally 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 University requirements for a baccalaureate degree. Individuals already holding a bachelor's degree from a regionally accredited institution in the United States will be considered exempt from the Wilkes General Education Curriculum for the purpose of seeking a second bachelor's degree.
- Wilkes students may graduate with two baccalaureate degrees simultaneously, but they must complete thirty (30) credits beyond the requirements for the first degree in order 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.

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, the designation "Distribution Requirement(s)" 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: 1) Skill Requirements (0 – 13 credits); 2) First-Year Foundations (3 credits); 3) Distribution Areas (24 credits); and 4) the 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

The Wilkes University General Education Curriculum

Student Learning Outcomes for the Skill Areas

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; [and]
- 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, effectively, and purposefully, with diverse audiences; [and]
- 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; [and]
- 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;
- analyze information;
- synthesize new information from multiple sources; [and]
- 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; [and]
- 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.

Students may opt or test out of each skill requirement by demonstrating competency through means designated by the department responsible for 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" (CI) 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

Completion of ENG 101 (English Composition) 4 credit hours

AND

Writing Across the Curriculum: Each undergraduate degree program, as well as the First-Year Foundations Program, incorporates writing and the progressive development of written communication skills into its 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 Office of the Registrar 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 OPO course. Satisfaction of the OPO requirement will not, in most cases, add credits to a students' program of study.

IV. Quantitative Reasoning

Completion of MTH 101 (Solving Problems Using Mathematics)

or higher minimum 3 credit hours

First-Year Foundations 0/3 Credit Hours

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

Students who have completed 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 of study. All students who have completed more than 23 credit hours earned in a college classroom when they matriculate at the University are eligible, but not required, to take an FYF course. A student may earn academic credit toward graduation for only one FYF course.

Distribution Areas 24 Credit Hours

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 in order to satisfy the requirements for Distribution Area I: The Humanities..

ENG 120	Introduction to Literature and Culture; and
HST 101	Historical Foundations of the Modern World; and
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 may be obtained from, and completed forms must be returned to, the Student Services Center.

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.

Student must complete two (2) of the courses listed below in order to satisfy the requirements for Distribution Area II: The Scientific World. The two courses must be drawn from two different sub-areas of study and at least one of the two selected courses must include a laboratory component. Credit hours vary according to incorporation of the laboratory component.

Sub-AreasCourse Options

Biology BIO 105 or BIO 121

Chemistry CHM 105 or CHM 115 (plus CHM 113)

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 Behavioral and Social Sciences minimum 6 credit hours

Student Learning Outcomes in the Behavioral and 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 in order to satisfy the requirements for Distribution Area III: The Behavioral and Social Sciences.

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

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 credit hours

Student Learning Outcomes in the Visual and Performing Arts:

Students will

- create, recreate, or critique 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; and
- 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 must complete one (1) of the courses listed below in order to satisfy the requirements of Distribution Area IV: The Visual and Performing Arts.

ART 101 - Experiencing Art, ART 140 - History of Art I, or ART 141
DAN 100 - Dance Appreciation: Comprehensive Dance Forms
MUS 101 - Introduction to Music I
THE 100 - Approach to Theatre

By means of a successful performance audition and written permission of the Chair of the Division of Performing Arts, students may substitute three (3) credit hours of performance or studio experience for the above course requirement.

By means of a satisfactory artwork portfolio evaluation and written permission of the Chairperson of the Department of Integrative Media and Art, students may substitute three (3) credit hours of studio experience for ART 101.

Permission for course substitutions in Area IV will be granted only in special cases that have received review and approval prior to registration. Students petitioning for Area IV course substitutions in Art must present a portfolio of creative work for review by the chair and faculty of the Department of Integrative Media and Art. Students petitioning for Area IV course substitutions in Dance, Music, or Theatre must schedule an interview with the chair and faculty in the Division of Performing Arts; in some instances, an audition may be required.

For more details on course substitution policies for Area IV, contact the Department of Integrative Media and Art or the Division of Performing Arts and the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution may be obtained from and completed forms must be returned to, and completed forms must be returned to the Student Services Center. Written permission for course substitutions must be obtained before registering for the course.

Senior Capstone Credits Vary

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.

Programs to Serve Adult and Non-Traditional Learners

The College of Graduate and Professional Studies offers and coordinates a number of programs that serve the adult and non-traditional student population. Complete information about the College and its programs may be found on the Wilkes University Web site at: http://www.wilkes.edu/graduatestudies.

For further details about any of the following programs, please call (570) 408-4235.

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, Advanced Placement (A.P.) Biology, Calculus A and B, Chemistry, Computer Science, English, Environmental Science, Physics, Statistics, or U.S. History. Each course will review the most recent changes and shifts in emphasis in the A.P. syllabus. Advanced Placement Summer Institute is a one-week program, which may be taken for three (3) graduate credits or audited. Specific questions about the Institute may be directed to the College of Graduate and Professional Studies.

Graduate, Post-Baccalaureate and Certificate Programs

Wilkes University continues to expand its role in post-baccalaureate offerings. Please call the Graduate Admissions Office to inquire about certificate and post-baccalaureate programs. The University offers doctoral degrees in Educational Leadership (Ed.D.), Nursing (DNP), and Pharmacy Practice (Pharm.D.). Master's degrees are available in the fields of Business Administration (M.B.A.), Creative Writing (M.A. and M.F.A), Education (M.S.Ed., with various concentrations), Electrical Engineering (M.S.E.E.), Engineering Management (M.S.E.G.M.), Mechanical Engineering (M.S.M.E), and Mathematics (M.S.). A separate Graduate Bulletin, which describes graduate programs in detail, is available upon request from the Graduate Admissions Office.

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, A.P. 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 Continued Learning Office.

Part-time Studies

Wilkes University welcomes part-time undergraduate students into all of its regular sessions. The University 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 commitment and interests permit. Many students complete their degree requirements in one or more of the special formats and scheduling options available through the Admissions Office.

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 Admissions Office.

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 specific course and scheduling information. Please request special summer discount information through the Office of Summer Programs at (570) 408-4239.

The Curriculum

The Institutional Student Learning Outcomes are addressed and assessed in the academic courses of study by way of a University curriculum approved by the faculty and 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 Dr. Eugene S. Farley, founding President of Wilkes University, 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, special concentration, or second major degree.

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

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 before the first semester of the student's junior year. Wilkes University offers three baccalaureate degrees—the Bachelor of Arts Degree, the Bachelor of Business Administration Degree, and the Bachelor of Science Degree—and Secondary Education Certification in Biology, Chemistry, Earth and Environmental Sciences, English, History, Mathematics, Political Science, and Spanish.

Bachelor of Arts Degree

Wilkes University offers the Bachelor of Arts degree (B.A.) with majors in:

Biochemistry	English	Philosophy
Biology	History	Physics
Chemistry	Individualized Studies	Political Science
Communication Studies	Integrative Media	Psychology
Computer Science	International Studies	Sociology
Criminology	Mathematics	Spanish
Earth and Environmental Sciences	Middle Level Education	Theatre Arts
Elementary and Early Childhood Education		

Bachelor of Business Administration Degree

Wilkes University offers the Bachelor of Business Administration degree (B.B.A.) with majors in:

- Accelerated B.B.A.
- Entrepreneurship
- Finance
- Management
- Marketing

Bachelor of Science Degree

Wilkes University offers the Bachelor of Science degree (B.S.) with majors in:

Accounting	Computer Science	Individualized Studies
Applied and Engineering Sciences	Earth and Environmental Sciences	Mathematics
Biochemistry	Electrical Engineering	Mechanical Engineering
Biology	Engineering Management	Medical Technology
Chemistry	Environmental Engineering	Nursing
Computer Information Systems		

Teacher Education

Students who wish to prepare for a teaching career in secondary schools select an appropriate disciplinary major (Biology, Chemistry, Earth and Environmental Sciences, English, History, Mathematics, Political Science, or Spanish) and use their elective credits to pursue the minor in Secondary Education and meet teacher certification requirements. Students who wish to prepare for a teaching career in elementary or middle level education pursue the major in Elementary and Early Childhood Education or Middle Level Education (with an appropriate area of concentration). A list of the courses needed for certification is provided in the departmental description of the Department of Education in this bulletin. Students planning a teaching career must seek counseling in the Department of Education early in their first semester at Wilkes University.

DEPARTMENT OF BIOLOGY AND HEALTH SCIENCES

Department of Biology and Health Sciences

Chairperson: Dr. Michael A. Steele

Faculty

Professors: Klemow, Pidcock, Steele, Terzaghi
Associate Professors: Biggers, Gutierrez, Harms, Kadlec, Kalter, Stratford
Adjunct Faculty: Mullen
Faculty Emeriti: Hayes, Turoczi
Coordinator of Health Sciences: Sharp
Lab Preparation Supervisor: Elias
Lab Preparation Assistant: Stull
Biology Instructor and Education Specialist: Chapman

BIOLOGY

Biology

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 in Biology – 22

Biology Major - Required Courses and Recommended Course Sequences

First Semester Credits	B.A.	B.S.
BIO-121 - Principles of Modern Biology I	4	4
CHM-113 - Elements & Compounds Lab	1	1
CHM-115 - Elements & Compounds	3	3
FYF-101 - First-Year Foundations	3	3
MTH-111 - Calculus I	4	4
Total Credits	**15**	**15**

Second Semester	B.A.	B.S.
BIO-122 - Principles of Modern Biology II	4	4
CHM-114 - The Chemical Reaction Lab	1	1
CHM-116 - The Chemical Reaction	3	3
ENG-101 - Composition	4	4
MTH 114 - Calculus & Modeling ...	4	4
Total Credits	**16**	**16**

Third Semester	B.A.	B.S.
BIO-225 - Population & Evolutionary Biology	4	4
CHM 231 - Organic Chemistry I	3	3
CHM 233 - Organic Chemistry I Lab	1	1
Distribution Requirements	6	6
Total Credits	**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 Chemistry II Lab	1	1
Distribution Requirements	6	6
Total Credits	**14**	**14**

Fifth Semester	B.A.	B.S.
BIO-397 - Professional Prep. Techniques*	0-2	0-2
BIO Elective or Research**	3	3
Distribution Requirements	0	3
Free Elective(s)***	9	3
MTH-150 Elementary Statistics	0	3
PHY-171 -Principles of Classical & Modern Physics	4	4
Total Credits	**16–18**	**16–18**

Sixth Semester	B.A.	B.S.
BIO-397 - Professional Prep. Techniques*	0-2	0-2
BIO Elective or Research	3	3
Computer Science Elective	3	3
Distribution Requirements	3	3
PHY-174 - Applications Classical and Modern Physics	4	4
Total Credits	**13–15**	**13–15**

Seventh Semester	B.A.	B.S.
BIO-391 - Senior Research Projects	1	1
BIO Electives	3–4	6–8
Free Electives	12	9
Total Credits	**16–17**	**16–18**

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
Total Credits	**15–16**	**15–16**

*Only one semester of BIO 397 is required, but it must be taken in the fifth or sixth semester.
**No more than four credits of BIO 395 or 396 will count toward the major.
***Any course other than a biology course.

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 as follows:

BIO-121 - Principles of Modern Biology I
BIO 122 - Principles of Modern Biology II
BIO 225 - Population and Evolutionary Biology
BIO 226 - Cellular and Molecular Biology

Two 300-level, Biology electives. These upper-level electives, exclusive of BIO 395-396 (Independent Research), 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: 1) achievement of a graduating cumulative grade point average of 3.25 or better; 3) achievement of grades of 3.00 or better in all biology courses; 3) pursuit of independent research and completion of a research project in biology; and 4) presentation of the research project results at a national or regional scientific conference or by means of publication of a research paper. The distinction "Honors in Biology" will be recorded on the student's transcript upon graduation.

Biology in Conjunction with the Secondary Education Major or Minor

Students interested in becoming secondary teachers in Biology should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in Biology and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it is not a stand alone major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades 7-12 in their chosen field. Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements. Students should also consult carefully with their Education program and Biology program advisors in planning their course of studies.

Total credits required for **Secondary Education minor - 40**

Total credits required for **Secondary Education major - 47**

Required courses for the major(*) or minor in Secondary Education are as follows:

ED 180 – Educational Psychology - 3 cr.

ED 190 – Effective Teaching with Field Experience - 3 cr.

ED 191 – Integrating Technology into the Classroom - 3 cr.

EDSP 210 – Teaching Students with Special Needs - 3 cr.

ED 220 – Teaching Culturally and Linguistically Diverse Learners - 3 cr.

EDSP 225 – Special Education Methods I with Field Experience - 3 cr.

*ED 345 – Assessment - 3 cr.

*ED 375 – Middle Level/Secondary School Methods with Field Exp. - 4 cr.

ED 371 – Teaching Methods in Science with Field Experience - 4 cr.

ED 380 – Content Area Literacy - 3 cr.

EDSP 388 – Inclusionary Practices (taken concurrently with ED 390) - 3 cr.

ED 390 – Student Teaching with Seminar - 12 cr.

** These additional courses required in order to complete the major in Secondary Education.*

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must
  - Attain a 3.0 GPA

    - Complete 48 credits including six credits in both Mathematics and English
    - Pass a test of basic skills
    - Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must
    - Maintain a 3.0 GPA
    - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must
    - Successfully complete all required Education courses, including student teaching
    - Graduate with a 3.0 cumulative GPA
    - Pass the appropriate exit test(s) in their content area
    - Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

BIOLOGY MARINE

Biology Major with a Marine Science Option 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 oversees 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 may formally pursue a minor in Earth and Environmental Sciences and Marine Science Option within a four-year program of study that is fully integrated into their major. On a less formal basis, students who meet course prerequisites may complement regular course work 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., the 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 in the Wallops Island program, students must first contact the coordinators of the Wallops Island Program at Wilkes University 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 Science Option.

Biology Major with a Marine Science Option and a Minor in Earth and Environmental Sciences - Required Courses and Recommended Course Sequence

First Semester

BIO-121 - Principles 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-111 - Calculus I	4
Total Credits	**15**

Second Semester

BIO-122 - Modern Biology II	4
CHM-114 - The Chemical Reaction Lab	1
CHM-116 - The Chemical Reaction	3
ENG-101 - Composition	4
MTH 114 - Calculus and Modeling...	4
Total Credits	**16**

Third Semester

BIO-225 - Population and Evolutionary Biology	4
CHM 231 - Organic Chemistry I	3
CHM 233 - Organic Chemistry I Lab	1
Distribution Requirement	3
EES-230 - Ocean Science	4
Total Credits	**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 Requirement	3
MTH-150 Elementary Statistics	3
Total Credits	**17**

MS - Summer College MSC*	3

Fifth Semester

BIO 397 - Professional Preparation Techniques	2
BIO Electives or Research	6
Distribution Requirement	3
PHY-171 - Principles of Classical & Modern Physics	4
Total Credits	**15**

Sixth Semester

Bio or EES-343 **	3
BIO Elective or Research	3
Distribution Requirement	3
EES Elective	3
PHY-174 - Appls. of Classical and Modern Physics	4
Total Credits	**16**

MS - Summer College MSC*	3

Seventh Semester

BIO-391 - Senior Projects I	2
BIO Elective	3-4
Distribution Requirement	3
Free Electives	6
Total Credits	**14-15**

Eighth Semester

BIO-392 - Senior Projects II	2
BIO Electives	6-7
Distribution Requirement	3
EES Elective	2-3
Total Credits	**13-15**

*EES minor includes 2 MS courses at MSC Wallops Island, excluding MS 110 and MS 260.
**BIO/EES 343 counts toward both the BIO degree and the EES minor. The 18-credit minimum for the minor includes BIO/EES-343.

Summary of Requirements:

Biology Course Credits (BIO-121, 122, 225, 226, 343, 391, 392, 397 & Wilkes BIO electives (18-20 credits) = 42-44
EES Minor Credits (EES-230, 343, 2 Wilkes EES electives, and 2 MSC courses) = 18-19
Other Science, Math, and Free Elective Credits = 48;
Core and Distribution Credits (in addition to credits included in the major and minor areas of study) = 25
Minimum Program Credits = 127

HEALTH SCIENCES

Health Sciences Professional Programs

Coordinator and Chief Health Professions Advisor: Ms. Eileen M. Sharp
Premedical and Pre-Professional Programs Advisor: Ms. Debra I. Chapman

Adjunct Faculty

Dr. Joseph Scopelliti, CEO, Guthrie Health System, Sayre, PA;
Brian D. Spezialetti, Program Director, Medical Technology Program, Robert Packer Hospital, Sayre, PA;
Joseph King, M.D., Medical Director, Medical Technology Program, Robert Packer Hospital, Sayre, PA:
Christine M. Wheary, MT(ASCP), Program Director, Clinical Laboratory Science, Williamsport Regional Medical Center, Williamsport, PA;
Marie Wood, MS, MT(ASCP), Program Director & Chair, Medical Laboratory Science Program, Lancaster General College of Nursing & Health Sciences.

Health Sciences Committee (reports to the Dean of the College of Science and Engineering)

Michael A. Steele, Ph.D., Professor of Biology and Chair, Division of Biology and Health Sciences;
William Hudson, Ph.D., Dean of the College of Science and Engineering
Debra I. Chapman, M.S., Instructor in Biology
Taela Donnelly, Visiting Instructor in Chemistry
Linda Gutierrez, M.D., Assistant Professor of Biology
Christopher H. Henkels, Ph.D., Assistant Professor of Chemistry
Lisa Kadlec, Ph.D., Associate Professor of Biology
Kenneth A. Pidcock, Ph.D., Associate Professor of Biology & Chair, Division of Biology and Health Sciences
Edward J. Schicatano, Ph.D., Associate Professor of Psychology
Eileen M. Sharp, M.S., Coordinator for Health Sciences Professional Programs and Committee Chair;
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 pre-professional medical 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, clinical laboratory sciences, and physician assistant studies.The University's medical pre-professional medical 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, clinical laboratory sciences, and physician assistant studies.

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, Biochemistry, or Psychology. 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 Health Sciences Advisor.

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 and online resources 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 and 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 universities with a liberal learning emphasis for 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.

Premedical Coursework and Competencies

Before applying, medical schools expect that applicants develop certain competencies through undergraduate coursework, especially in the sciences, to provide the foundation for studying medicine. Most medical schools currently require that students complete at least one year of college coursework (including both lecture and lab components) in biology, general/inorganic chemistry, organic chemistry, and physics to meet their admission requirements. Science and medicine are changing, however, and some medical schools are considering changing their admission requirements and how they evaluate applicants. It has been proposed that medical schools eventually move away from course-based admission requirements toward competency-based admission requirements, in order to allow greater flexibility in the types of courses that students take to prepare for medical school. However, it is unlikely that many schools will fully abandon course-based requirements in the near future.

The section below outlines many of the common course requirements for admission to medical schools. Please note that there can be important variations in admissions requirements. Students should research the requirements for the schools where they intend to apply. There are several resources for researching requirements. Students can consult the individual medical school websites for information on their admission requirements. The guide produced by the Association of American Medical Colleges, Medical School Admissions Requirements, provides information on admission requirements for allopathic medical schools. The American Association of Colleges of Osteopathic Medicine publishes an Osteopathic Medical College Information Book that provides information on admissions requirements for osteopathic medical schools. Students also may consult with an advisor at the Health Professions and Prelaw Center on premedical coursework.

Most medical schools will not require that you complete all required coursework before you submit the application for admission; most will simply require you to complete all required coursework before you matriculate to (enroll in) the school. However, before taking the MCAT exam you should be sure to complete the necessary coursework in the sciences and social sciences for building competencies in the areas covered on the exam.

You should not view your premedical coursework as simply part of a checklist of tasks to get out of the way before applying to medical school. You should view your premedical coursework as a means to build critical competencies that will be vitally important for the MCAT exam, success in medical school, and your future practice as a physician.

Your performance in premedical science courses will be viewed by admissions committees as a predictor of your ability to cope with the rigorous demands of medical school. Simply earning passing grades in these courses is not sufficient. Medical schools have expectations that students who are building the necessary competencies should be able to excel in their premedical science coursework, generally earning A's in most premedical science courses, with occasional B's. If you are earning C's, D's or F's you cannot be regarded as developing the necessary competencies for success and you may need to reevaluate whether medical school is the path for you.

For more information on the competencies required for success in medical school please see the report, "Scientific Foundations for Future Physicians."
For more information on requirements for Health Professions Schools, direction in appropriate coursework, and assistance in the application process, students should consult with the Chief Health Professions Advisor on a regular basis.

The WIlkes Health Sciences Pre-Professional Core

This core program is required of all students aspiring to enter programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine, and Veterinary Medicine. The goals of the Pre-professional Core are to

1. Help the student develop a useful scientific foundation for their selected career choice;
2. Serve as a unique signature, which Wilkes graduates can carry forward as successful professionals; and
3. Facilitate the preparation for standardized admissions tests such as MCAT, OAT, and DAT.

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 professional 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 health care, 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 Curriculum requires the following courses as a minimum:*

- Two courses in Modern Biology
  - BIO 121 – Principles of Modern Biology I; and
  - BIO 122 – Principles of Modern Biology II
- At least two to three upper level biology courses are recommended based on a student's career choice
- Four courses in Chemistry
  - CHM 115 – Elements and Compounds (plus CHM 113 – Elements and Compounds Lab)
  - CHM 116 – The Chemical Reaction (plus CHM 114 – The Chemical Reaction Lab)
  - CHM 231 – Organic Chemistry I (plus CHM 233 – Organic Chemistry I Lab)
  - CHM 232 – Organic Chemistry II (plus CHM 234 – Organic Chemistry II Lab)
- One course in Biochemistry (although for the 2015 MCAT, both courses are highly recommended)
  - CHM 361 – Biochemistry: Structure and Function or
  - CHM 362 – Biochemistry: Metabolism
- One course in Medical Informatics
  - CS 265
- Two courses in Physics
  - PHY 171 – Principles of Classical and Modern Physics and
  - PHY 174 – Applications of Classical and Modern Physics; or (depending on a student's major)
  - PHY 201 – General Physics I (calculus based) and
  - PHY 202 – General Physics II (calculus based)
- Two courses in Mathematics
  - MTH 111 – Calculus I and
  - MTH 114 – Calculus and Modeling for the Biological and Health Sciences or (depending on a student's major)
  - MTH 112 - Calculus II
- Three courses in Behavioral and Social Sciences
  - PSY 101 – General Psychology
  - SOC 101 - Introduction to Sociology
  - ANT 101 - Introduction to Anthropology
  - As of 2015, the revised MCAT exam will test concepts from psychology and sociology in the Psychological, Social and Biological Foundations of Behaviorsection of the exam. In addition, the Critical Analysis and Reasoning Skillssection of the revised MCAT may include passages from cross-cultural studies (anthropology, communication and culture, etc.) and population health.
- One to two courses in English** (emphasizing writing skills)
- Research course with a Special Project***
- Volunteer/Community Service (minimum 20 hours) in each of the undergraduate years
- A shadowing experience (20-25 hours) in each of the undergraduate years
- Attendance at Health Science Office sponsored events on campus

*Pre-optometry students are also required to take MTH 150 – Elementary Statistics, BIO 226 – Cellular and Molecular Biology, and BIO 327 – Medical Microbiology. Pre-dentistry students are also required to complete ART 122 – Sculpture

**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 heath care must complete these pre-professional core courses. Students should work with their academic advisors and the Health Professions Advisor to integrate this core into the recommended course sequence for their academic major as outlined in this bulletin.

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 April 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 about 90%. Allopathic medical schools accepting Wilkes students include the Commonwealth Medical College, George Washington, Georgetown, Harvard, John 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, MO.

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 Kornberg School of Dentistry. Pre-optometry 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 at Salus University. 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

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 two 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 letters from two high school science teachers and one humanities or English teacher to the Health Sciences Committee and successfully complete three interviews. If ultimately selected for either of the two 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 Commonwealth Health Care System (CHS), which includes the General Hospital in Wilkes-Barre, PA (Commonwealth Scholars) for students to participate in this clinical experience.

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 or medically underserved areas of Pennsylvania who must be interested in a career in primary care medicine. This program allows students to select either the Guthrie Scholars clinical site or the Commonwealth 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 pursue undergraduate study. Details of this program are as follows:

- Program Admission
  - To be considered for selection to the Penn State Hershey Premedical Scholars BS/MD 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 in the math and verbal reasoning sections. 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); and
    - have a strong understanding of the medical field and what is involved in being a physician.
    - Two Premedical Scholars may be selected to the program each year.
    - Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office notifies 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 Commonwealth Health Care System, and at the Pennsylvania State University College of Medicine.
    - Emphasis in recruiting will be placed on students from rural or medically underserved areas of Pennsylvania who wish to pursue a career in primary care medicine.
    - Successful applicants should expect to be interviewed at Wilkes before the winter break 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.
    - Final selection for this program is at the discretion of the medical school at which a student interviews.
    - Program Format
    - 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 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 Pennsylvania 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 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.
  - The off-campus clinical semester requires a total of 15 credits of course work, including Cooperative Education in Clinical Observation (6), Senior or Independent Research or both (3), Lectures in Biomedicine (3), and Discussion on Medical Ethics (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department.
    - Students must complete their 7th or 8th semester of undergraduate study at the Robert Packer Medical Center in Sayre, PA or the Wilkes-Barre General Hospital in Wilkes-Barre, PA. In return for Guthrie's or Commonwealth'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 the Wilkes-Barre General Hospital, depending upon the site of the undergraduate off-campus clinical semester.

- Completion of the MCAT examination is required for admission to the Pennsylvania State University College of Medicine. The exam must be taken no later than mid-June after 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.
- Four (4) years of medical school study at the Pennsylvania State University College of Medicine at Hershey.

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, PA.

The program allows high school seniors to be assured admission to SUNY Upstate Medical University as they enter Wilkes University to pursue undergraduate study. Details of this program are as follows:

- Program Admission
  - High school applicants must have a minimum combined SAT score of 1200 in the math and verbal section 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.
  - Students admitted to the program, after successful interview 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.
  - 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. The Medical College Admission test (MCAT) is required and students must achieve a minimum score of 30. Additional requirements will be specified in the acceptance letter from the medical school and Wilkes University.
  - Emphasis in recruiting for this program will be placed on students from the southern tier of New York State, from Binghamton to Elmira/Corning.
  - The deadline for application and acceptance to Wilkes University is November 15th of their senior year in high school.
  - Successful applicants should expect to be interviewed at Wilkes before the winter break 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.
  - Final selection for this program is at the discretion of the medical school at which a student interviews.
  - Program Format
    - Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core.
    - The off-campus clinical semester requires a total of 15 credits of course work, including Cooperative Education in Clinical Observation (6), Senior or Independent Research or both (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.
    - Completion of the MCAT examination is required for admission to SUNY Upstate Medical University. The exam must be taken no later than mid-June after the junior year at Wilkes.
    - Students must complete their 7th or 8th semester of undergraduate study at the Robert Packer Medical Center in Sayre, PA, conducting clinical 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 engaged in required and elective clinical rotations at Robert Packer Medical Center.
    - Four (4) years of medical school study at the 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.

Early Acceptance Program with the Commonwealth Medical College at Scranton, PA

The Commonwealth Medical College (TCMC) at Scranton, PA and Wilkes University have developed a special Early Acceptance Program with Wilkes University.

This program allows Wilkes University students to apply for Early Acceptance Admission to TCMC at the end of their sophomore year. If accepted to the medical school at this time, students must continue to meet admission requirements for TCMC by the time they graduate from Wilkes University. However, students may then spend their final two undergraduate years on their studies and will not have to go through the traditional application process, which generally occurs during the junior and senior years at Wilkes.

Seven-Year Affiliated Health Professions Programs

In addition to the traditional four-year premedical undergraduate programs, Wilkes University has maintained affiliations with health professions schools in osteopathic medicine, dentistry, optometry, and podiatric medicine for many years. These accelerated 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 Kornberg School of Dentistry (TUKSD)

Pennsylvania College of Optometry at Salus University (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 in the math and verbal sections (with no score less than 550), and should have completed

Honors or AP course work, 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 Credits

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 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 114 Calculus and Modeling	4
	16

Third Semester

BIO 225 Population and Evolutionary Biology	4
CHM 231 Organic Chemistry I	3
CHM 233 Organic Chemistry I Lab	1
COM 101 Fundamentals of Public Speaking	3
Distribution Requirements	6
	17

Fourth Semester

BIO 226 Cellular and Molecular Biology	4
CHM 232 Organic Chemistry II	3
CHM 234 Organic Chemistry II Lab	1
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 Applications of Modern Physics	4
Distribution Requirement	3
Free Elective	3
	18

**Select one course from the Structural and Functional Biology category and one course from the Diversity and Populational Biology category. Pre-optometry students must complete BIO 327 – Medical Microbiology.Pre-optometry students must complete BIO 327 (Medical Microbiology).*

Following successful completion of his/her 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 in Biology.

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 Curriculum will be endorsed and receive a Letter of Evaluation for the seven-year programs. Students whose academic credentials fall below 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 Kornberg School of Dentistry (TUKSD)

TUKSD 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 TUKSD and they meet the following minimum requirements as specified by Temple University School of Dentistry:

1. track as a science major in the Wilkes pre-dental program;
2. submit application letter to TUKSD prior to December 1 of the junior year at Wilkes;
3. receive a Letter of Evaluation from the Wilkes University Health Sciences Committee;
4. earn a minimum grade point average of 3.5 by the end of the 5th semester of study in the basic sciences, 3.4 in the sciences, and 3.3 overall; and
5. earn a minimum score of 18 in the Science section and 18 in 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.

Salus University: Pennsylvania College of Optometry (PCO)

State University of New York College of Optometry (SUNY-Optometry)

Temple University School of Podiatric Medicine (TUSPM)

Salus/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 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.

Transfer Doctoral Degree Programs

The transfer program is similar to the 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 osteopathic medicine, dentistry, optometry, podiatric medicine, and doctoral level physical therapy (DPT).

These students may, with the approval of the Wilkes University 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 a professional school. Students in these programs must, however, satisfy the General Education Curriculum requirements at Wilkes University in order 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. It is important to look at professional programs in these areas because there is no set standard of prerequisites for all programs. By choosing schools to which a student may want to apply, the health sciences advisors can help to make sure he or she meets the prerequisites of a particular program in order to be a viable candidate when applying to the professional school. Students may plan to apply to a pre-professional undergraduate program in physical therapy, occupational therapy, physician assistant, and chiropractic medicine after two or three years of course work at Wilkes. Student 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.

Physician Assistant

The average PA program takes 26.5 months to complete. The first year is generally composed of classroom studies – the essential medical sciences such as microbiology, anatomy, and physiology – followed by a year of clinical rotations in private practice and institutional settings.

A candidate must have completed a Bachelors degree from an accredited undergraduate college or university. Undergraduate credits must include pre-professional courses.

A candidate must have three letters of evaluation. One is from the Health Sciences Committee, one is from a professor and one is from a Physician Assistant.

*Minimum requirements for MOST Physician Assistant professional schools:

- GPA = 3.2 or better*
- GRE = 1100 or above on verbal and quantitative, no single test score below 450

Minimum 500 hours through work or volunteer experiences in a clinical setting

The Wilkes Pre-Physician Assistant Core

8 units in biological and physical sciences including:

BIOLOGY: Human Anatomy and Physiology I, Human Anatomy and Physiology II, Biostatistics and Experimental Design,

CHEMISTRY: General Chemistry I, General Chemistry II, Organic Chemistry I

Two (2) units in required: Philosophy (Medical Ethics), Introduction to Psychology, Mathematics or Statistics, English Composition

*Students are responsible to meet requirements for each physician assistant institution for which they intend to apply.

American Academy of Physician Assistants: www.aapa.org

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 a place in society while learning to live within the limits of his or 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 to 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 course for all physical therapy programs. Therefore, students must consult with each school to which they seek admission to ascertain that particular school's prerequisites: www.apta.org.

The following minimum requirements are based upon the Drexel University and Widener University Doctor of Physical Therapy degree programs:

- Five courses in Biology for a total of 19-20 credits to include the following:
  - BIO 121 – Principles of Modern Biology I
  - BIO 122 – Principles of Modern Biology II
  - BIO 314 – Comparative Vertebrate Anatomy (prerequisite: BIO 225 – Population and Evolutionary Biology)
  - BIO 321 – Mammalian Physiology (prerequisite: BIO 226 – Cellular and Molecular Biology)
  - One of the following upper-level Biology courses:
    - BIO 323 – Functional Histology
    - BIO 324 –Molecular Biology
    - BIO 326 – Immunology and Immunochemistry
    - BIO 327 – Medical Microbiology
    - BIO 345 - Genetics
- One of the following research-based courses:
  - BIO 391, 392 – Senior Research Projects I, II
  - BIO 395, 396 – Independent Research
  - PSY 395, 396 – Independent Research
- Two courses in General Chemistry with laboratory for a total of 8 credits (for example, CHM 113 – Elements and Compounds Lab and CHM 115 – Elements and Compounds; CHM 114 – The Chemical Reaction Lab and CHM 116 – The Chemical Reaction)
- Two courses in Physics with laboratory for a total of 8 credits (for example, PHY 171 – Principles of Classical and Modern Physics and PHY 174 – Applications of Classical and Modern Physics)
- Two courses in Psychology for a total of 6 credits
  - PSY 101 – General Psychology
  - PSY 221 – Developmental Psychology
- One course in Statistics for a total of 3 credits (for example, PSY 200 – Research and Design Statistics I or MTH 150 – Elementary Statistics)
- Mathematics (per the requirements of the professional school)
- 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 General Education Curriculum)

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, from a minimum of 40 to 250 or more. Some or all of those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Health Sciences Office or the Cooperative Education Office.

Letters of Evaluation – One composite letter from the Wilkes University Health Sciences Committee and one letter from a licensed physical therapist

In addition to completing the Pre-Physical Therapy Core requirements, students must consult the prerequisite guidelines published by the particular institutions to which they wish to gain admission.

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.

Students should consult the previous section of the Bulletin for the prerequisite courses required for admission to Drexel University's Affiliated Physical Therapy Program. Additionally, Wilkes students applying to Drexel University must meet the following criteria for admission:

- a cumulative GPA of 3.25 or above at the end of six full semesters of study, as noted in the curricular outline;
- completion of all science courses with a cumulative GPA 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 the application for admission. This request must be made in writing to the Committee by May 15 of the student's junior year; and
- one Letter of Evaluation and 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 the bachelor's degree from Wilkes University in whatever major they choose prior to matriculation at Drexel University.

Affiliated Program with Widener University: Doctor of Physical Therapy Degree Program

The Affiliated Physical Therapy Program provides students the opportunity to move on 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. Students must submit an official transcript to Wilkes University after completing their first year in the physical therapy program in order to receive a Wilkes Baccalaureate 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 seats each year for the 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 this bulletin for prerequisite courses required by Widener University's Doctor of Physical Therapy Program.

- 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 subsection 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; and
  - rank in the top 25% of their high school graduating class.
  - 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 University; and
    - have a cumulative GPA of 3.0 with no grade in the Pre-Physical Therapy Core curriculum of less than a 3.0.

The selection process will include interviews with the Wilkes University Health Sciences Committee and the Widener University Department of Physical Therapy.

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 challenge examination;
- Graduate Record Examination (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 licensed physical therapist; and one from an individual chosen by the student; and
- participation in Health Sciences Office sponsored events on campus.

Students who have completed their baccalaureate degree at Wilkes will be subject to the same admission guidelines as 3+3 students.

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 the successful completion of 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 Examination (GRE) in the fall semester of their fourth year of study at Wilkes. To qualify for admission to Temple, students must earn a minimum GPA of 3.0 while at Wilkes and score above the 50th percentile on the GRE. Wilkes students who meet the standards of this affiliated program will be given special consideration for admission by Temple.

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 – Principles of Modern Biology I
- BIO 122 – Principles of Modern Biology II
- Two courses in Anatomy and Physiology
  - BIO 115 – Anatomy and Physiology I and
  - BIO 116 – Anatomy and Physiology II or
  - BIO 331 and BIO 332 – consult the Chief Health Professions Advisor for information about these courses
  - One course in Chemistry
    - CHM 113 – Elements and Compound Lab and CHM 115 – Elements and Compounds
    - One course in Mathematics
      - MTH 100 – Pre-calculus (NOTE: This course does not satisfy the Quantitative Literacy requirements of the Wilkes University General Education Curriculum) or
      - MTH 101 – Solving Problems Using Mathematics
      - Four courses in Psychology
        - PSY 101 – General Psychology
        - PSY 200 – Research and Design Statistics I
        - PSY 221 – Developmental Psychology
        - PSY 222 – Adolescent Psychology
        - One course in Sociology
          - SOC 101 – Introduction to Sociology
          - SOC 251 – Sociology of Minorities is also recommended, but not required
          - Cooperative Education or Internship

In addition to completing the Pre-Occupational Therapy Core, students must consult prerequisite guidelines published by the particular institutions to which they wish to gain admission. If interested in a particular program, students should consult the occupational therapy website: www.aota.org. 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 through the Health Sciences Office or 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 years of study at Wilkes and two years of study at Temple University, leading to the 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, Drexel University (formerly MCP-Hahnemann) School for the Health Sciences, Tufts Graduate Schools 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.

Some Occupational Therapy programs are beginning to offer Doctorate degrees. It is recommended that students begin to look at these programs.

Medical Laboratory Sciences (Medical Technology)

Total minimum number of credits required for a major in Medical Laboratory Science (Medical Technology) leading to the B.S. degree – 120.

The Board of Certification of Medical Technology, part of the American Society for Clinical Pathology, recommends certain requirements for a program of training leading to the B.S. degree in Medical Laboratory Science. 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 received the B.S. degree in Medical Laboratory Science 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 formal affiliations with the Robert Packer Hospital in Sayre, PA, and with Williamsport Regional Medical Center in Williamsport, 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.

Medical 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	3
CHM 113 Elements and Compounds Lab	1
FYF 101 First-Year Foundations	3
MTH 111 Calculus I	4
	15

Second Semester

BIO 122 Principles of Modern Bio II	4
CHM 116 The Chemical Reaction	3
CHM114 The Chemical Reaction Lab	1
ENG 101 Composition	4
Distribution Requirement	3
	15

Third Semester

BIO 225 Population and Evolutionary Biology	4
CHM 231 Organic Chemistry I	3
CHM 233 Organic Chemistry Lab	1
Computer Science Elective	3
Distribution Requirement	3
	14

Fourth Semester

BIO 226 Cellular and Molecular Biology	4
CHM 232 Organic Chemistry II	3
CHM 234 Organic Chemistry II Lab	1
MTH 150 Elementary Statistics	3
Distribution Requirement	3
	14

Fifth Semester

BIO 327 Medical Microbiology	4
CHM 361 Biochemistry: Structure & Function	3
Distribution Requirements/Free Electives	9
	16

Sixth Semester

BIO 326 Immunology and Immunochemistry	4
BIO 397 Professional Prep. Techniques	2
Phy 174 Appls. of Classical and Modern Physics	4
Distribution Requirements/Free Electives	6
	16

Seventh and Eighth Semesters

CLINICAL LABORATORY SCIENCES PROFESSIONAL STUDY YEAR

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	3
	30

Other Professions

Information on academic programs in related health fields such as Nursing, Pre-pharmacy and Pharmacy (Pharm.D.) at Wilkes 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 information on these affiliations.

DEPARTMENT OF CHEMISTRY

Department of Chemistry

Chairperson: Dr. Donald Mencer

Faculty

Professor: Castejon
Associate Professors: Bradley, Mencer, Trujillo, Wignot
Assistant Professors: Dinescu, Henkels
Faculty Emeriti: Faut, Rozelle, Stine

Total minimum number of credits required for a major in Biochemistry leading to the B.S. degree – 122
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 major in Chemistry leading to the B.S. degree - 121
Total minimum number of credits required for a minor in Chemistry – 22

The Wilkes Chemistry and Biochemistry programs are accredited by the American Chemical Society for the professional training of chemists. ACS accreditation will be maintained for the B.S. programs in Chemistry and Biochemistry. Students who complete either of these B.S. programs are certified for membership eligibility in the Society at graduation. Students completing the B.A. program in Chemistry may be certified, dependent upon students' choice of chemistry courses..

BIOCHEMISTRY

Biochemistry Major

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).

The Wilkes Chemistry and Biochemistry programs are accredited by the American Chemical Society for the professional training of chemists. ACS accreditation will be maintained for the B.S. programs in Chemistry and Biochemistry. Students who complete either of these B.S. programs are certified for membership eligibility in the Society at graduation. Students completing the B.A. program in Chemistry may be certified, dependent upon the student's choice of chemistry courses.

Biochemistry Major - Required Courses and Recommended Course Sequence

First Semester Credits

CHM-113 - Elements & Compounds Lab	1
CHM-115 - Elements & Compounds	3
BIO-121 - Princ. of Modern Biology I	4
MTH-111 - Calculus I	4
FYF-101 - First-Year Foundations	3
Distribution Requirement	3
	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
	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 Requirements	6
	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
	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
	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
	16

Seventh Semester

CHM-391 - Senior Research I	2
CHM-371 Integrated Laboratory*	1
Biology Elective**	3-4
Distribution Requirement	3
Free Elective	3
	12-13

Eighth Semester

CHM 322 Inorganic Chemistry	3
CHM 372 Integrated Laboratory	1
CHM-392 - Senior Research II	2
Biology Elective**	3-4
Free Elective	3
	12-13

*All biochemistry majors are required to take a total of three (3) credits of Integrated Laboratory (CHM 370, 371, 372).
** All biochemistry majors are required to take a total of 2 biology electives chosen from BIO 345, 324, 326, 329.

CHEMISTRY

Chemistry Major

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 desire 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 fields. The B.A. program in Chemistry includes specific concentrations, which will allow students to have a solid, fundamental background in Chemistry in combination with other disciplines such as Art, Business, Computer Science, Education, Environmental Sciences, Forensic Science, Mathematics, Pharmaceutical Sciences, and Pre-med Studies. The ultimate goal is to create a curriculum that is easily adapted to the ever-changing challenges of modern society and of multidisciplinary academic endeavors.

The Wilkes Chemistry program is accredited 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.A. program in Chemistry may be accredited, dependent upon the student's choice of chemistry courses. In all cases, students will choose specific courses in a concentration after consultation with departmental advisors.

Chemistry Major - Concentrations and Minor Areas of Study

Art

Recommended courses for the B.A. degree in Chemistry with a concentration in Art:

ART 113 – Drawing I 3 cr.
ART 123 – Ceramics 3 cr.
ART 120 – Painting I 3 cr.
ART 122 – Sculpture 3 cr.
ART 140 - History of Art I 3 cr.
ART 141 - History of Art II 3 cr.

Recommended Distribution Area IV course

ART 101 – Experiencing Art 3 cr.

Recommended Free Elective

ART 121 – Printmaking 3 cr.

Business (Minor)

Chemistry majors may pursue a minor in one of the areas in Business. For details of minor degree programs in Business, see Accounting Minor, Business Administration Minor, Marketing Minor, and Entrepreneurship Minor.

Computer Science

Recommended courses for the B.A. degree in Chemistry with a concentration in Computer Science:

CS 126 – Computer Science II 4 cr.
CS 225 – Computer Science III 3 cr.
CS 324 – Systems Analysis 3 cr.
CS 325 – Database Management 3 cr.
CS 328 – Algorithms 3 cr.
CS 334 – Software Engineering 3 cr.
Free Elective: MTH 231 – Discrete Mathematics 3 cr.

Students pursuing a concentration in Computer Science must satisfy all prerequisites for recommended concentration courses.

Secondary Education (Major or Minor)

Students interested in becoming secondary teachers in Chemistry should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study, to plan their professional studies. These students will declare a major in Chemistry and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it is not a stand alone major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades 7-12 in their chosen field.

Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements. Students should also consult carefully with their Education program and Chemistry program advisors in planning their course of studies.

Total credits required for Secondary Education minor - **40** credits
Total credits required for Secondary Education major - **47** credits

Required courses for the major(*) or minor in Secondary Education are as follows:
ED 180 Educational Psychology 3 cr.
ED 190 Effective Teaching with Field Experience 3 cr.
ED 191 Integrating Technology into the Classroom 3 cr.
EDSP 210 Teaching Students with Special Needs 3 cr.
ED 220 Teaching Culturally and Linguistically Diverse Learners 3 cr.
EDSP 225 Special Education Methods I with Field Experience 3 cr.
* ED 345 Assessment 3 cr.
* ED 375 Middle Level/Secondary School Methods with Field Exp. 4 cr.
ED 371 Teaching Methods in Science with Field Experience 4 cr.
ED 380 Content Area Literacy 3 cr. EDSP 388 Inclusionary Practices (taken concurrently with ED 390) 3 cr.
ED 390 Student Teaching with Seminar 12 cr.
* These additional courses required in order to complete the major in Secondary Education.

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must
  - Attain a 3.0 GPA
  - Complete 48 credits including six credits in both Mathematics and English
  - Pass a test of basic skills
  - Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must
  - Maintain a 3.0 GPA
  - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must
  - Successfully complete all required Education courses, including student teaching
  - Graduate with a 3.0 cumulative GPA
  - Pass the appropriate exit test(s) in their content area

- Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

Forensic Science

Recommended courses for the B.A. degree in Chemistry with a concentration in Forensic Science:

BIO 121 – Principles of Modern Biology I 4 cr.
CHM 398 – Forensic Chemistry 3 cr.
PS 232 – Criminal Law 3 cr.
PSY 242 – Personality 3 cr.
PSY 355 – Forensic Psychology 3 cr.
SOC 222 – Criminology 3 cr.

Recommended Distribution Courses:

EC 102 – Principles of Economics II 3 cr.
PSY 101 – General Psychology 3 cr.
SOC 101 – Introduction to Sociology 3 cr.

Recommended Free Electives:

BIO 226 – Cellular and Molecular Biology 4 cr.
BIO 345 – Genetics 4 cr.
MTH 150 – Elementary Statistics 3 cr.

Students pursuing a concentration in Forensic Science must satisfy all prerequisites for recommended concentration courses.

Pre-Med Studies

Recommended and required courses for the B.A. degree in Chemistry with a concentration in Pre-Med Studies:

CHM 361 and 362 is recommended in place of CHM 365.

Required Courses:

BIO 121 – Principles of Modern Biology I 4 cr.
BIO 122 – Principles of Modern Biology II 4 cr.
CS 265 – Medical Informatics 3 cr.

Recommended Courses (select 18 credits from the following list of courses):

BIO 321 – Mammalian Physiology 4 cr.
BIO 323 – Functional Histology 4 cr.
BIO 326 – Immunology and Immunochemistry 4 cr.
BIO 327 – Medical Microbiology 4 cr.
BIO 328 – Developmental Biology 4 cr.
BIO 329 – Virology 3 cr.
BIO 345 – Genetics 4 cr.
BIO 368 – Medical Botany 3 cr.
BIO 398 – Medical Ethics 3 cr.
CHM 398 – Brain Chemistry 3 cr.
CHM 398 – Medicinal Chemistry 3 cr.
MTH 150 – Elementary Statistics 3 cr.
SP 210 – Medical Spanish 3 cr.

Students pursuing a concentration in Pre-Med Studies must satisfy all prerequisites for recommended concentration courses.

Sustainability

Recommended course for the B.A. degree in Chemistry with a concentration in Sustainability:

CHM 398 – Environmental Chemistry 3 cr.

The B.A. degree in Chemistry with a concentration in Sustainability requires a minimum of 29 credits in the concentration area. Students should select courses from the following content areas:

Content Area I: Writing Perspective (3 cr.) Credits
ENG 202 – Technical and Professional Writing 3
ENG 228 – Professional and Workplace Writing 3
Content Area II: Political and Legal Perspective (6 cr.) Credits
BA 223 – Legal Environment of Business 3
PS 224 – Public Policy Analysis 3
PS 260 – Introduction to Political Thinking 3
Content Area III: Ethical Perspective (3 cr.) Credits
PHL 218 – Environmental Ethics 3
PHL 250 – Philosophy of Science 3
Content Area IV: Environmental Perspective (17 cr.) Credits
EES 210 – Global Climatic Change 3
EES 240 – Principles of Environmental Science 3
EES 261 – Regional Geography 3
EES 271 – Environmental Mapping I: The Global Positioning System 3
EES 272 – Environmental Mapping II: Geographic Information Systems 3
EES 304 – Environmental Data Analysis 3
EES 330 – Water Quality 3
EES 332 – Air Quality 3
EES 340 – Ecology 3
EES 341 – Freshwater Ecosystems 3
EES 343 – Marine Ecology 3
EES 398 – Topics in EES 3
ENV 305 – Solid Waste Management 3
ENV 315 – Soils 3
ENV 321 – Hydrology 4
ENV 351 – Water and Wastewater Treatment 4
ENV 353 – Air Pollution Control 3
ENV 354 – Hazardous Waste Management 3
ENV 398 – Topics in Engineering 3
ME 322 – Engineering Thermodynamics 3

Students pursuing a concentration in Sustainability must satisfy all prerequisites for recommended concentration courses.

Chemistry Major (B.A. Degree) - Required Courses and Recommended Course Sequence

First Semester	Credits
CHM 113 – Elements & Compounds Lab	1
CHM 115 – Elements & Compounds	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
MTH 111 – Calculus I	4
Total Credits	**15**

Second Semester	
CHM 114 – The Chemical Reaction Lab	1
CHM 116 – The Chemical Reaction	3
CS 125 – Computer Science I	4
Distribution Requirement	3
MTH 112 – Calculus II	4
Total Credits	**15**

Third Semester	
CHM 231 – Organic Chemistry I	3
CHM 233 – Organic Chemistry Lab I	1
Distribution Requirements	6
PHY 201 – General Physics I	4
Concentration Area or Minor Course	3
Total Credits	**17**

Fourth Semester	
CHM 232 – Organic Chemistry II	3
CHM 234 – Organic Chemistry Lab II	1
CHM 246 – Analytical Chemistry Lab	1
CHM 248 – Analytical Chemistry	3
MTH 212 – Multivariable Calculus	4
PHY 202 – General Physics II	4
Total Credits	**16**

Fifth Semester	Credits
CHM 341 – Instrumental Methods	3
CHM 343 – Instrumental Methods Lab	1
CHM 355 –Physical Chemistry for the Life Sciences	3
CHM 357 –Physical Chemistry for the Life Sci. Lab	1
Distribution Requirement	3
Concentration Area or Minor Courses	6
Total Credits	**17**

Sixth Semester	
CHM 322 – Inorganic Chemistry	3
CHM 365 – Medical Biochemistry	4
CHM 370 – Integrated Chemistry Lab*	1
CHM 390 – Chemistry Junior Seminar	1
Concentration Area or Minor Courses	6
Total Credits	**15**

Seventh Semester	
CHM 371 – Integrated Chemistry Lab*	0-1
CHM 391 – Senior Research	2
Distribution Requirement	3
Free Electives (see Concentration Area & Minor courses)	6
Concentration Area or Minor Course	3
Total Credits	**14 – 15**

Eighth Semester	
CHM 372 – Integrated Chemistry Lab*	0-1
CHM 392 – Senior Research	2
Distribution Requirement	3
Free Elective (see Concentration Area & Minor courses)	3-4
Concentration Area or Minor Course	3
Total Credits	**12 – 13**
**Students pursuing the B.A. in Chemistry are required to complete two (2) credits of Integrated Laboratory (CHM 370, 371, 372).*	

Chemistry Major (B.S. Degree) - Required Courses and Recommended Course Sequence

First Semester	Credits
CHM 113 – Elements & Compounds Lab	1
CHM 115 – Elements & Compounds	3
ENG 101 – Composition or	4
Distribution Requirement	3
FYF 101 – First-Year Foundations	3
MTH 111 – Calculus I	4
Total Credits	**14 – 15**

Second Semester	
CHM 114 – The Chemical Reaction Lab	1
CHM 116 – The Chemical Reaction	3
CS 125 – Computer Science I	4
ENG 101 – Composition or	4
Distribution Requirement	3
MTH 112 – Calculus II	4
Total Credits	**15 – 16**

Third Semester	
CHM 231 – Organic Chemistry I	3
CHM 233 – Organic Chemistry Lab I	1
Distribution Requirements	6
PHY 201 – General Physics I	4
Total Credits	**14**

Fourth Semester	
CHM 232 – Organic Chemistry II	3
CHM 234 – Organic Chemistry Lab II	1
CHM 246 – Analytical Chemistry Lab	1
CHM 248 – Analytical Chemistry	3
MTH 212 – Multivariable Calculus	4
PHY 202 – General Physics II	4
Total Credits	**16**

Fifth Semester	Credits
CHM 341 – Instrumental Methods	3
CHM 343 – Instrumental Methods Lab	1
CHM 351 – Physical Chemistry I	3
CHM 353 – Physical Chemistry I Lab	1
CHM 365 – Medical Biochemistry	4
Distribution Requirement	3
Total Credits	**15**

Sixth Semester	
CHM 322 – Inorganic Chemistry	3
CHM 352 – Physical Chemistry II	3
CHM 354 – Physical Chemistry II Lab	1
CHM 370 – Integrated Chemistry Lab*	1-2
CHM 390 – Chemistry Junior Seminar	1
Distribution Requirements	6
Total Credits	**15 – 16**

Seventh Semester	
CHM 371 – Integrated Chemistry Lab*	1-2
CHM 391 – Senior Research I	2
Free Electives	9
Major Elective	3
Total Credits	**15 - 16**

Eighth Semester	
CHM 372 – Integrated Chemistry Lab*	0-1
CHM 392 – Senior Research	2
Free Electives	9
Major Elective	3
Total Credits	**14 - 15**

**Students pursuing the B.S. in Chemistry are required to complete four (4) credits of Integrated Laboratory (CHM 370, 371, 372).*

Chemistry Minor

Students in majors other than Chemistry may wish to elect a minor in Chemistry. The minor shall consist of a minimum of 22 credits.

Required courses:

CHM 113/115 - Elements and Compounds with lab.
CHM 114/116 - The Chemical Reaction with lab.
CHM 231/233 - Organic Chemistry 1 with lab.
CHM 232/234 - Organic Chemistry 2 with lab.

Six (6), or more, credit hours of electives – All electives must be listed or cross-listed as a chemistry course, 200 level or higher, and in keeping with the existing prerequisites as listed in the Bulletin.

DEPARTMENT OF ELECTRICAL ENGINEERING AND PHYSICS

Department of Electrical Engineering and Physics

Chairperson: Dr. David Carey

Faculty

Professors: Arora, Gilmer, Srinivasan
Associate Professors: Carey, Harms
Assistant Professors: Lucent, Nazzal, Sabouni
Faculty Emeriti: Hostler, Maxwell, Placek

Mission

Our mission is to guide and nurture our students to become the best and most capable engineers in industry through a mentoring culture, hands-on learning and practical scholarship with industrial collaboration..

Electrical Engineering

Total minimum number of credits required for a Bachelor of Science Degree in Electrical Engineering – 130.
Total minimum number of credits required for a minor in Computer Engineering – 22

Engineering is a creative profession in which technological problems are met within the framework of scientific possibilities, economic constraint, and cultural preference. 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. It provides 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 are encouraged to be well-prepared in the sciences and mathematics. 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 the hands-on student utilization of laboratories and computing systems.

The EE program is designed to achieve a balance among the major areas of Communication Systems, Microelectronis, and Computer Systems. The student may choose to specialize within the EE program in any of the following areas: Communication and Information Systems, Microcontroller Based System Design, and Design and Fabrication of Microelectronic Devices and Circuits. A description of program objectives and outcomes is available in the Department office and is posted on the Department of Electrical Engineering and Physics Bulletin Board.

The Electrical Engineering program maintains professional accreditation by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; Telephone: (410) 347-7700).

A Master of Science degree in Electrical Engineering (MSEE) and a Master of Science degree in Bioengineering (MSBEGR) are also available. These degree programs are described in the Graduate Bulletin. Engineering students may also elect to complete a minor in Computer Engineering and/or Physics.

Honors in Engineering

Upon the recommendation and approval of the Engineering faculty, the honor student in Engineering will be recognized upon completion of the following requirements:

- achievement of an overall GPA of 3.25 or better;
- receipt of grades of 3.00 or better in all engineering courses of his or her field of study;
- pursuit of independent research or special projects in engineering; and
- presentation of research results or special project 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 Institute of Electrical and Electronic Engineers (IEEE), the Society of Women Engineers (SWE), the Pennsylvania Society of Professional Engineers (PSPE), and the Engineering Student Council. Students also participate in various on-campus activities and design competitions.

Transfer Credit Policy

No credits will be transferred to Wilkes University unless their prerequisites have been satisfied. Transfer credits must follow the proper course sequence as specified in the Wilkes bulletin. For transfer credits to be awarded the required prerequisite(s) must be satisfied during the first year at Wilkes.

Cooperative Education

An important feature of the electrical engineering program 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.

Student Classification Categories

Students attain Sophomore standing after successfully completing all Freshman year required courses.
Students attain Junior standing after successfully completing all Sophomore year required courses.
Students attain Senior standing after successfully completing all Junior year required courses.

ELECTRICAL ENGINEERING

Electrical Engineering

Electrical Engineering Major - Required Courses and Recommended Course Sequence

First Semester

MTH-111 Calculus I	4
CHM-117 Introductory Chemistry Lab for Engineers	1
CHM-118 Chemistry for Engineers	3
ME-180 CADD Lab	1
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
	16

Second Semester

MTH-112 Calculus II	4
PHY-201 General Physics I	4
EGR-140 Computational & Statistical Analysis	3
EGR-200 Introduction to Materials Science and Engineering	3
Distribution Requirement	3
	17

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
	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
	16

Fifth Semester

EE-252 Electronics II	4
EE-271 Semiconductor Devices	3
EE-373 CAD for Microfabrication	1
EE-381 Microfabrication Lab	3
Technical Elective*	3
Distribution Requirement	3
	17

Sixth Semester

EGR-399 Cooperative Education **or**	
Technical Electives	6
EGR-201 Professionalism and Ethics	1
Distribution Requirements	6
EGM-320 Engineering Project Analysis	3
	16

Seventh Semester

EE-314 Control Systems	3
EE-337 Engineering Electromagnetics I	4
EE-391 Senior Project I	1
EE-325 Energy Conversion Devices	3
Technical Electives**	3
Distribution Requirement	3
	17

Eighth Semester

EE-339 Engineering Electromagnetics II	4
EE-382 Modern Communication Systems	4
EE-392 Senior Projects II	2
Technical Elective**	3
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 must consult with the Cooperative Education Coordinator to determine availability and proper scheduling of the Cooperative Education experience.*

Minor in Computer Engineering

A 20 to 22-credit Computer Engineering minor is a special and highly focused option for students majoring in Engineering and other related disciplines. The minor consists of the following course requirements:

CS-125 – Computer Science I **or** EGR-140 - Computational & Statistical Analysis

CS-126 – Computer Science II **or** EE-247 Programming for Embedded Applications
EE-241 – Digital Design
EE-345 – Computer Organization
EE-342 – Microcontroller Based System Design
One elective course from an Application Area (e.g., EE-314 – Control Systems; CS-355 – Computer Networks; or ME-317 – Robotics)

PHYSICS

Physics

Total minimum number of credits required for a Baccalaureate of Arts Degree in Physics – 123.
Total minimum number of credits required for a Baccalaureate of Arts Degree in Physics with a minor in Secondary Education – 124

Baccalaureate of Arts degree in Physics (BA in Physics) is designed to offer a track for all students who wish to combine a major in Physics with other career goals. Primary among them are those students who wish to become certified in Physics by the PA Department of Education to teach high school physics and other science courses. In addition, the program will support students who may wish to concentrate on careers in medicine, dentistry, or law.

Physics B.A. Degree- Required Courses and Recommended Course Sequence

First Semester

MTH-111 Calculus I*	4
CHM-115 Elements and Compounds*	3
CHM-113 Elements and Compounds Lab*	1
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
	15

Second Semester

MTH-112 Calculus II*	4
PHY-201 General Physics I*	4
EGR-140 Computational & Statistical Analysis^*	3
Physics Elective	3
Distribution Requirement	3
	17

Third Semester

MTH-211 Intro. to Differential Equations*	4
PHY-202 General Physics II*	4
Physics Elective @	3
Distribution Requirement	6
	17

Fourth Semester

MTH-212 Multivariable Calculus*	4
PHY-203 General Physics III*	3
Physics Elective@	6
Distribution Requirement	3
	16

Fifth Semester

PHY 311 Thermodynamics*	3
PHY 312 Analytical Mechanics*	3
EE 337 Engineering Electromagnetics I*	3
Physics Electives@	3
Distribution Requirement	3
	16

Sixth Semester

PHY 314 Quantum Mechanics*	3
Physics Electives@	9
Distribution Requirement	3
	15

Seventh Semester

PHY 391 Senior Project I*	1
Physics Electives@	6
Free Electives	6
	13

Eighth Semester

PHY 392 Senior Projects II*	2
Physics Electives@	6
Free Electives	6
	14

**Required Core Course for BA in Physics Major.*
^Can be substituted with CS 125.
@Physics electives may be chosen from any advisor-approved mathematics, biology, chemistry, computer science, environmental science/engineering, electrical engineering, or mechanical engineering course numbered 200 or above.

Physics Major In Conjunction with the Secondary Education Major or Minor

Students interested in becoming secondary teachers in Physics should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in Physics and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it cannot stand alone as a major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades 7-12 in their chosen field.

Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements. Students should also consult carefully with their Education program and Physics program advisors in planning their course of studies.

Total credits required for **Secondary Education minor - 40 cr.**

Total credits required for **Secondary Education major - 47 cr.**

Required courses for the major(*) or minor in Secondary Education are as follows:

ED 180 – Educational Psychology - 3 cr.

ED 190 – Effective Teaching with Field Experience - 3 cr.

ED 191 – Integrating Technology into the Classroom - 3 cr.

EDSP 210 – Teaching Students with Special Needs - 3 cr.

ED 220 – Teaching Culturally and Linguistically Diverse Learners - 3 cr.

EDSP 225 – Special Education Methods I with Field Experience - 3 cr.

ED 300 – Teaching of a Foreign Language with Field Experience - 4 cr.

*ED 345 – Assessment - 3 cr.

*ED 375 – Middle Level/Secondary School Methods with Field Exp. - 4 cr.

ED 371 – Teaching Methods in Science with Field Experience - 4 cr.

ED 380 – Content Area Literacy - 3 cr.

EDSP 388 – Inclusionary Practices (taken concurrently with ED 390) - 3 cr.

ED 390 – Student Teaching with Seminar - 12 cr.

***** *These additional courses required in order to complete the major in Secondary Education.*

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must
  - o Attain a 3.0 GPA
  - o Complete 48 credits including six credits in both Mathematics and English
  - o Pass a test of basic skills
  - o Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must
  - o Maintain a 3.0 GPA
  - o Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must
  - o Successfully complete all required Education courses, including student teaching
  - o Graduate with a 3.0 cumulative GPA
  - o Pass the appropriate exit test(s) in their content area
  - o Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

Physics Minor

Physics is the study of physical phenomena, including forces, energy, momentum, friction, electricity, electrostatics, magnetics, 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 20 credits, as follows:

Eleven credits of required introductory courses in Physics:

PHY 201 – General Physics I	4
PHY 202 – General Physics II	4
PHY 203 – General Physics III	3

AND

Three credits of required advanced courses selected from the following:

PHY 311 - Thermodynamics and Statistical Mechanics	3
PHY 312 - Analytical Mechanics	3
PHY 314 - Quantum Mechanics	3

AND

Six credits of electives selected from the following:

PHY 311 - Thermodynamics and Statistical Mechanics	3
PHY 312 - Analytical Mechanics	3
PHY 314 - Quantum Mechanics	3
CHM 251 – Physical Chemistry I	3
CHM 252 – Physical Chemistry II	3
EES 251 – Synoptic Meteorology	4
EES 280 – Principles of Astronomy	4
EE 337 – Engineering Electromagnetics I	4
EGR 200 – Introduction to Materials Science & Engineering	3
ME 231 – Statics and Dynamics I	3
ME 321 – Fluid Dynamics	3
ME 322 – Engineering Thermodynamics	3
MTH 361 – Applied Mathematics I	3
MTH 362 – Applied Mathematics II	3
PHY 398 – Topics in Physics	variable

Minimum total credits required - 20

DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

Department of Environmental Engineering and Earth Sciences

Chairperson: Dr. Sid P. Halsor

Faculty

Professors: Bruns, Halsor, Murthy, Redmond
Associate Professors: Troy, Whitman
Assistant Professor: Frederick, Dempsey
Adjunct Professors: Skoronski,Walski
Lecturers: Kaster, McMonagle
Laboratory Manager: McMonagle

The Department of Environmental Engineering and Earth Sciences (EEES) offers the following degree programs: the B.S. in Environmental Engineering; the B.S. in Earth and Environmental Sciences; and the B.A. in Earth and Environmental Sciences. These 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 water quality laboratory used for teaching and research and the Center for Geographic Information Science (GIS). Other facilities in the area are used for field study in courses and for 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 grand 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

Total minimum number of credits required for a major in Earth and Environmental Sciences leading to the B.S. degree – 124
Total minimum number of credits required for a major in Earth and Environmental Sciences leading to the B.A. degree with Secondary teaching Certification in Earth and Space Science – 141
Total minimum number of credits required for a major in Earth and Environmental Sciences leading to the B.A. degree – 123
Total minimum number of credits required for a minor in Earth and Environmental Sciences – 18
Total minimum number of credits required for a minor in Geology – 18

Environmental Engineering

Total minimum number of credits required for a major in Environmental Engineering Leading to the B.S. Degree - 134

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.

EARTH AND ENVIRONMENTAL SCIENCES

Earth and Environmental Sciences Major

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 courses in chemistry and biology, the student may also satisfy requirements for certification in General Science.

Students interested in Secondary Education should make an appointment with the chairperson of the Department of Education as early as possible in their program of study to plan their professional studies. These students will declare a minor in Secondary Education. 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 GPA to remain in the Teacher Education Program, and pass the appropriate PRAXIS tests in order to be certified.

Earth and Environmental Sciences B.S. Degree- Required Courses and Recommended Course Sequence

First Semester Credits

ENG-101 Composition	4
FYF-101 First-Year Foundations	3
MTH-111 Calculus I	4
CHM-113 Elements & Compounds Lab	1
CHM-115 Elements & Compounds	3
	15

Second Semester

CHM-114 The Chemical Reaction Lab	1
CHM-116 TheChemical Reaction	3
Distribution Requirement	3
EES-211 Physical Geology	4
MTH-112 Calculus II	4
	15

Third Semester

BIO-121 Principles of Modern Biology I	4
MTH-150 Elementary Statistics	3
Free Elective	3
Distribution Requirement	3
PHY-171 Principles of Classical and Modern Physics	4
	17

Fourth Semester

BIO-122 Principles of Modern Biology II	4
EES-240 Principles of Environmental Engineering & Science	4
PHY-174 Appl of Classical & Modern Physics	4
CS Elective	3
	15

Fifth Semester

EES-230 Ocean Science	4
EES-251 Synoptic Meteorology	4
EES-271 Environ. Mapping I or ENV Elective	3
EES-394 Field Study	1
ENV-321 Hydrology	4
	16

Sixth Semester

EES-202 Biogeochemistry	3
EES-272 Environ. Mapping II or EES/ENV Elective	6
EES-302 Literature Methods	1
EES-304 Environmental Data Analysis	2
Free Elective	3
	15

Seventh Semester

Free Elective	3
EES/ENV Electives	6
Distribution Requirements	6
EES-391 Senior Projects I	1
	16

Eighth Semester

ENV-330 Water Quality	4
OR ENV-332 Air Quality	3
EES/ENV Elective	3
Distribution Requirements	6
EES-392 Senior Projects II	2
	14-15

NOTE:
B.S. candidates are encouraged to complete a science minor (e.g., Physics, Chemistry, or Biology); consult the undergraduate bulletin for details. Candidates are also encouraged to have relevant cooperative educational experiences, 6 credits of which may be applied as EES electives.

1. Courses at the 200-level and above are intended for science and mathematics majors only. Exceptions may be made with permission of the instructor. Election of a 200-level course by a non-science major will preclude registration for the corresponding 100-level course.

Recommended Course Sequence for a B.A. Degree in Earth and Environmental Sciences and a Minor in Secondary Education Leading to Certification in Earth & Space Science in the Commonwealth of Pennsylvania

First Semester

ED-180 Educational Psychology	3
PSY-101 General Psychology	3
FYF-101 First-Year Foundations	3
ENG-101 Composition	4
MTH-111 Calculus I	4
	17

Second Semester

ED-190 Effective Teaching with Field Experience	4
ED-191 Integrating Technology into the Classroom	3
EES-211 Physical Geology	4
MTH-150 Elementary Statistics	3
Distribution Requirement	3
	17

Third Semester

EDSP-210 Teaching Students with Special Needs	3
CHM-113 Elements & Compounds Lab	1
CHM-115 Elements & Compounds	3
EES-251 Synoptic Meteorology	4
EES-212 Historical Geology	3
Distribution Requirement	3
	17

Fourth Semester

ED-220 Teaching Culturally and Linguistically Diverse Learners	3
EES-240 Principles of Environmental Engineering & Science	4
CS-115 Computers & Applications	3
EES Elective	3
Distribution Requirement	3
	16

Fifth Semester

EDSP-225 Special Education Methods I with Field Experience	3
EES-230 Ocean Science	4
PHY-171 Principles of Classical & Modern Physics	4
EES-280 Principles of Astronomy	4
	15

Sixth Semester

EES-302 Literature Methods	1
EES-304 Environmental Data Analysis	2
EES-210 Global Climate Change	3
PHY-174 Applications of Classical & Modern Physics	4
EES-271/[[EES-272]] Environmental Mapping I/ Environmental Mapping II	3
Distribution Requirement	3
	16

Seventh Semester

ED-380 Content Area Literacy	3
ED-371 Teaching Methods in Science with Field Experience	4
EES-391 Senior Projects I	1
EES-394 Field Study	1
EES Elective	3
Distribution Elective	3
	15

Eighth Semester

ED-390 Student Teaching with Seminar	12
EDSP-388 Inclusionary Practices (taken concurrently with ED 390)	3
EES-392 Senior Projects II	2
	18

Grand Total - 129 credits

The above course sequence is designed to be completed in four years. There are additional options that can be added to the above: (1) the addition of coursework that would lead to certification in General Science as well as in Earth & Space Science and, (2) upgrading the minor in Secondary Education to a double major (both B.A. degrees) in Secondary Education. Note that the B.A. degree in Secondary Education cannot stand alone; it must be paired with another major. It should also be understood that adding these options to the basic program will require additional courses which may require more than four years to complete. A summary of the options is as follows:

(Basic Program) Bachelor of Arts degree in Earth & Environmental Sciences
Minor in Secondary Education
Secondary Teaching Certification in Earth & Space Sciences
Total credits required: 129 credits

(Option 1) Bachelor of Arts degree in Earth & Environmental Sciences

Minor in Secondary Education
Secondary Teaching Certification in Earth & Space Sciences
Secondary Teaching Certification in General Science
Total credits required: 141 credits
add: BIO 121 (4 credits) + BIO 122 or 225 (4 credits) + CHM 114/116 (4 credits)

(Option 2) Bachelor of Arts degree in Earth & Environmental Sciences
Bachelor of Arts degree in Secondary Education (double major)
Secondary Teaching Certification in Earth & Space Sciences
Total credits required: 136 credits
add: ED 345 (3 credits) + ED 375 (4 credits)

In addition to the course requirements, there are non-course requirements:

- All Teacher Education candidates must apply for admission to the Teacher Education Program in sophomore or junior year.
- In order to be admitted into the Teacher Education Program, candidates must:
  - Attain a 3.0 GPA
  - Complete 48 credits including six credits in both Mathematics and English
  - Pass a test of basic skills
  - Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must:
  - Maintain a 3.0 GPA
  - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in the Commonwealth of Pennsylvania in grades 7 – 12, candidates must:
  - Successfully complete all required Education courses including student teaching
  - Graduate with a 3.0 or better cumulative GPA
  - Pass the appropriate exit test(s) in their content area
  - Apply for certification through the Pennsylvania Teacher Information Management System (TIMS)

Students interested in becoming secondary teachers in these programs should make an appointment with the chairperson of the Wilkes Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in Earth & Environmental Sciences and a minor or major in Secondary Education. Students will be advised both by a faculty member in the Earth & Environmental Sciences Program and by the Coordinator of the Secondary Education Program. The advisors will ensure that the student is aware of course prerequisites which is especially important for some of the education courses which require completed clearances which can take months to acquire. Students should also refer to the Education Department section of this bulletin for complete details of the education curriculum.

Earth and Environmental Sciences Major with a Minor in Biology and a Marine Science Option

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 the Wallops Island Marine Science 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 field 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 course work with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island facility 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., the 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 Wallops Island Marine Science Station include:

MS 110 – Introduction to Oceanography MS 394 – Physiology of Marine Organisms
MS 211 – Field Methods in Oceanography MS 431 – Ecology of Marine Plankton
MS 221 – Marine Invertebrates MS 432 – Marine Evolutionary Ecology
MS 241 – Marine Biology MS 433 – Advanced Methods in Coastal Ecology
MS 250 – Wetland Ecology MS 450 – Coastal Geomorphology
MS 260 – Marine Ecology MS 451 – Coastal Environmental Oceanography
MS 300 – Tropical Invertebrates MS 464 – Biological Oceanography
MS 331 – Chemical Oceanography MS 470 – Research Diver Methods
MS 342 – Marine Biology MS 471 – Scanning Electron Microscopy: Marine Apps.
MS 343 – Marine Ichthyology MS 490 – Marine Aquaculture
MS 345 – Ornithology MS 491 – Coral Reef Ecology
MS 352 – Modeling in Environmental Biological Sci. MS 492 – Marine Mammals
MS 362 – Marine Geology MS 493 – Behavioral Ecology
MS 390 – Undergraduate Research in Marine Science MS 500 – Problems in Marine Science

See the Coordinators of the Wallops Island Program for outlines of individual course and for information on the structure of the Marine Sciences Option.

Earth and Environmental Sciences Major (B.S. Degree) with a Minor in Biology and a Concentration in Marine Science - Required Courses and Recommended Course Sequence

First Semester

BIO-121 Principles of 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
	15

Second Semester

BIO-122 Principles of Modern Biology II	4
ENG-101 Composition	4
MTH-112 Calculus II	4
CHM-114 The Chem. Reaction Lab	1
CHM-116 The Chemical Reaction	3
	16

Third Semester

EES-230 Ocean Science	4
BIO-225 Population and Evolutionary Biology	4
Distribution Requirements	6
	14

Fourth Semester

EES-211 Physical Geology	4
Computer Science Elective	3
EES-240 Principles of Environmental Engineering & Science	4
BIO-226 Cellular & Molecular Biology	4
	15

MS_Summer College MCS (BIO Course)(2)	3

Fifth Semester

PHY-171 Classical and Modern Physics or	4
PHY-201 Introductory Physics I	
EES-251 Synoptic Meteorology	4
EES-394 Field Study	1
EES/ENV Elective	3
Distribution Requirement	3
	15

Sixth Semester

PHY-174 Appl Classical & Modern Physics or	4
PHY-202 General Physics II	
BIO/EES-343 Marine Ecology 3**	3
EES/ENV Elective	3
EES-302 Literature Methods	1
EES-304 Environmental Data Analysis	2
MTH-150 Elementary Statistics	3
	16

Marine Science Summer College - Marine Science Consortium (MSC)*	
BIO Course (see MSC course listings)	3

Seventh Semester

EES-391 Senior Projects I	1
EES/ENV Electives	6
Distribution Requirement	3
Free Electives	7
	17

Eighth Semester

EES-392 Senior Projects II	2
EES/ENV Electives	6
Distribution Requirements	6
Free Elective	3
	16

*The minor in Biology includes 2 MS courses (biology content) at the Marine Science Consortium (MSC) Wallops Island, excluding MS 110 and MS 260.
**EES/BIO 343 counts toward both the EES degree and the Biology minor. The 22 minimum credits for the Biology minor includes BIO/EES 343.
NOTE: 3 of the 15 credits of EES/ENV Electives must include either EES 271 or EES 272.

Earth and Environmental Sciences and Geology Minors

Two minors are offered by the Department of Environmental Engineering and Earth Sciences. A minor may be awarded to students with demonstrated expertise in Earth and Environmental Sciences or Geology, as determined by the faculty of the department.

The minimum requirements for the minor in Earth and Environmental Sciences consist of 18 credits of course work in Earth and Environmental Sciences (EES), 12 credits of which must be at the 200-level or above. For the Geology minor, 18 credits of prequalified environmental EES geology courses are required, 15 credits of which must be 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 may not be counted toward the existing EES minor. Since there is no major in Geology, however, EES majors, like any other major, may pursue a minor in Geology. Additionally, EES majors may take any of the Environmental Engineering courses (ENV), if prerequisites are satisfied.

Geology Minor Course Offerings

Students should select from the following list to satisfy the requirements for the minor in Geology.

Course	Credits
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-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

* Required for minor in geology.
** Content must be within the field of geology.

ENVIRONMENTAL ENGINEERING

Environmental Engineering Major

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. Specialization is achieved by means of the selection of appropriate technical electives.

The student professional chapters of the Society of Women Engineers (SWE), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), and the Air & Waste Management Association (A&WMA), in conjunction with the Department of Environmental Engineering and Earth Sciences periodically offer seminars on subjects of a timely nature. Attending these seminars and taking the Engineers-in-Training (E.I.T.) Exam are mandatory for the completion of the degree in Environmental Engineering.

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: achievement of an overall grade point average of 3.25 or better; receipt of grades of 3.00 or better in all engineering courses of his or her discipline; pursuit of independent research or special projects in engineering; and presentation of research and project results at meetings, conferences, or by means of publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

Environmental Engineering Major - Required Courses and Recommended Course Sequence

First Semester

CHM-113 Elements and Compounds lab	1
CHM-115 Elements and Compounds	3
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
ME-180 CADD Lab	1
MTH-111 Calculus I	4
	16

Second Semester

Distribution Requirements	3
EES-202 Biogeochemistry	3
Free Elective*	3
MTH-112 Calculus II	4
PHY-201 General Physics I	4
	17

Third Semester

Distribution Requirement	3
ENV-201 Environmental Engineering Systems I	1
[[ENV-205]] Environmental Microbiology	1
ME-231 Statics	3
MTH-211 Intro. to Differential Equations	4
PHY-202 General Physics II	4
	16

Fourth Semester

Distribution Requirement	3
EES-211 Physical Geology	4
EES-240 Principles of Environmental Engineering & Science	4
ME-232 Strength of Materials	3
ME-322 Thermodynamics	3
	17

Fifth Semester

ENV-315 Soils	3
ENV-202 Environmental Engineering Systems II	2
ENV-321 Hydrology	4
ME-321 Fluid Mechanics	3
ME-323 Fluid Mechanics Lab	1
Technical Elective**	3
	17

Sixth Semester

Distribution Requirement	3
EGM-320 Engineering Project Analysis	3
EGR-201 Engineering Ethics	1
ENV-330 Water Quality	4
ENV-332 Air Quality	3
Technical Elective**	3
	17

Seventh Semester

Distribution Requirement	3
ENV-301 Environmental Engineering Systems III	1
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
Technical Elective**	3
	18

Eighth Semester

Distribution Requirement	3
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**	3
	17

**Free elective must be numbered 101 or higher.*
***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.

DEPARTMENT OF MECHANICAL ENGINEERING & ENGINEERING MANAGEMENT

Department of Mechanical Engineering & Engineering Management

Chairperson: Dr. Henry Castejon

Faculty

Professors: Castejon, Ghorieshi, Kalim, Orehotsky, Razavi
Assistant Professor: Bednarz, Janecek, Zhu
Visiting: Cui, Dubey
Adjunct: Greiner, Ruane
Instructor: Taylor
Technical Support Staff: Adams, Topfer
Administrator: Chirico

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

Total minimum number of credits required for a major in Applied and Engineering Sciences leading to the B.S. degree – 120
Total minimum number of credits required for a major in Engineering Management leading to the B.S. degree – 130
Total minimum number of credits required for a major in Mechanical Engineering leading to the B.S. degree – 130

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. Wilkes offers a Bachelor's of Arts Degree in Physics, which provides a substantive physics foundation in a two-track program. Engineering students may also elect to complete a minor in Physics.

Wilkes University offers five engineering programs. Three programs—Electrical Engineering, Environmental Engineering, and Mechanical Engineering—maintain professional accreditation by the 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).

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. Mechanical Engineering, Applied and Engineering Sciences, and Engineering Management are housed in the Department of Mechanical Engineering and Engineering Management, and Electrical Engineering and Physics are housed in the Department of Electrical Engineering and Physics.

Honors in Engineering

Upon the recommendation and approval of the Engineering faculty, the honor student in Engineering will be recognized upon completion of the following requirements:

- achievement of an overall GPA of 3.25 or better;
- receipt of grades of 3.00 or better in all engineering courses of his or her field of study;
- pursuit of independent research or special projects in engineering; and
- presentation of research results or special project 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 Society of Women Engineers (SWE), the Pennsylvania Society of Professional Engineers (PSPE), the Society of Automotive Engineers (SAE), and the Engineering Student Council. Students also participate in various on-campus activities and design competitions such as the Mini-Baja Off-Road Design Competition.

Department Transfer Credit Policy

No credits will be transferred to Wilkes University unless their prerequisites have been satisfied. Transfer credits must follow the proper course sequence as specified in the Wilkes bulletin. For transfer credits to be awarded the required prerequisite(s) must be satisfied during the first year at Wilkes.

Cooperative Education

An important feature 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.

1. The requirements for the **6 credit hours** co-op are as follows:
    a. The co-op project should distinctly demonstrate an **engineering design & analysis** component.
    b. The student, working with his manager, should submit bi-weekly project report to the faculty advisor.
    c. The working hours should not be less than **20 hours** per week and the total **300 hours** should spread out at least 10 weeks.
    d. The student should make a **20 minutes** final oral presentation to a general audience.
    e. The student should submit a final project report of at least **50 pages** (double spaced) no later than the last day of classes of the semester. The final report should include at least the background of company, project background, technical work and project reflection.
2. The requirements for the **3 credit hours** co-op are as follows:
    a. The co-op project should distinctly demonstrate an **engineering** component.
    b. The student, working with his manager, should submit bi-weekly project report to the faculty advisor.
    c. The working hours should not be less than **10 hours** per week and the total **150 hours** should spread out at least 10 weeks.
    d. The student should make a **10 minutes** final oral presentation to a general audience.
    e. The student should submit a final project report of at least **25 pages** (double spaced) no later than the last day of classes of the semester. The final report should include at least the background of company, project background, technical work and project reflection.

Student in Major Classification Categories

Students attain Sophomore standing after successfully completing all Freshman-year required courses.
Students attain Junior standing after successfully completing all Sophomore-year required courses.
Students attain Senior standing after successfully completing all Junior-year required courses.

APPLIED AND ENGINEERING SCIENCES

Applied and Engineering Sciences

The four-year Bachelor of Science degree program in Applied and Engineering Science (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 his or her faculty advisor to assure a clear and well-planned program configured realistically to the students' interests and needs.

Applied and Engineering Sciences Major - Required Courses and Recommended Course Sequence

First Semester

MTH-111 Calculus I	4
CHM-117 Intro Chem Lab for Engineers	1
CHM-118 Chemistry for Engineers	3
ME-180 CADD Lab	1
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
	16

Second Semester

MTH-112 Calculus II	4
PHY-201 General Physics I	4
EGR-140 Computer Utilization in Engineering	3
Distribution Requirement	6
	17

Third Semester

PHY-202 General Physics II	4
Free Elective	3
Distribution Requirement	6
	13

Fourth Semester

EGR-200 Intro. to Materials Science	3
Free Electives	9
Distribution Requirements	3
	15

Fifth Semester

EE-283 Electrical Measurement Lab	1
ME-231 Statics & Dynamics I	3
EE-211 Electrical Circuits & Devices	3
Free Electives	6
Distribution Requirement	3
	16

Sixth Semester

EGR-399 Cooperative Education* **or** Technical Electives**	6
Technical Elective	3
EGR-201 Professionalism and Ethics	1
EGM-320 Engineering Project Analysis	3
	13

Seventh Semester

EGR-391 Senior Project I*	1
Technical Electives	6
Free Elective	9
	16

Eighth Semester

EGR-392 Senior Projects II*	2
Electives	6
Technical Electives	6
	14

**EGR 391 and 392 may be replaced by EE/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 the Cooperative Education coordinator for availability and proper scheduling of Cooperative Education experience.*

ENGINEERING MANAGEMENT

Engineering Management

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 who 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 his or her faculty advisor to assure a clear and well-planned program configured realistically to the student's interests and needs.

The Master of Science degree in Engineering Management (MSEGM) is also available. This degree program is described in the Graduate Bulletin.

Engineering Management Major - Required Courses and Recommended Course Sequence

First Semester

MTH-111 Calculus I	4
CHM-117 Intro Chem Lab for Engineers	1
CHM-118 Chemistry for Engineers	3
ME-180 CADD Lab	1
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
	16

Second Semester

MTH-112 Calculus II	4
PHY-201 General Physics I	4
EGR-140 Computer Utilization in Engineering	3
EGR-200 Introduction to Materials Science and Engineering	3
Distribution Requirement	3
	17

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
Distribution Requirement	3
	18

Fourth Semester

EC-102 Principles of Economics	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

MKT-321 Marketing or EC-101 Princ. of Economics	3
MGT-351 Management of Organizations	3
ME-335 Engineering Modeling & Analysis	3
BA-335 Law & Business or ACC-162 Managerial Accounting & Decision Making	3
Distribution Requirement	3
	15

Sixth Semester

EGR-399 Cooperative Education* **or** Technical Electives**	6
EGR-201 Professionalism and Ethics	1
EGM-321 Quantitative Analysis & Programming Methods	3
FIN-341 Managerial Finance	3
EGM-320 Engineering Project Analysis	3
	16

Seventh Semester

EGM-391 Senior Project I	1
Distribution Requirement	3
Technical Electives**	6
Distribution Requirement	3
Free Elective	3
	16

Eighth Semester

EGM-392 Senior Projects II	2
EGM-336 Engineering and Management Models	3
Technical Electives**	6
Free Elective	3
	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 the Cooperative Education Coordinator to determine availability and proper scheduling of the Cooperative Education experience.*

Engineering Management Minor

A 21-credit Engineering Management (EGM) minor is a special curriculum established to offer critical business and technical management skills for engineering majors. These courses are normally not taken by typical engineering students in the design disciplines. The following courses are required:

EGM 320 - Engineering Project Management
EC 102 - Principles of Economics II
EGM 321 - Quantitative Analysis and Programming Methods
EGM 336 - Engineering and Management Models

**BA 335 - Law and Business or *FIN 341 - Managerial Finance*

Additionally, six elective credits must be completed from the following courses (EGR 399 - Cooperative Education (or equivalent); EGM 398 - Engineering Project Decision Process; *BA 335 - Law and Business or *FIN 341 - Managerial Finance.

**The courses shown will count as "technical electives" for Division of Engineering and Physics students only when completing an EGM Minor or by special permission of the Department Chair. Other majors must consult their respective Chair for classification of these electives.*

MECHANICAL ENGINEERING

Mechanical Engineering

The Department of Mechanical Engineering and Engineering Management 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 professional accreditation by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; Telephone: (410) 347-7700).

The ME program is designed to achieve a balance among the major areas of Machine Design, Electro-Mechanical Systems, and Thermal Systems. Student may choose to specialize within the following areas: Thermal, Design and Micro-Electro-Mechanical Systems. Descriptions of program objectives and outcomes are publically posted in the Department and on the Department's webpages.

The Master of Science degree in Mechanical Engineering (MSME) is also available. This degree program is described in the Graduate Bulletin.

Mechanical Engineering B.S. Degree - Required Courses and Recommended Course Sequence

First Semester

MTH-111 Calculus I	4
CHM-117 Intro Chem Lab for Engineers	1
CHM-118 Chemistry for Engineers	3
ME-180 CADD Lab	1
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
	16

Second Semester

MTH-112 Calculus II	4
PHY-201 General Physics I	4
EGR-140 Computational & Statistical Analysis	3
EGR-200 Intro to Materials Science	3
Distribution Requirement	3
	17

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	3
Distribution Requirement	3
	18

Fourth Semester

EGR-222 Mechatronics	3
ME-232 Strength of Materials	3
ME-234 Dynamics	3
ME-322 Engineering Thermodynamics	3
EGR-214 Linear Systems	3
ME-175 Intro. to Manufacturing and Machining	1
	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 & Analysis	3
ME-333 Machine Design I	3
Distribution Requirements	3
	16

Sixth Semester

EGR-399 Cooperative Education* OR Technical Electives**	6
EGR-201 Professionalism and Ethics	1
Distribution Requirements	6
EGM-320 Engineering Project Analysis	3
	16

Seventh Semester

ME-324 Heat Transfer	3
ME-326 Heat Transfer Lab	1
ME-384 Mechanical Design Lab	3
ME-391 Senior Project I	1
Technical Electives**	3
ME-317 Robotics	3
Distribution Requirement	3
	17

Eighth Semester

Technical Electives**	6
ME-392 Senior Projects II	2
ME-332 Vibration of Dynamic Systems	3
Free Elective	3
	14

**Consult with the Cooperative Education Coordinator to determine availability and proper scheduling of the Cooperative Education experience.*
***Technical electives may be chosen from any advisor approved math, science, or engineering course numbered 200 or above to satisfy a concentration requirement.*

DIVISION OF BEHAVIORAL AND SOCIAL SCIENCES

Division of Behavioral & Social Sciences

Chairperson: Dr. Kyle L. Kreider

Faculty

Professors: Baldino, Bohlander, Charnetski, Garr, Tindell, Tuttle
Associate Professors: Kreider, Miller, Schicatano, Seeley, Thomas
Assistant Professors: Newell, Wilczak, Wiernik
Faculty Emeriti: DeYoung, Farrar, Natzke, Stetten, Tuhy

CRIMINOLOGY MINOR

Requirements

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 one course from each of the content areas listed below:

Content area I: Economics (3 Hours)	
EC 320	Economics of Crime* 3 cr.

Content area II: Political Science (3 Hours)	
PS 232	Criminal Law 3 cr.
PS 233	Law & Society 3 cr.
PS 332	Civil Rights & Liberties* 3 cr.

Content area III: Psychology (3 Hours)	
PSY 352	Abnormal Behavior* 3 cr.
PSY 355	Forensic Psychology* 3 cr.

Content area IV: Sociology (3 Hours)	
SOC 215	Family Violence* 3 cr.
SOC 223	Drugs & Alcohol in American Society* 3 cr.
SOC 224	Corrections, Probation, and Parole 3 cr.
SOC 225	Juvenile Delinquency 3 cr.
SOC 228	Deviance & Social Control 3 cr.
SOC 235	Corrections Counseling 3 cr.

** Students must complete all course prerequisites.*

CRIMINOLOGY, B.A.

Requirements

Criminology

Coordinator: Dr. Andrew Wilczak

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 in Criminology - 18

The Division of Behavioral and 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, Abnormal Behavior, 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 for 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). The 45 hours do not include any prerequisites.

Introductory Courses (12 hours)		credits
PS 233	Law & Society	3
EC 102	Microeconomics	3
PSY 101	General Psychology	3
SOC 101	Introduction to Sociology	3

Criminology Core Courses (23 hours)		
EC 320	Economics of Crime	3
PS 232	Criminal Law	3
PSY 242	Personality	3
PSY 352 **OR** PSY 355	Abnormal Behavior or Forensic Psychology	3
SOC 222	Criminology	3
SOC 309	Career Mentoring in the Social Sciences	2
PS 261 **OR** SOC 371	Research 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 Civil Liberties	3
PSY 352 **OR** PSY 355	Abnormal Behavior 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

Recommended Course Sequence

Required Courses and Recommended Course Sequence

First Semester	Credits
PS 111 Introduction to American Government	3
ENG101 Composition or	4
Distribution Requirement	3
FYF 101 First-Year Foundations	3
PSY 101General Psychology	3
SOC 101 Introduction to Sociology	3
Total Credits	**15-16**

Second Semester	
Distribution Requirements	6
ENG 101 Composition or	4
Distribution Requirement	3
Major Elective	3
Free Elective	3
Total Credits	**15-16**

Third Semester	
Distribution Requirement	3
Free Electives	6
SOC 222 Criminology	3
Major Elective	3
Total Credits	**15**

Fourth Semester	
Distribution Requirement	3
EC 102 Microeconomics	3
Free Elective	3
Major Elective	3
PS 233 Law and Society	3
Total Credits	**15**

Fifth Semester	
Distribution Requirements	6
EC 320 Economics of Crime	3
PS 232 Criminal Law	3
Free Electives	3
Total Credits	**15**

Sixth Semester	
Distribution Requirement	3
Major Elective	3
Free Electives	6
SOC 309 Career Mentoring in the Social Sciences	2
SOC 371 Methods of Social Research **OR** PS 261 Research Methods in Political Science	3
Total Credits	**17**

Seventh Semester	
Free Electives	12
SOC 373 or PS 265 – Quantitative Reasoning in the Social Sciences	3
Total Credits	**15**

Eighth Semester	
Free Electives	11
SOC 390 or PS 390 Senior Capstone	3
Total Credits	14

**See the General Education Curriculum for a list of courses that satisfy the Distribution Requirements.*

ECONOMICS MINOR

Requirements

Total minimum number of credits required for a minor in Economics — 18.

The Division of Behavioral and Social Sciences 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 Behavioral and Social Sciences.

ENVIRONMENTAL POLICY MINOR

Requirements

Environmental Policy Minor

A minor in Environmental Policy consists of 19 hours for students in the Sciences and 18 hours for non-science majors. Science majors must complete EES 240, PS 221, PS 224, PS 226 plus 6 credit hours of electives. Non-Science majors must complete EES 210, PS 221 or PS 224, PS 226 plus 9 credit hours of electives.

Electives in Political Science
PS 212 - Urban Government and Politics
PS 242 - International Law and Organization

Electives in Environmental Engineering and Earth Science
EES 205 - The Global Environment
EES 261 - Regional Geography

INTERNATIONAL STUDIES

Requirements

International Studies

Coordinator: Dr. Andrew P. Miller

Total minimum number of credits required for a major in International Studies leading to the B.A. degree — 120
Total minimum number of credits required for a minor in International Studies - 18

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.

International Studies 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 (HST) 101; Economics (EC) 101-102; Political Science (PS) 141, 151, 261; Anthropology (ANT) 102; Earth and Environmental Sciences (EES) 105*; International Studies (IS) 380; and Foreign Language (FL) at the 203-204 level of 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. Nine (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 Credits		Credits
PS 242	International Law and Organizations	3
PS 251	European Politics	3
PS 350	Comparative Politics	3

Content Area II: History		
HST 328	History of the Foreign Policy of the U.S.	3
HST 341-342	History of Great Britain	3
HST 342	The British Empire and Commonwealth	3
HST 345	History of Northeastern Europe	3
HST 346	History of the Balkans	3
HST 348	History of Russia	3
HST 356	Europe, 1900–1960	3
HST 357	The World Since 1945	3
HST 376	World War II	3

Content Area III: International Business and Economics		
BA 358	International Business	3

Content Area IV: Anthropology		
ANT 101	Introduction to Anthropology	3
ANT 211	Anthropology through Film	3
ANT 212	Peoples and Cultures of the World	3

Content Area V: Languages		
ENG 233	Survey of British Literature I	3
ENG 234	Survey of British Literature II	3
ENG 350	Studies in the English Novel	3
ENG 353	Studies in Postcolonial Literature	3
ENG 370	Modern British Poetry	3
SP 205	Conversation	3
SP 206	Advanced Grammar, Stylistics, & Composition	3
SP 208	Culture and Civilization	3
SP 209	Latin American Culture & Civilization	3
SP 210	Spanish for Business	3
SP 211	Conversational Spanish for Health & Social Services	3
SP 212	Non-Literary Translation	3
SP 220	Spanish Listening & Comprehension	3
SP 301	Introduction to Latin American Culture	3
SP 307	Survey of Spanish Literature I	3
SP 308	Survey of Spanish Literature II	3

Content Area VI: Global Environmental Policy		
EES 210	Global Climatic Change	3
EES 218	Environmental Ethics	3
EES 261	Regional Geography	3

Content Area VII: Intercultural Communication		
COM 304	Intercultural Communication	3

Recommended Course Sequence

First Semester Credits	
Distribution Requirement*	3
ENG 101 Composition or	4
Distribution Requirement	3
EC 101 Principles of Economics I	3
FYF 101 First-Year Foundations	3
PS 151 Introduction to Comparative Politics	3
Total Credits	**15-16**

Second Semester	
COM 101 Fundamentals of Public Speaking	3
EC 102 Principles of Economics II	3
ENG 101 Composition or	4
Distribution Requirement	3
HST 101 Historical Foundations of the Mod. World	3
PS 141 Introduction to International Relations	3
Total Credits	**15-16**

Third Semester	
ANT 102 Cultural Anthropology	3
CS 115 Computers and Applications	3
Distribution Requirement	3
EES 105 Planet Earth	3
Foreign Language*	3
Total Credits	**15**

Fourth Semester	
Content Hours	3
Distribution Requirements	6
ENG 120 Intro. to Literature and Culture	3
Foreign Language*	3
Total Credits	**15**

Fifth Semester	
Study Abroad or Free Electives**	15
Total Credits	**15**

Sixth Semester	
Study Abroad or Free Electives**	15
Total Credits	**15**

Seventh Semester	
Content Hours	9
MTH 101 Solving Problems Using Mathematics	3
PS 261 - Research Methods in Political Science	3
Total Credits	**15**

Eighth Semester	
Content Hours	3
Free Electives	8
IS 380 Senior Capstone	3
Total Credits	**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 Coordinator.*

INTERNATIONAL STUDIES MINOR

Requirements

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 courses listed below from at least two different Content Areas.

Content Area I: Political Science Credits		
PS 141	Introduction to International Relations	3
PS 242	International Law and Organizations	3
PS 251	European Politics	3
PS 350	Comparative Politics	3

Content Area II: History		
HST 328	History of the Foreign Policy of the US	3
HST 341	History of Great Britain	3
HST 342	The British Empire and Commonwealth	3
HST 345	History of Northeastern Europe	3
HST 346	History of the Balkans	3
HST 348	History of Russia	3
HST 356	Europe, 1900–1960	3
HST 357	The World Since 1945	3
HST 376	World War II	3

Content Area III: International Business and Economics		
BA 358	International Business	3
EC 102	Principles of Economics II	3
EC 340	International Trade and Finance	3

Content Area IV: Anthropology		
ANT 101	Introduction to Anthropology	3
ANT 211	Anthropology through Film	3
ANT 212	Peoples and Cultures of the World	3

Content Area V: Languages		
ENG 233	Survey of British Literature I	3
ENG 234	Survey of British Literature II	3
ENG 350	Studies in the English Novel	3
ENG 353	Studies in Postcolonial Literature	3
ENG 370	Modern British Poetry	3
SP 101	Elementary Spanish	3
SP 102	Elementary Spanish	3
SP 203	Intermediate Spanish	3
SP 204	Intermediate Spanish	3
SP 205	Conversation	3
SP 206	Advanced Grammar, Stylistics, & Composition	3
SP 208	Culture and Civilization	3
SP 209	Latin American Culture & Civilization	3
SP 210	Spanish for Business	3
SP 211	Conversational Spanish for Health & Social Services	3
SP 212	Non-Literary Translation	3
SP 220	Spanish Listening & Comprehension	3
SP 301	Introduction to Latin American Culture	3
SP 307	Survey of Spanish Literature I	3
SP 308	Survey of Spanish Literature II	3

Content Area VI: Global Environmental Policy		
EES 210	Global Climatic Change	3
EES 218	Environmental Ethics	3
EES 261	Regional Geography	3

Content Area VII: Intercultural Communication		
COM 304	Intercultural Communication	3

NEUROSCIENCE MINOR

Requirements

Neuroscience Minor

Coordinator: Dr. Edward 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 any of the following fields: neuroscience, pharmacology, and medicine. To earn a minor, students must complete at least 28 credits in the courses listed below.

Required Courses for the Minor in Neuroscience

Course No.	Course Title	Credits
PSY 101	General Psychology	3
PSY 200	Research Design and Statistics I **OR**	4
PSY 201	Applied Statistics and Research	4
MTH 150	Elementary Statistics	3
PSY 311	Behavioral Neuroscience	4
PSY 357	Neuropsychology	3
PSY 359	Psychopharmacology **OR**	3
PHA 450	Neuropharmacology of Drugs of Abuse	3
BIO 121	Principles of Modern Biology I	4
BIO 226	Molecular and Cellular Biology	4
BIO 115	Human Anatomy & Physiology **OR**	4
BIO 321	Mammalian Physiology **OR**	4
PHA 331	Medical Anatomy **AND**	4
PHA 332	Physiology I & II	4

NEUROSCIENCE, B.S..

Requirements

Total minimum of credits required for a major in Neuroscience leading to the B.S. degree - 120

Total minimum of credits required for a minor – 28

Neuroscience Major

Coordinator: Dr. Edward Schicatano

The Neuroscience major must complete a minimum of 120 credit hours. In addition to satisfying the University's General Education requirements, the student majoring in Neuroscience completes a minimum of 73 credits in Neuroscience and other required courses (please see the course listings for the specific course requirements).

Students are encouraged to consult the Undergraduate Bulletin for all information regarding the degree requirements. Each student should also meet and work closely with their faculty advisor in order to make the optimal course selections based upon the student's interests and future goals.

Required Courses (73 credits)

Psychology majors must take all of the following courses:

BIO 121	Principles of Modern Biology I	4 credits
BIO 226	Cellular & Molecular Biology	4 credits
BIO 321 or 398	Mammalian Physiology or Neurophysiology	4 credits
	One upper level BIO course	4 credits
CHM 115	Elements and Compounds	4 credits
CHM 116	The Chemical Reaction	4 credits
CHM 231	Organic Chemistry	4 credits
PHY 171	Principles of Classical & Modern Physics	4 credits
PHY 174	Application of Classical & Modern Physics	4 credits
MTH 111	Calculus	4 credits
PSY 101	General Psychology	3 credits
PSY 200	Statistics	4 credits
PSY 300	Research Methods	4 credits
PSY 400	Capstone	3 credits
PSY 257	Neuropsychology	3 credits
PSY 311	Behavioral Neuroscience	4 credits
PSY 359	Psychopharmacology	3 credits
PSY 398	Neuroscience Seminar	3 credits
	One 300 level PSY class	3 credits
	BIO, CHM or PSY elective	3 or 4 credits

Recommended Course Sequence

First Semester Credits

BIO-121 – Principles of Modern Biology I

CHM-113 – Elements & Compounds Lab

CHM-115 – Elements & Compounds

FYF-101 – First Year Foundations

PSY-101 – General Psychology

Second Semester Credits

CHM-114 – The Chemical Reaction Lab

CHM-116 – The Chemical Reaction

ENG-101 – Composition

MTH-111 – Calculus

Distribution Requirement

Third Semester Credits

CHM-231 – Organic Chemistry I

CHM-233 – Organic Chemistry Lab

PSY-257 – Neuropsychology

3 Distribution Requirements

Fourth Semester Credits

PSY-200 – Statistics

BIO-226 – Cellular & Molecular Biology

3 Distribution Requirements

Fifth Semester Credits

PHY-171 – Principles of Classical & Modern Physics

BIO-321 – Mammalian Physiology or Neurophysiology

PSY elective (required)

Free elective

Sixth Semester Credits

PHY-174 – App. Of Class & Mod Physics

BIO, PSY or CHM elective

PSY-300 – Research Methods

PSY-359 – Psychopharmacology

Seventh Semester Credits

PSY-311 – Behavioral Neuroscience

BIO elective (required)

2 Free electives

PSY-400 – Capstone or Free elective

Eighth Semester Credits

PSY-398 - Neuroscience Seminar

Free electives or PSY-400 Capstone

POLICY STUDIES MINOR

Requirements

Policy Studies Minor

A minor in Policy Studies requires that the student take the following four Political Science courses and an additional 6 credits in policy courses. These courses may include an offering from outside the Political Science Department, but the course(s) must be approved by an advisor in the Department before taking the course(s).

Policy Studies Minor Requirements

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

POLITICAL SCIENCE MINOR

Requirements

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

POLITICAL SCIENCE, B.A.

Requirements

Political Science

Total minimum number of credits for a major in Political Science leading to the 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

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 or international service. See the Pre-Law section of this bulletin for information on law school advising and admissions.

Political Science Major

A major in Political Science requires a minimum of 120 hours. These include 43 hours in the University's General Education Requirements and 44 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, 309 (2 credits), and 380, a total of 23 credit hours. Students must then choose an additional 21 credits in Political Science with at least 3 courses (9 credits) 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 with the chairperson of the Department of Education as early as possible in their program of study 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.

In Conjunction with the Secondary Education Major or Minor

Students interested in becoming secondary teachers in Political Science should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in Political Science and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it cannot stand alone as a major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades 7-12 in their chosen field.

Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements. Students should also consult carefully with their Education program and Political Science program advisors in planning their course of studies.

Total credits required for Secondary Education minor - 40

Total credits required for Secondary Education major - 47

Required courses for the major(*) or minor in Secondary Education are as follows:

ED 180 – Educational Psychology - 3 cr.
ED 190 – Effective Teaching with Field Experience - 3 cr.
ED 191 – Integrating Technology into the Classroom - 3 cr.
EDSP 210 – Teaching Students with Special Needs - 3 cr.
ED 220 – Teaching Culturally and Linguistically Diverse Learners - 3 cr.

EDSP 225 – Special Education Methods I with Field Experience - 3 cr.
ED 300 – Teaching of a Foreign Language with Field Experience - 4 cr.
*ED 345 – Assessment - 3 cr.
*ED 375 – Middle Level/Secondary School Methods with Field Experience - 4 cr.
ED 380 – Content Area Literacy - 3 cr.
ED 381 – Teaching Methods in Social Studies (with Field Experience) - 4 cr.
EDSP 388 – Inclusionary Practices (taken concurrently with ED 390) - 3 cr.
ED 390 – Student Teaching with Seminar - 12 cr.

** These additional courses required in order to complete the major in Secondary Education.*

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must:
  - Attain a 3.0 GPA
  - Complete 48 credits including six credits in both Mathematics and English
  - Pass a test of basic skills
  - Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must:
  - Maintain a 3.0 GPA
  - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must:
  - Successfully complete all required Education courses, including student teaching
  - Graduate with a 3.0 cumulative GPA
  - Pass the appropriate exit test(s) in their content area
  - Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

PSYCHOLOGY MINOR

Requirements

Psychology Minor

Students who elect to minor in Psychology must complete at least 18 credits of psychology courses. This includes PSY 101 and a statistics course (either PSY 200 or PSY 201) and at least 12 additional credits in psychology. Students who have completed MTH 150, having satisfied the basic statistics requirement for the minor, may opt to take another PSY course in lieu of PSY 200 or PSY 201

PSYCHOLOGY, B.A.

Requirements

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.

Psychology Major

Coordinator: Dr. Edward Schicatano

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 41 credits in psychology, including PSY 101(General Psychology), five breadth area courses, two applied psychology courses, a three-course capstone sequence, and a career mentoring course. (Please see the course listings for the specific course requirements.) PSY 101 is a prerequisite to all other psychology courses. The Psychology major must take either BIO 105 (Human Biology) or another biology course approved by the department. It is also strongly recommended that the student take a foreign language.

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.

There are two different options for satisfying the capstone requirement in psychology. For students who are interested in pursuing graduate studies in psychology or psychology research in their career, the research-based capstone will provide an excellent opportunity for hands-on research experience. For those who are more interested in pursuing a career immediately after graduation, or are pursuing non-research based careers, or graduate school in an applied area, the applied option will provide valuable experience in real-world settings, and with additional guidance and structure, will enhance the student's applied skills. The courses for the two options are detailed below.

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

Required Courses (21 cr.)

Psychology majors must take all of the following courses:

PSY101	General Psychology	3
PSY 221	Developmental Psychology	3
PSY 242	Personality	3
PSY 341	Social Psychology	3
PSY 331	Cognition	3
PSY 311	Behavioral Neuroscience	4
PSY 309	Career Mentoring for the Social Sciences	2

Elective Courses (minimum 9 cr.)

Psychology majors will also choose at least three elective psychology courses. Two must be from the following list of applied topics, and the third can be selected from any psychology offering that is not already counted toward the major requirements.

PSY 250	Applied Behavior Analysis	3
PSY 351	Behavioral Medicine	3
PSY 352	Abnormal Behavior**	3
PSY 353	Clinical Methods in Psychology	3
PSY 354	Exceptional Individual	3
PSY 355	Forensic Psychology	3
PSY 356	Industrial/ Organizational Psychology	3
PSY 257	Neuropsychology	3
PSY 358	Psychological Tests and Measurements	3
PSY 359	Psychopharmacology	3

***Course was formerly called "Psycopathology"*

Capstone Sequence (14 cr.)

Majors must choose one of the following capstone options:

Option #1 - Research-Based Capstone		
PSY 200	Statistics	4
PSY 300	Research Methods	4
PSY 400	Senior Capstone	3
	PSY Elective	3
Note: The courses for this option must be completed in sequence and may not be taken concurrently. It is recommended that students complete most of the required psychology courses before taking PSY 300, which should not be taken prior to the junior year.		

Option #2 - Applied Capstone		
PSY 200	Statistics	4
PSY 301	Psychological Research	3
PSY 399	Internship Experience	3
PSY 401	Research Capstone	4
Note: PSY 301 and 399 may be taken in any order and may be taken concurrently, but both must be successfully completed prior to enrolling in PSY 401. Students taking PSY 401 will need a second internship as part of the requirement for this course.		

Recommended Course Sequence

First Semester Credits	
BIO 105 Human Biology	3
Distribution Requirement	3
ENG 101 Composition or Distribution Requirement	3-4
FYF 101 First-Year Foundations	3
PSY 101 General Psychology	3
Total Credits	**15-16**

Second Semester	
Distribution Requirements	9
ENG 101 Composition or Distribution Requirement	3-4
PSY 242 Personality	3
Total Credits	**15-16**

Third Semester	
Distribution Requirements	6
Free Electives	6
PSY 221 Developmental Psychology	3
Total Credits	**15**

Fourth Semester	
Distribution Requirements	6
Free Elective	3
PSY 331 Cognition or PSY 341 Introduction to Social Psychology	3
PSY 200 Statistics or Major Elective	3-4
Total Credits	**15-16**

Fifth Semester	
Free Electives	9
PSY 331 Cognition or PSY 341 Introduction to Social Psychology	3
PSY 200 Statistics or Major Elective	3-4
Total Credits	**15-16**

Sixth Semester	
PSY 309 Career Mentoring	2
PSY 311 Behavioral Neuroscience or Major Elective	3-4
Free Electives	6
PSY 300 Research Methods or PSY 301 Psychological Research	3-4
Total Credits	**14-16**

Seventh Semester	
PSY 311 Behavioral Neuroscience or Major Elective	3-4
PSY 400 or PSY 401 Senior Capstone*	3
or PSY 300 Research Methods	3-4
or PSY 301 Psychological Research	
or Free Electives	6-9
Total Credits	**15-16**

Eighth Semester	
Major Elective or PSY 400 or PSY 401 Senior Capstone*	3
Free Electives	9
Total Credits	**12**

**Students can choose to take the capstone course in either the fall or spring of their senior year.*

PUBLIC ADMINISTRATION

Requirements

Public Administration

Total minimum number of credits for a major in Public Administration leading to the B.A. degree — 120

A major in Public Administration requires 120 hours. These include 43 hours in the University's General Education Requirements and 56 credits in the Public Administration major. All majors must take the following courses that comprise the Core in Public Administration: PS111, 151, 221, 224, 260, 261, 265, 309 (2 credits) 311, 312, 380, EC101, 102, and 330, BA335 and 336, and MGT351 and 354. Students are also required to take three (3) credits in either an Internship (PS399) or a PS elective.

The Public Administration major is consistent with the Political Science Department's mission "to educate students to understand the significance of politics in America and the world and the relevance of politics to their lives." This major will benefit students who are interested in pursuing professional careers, specifically in the public or non-profit sectors.

First Semester - Fall

ENG 101 Composition or Distribution Requirement	4/3
FYF 101 First-Year Foundations	3
Distribution Requirements	6
PS 111 Intro. to American Government	3
Total Credits	16/15

Second Semester - Spring

ENG 101 Composition or Distribution Requirement	4/3
Distribution Requirements	12
Total Credits	16/15

Third Semester - Fall

Distribution Requirements	6
PS 151 Intro to Comparative Politics	3
PS 221 Intro to Public Administration	3
EC 101 Principles of Econ I	3
Total Credits	15

Fourth Semester - Spring

Distribution Requirements	9
PS 260 Intro to Political Thinking	6
EC 102 Principles of Econ II	3
Total Credits	15

Fifth Semester - Fall

BA 335 Law and Business	3
PS 311 American Presidency	3
PS 261 Research Methods in Political Science	3
EC 330 Public Finance	3
PS 399 Internship or PS Elective	3
Total Credits	15

Sixth Semester - Spring

BA 336 Advanced Topics in Business Law*	3
PS 312 The US Congress	3
PS 265 Quantitative Reasoning	3
PS 224 Public Policy Analysis	3
PS 399 Internship or PS Elective	3
Total Credits	15

Seventh Semester - Fall

PS 380 Capstone Research	3
MGT 351 Management of Organizations and People	3
PS 309 Careers in PS	2
Free Electives	9
Total Credits	17

Eighth Semester - Spring

Free Electives	9
MGT 354 Organizational Behavior**	3
PS Electives	3
Total Credits	15

Total credits for the Public Administration major - 56

Credits in Political Science - 35

Credits in Business Administration - 12

Credits in Economics -9

***BA 335 is a prerequisite.**

****BA 351 is a prerequisite.**

SOCIOLOGY MINOR

Requirements

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

The department offers SOC 393 (Practicum) and SOC 399 (Cooperative Education), a supervised practical field experience in a professional setting designed for Sociology minors. The hours earned in Cooperative Education or Practicum may not, however, be applied toward the 18 hours of course work required for the minor.

SOCIOLOGY, B.A.

Requirements

Sociology

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 in Sociology - 18

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 M.B.A. in slightly more than one calendar year after completion of their B.A. degree.

Sociology Major

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 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. Courses required in the major, such as SOC 101 and ANT 101, may also be used to fulfill distribution requirements in the General Education Curriculum.

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, however, be applied toward the 36 hours of course work required for the major.

Recommended Course Sequence

First Semester	
Distribution Requirements	6
ENG 101 Composition or	4
Distribution Requirement	3
FYF 101 First-Year Foundations	3
SOC 101 Introduction to Sociology	3
Total Credits	**15-16**

Second Semester	
ANT 101 Introduction to Anthropology	3
Distribution Requirements	9
ENG 101 Composition or	4
Distribution Requirement	3
Total Credits	**15-16**

Third Semester	
Free Electives	12
Major Elective	3
Total Credits	**15**

Fourth Semester	
Free Electives	12
Major Elective	3
Total Credits	**15**

Fifth Semester	
Free Electives	9
Major Elective	3
SOC 381 Social Theory	3
Total Credits	**15**

Sixth Semester	
Free Electives	6
Major Electives	6
SOC 371 Methods of Research	3
Total Credits	**15**

Seventh Semester	
Free Electives	9
Major Elective	3
SOC 373 Quantitative Reasoning in the Social Sciences	3
Total Credits	**15**

Eighth Semester	
Free Electives	11
SOC 390 Senior Capstone	3
Total Credits	**14**

DIVISION OF GLOBAL HISTORY AND LANGUAGES

Division of Global History & Languages

(incorporating the departments of Foreign Languages, History and Philosophy)

Co-chairpersons: Dr. John Hepp and Dr. Diane Wenger

Faculty

Professors: Bianco (Spanish), Riggs (History), Winkler (Anthropology)
Associate Professors: Hepp (History), Morrison (Diversity/Cultural Studies), Paul (Philosophy), Wenger (History)
Assistant Professors: García (Spanish), Kuiken (History), Shimizu (History), Zarpentine (Philosophy)
Adjunct Faculty: Hunsinger (History), Kuiken (French), Packard (History), Petrasko (History), Poggi (Spanish), Thackara (Spanish), Thomas (History)
Faculty Emeriti: Berlatsky (History), Cox (History), Hupchick (History), Karpinich (Foreign Languages), Marban (Foreign Languages), Rodechko (History)

HISTORY MINOR

Requirements

A minor in History shall consist of a minimum of 18 credit hours in courses offered by the department. The required courses are History (HST) 101 (Historical Foundations of the Modern World), HST 125 (American History I), and HST 126 (American History II).

HISTORY, B.A.

Requirements

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 in History — 18.

History Major

Wilkes University offers four separate tracks for students interested in pursuing careers in history. The standard History Major is designed for pre-professional and pre-graduate school students who either intend to further their education at an advanced level (law, medical or graduate school) or wish to combine their major in History with another undergraduate major.
The standard History Major can be combined with a minor or a major in secondary education for students interested in teaching careers in public secondary schools. The Public History Concentration prepares students for entry-level work in museums, archives and other locations in which historians work with the public in non-teaching roles. The Digital History Concentration allows students to follow a course of study that combines classes in History, Integrative Media and Communication Studies to learn the skills necessary to present history in a variety of media, from web sites to audio and video documentaries.
Wilkes University requires 120 credit hours for the B.A. degree in History. These include 40 credit hours in distribution courses and 30 credit hours in the discipline. HST (History) 101-102, HST 125-126, HST 297, HST 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/United States and non-American/world topics. Comparative courses count toward these minimum distribution requirements as either an American or a non-American topic. American/United States topics will contain the designation (A) at the end of their titles, non-American/world 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.

History in Conjunction with the Secondary Education Major or Minor

Students interested in becoming secondary teachers in History should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in History and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it cannot stand alone as a major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades 7-12 in their chosen field.

Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements.

Students should also consult carefully with their Education program and History program advisors in planning their course of studies.

Total credits required for Secondary Education minor - 40

Total credits required for Secondary Education major - 47 cr

Required courses for the major(*) or minor in Secondary Education are as follows:

ED 180 – Educational Psychology - 3 cr.

ED 190 – Effective Teaching with Field Experience - 3 cr.

ED 191 – Integrating Technology into the Classroom - 3 cr.

EDSP 210 – Teaching Students with Special Needs - 3 cr.

ED 220 – Teaching Culturally and Linguistically Diverse Learners - 3 cr.

EDSP 225 – Special Education Methods I with Field Experience - 3 cr.

ED 300 – Teaching of a Foreign Language with Field Experience - 4 cr.

*ED 345 – Assessment - 3 cr.

*ED 375 – Middle Level/Secondary School Methods with Field Exp. - 4 cr.

ED 380 – Content Area Literacy - 3 cr.

ED 381 – Teaching Methods in Social Studies (with Field Experience) - 4 cr.

EDSP 388 – Inclusionary Practices (taken concurrently with ED 390) - 3 cr.

ED 390 – Student Teaching with Seminar - 12 cr.

** These additional courses required in order to complete the major in Secondary Education.*

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must
  - Attain a 3.0 GPA
  - Complete 48 credits including six credits in both Mathematics and English
  - Pass a test of basic skills
  - Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must
  - Maintain a 3.0 GPA
  - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must
  - Successfully complete all required Education courses, including student teaching
  - Graduate with a 3.0 cumulative GPA
  - Pass the appropriate exit test(s) in their content area
  - Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

History Major/Digital History Concentration

This program takes an interdisciplinary approach to studying, preserving and sharing the past. It can be combined with the existing Public History concentration for students interested in pursuing careers in museums and historical societies, with the Integrative Media major for those

interested in commercial and non-profit applications of design and with the Communication Studies major for those interested in videography. The major involves hands-on work in a variety of fields. All students are required to complete one internship. The senior capstone varies with the student's individual interest; it can be a historic video or web site, an actual or virtual museum display, a video project or a research paper on an appropriate topic.

Anyone who has a Bachelor's degree from an accredited institution can receive a Certificate in Digital History after completing the course work required for the Concentration in Digital History. Please contact the chairs of Global History & Languages for more information on this certificate.

Wilkes University requires a minimum of 120 credit hours for the B.A. degree in History/Digital History Concentration. These include 37 credit hours in distribution courses and 55 hours in Art, Communication Studies, Computer Science, History and Integrative Media classes. Required courses include ART 111, COM 102, COM 222, COM 261, COM 322, CS 125, HST 125, HST 126, HST 211, HST 297, HST 311, two 300-level HST electives, IM 201, IM 301, IM 302, HST 397 or IM 391 and HST/IM/COM 399.

Recommended Course Sequence

First Semester	
Distribution Requirement	6
ENG 101-Composition	4
FYF 101	3
HST 125 US History I	3
Total Credits	**16**

Second Semester	
Distribution Requirement	3
COM 102 Principles of Comm.	3
CS 125 Computer Science I	4
Art 111 Fund. of Color and Design	3
HST 126 US History II	3
Total Credits	**16**

Third Semester	
Distribution Requirement	3
COM 221 Audio Production	3
COM 261 Multimedia Communication	3
IM 201 IM Foundations II	3
HST 297 Research & Methods	3
Total Credits	**15**

Fourth Semester	
Distribution Requirement	6
HST 211 Intro to Public History	3
IM 301 Digital Composition	3
COM 322 Advanced Video Prod.	3
Total Credits	**15**

Fifth Semester	
Distribution Requirement	9
HST 311 Oral History	3
IM 302 Principles of Interactivity	3
Total Credits	**15**

Sixth Semester	
History Elective	3
Free Electives	12
Total Credits	**15**

Seventh Semester	
COM/IM/HST 399 Internship	3
History Elective	3
Free Electives	9
Total Credits	**15**

EighthSemester	
HST 397 or IM 391 Capstone	3
Free Electives	12
Total Credits	**15**

Recommended Course Sequence - History Major

First Semester	
Distribution Requirements	6
ENG 101 Composition or	4
Distribution Requirement	3
FYF 101 First-Year Foundations	3
HST 101 Historical Foundations of the Modern World	3
Total Credits	**15-16**

Second Semester	
Distribution Requirements	9
ENG 101 Composition or	4
Distribution Requirement	3
HST 102 Europe Before 1600	3
Total Credits	**15-16**

Third Semester	
Distribution Requirements	6
Free Elective*	3
HST 125 American History I	3
HST 297 Research & Methods Seminar	3
Total Credits	**15**

Fourth Semester	
Distribution Requirements	9
Free Elective*	3
HST 126 American History II	3
Total Credits	**15**

Fifth Semester	
Free Electives*	9
Major Electives	6
Total Credits	**15**

Sixth Semester	
Free Electives*	12
Major Elective	3
Total Credits	**15**

Seventh Semester	
Free Electives*	9
Major Electives**	6
Total Credits	**15**

Eighth Semester	
Free Electives*	11
HST 397 Seminar**	3
Total Credits	**14**

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

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

Recommended Course Sequence - Digital History Concentration

First Semester	
Distribution Requirement	6
ENG 101-Composition	4
FYF 101	3
HST 125 US History I	3
Total Credits	**16**

Second Semester	
Distribution Requirement	3
COM 102 Principles of Comm.	3
CS 125 Computer Science I	4
Art 111 Fund. of Color and Design	3
HST 126 US History II	3
Total Credits	**16**

Third Semester	
Distribution Requirement	3
COM 221 Audio Production	3
COM 261 Multimedia Communication	3
IM 201 IM Foundations II	3
HST 297 Research & Methods	3
Total Credits	**15**

Fourth Semester	
Distribution Requirement	6
HST 211 Intro to Public History	3
IM 301 Digital Composition	3
COM 322 Advanced Video Prod.	3
Total Credits	**15**

Fifth Semester	
Distribution Requirement	9
HST 311 Oral History	3
IM 302 Principles of Interactivity	3
Total Credits	**15**

Sixth Semester	
History Elective	3
Free Electives	12
Total Credits	**15**

Seventh Semester	
COM/IM/HST 399 Internship	3
History Elective	3
Free Electives	9
Total Credits	**15**

Eighth Semester	
HST 397 or IM 391 Capstone	3
Free Electives	12
Total Credits	**15**

HISTORY, B.A. - PUBLIC HISTORY

Requirements

History Major/Public History Concentration

This degree prepares students for entry-level work in museums, historical sites, cultural resource management, archives, historical societies, historic preservation and other areas where historians engage the public. The history department encourages students seeking the Public History BA to choose a cognate major/minor such as English, business, or communications.

Wilkes University requires a minimum of 120 credit hours for the B.A. degree in History/Public History Concentration. These include 40 credit hours in distribution courses and 39 credit hours in the discipline. Required history courses include: HST 101, HST 125-126, HST 211, HST 297, HST 397, HST 399 (6 credits), 12 additional credit hours in history courses numbered 300 and above from an approved list of Public History eligible course, and any two of the following: HST 311, HST 312, and HST 325.

Recommended Course Sequence

First Semester	
Distribution Requirement	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
HST 101 Historical Foundations of the Modern World	3
HST 125 US History I	3
Total Credits	**16**

Second Semester	
Distribution Requirements	9
HST 126 US History II	3
HST 211 Intro to Public History	3
Total Credits	**15**

Third Semester	
Distribution Requirements	12
HST 297 Research & Methods Seminar	3
Total Credits	**15**

Fourth Semester	
Distribution Requirements	6
Major Electives/Requirement	6
Free Elective	3
Total Credits	**15**

Fifth Semester	
Free Electives	12
Major Elective/Requirement	3
Total Credits	**15**

Sixth Semester	
Free Electives	9
Major Elective/Requirement	6
Total Credits	**15**

Seventh Semester	
HST 399 Internship	3
Free Electives	6
HST 397 Capstone/Seminar	3
Major Elective/Requirement	3
Total Credits	**15**

Eighth Semester	
HST 399 Internship	3
Free Electives	12
Total Credits	**15**

PHILOSOPHY MINOR

Requirements

The minor in Philosophy consists of 18 credit hours, including PHL 101 (Introduction to Philosophy), PHL 122 (Introduction to Symbolic Logic), and at least six credits at the 300-level, including PHL 301 (Origins of Western Thought).

PHILOSOPHY, B.A.

Requirements

Total minimum number of credits required for a major in Philosophy leading to the B.A. degree — 120 credits, 30 of them in Philosophy
Total minimum number of credits required for a minor in Philosophy — 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, about the significance of death in our lives, and so on. 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.

Philosophy Major

The major in Philosophy requires a minimum of 30 credit hours, including PHL 101(Introduction to Philosophy), PHL 122 (Introduction to Symbolic Logic), and at least nine credits at the 300-level, including PHL 301 (Origins of Western Thought), PHL 310 (Ethical Theory), and a one-credit capstone experience (PHL 390).

SPANISH MINOR

Requirements

Students may elect to minor in Spanish. A minor in Spanish consists of 18 credit hours beyond SP 102 (Elementary Spanish II). Study abroad is encouraged.

SPANISH, B.A.

Foreign Languages at Wilkes University

Wilkes University offers a major and minor in Spanish (along with a program leading to secondary education certification for Spanish majors) and introductory-level courses in French on a regular basis. In addition, other introductory-level foreign language courses are offered based on student demand and the availability of qualified faculty. For more information on these classes, please contact the chairs of Global History & Languages.

Requirements

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 in Spanish — 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.

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 have the opportunity to spend a summer or a semester in Spain.

Spanish Major

Spanish is offered as a major field of study. A major in Spanish consists of 24 credit hours beyond SP (Spanish) 204 (Intermediate Spanish II).

In the interest of broadening career options, all Spanish majors are advised to combine their language studies with another discipline. All majors are strongly urged to spend at least a summer or one semester abroad, as arranged in consultation with their Spanish advisor.

Spanish in conjunction with the Secondary Education major or minor

Students interested in becoming PK-12 teachers in Spanish should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in Spanish and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it cannot stand alone as a major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades PK-12 in their chosen field.

Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements. Students should also consult carefully with their Education program and Spanish program advisors in planning their course of studies.

Total credits required for PK-12 Education minor - 40

Total credits required for PK-12 Education major - 47

Required courses for the major(*) or minor in Secondary Education are as follows:

ED 180 – Educational Psychology - 3 cr.

ED 190 – Effective Teaching with Field Experience - 3 cr.

ED 191 – Integrating Technology into the Classroom - 3 cr.

EDSP 210 – Teaching Students with Special Needs - 3 cr.

ED 220 – Teaching Culturally and Linguistically Diverse Learners - 3 cr.

EDSP 225 – Special Education Methods I with Field Experience - 3 cr.

ED 300 – Teaching of a Foreign Language with Field Experience - 4 cr.

*ED 345 – Assessment - 3 cr.

*ED 375 – Middle Level/Secondary School Methods with Field Exp. - 4 cr.

ED 380 – Content Area Literacy - 3 cr.

EDSP 388 – Inclusionary Practices (taken concurrently with ED 390) - 3 cr.

ED 390 – Student Teaching with Seminar - 12 cr.

* These additional courses required in order to complete the major in Secondary Education.

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must
  - Attain a 3.0 GPA
  - Complete 48 credits including six credits in both Mathematics and English
  - Pass a test of basic skills
  - Submit required clearances showing ‘no record’
- To remain in the Teacher Education Program, candidates must
  - Maintain a 3.0 GPA
  - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must
  - Successfully complete all required Education courses, including student teaching
  - Graduate with a 3.0 cumulative GPA
  - Pass the appropriate exit test(s) in their content area
  - Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

Recommended Course Sequence

First Semester	
Distribution Requirements	6
Eng 101 Composition or	4
Distribution Requirement	3
FYF 101 First-Year Foundations	3
SP 101 Elementary Spanish I (or level of competency)	3
Total Credits	**15-16**

Second Semester	
Distribution Requirements	9
Eng 101 Composition or	4
Distribution Requirement	3
SP 102 Elementary Spanish II (or level of competency)	3
Total Credits	**15-16**

Third Semester	
Distribution Requirement	3
Free Electives	9
SP 203 Intermediate Spanish I	3
Total Credits	**15**

Fourth Semester	
Free Electives	9
SP 204 Intermediate Spanish II	3
SP 205 Conversation	3
Total Credits	**15**

Fifth Semester*	
Free Electives	9
SP 198 Topics in Spanish	3
SP 206 Adv. Grammar, Stylistics, & Comp.	3
Total Credits	**15**

Sixth Semester	
Free Electives	9
SP 208 Culture and Civilization	3
SP 301 Intro. to Latin American Lit.	3
Total Credits	**15**

Seventh Semester	
Free Electives	9
SP 298 Topics in Spanish	3
SP 307 or 308 Survey of Spanish Lit. I or II	3
Total Credits	**15**

Eighth Semester	
Free Electives	11
SP 397 Seminar	3
Total Credits	**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.*

DIVISION OF PERFORMING ARTS

Division of Performing Arts

Chairperson: Dr. Steven Thomas
The Division of Performing Arts comprises the programs in Theatre, Musical Theatre, Music and Dance.

Theatre Faculty

Director of Theatre: Teresa Fallon
Associate Professor: Dawson
Assistant Professor: Liebetrau
Adjunct Faculty: Phair, Rasmus

Dance Faculty

Director of Dance: Kristin Degnan-Boonin
Faculty of Practice: Mariani
Adjunct Faculty: Cross, Harris

Music Faculty

Coordinator of Music: Steven Thomas
Associate Professors: Simon, Thomas
Adjunct Faculty: Driscoll, Insalaco, Levy, Lindsey, Vaida, Waltich, Zipay

The Division of Performing Arts offers a B.F.A. degree in Musical Theatre, a B.A. degree in Theatre Arts and minor areas of study in Dance, Music, and Theatre. Students pursuing a B.A. in Theatre Arts may also elect to add a concentration in Acting & Directing, Design & Tech, or Dance.

Total minimum number of credits required for a major in Musical Theatre leading to the B.F.A. degree — 122
Total minimum number of credits required for a major in Theatre Arts leading to the B.A. degree — 121
Total minimum number of credits required for a minor in Theatre Arts — 18
Total minimum number of credits required for a minor in Dance — 18
Total minimum number of credits required for a minor in Music — 18

Musical Theatre Major

The B.F.A. in Musical Theatre 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.

Theatre Arts Major

The B.A. in Theatre Arts is a balanced program that encourages many kinds of theatre artists. The program combines the liberal arts core curriculum with the required 45 credits of Theatre Arts classes and 39 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: Acting & Directing, Design & Tech, and Dance.

DANCE MINOR

Requirements

Director: Ms. Kristin Degnan-Boonin
Faculty of Practice: Mariani
Adjunct Faculty: Cross, Harris

Total minimum number of credits required for a minor in dance — 18

Wilkes University provides a comprehensive minor program in the field of dance, with classes in Classical Ballet, Modern, Jazz and Tap Dance. In order to satisfy the requirements for the Minor in Dance, students must take 18 credits of dance at a level above DAN 100, at least 3 of which must be DAN 320 Dance Composition..

MUSIC MINOR

Requirements

Music Coordinator: Dr. Steven Thomas

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.

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

Performance: 6 credits
Choose from the following courses:
MUS-121 Civic Band (3 credits) (repeatable)
MUS-125 University Chorus (0 - 3 credits) (repeatable)
MUS-127 Jazz Ensemble (3 credits) (repeatable)
MUS-132 Chamber Orchestra (3 credits) (repeatable)

Music Theory: 3 credits
MUS-103 Music Theory I (3 credits)

Music History: 6 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 are available in Darte Hall. These rooms are generally reserved for those students majoring in Theatre Arts or Musical Theatre and those participating in ensembles or taking private music instruction within the Performing Arts Division or the Wilkes Community Conservatory. 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 Division of Performing Arts 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 on the student's record that precludes the release of the official transcript of work undertaken at the University.

MUSICAL THEATRE, B.F.A.

Requirements

The B.F.A. in Musical Theatre 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

Recommended Course Sequence

First Semester Credits	
FYF-101 First-Year Foundations	3
ENG-101 Composition	4
THE-121 Stagecraft I	3
THE-132 Voice & Diction I (OPO)	3
MUS-100 Voice	1
MUS-119 Studio Class	0
MUS-102 Music Fundamentals (can be waived with permission of the instructor)	3
MUS-125 University Chorus	1
THE-190 Theatre Laboratory	1
Total Credits	**19**

Second Semester	
ENG-120 Intro to Literature and Culture	3
MUS-100 Voice	1
MUS-119 Studio Class	0
MUS-103 Music Theory I	3
MUS-125 University Chorus	1
THE-233 Voice & Diction II	3
THE-131 Acting 1	3
THE-190 Theatre Laboratory	1
Total Credits	**15**

Third Semester	
Distribution Requirements	9
MUS-200 Voice	1
MUS-219 Studio Class	0
THE-190 Theatre Laboratory	1
THE-232 Acting II	3
Total Credits	**14**

Fourth Semester	
Distribution Requirements	6
THE-214 Script Analysis	3
THE-216 Design for the Theatre	3
MUS-200 Voice	1
MUS-219 Studio Class	0
THE-190 Theatre Laboratory	1
Total Credits	**14**

Fifth Semester	
Distribution Requirement	6
MUS-300 Voice	1
MUS-319 Studio Class	0
THE-211 Theatre History I	3
THE-190 Theatre Laboratory	1
THE-331 Acting III	3
DAN-250 Classical Ballet	3
Total Credits	**17**

Sixth Semester	
Electives	3
DAN-230 Jazz Dance I	3
MUS-300 Voice	1
MUS-319 Studio Class	0
THE-311 Theatre History II	3
THE-234 Directing I	3
THE-190 Theatre Laboratory	1
Total Credits	**14**

Seventh Semester	
Electives	9
Distribution Requirement	3
MUS-400 Voice	1
MUS-419 Studio Class	0
THE-190 Theatre Laboratory	1
THE-493 Senior Capstone	1
Total Credits	**15**

Eighth Semester	
Electives	9
THE-394 The Business of Theatre/ Auditions	3
THE-190 Theatre Laboratory	1
MUS-400 Voice	1
MUS-419 Studio Class	0
Total Credits	**14**

THEATRE ARTS MINOR

Requirements

A minor in Theatre Arts consists of 18 hours, including THE 121 (Stagecraft), a course that all students must complete. In addition, the Theatre Arts minor must complete at least five courses from the prescribed list of Theatre electives.

Required courses for a minor in Theatre Arts:		
THE 121	Stagecraft	3 cr.

Electives (select five of the following courses):		
THE-131	Acting I	3 cr.
THE-132	Voice & Diction I	3 cr.
THE-211	Theatre History I	3 cr.
THE-214	Script Analysis	3 cr.
THE-216	Design for the Theatre	3 cr.
THE-232	Acting II	3 cr.
THE-234	Directing I	3 cr.
THE-311	Theatre History II	3 cr.
THE-321	Scenic Design	3 cr.
THE 334	Directing II	3 cr.

THEATRE ARTS, B.A - DANCE

Requirements

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 45 credits of Theatre Arts classes and 39 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: Acting & Directing, Design & Tech, and Dance.

Dance Concentration

DAN-120 Tap Dance (3)
DAN-210 Modern Dance I (3)
DAN-230 Jazz Dance I (3)
DAN-250 Classical Ballet I (3)
DAN-320 Dance Composition (3)
Dance Elective (3)

Recommended Course Sequence

First Semester	
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
THE-121 Stagecraft I	3
THE-132 Voice & Diction I	3
THE-190 Theatre Laboratory	1
Total Credits	**14**

Second Semester	
Distribution Requirements	6
DAN-250 Classical Ballet	3
ENG-120 Intro to Literature and Culture	3
THE-131 Acting I	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Third Semester	
Distribution Requirements	6
DAN-230 Jazz Dance I	3
Elective	3
THE-190 Theatre Laboratory	1
THE-232 Acting II	3
Total Credits	**16**

Fourth Semester	
Distribution Requirements	6
DAN-210 Modern Dance I	3
THE-214 Script Analysis	3
THE-216 Design for the Theatre	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Fifth Semester	
DAN-120 Tap Dance	3
THE-211 Theatre History I	3
THE-331 Acting III *or* THE-226 Scenic Painting I	3
THE-234 Directing I	3
THE-190 Theatre Laboratory	1
Elective	3
Total Credits	**16**

Sixth Semester	
Distribution Requirement	9
DAN-320 Dance Composition	3
THE-311 Theatre History II	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Seventh Semester	
Electives	9
Dance Elective	3
Theatre Elective	3
THE-190 Theatre Laboratory	1
THE-493 Senior Capstone	1
Total Credits	**14**

Eighth Semester	
Electives	9
Theatre Elective	3
THE-190 Theatre Laboratory	1
Total Credits	**13**

THEATRE ARTS, B.A.

Requirements

The Theatre Arts major is a diverse and balanced program that encourages many kind 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 45 credits of Theatre Arts classes and 39 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: Acting & Directing, Design & Tech, and Dance.

Recommended Course Sequence

First Semester	
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
THE-121 Stagecraft	3
THE-132 Voice & Diction I (OPO)	3
THE-190 Theatre Laboratory	1
Total Credits	**14**

Second Semester	
Distribution Requirements	6
THE-216 Design for the Theatre	3
ENG-120 Intro to Literature and Culture	3
[[THE-131 Acting I	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Third Semester	
Distribution Requirements	6
Elective	3
THE-190 Theatre Laboratory	1
THE-232 Acting II	3
Total Credits	**13**

Fourth Semester	
Distribution Requirements	9
Elective	3
THE-214 Script Analysis	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Fifth Semester	
Distribution Requirement	3
Electives	9
THE-190 Theatre Laboratory	1
THE-211 Theatre History I	3
Total Credits	**16**

Sixth Semester	
Distribution Requirement	3
Electives	6
THE-190 Theatre Laboratory	1
THE-311 Theatre History II	3
THE-234 Directing I	3
Total Credits	**16**

Seventh Semester	
Electives	9
THE-190 Theatre Laboratory	1
Theatre Elective	3
THE-393 Senior Capstone	1
Total Credits	**14**

Eighth Semester	
Electives	9
Theatre Elective	3
THE-190 Theatre Laboratory	1
THE-331 Acting III or	
THE-226 Scenic Painting	3
Total Credits	**16**

Theatre Arts majors may use their elective credits to earn a concentration in Acting & Directing, Design & Tech, or Dance.

THEATRE ARTS, B.A. - ACTING AND DIRECTING

Requirements

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 45 credits of Theatre Arts classes and 39 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: Acting & Directing, Design & Tech, and Dance.

Acting & Directing Concentration

THE-233 Voice & Diction II (3)
THE-331 Acting III (3)
THE-334 Directing II (3)
THE-431 Acting IV (3)
ENG/Dramatic Lit (6) - Choose two of the following
ENG-342 Studies in Shakespeare (3)
ENG-365 Studies in Modern Drama (3)
ENG-366 Studies in American or British Drama (3)

Recommended Course Sequence

First Semester	
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
THE-121 Stagecraft I	3
THE-132 Voice & Diction I (OPO)	3
THE-190 Theatre Laboratory	1
Total Credits	**14**

Second Semester	
Distribution Requirements	6
ENG-120 Intro to Literature and Culture	3
THE-131 Acting I	3
THE-190 Theatre Laboratory	1
THE-216 Design for the Theatre	3
Total Credits	**16**

Third Semester	
Distribution Requirements	6
Elective	3
ENG/Dramatic Lit	3
THE-190 Theatre Laboratory	1
THE-232 Acting II	3
Total Credits	**16**

Fourth Semester	
Distribution Requirements	9
Elective	3
THE-214 Script Analysis	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Fifth Semester	
Distribution Requirement	3
ENG/Dramatic Lit	3
THE-211 Theatre History I	3
THE-234 Directing I	3
THE-331 Acting III	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Sixth Semester	
Distribution Requirement	3
Elective	3
Theatre Elective	3
THE-311 Theatre History II	3
THE-334 Directing II	3
THE-190 Theatre Laboratory	1
Total Credits	**16**

Seventh Semester	
Electives	6
THE-232 Voice & Diction II	3
THE-431 Acting IV	3
THE-190 Theatre Laboratory	1
THE-493 Senior Capstone	1
Total Credits	**14**

Eighth Semester	
Electives	9
Theatre Elective	3
THE-190 Theatre Laboratory	1
Total Credits	**13**

THEATRE ARTS, B.A. - THEATRE DESIGN

Requirements

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 45 credits of Theatre Arts classes and 39 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: Acting & Directing, Design & Tech, and Dance.

Design & Tech Concentration

ART-111 Fundamentals of Color & Design (3) *or* THE-224 Rendering for the Theatre (3)
THE-220 Stagecraft II (3)
THE-225 Historic Scenic Styles (3)
THE-226 Scenic Painting I (3)
[[THE 321]] Scenic Design (3)
Design Elective (3) - Choose from:
- THE 191/291/391/491 Practicum (1-3)
- THE-322 Lighting Design (3)
- THE-326 Scenic Paining II (3)

Recommended Course Sequence

First Semester	
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
THE-121 Stagecraft I	3
THE-132 Voice & Diction I (OPO)	3
THE-190 Theatre Laboratory	1
Total Credits	**14**

Second Semester	
Distribution Requirements	6
ENG-120 Intro to Literature and Culture	3
THE-131 Acting I	3
THE-190 Theatre Laboratory	1
THE-216 Design for the Theatre	3
Total Credits	**16**

Third Semester	
Distribution Requirements	6
THE-190 Theatre Laboratory	1
THE-224 Rendering for the Theatre or ART-111 Fund. of Color & Design	3
THE-232 Acting II	3
Elective	3
Total Credits	**16**

Fourth Semester	
Distribution Requirements	9
THE-190 Theatre Laboratory	1
THE-214 Script Analysis	3
THE-321 Scenic Design	3
Total Credits	**16**

Fifth Semester	
Distribution Requirement	3
Electives	6
THE-190 Theatre Laboratory	1
THE-211 Theatre History I	3
THE-226 Scenic Painting I	3
Total Credits	**16**

Sixth Semester	
Distribution Requirements	3
Electives	6
THE-190 Theatre Laboratory	1
THE-234 Directing	3
THE-311 Theatre History II	3
Total Credits	**16**

Seventh Semester	
Electives	9
THE-190 Theatre Laboratory	1
THE-220 Stagecraft II	3
THE-225 Historic Scenic Styles	3
THE-493 Senior Capstone	1
Total Credits	**14**

Eighth Semester	
Electives	9
Theatre Electives	6
THE-190 Theatre Laboratory	1
Total Credits	**16**

DEPARTMENT OF AEROSPACE STUDIES

Department of Aerospace Studies

Chairperson: Lieutenant Colonel John Baum

Faculty

Professor: Lt. Col. Baum
Instructor: Captain Bierma

Aerospace Studies (Air Force ROTC)

Total minimum number of credits required for a minor in Aerospace Studies – 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 three-year program. Students with three years remaining until graduation may enroll concurrently in the freshman and sophomore Aerospace 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 (570-408-4860).

A minor in Aerospace Studies is available to students who complete a minimum of 22 semester hours including the following: up to 16 hours of Aerospace Studies courses (AS 101, 102, 201, 202, 301, 302, 401, 402) and 3 hours for AFROTC Field Training (4-week AFROTC Field Training AS 240), 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)

Business Administration Credits

BA 151 – Integrated Management Experience 3
BA 233 – The Legal Environment of Business 3
BA 234 – Business Law 3
BA 321 – Marketing 3
BA 326 – The Selling Process 3
BA 327 – Marketing Seminar 3
BA 341 – Managerial Finance 3
BA 351 – Management of Organizations and People 3
BA 352 – Production and Operations Management 3
BA 354 – Organizational Behavior 3
BA 356 – The Social Responsibility of Business 3

Communication Studies Credits

COM 101 – Fundamentals of Public Speaking 3
COM 102 – Principles of Communication 3
COM 201 – Advanced Public Speaking 3
COM 202 – Interpersonal Communication 3
COM 206 – Business and Professional Communication 3
COM 220 – Introduction to Telecommunications 3
COM 303 – Organizational Communication 3
COM 352 – Advanced Public Relations Campaigns 3
COM 361 – Feature Writing 3
COM 399 – Cooperative Education 1-6

History Credits

HST 101 – Historical Foundations of the World 3
HST 102 – Europe Before 1600 3
HST 125 – American History I 3
HST 126 – American History II 3
HST 328 – History of the Foreign Policy of the United States 3
HST 334 – The United States, 1900-1945 3
HST 335 – The United States Since 1945 3
HST 376 – World War II 3

Political Science Credits

PS 111 – Introduction to American Politics 3

PS 141 – Introduction to International Politics 3
PS 151 – Governments of the World 3
PS 212 – Urban Government and Politics 3
PS 213 – Political Parties and Political Participation 3
PS 221 – Introduction to Public Administration 3
PS 261 – Concepts and Methods in Political Science 3
PS 331 – The Constitution and the Federal System 3
PS 332 – Civil Rights and Liberties 3

General Military Course

(Four-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 the following: four one-credit Aerospace 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) at least twice weekly.

Field Training

Field training consists of a four-week, 3-credit Aerospace Studies course conducted at Maxwell AFB AL. It provides students an opportunity to 1) observe Air Force units and people at work, 2) participate in marksmanship, survival, athletics, and leadership training activities, 3) experience aircraft orientation flights, and 4) 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 Officer Course (POC)

The last two years of the program constitute the Professional Officer Course (POC). POC courses are open only to AFROTC cadets who have successfully completed Field Training or by permission of the Detachment Commander. The POC curriculum consists of the following: four three-credit Aerospace Studies courses; a non-credit leadership laboratory each semester; leadership studies; introduction to national security affairs; preparation for active duty; and Physical Training (PT) twice weekly.

Professional Development Training (PTD)

(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 area of 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 are provided by the Air Force. The participating cadet is also provided a nominal stipend during the program.

Benefits

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, combat system operators, engineers, missile or space operations officers, nurses, engineers, meteorologists, computer analysts, security forces, or any of a number of other career fields.

Scholarships

AFROTC offers 2.5 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 Aerospace Studies Department early in the fall semester. High school students wishing to compete for AFROTC college scholarships must complete and submit an application no later than 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 upon their academic year, and a $600 annual book allowance.

Uniforms and Materials

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

LEADING TO A COMMISSION IN THE UNITED STATES AIR FORCE

Recommended Course Sequence

General Military Course

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
Total Credits	**1**

Second Semester

AS 102 Foundations of the USAF II	1
AS 104 Leadership Laboratory	0
Total Credits	**1**

Third Semester

AS 201 Evolution of Air & Space Power I	1
AS 203 Leadership Laboratory	0
Total Credits	**1**

Fourth Semester

AS 202 Evolution of Air & Space Power II	1
AS 204 Leadership Laboratory	0
Total Credits	**1**

Variations in this schedule are possible. Sophomores with no AFROTC experience may enroll in both of the one-credit freshman and sophomore courses concurrently, under the "dual-enrollee" program).

Summer Field Training

Only one Field Training class is required.

Summer

AS 240 4-week AFROTC Field Training	3
Total Credits	3

Professional Officer Course

The Professional 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. 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
Total Credits	**3**

Sixth Semester

AS 302 Air Force Leadership Studies II	3
AS 304 Leadership Laboratory	0
Total Credits	**3**

Seventh Semester

AS 401 Nat'l Security Affairs/Active Duty Preparation I	3
AS 403 Leadership Laboratory	0
Total Credits	**3**

Eighth Semester

AS 402 Nat'l Security Affairs/Active Duty Preparation II	3
AS 404 Leadership Laboratory	0
Total Credits	**3**

DEPARTMENT OF COMMUNICATION STUDIES

Department of Communication Studies

Chairperson: Dr. Mark D. Stine

Faculty

Professor Emeritus: Kinney
Professor: Elmes-Crahall
Associate Professors: Estwick, Stine
Assistant Professors: Briceño, Churcher
Instructor: Mellon
Director of the Shelburne Television Center: Brigido
Radio Station Manager: Rock

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 in Communication Studies - 18

The major in Communication Studies is a student centered program that emphasizes excellence in professional skills, ethical standards, and provides the hands-on experience expected of tomorrow's communication leaders. Our mission is to develop civically engaged leaders who have the ability to integrate global and technical issues within the context of personal and professional excellence. The integration emerges from a focus on oral, written, and interpersonal skills, ethics, collaborative learning, research, and the value of diversity. The major offers concentrations in Strategic Communication, Rhetorical Studies, Media Production, and Multimedia Journalism.

COMMUNICATION STUDIES, MINOR

Requirements

Communication Studies Minor

Students who wish to minor in Communication Studies must meet the following requirements (18 credits):
COM-101: Fundamentals of Public Speaking
COM-102: Principles of Communication
COM-260: Basic Newswriting
And any three additional courses with a "COM" prefix.

COMMUNICATIONS, B.A. - MEDIA PRODUCTION CONCENTRATION

All students choosing to major in Communication Studies must fulfill specific department core requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows (29 credits):

COM-101	Fundamentals of Public Speaking
COM-102	Principles of Communication
COM-124	Mass Media Literacy
COM-144	Practicum (2 credits minimum with at least one in each concentration taken)
COM-202	Interpersonal Communication
COM-260	Basic Newswriting (WI)
COM-261	Multimedia Communication
COM-304	Intercultural Communication
COM-324	Communication Research Methods
COM-397	Senior Seminar

Concentration Requirements

MEDIA PRODUCTION

The Media Production concentration prepares students for working in the rapidly changing world of digital media. Students will learn the foundation skills of audio and video production in both studio and field settings in order to create and adapt information for a wide variety of purposes. Students learn to prepare content for a host of media production platforms including television, radio, and the Internet. This concentration also introduces students to the history, economics, regulations, and functions of the radio, television, cable and web-based media industries. It provides students with a combination of skills, performance, and theory that will enable graduates to seek employment in those industries.

All students concentrating in Media Production must take the following two courses (6 credits):

COM-220: Introduction to Electronic Media
COM-222: Broadcast Production

In addition, students pursuing a concentration in Broadcast Media will complete 6 credits selected from the following courses:

COM-223: The Art of Film
COM-320: Media Management
COM-322: Advanced Video Production
COM-323: Advanced Audio Production
COM-362: Mass Communication Law
COM-399/CPE-399: Cooperative Education

Recommended Course Sequence

First Semester Credits	
COM-101 Fundamentals of Public Speaking	3
Distribution Requirements	6
ENG-101 Composition or	4
Distribution Requirement	3
FYF-101 First-Year Foundations	3
Total Credits	15-16

Second Semester	
COM-102 Principles of Communication	3
COM-124 Mass Media Literacy	3
Distribution Requirements	6
ENG-101 Composition or	4
Distribution Requirement	3
Total Credits	15-16

Third Semester	
COM-202 Interpersonal Communication	3
COM-260 Basic Newswriting	3
Free Electives	9
COM-144 Practicum	1
Total Credits	16

Fourth Semester	
Concentration Selection	3
Distribution Requirements	9
COM-261 Multimedia Communication	3
Total Credits	15

Fifth Semester	
COM-304 Intercultural Communication	3
Concentration Selections	6
Free Electives	6
Total Credits	15

Sixth Semester	
Concentration Selection	3
COM-144 Practicum	1
Distribution Requirements	6
Free Electives	6
Total Credits	16

Seventh Semester	
COM-324 Research Methods	3
Free Electives	12
Total Credits	15

Eighth Semester	
COM-397 Senior Seminar	3
Free Electives	12
Total Credits	15

COMMUNICATIONS, B.A. - MULTIMEDIA JOURNALISM CONCENTRATION

All students choosing to major in Communication Studies must fulfill specific department core requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows (29 credits):

COM-101	Fundamentals of Public Speaking
COM-102	Principles of Communication
COM-124	Mass Media Literacy
COM-144	Practicum (2 credits minimum with at least one in each concentration taken)
COM-202	Interpersonal Communication
COM-260	Basic Newswriting (WI)
COM-261	Multimedia Communication
COM-304	Intercultural Communication
COM-324	Communication Research Methods
COM-397	Senior Seminar

Concentration Requirements

MULTIMEDIA JOURNALISM

The multimedia journalism concentration prepares students for this continually evolving field where new trends and technologies arc constantly having an impact on traditional practices. The Communication Studies Department addresses this transformation by incorporating these changes into its classes or developing new courses that deal with specific needs in the field. However, the core to any journalism training is the ability to work with words, gather information and synthesize that into meaningful messages for its intended audience regardless of format- print, broadcast or digital.

All students pursuing a concentration in Multimedia Journalism must take the following two courses (6 credits):

COM-321: Advanced Multimedia Reporting
COM-362: Mass Communication Law

In addition, students pursuing a concentration in Multimedia Journalism will complete 6 credits selected from the following courses:

COM-262: Visual Communications
COM-300: Communication Criticism
COM-302: Fundamentals of Public Relations
COM-361: Feature Writing
COM-399/CPE-399: Cooperative Education

Recommended Course Sequence

First Semester Credits	
COM-101 Fundamentals of Public Speaking	3
Distribution Requirements	6
ENG-101 Composition or	4
Distribution Requirement	3
FYF-101 First-Year Foundations	3
Total Credits	15-16

Second Semester	
COM-102 Principles of Communication	3
COM-124 Mass Media Literacy	3
Distribution Requirements	6
ENG-101 Composition or	4
Distribution Requirement	3
Total Credits	15-16

Third Semester	
COM-202 Interpersonal Communication	3
COM-260 Basic Newswriting	3
Free Electives	9
COM-144 Practicum	1
Total Credits	16

Fourth Semester	
Concentration Selection	3
Distribution Requirements	9
COM-261 Multimedia Communication	3
Total Credits	15

Fifth Semester	
COM-304 Intercultural Communication	3
Concentration Selections	6
Free Electives	6
Total Credits	15

Sixth Semester	
Concentration Selection	3
COM-144 Practicum	1
Distribution Requirements	6
Free Electives	6
Total Credits	16

Seventh Semester	
COM-324 Research Methods	3
Free Electives	12
Total Credits	15

Eighth Semester	
COM-397 Senior Seminar	3
Free Electives	12
Total Credits	15

COMMUNICATIONS, B.A. - RHETORICAL STUDIES CONCENTRATION

All students choosing to major in Communication Studies must fulfill specific department core requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows (29 credits):

COM-101	Fundamentals of Public Speaking
COM-102	Principles of Communication
COM-124	Mass Media Literacy
COM-144	Practicum (2 credits minimum with at least one in each concentration taken)
COM-202	Interpersonal Communication
COM-260	Basic Newswriting (WI)
COM-261	Multimedia Communication
COM-304	Intercultural Communication
COM-324	Communication Research Methods
COM-397	Senior Seminar

Concentration Requirement

RHETORICAL STUDIES

The Rhetorical Studies concentration rests on the premise that, in order to be responsible citizens, we must be critical, ethically minded producers and consumers of a wide variety of publicly communicated messages. Contemporary rhetorical scholars inquire into the development and consumption of many of these kinds of messages, including presidential addresses, social movement discourse, radio, films and television shows, and digital communication. Keeping this context in mind, students arc challenged to improve their rhetorical skills by crafting, delivering, and critiquing public presentations, practicing the rhetorical arts of listening and silence, deliberating across differences, and analyzing public discourse. As they apply these skills, students engage in critical thinking, gain a deeper understanding of their roles and responsibilities as citizens in a deliberative democracy, and improve their understanding of the power of rhetoric when adapted and communicated effectively in diverse settings.

All students pursuing a concentration in Rhetorical Studies are required to take the following two courses (6 credits):

COM-300: Communication Criticism
COM-301: Persuasion

In addition, students pursuing a concentration in Rhetorical Studies will take 6 credits selected from the following courses:

COM-201: Advanced Public Speaking
COM-204: Argumentation and Debate
COM-305: Studies in Public Address
COM-399/CPE-399: Cooperative Education

Recommended Course Sequence

First Semester Credits	
COM-101 Fundamentals of Public Speaking	3
Distribution Requirements	6
ENG-101 Composition or	4
Distribution Requirement	3
FYF-101 First-Year Foundations	3
Total Credits	15-16

Second Semester	
COM-102 Principles of Communication	3
COM-124 Mass Media Literacy	3
Distribution Requirements	6
ENG-101 Composition or	4
Distribution Requirement	3
Total Credits	15-16

Third Semester	
COM-202 Interpersonal Communication	3
COM-260 Basic Newswriting	3
Free Electives	9
COM-144 Practicum	1
Total Credits	16

Fourth Semester	
Concentration Selection	3
Distribution Requirements	9
COM-261 Multimedia Communication	3
Total Credits	15

Fifth Semester	
COM-304 Intercultural Communication	3
Concentration Selections	6
Free Electives	6
Total Credits	15

Sixth Semester	
Concentration Selection	3
COM-144 Practicum	1
Distribution Requirements	6
Free Electives	6
Total Credits	16

Seventh Semester	
COM-324 Research Methods	3
Free Electives	12
Total Credits	15

Eighth Semester	
COM-397 Senior Seminar	3
Free Electives	12
Total Credits	15

COMMUNICATIONS, B.A. - STRATEGIC COMMUNICATION CONCENTRATION

All students choosing to major in Communication Studies must fulfill specific department core requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows (29 credits):

COM-101	Fundamentals of Public Speaking
COM-102	Principles of Communication
COM-124	Mass Media Literacy
COM-144	Practicum (2 credits minimum with at least one in each concentration taken)
COM-202	Interpersonal Communication
COM-260	Basic Newswriting (WI)
COM-261	Multimedia Communication
COM-304	Intercultural Communication
COM-324	Communication Research Methods
COM-397	Senior Seminar

Concentration Requirements

STRATEGIC COMMUNICATION

The strategic communication concentration, which blends theory with practice, focuses on the ways in which organizations use interpersonal and ever-evolving media channels to establish mutually beneficial relationships and to accomplish specific goals. Students in this concentration will gain real world experience working with businesses and nonprofit organizations. Students will also focus on learning the theories and ethical practices of strategic communication, persuasion and public relations while developing a range of communication skills appropriate for professional settings.

All students pursuing a concentration in Strategic Communication will take the following two courses (6 credits):

COM-302: Fundamentals of Public Relations
COM-303: Organizational Communication
In addition, students pursuing a concentration in Strategic Communication will complete 6 credits selected from the following courses:

COM-203: Small Group & Team Communication
COM-206: Business and Professional Communication
COM-300: Communication Criticism
COM-301: Persuasion
COM-352: Advanced Public Relations Campaigns
COM-372: Managing a Public Relations Agency
COM-399/CPE-399: Cooperative Education

Recommended Course Sequence

First Semester Credits	
COM-101 Fundamentals of Public Speaking	3
Distribution Requirements	6
ENG-101 Composition **or**	4
Distribution Requirement	3
FYF-101 First-Year Foundations	3
Total Credits	**15-16**

Second Semester	
COM-102 Principles of Communication	3
COM-124 Mass Media Literacy	3
Distribution Requirements	6
ENG-101 Composition **or**	4
Distribution Requirement	3
Total Credits	**15-16**

Third Semester	
COM-202 Interpersonal Communication	3
COM-260 Basic Newswriting	3
Free Electives	9
COM-144 Practicum	1
Total Credits	**16**

Fourth Semester	
Concentration Selection	3
Distribution Requirements	9
COM-261 Multimedia Communication	3
Total Credits	**15**

Fifth Semester	
COM-304 Intercultural Communication	3
Concentration Selections	6
Free Electives	6
Total Credits	**15**

Sixth Semester	
Concentration Selection	3
COM-144 Practicum	1
Distribution Requirements	6
Free Electives	6
Total Credits	**16**

Seventh Semester	
COM-324 Research Methods	3
Free Electives	12
Total Credits	**15**

Eighth Semester	
COM-397 Senior Seminar	3
Free Electives	12
Total Credits	**15**

DEPARTMENT OF EDUCATION

Department of Education - Undergraduate

Chairperson: Dr. Diane Polachek

Faculty

Professor: Polachek
Associate Professors: Gardner, Murray-Galella
Assistant Professor: Frantz-Fry
Faculty of Practice: Kaster, Thomas
Faculty Emeriti: J. Bellucci, Fahmy, Johnson

The Education Department Programs

Mission of the Teacher Education Program

The Mission of the Teacher Education Program is to provide the educational community and society at large with competent, caring, and ethical educators who are life-long 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 candidates to meet the diverse needs of all students within the learning community.

The Teacher Education Program (TEP) information in this *2015-16 Undergraduate Bulletin* addresses new certification programs mandated by the Pennsylvania Department of Education (PDE) that will be followed by all students starting in Fall 2010 or after. The programs are:

1. Pre-kindergarten through fourth grade (PK-4) certification has replaced the Kindergarten through sixth grade (K-6) certification.
2. Special education concentrations that specify a grade band of Pre-kindergarten through eighth grades (PK-8) *or* seventh through twelfth grades (7-12) have replaced the Pre-kindergarten through twelfth grade (PK-12) generalist certificate.
3. Middle Level certification in grades four through eight (4-8) with five areas of concentration: Mathematics, Science, English, Language Arts and Reading, Social Studies, and Mathematics/Science.
4. Secondary Education grades 7-12, with teacher certification in Biology, Chemistry, English, Earth & Space Science (with a major in Earth and Environmental Sciences), Physics, Spanish, and Social Studies (with a major in History or Political Science).

Students should regularly consult with their academic advisors and the Education Department for any changes or considerations. The Education Department maintains specific advising checklists and policy documents to guide students in their respective programs.

Teacher Education Program Admission Requirements:

Students preparing for teacher certification must be formally admitted to the Teacher Education Program at Wilkes University. Students are expected to review and comply with all policies of the Wilkes University Education Teacher Education Program and of the Pennsylvania Department of Education.

NOTE: Policies may change or be revised according to new or updated Pennsylvania Department of Education regulations.

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

Students pursuing teacher certification at Wilkes University must comply with the following:

1. complete 48 semester hour credits (including six credits of Mathematics and six credits of English as required by the PDE)
2. submit current, valid Act 34 State Police Criminal Record Check, ACT 151 Child Abuse History Clearance, Act 114 FBI Fingerprint Check, and Act 24 Arrest/Conviction Report and Certification Form, which report "no record"; and
3. complete and submit formal the *Teacher Education Program Application*, personal Philosophy of Education, Disposition Assessment, signed Code of Professionalism and Academic Honesty, and a signed *Student Acknowledgement of Grade Point Average (GPA) and Test of Basic Skills Policy of the Wilkes University Education Department.* This process is completed during ED 190 or upon transfer from another institution. See below for the charts from the Pennsylvania Department of Education indicating required scores for all tests of basic skills.
4. Also, prior to registering for

- ED 190: Effective Teaching with Field Experience and
- ED 191: Integrating Technology into the Classroom
    - earn a final course grade of 2.50 in ED 180: Educational Psychology and
    - achieve an overall Grade Point Average (GPA) of 2.50.

5. Prior to registering for

- ED 220:Teaching Culturally and Linguistically Diverse Learners
- EDSP 210: Teaching Students with Special Needs
    - earn a final course grade of 2.5 in ED 190 and ED 191

- earn an overall Grade Point Average (GPA) of 2.85
- submit exemption qualifying SAT/ACT scores OR
- complete practice modules of the Reading, Mathematics, and Writing tests available at http://www.longsdalepub.com/courses/papa/ or the designated pre-test site chosen by the Education Department. Registration information is available from the Education Department.

6. Prior to registering for

- ED 263: Child Development and Cognition I (15 hours of field experience)
- ED 264: Child Development and Cognition II (30 hours of field experience)
- EDSP 225: Special Education Methodology I with Field Experience (30 hours)
- EDSP 226: Special Education Methodology II with Field Experience (20 hours)
- EDSP 227: Behavior Management with Field Experience (20 hours)
  - earn a final course grade of 2.50 in ED 190 and ED 191 and
  - earn an overall Grade Point Average (GPA) of 2.85 and
  - submit qualifying SAT scores (of at least 1550, with no score lower than 500 in each area) or ACT scores of at least 23 OR
  - complete all modules of the PAPA test: Reading, Mathematics, and Writing. Registration information is available at http://www.pa.nesinc.com OR
  - complete all tests of the Praxis Core Academic Skills for Educators (CORE): Reading, Mathematics, and Writing. Registration information is available at www.ets.org/praxis/pa

7. Prior to admission to

- the Teacher Education Program and
- to registering for any 300-level Education course and/or content methods course
  - pass all modules of a test of basic skills in Reading, Writing, and Mathematics or have earned SAT/ACT scores that qualifies student for the exemption *(see below for passing score information)*
  - earn a 3.0 Grade Point Average (GPA)
  - submit the Teacher Education Program Application and other required materials.

It is the student's responsibility to ensure that official test score reports are on file in the Education Department Office and to remain informed about his/her own grade point average.

8. maintain a cumulative 3.0 GPA in order to be retained in the program following formal admission (as required by PDE).

Information about the Entrance Tests of Basic Skills Required for Admission the Teacher Education Program

2014-2015 Pennsylvania Department of Education (PDE) Bureau of School Leadership and Teacher Quality Certifying Tests and Qualifying Scores Last Update 12/30/2014

I. Alternate Basic Skills Assessments (SAT or ACT)

Test Name	Minimum Score per Section	Minimum Combined Score	Test Vendor
SAT Reading, Mathematics and Writing	Critical Reading - 500	1500	College Board
	Mathematics - 500		
	Writing - 500		
ACT English/Writing and Mathematics	English/Writing - 22; Mathematics - 21	23	ACT

II. Pre-Service Academic Performance Assessment (PAPA):

Test Name	Test Number	Test Vendor	Qualifying Score	Minimum Composite Score
(PAPA) Reading	8001	ES Pearson	220	193
(PAPA) Mathematics	8002	ES Pearson	220	197
(PAPA) Writing	8003	ES Pearson	220	192

Composite Score Method– PAPA Tests Minimum Composite Score Total: 686. Sum of the 3 PAPA tests must total or exceed 686. This total does not represent the sum of the 3 minimum scores. Candidates must achieve a Qualifying Score in at least one PAPA area and also reach the Minimum Composite Score Total of 686 when all three test scores are added together.

III. Praxis Core Academic Skills for Educators Tests (CORE) for Instructional Candidates

CORE Test	Test Number	Test Provider	Passing Score	Minimum Composite Score
Reading	5712	ETS	156	148
Writing	5722	ETS	162	158
Mathematics	5732	ETS	150	142

Composite Score Method– Praxis CORE Tests: Minimum Composite Score Total: 475 . Sum of the three CORE tests must total or exceed 475. This total does not represent the sum of the three minimum scores. Candidates must achieve a Qualifying Score in at least one CORE area and also reach the Minimum Composite Score Total of 475 when all three test scores are added together.
PDE maintains a website with the most current information; please check this site in the event information has been updated: http://www.portal.state.pa.us/portal/server.pt/community/testing_requirements/8638

Teacher Education Program Student Teaching Requirements:

1. Successful completion of the requirements for TEP Admission and Retention;
2. Achievement of the major and minor GPA requirements;
3. Attendance at the Student Teaching Placement Meeting in the semester prior to student teaching;
4. Completion of all required paperwork obtained at the Student Teaching Placement Meeting in the semester prior to student teaching'
5. Submission of all clearances with no offenses;
6. Completion of all required course work and fieldwork, with the exception of ED 390: Student Teaching and EDSP 388: Inclusionary Practice;
7. Registration form with advisor's signature for PK-4 and Middle Level Education majors; or
8. For Secondary Education majors or minors, approval of student teaching eligibility by the major content area academic department chair and advisor, the Education Department, and the Teacher Education Committee.

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. Students should not plan to work while student teaching.

Teacher Education Program Requirements for Graduation and Certification

1. Meet the major and minor GPA requirements;
2. Completed all Wilkes University and TEP requirements;
3. Successfully complete Student Teaching, including satisfactory scores on each category of the Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430);
4. Provide evidence of passing scores on all relevant PRAXIS II tests or PECT (PA Educator Certification Tests) for the appropriate area or subjects. *NOTE: A student may graduate without passing all PRAXIS II tests or PECT, but cannot obtain PDE certification;*
5. Complete the Wilkes University application for graduation, which is provided by the University Registrar;
6. Review and complete the graduation audit with academic advisor and submit documentation to Student Services;
7. Submit PDE Application online via TIMS (Teacher Information Management System).

NOTE: Program Requirements may change at the discretion of the Pennsylvania Department of Education.

Information about the Exit Tests Required for Specific Certification Areas

PRAXIS II or PECT tests should be taken prior to student teaching and/or at the conclusion of studies in student's major field. Educational Testing Service (ETS) schedules administration of PRAXIS II tests at intervals throughout the year. Refer to www.ets.org/praxis for specific dates, locations, and times. Pearson administers PECT tests for Special Education and PreK-4; information about specific dates, locations, and times is available at http://www.pa.nesinc.com.

Major	Test(s)	Required for	Passing Score
Secondary Education Certification (7-12) Praxis II			
Biology	Biology: Content Knowledge (0235)	Certification in Biology 7-12	147
Chemistry	Chemistry: Content Knowledge (0245)	Certification in Chemistry 7-12	154
Earth & Environmental Science	Earth & Space Science: Content Knowledge (0571)	Certification in Earth & Space Science 7-12	157
General Science: Content Knowledge (0435)	Certification in General Science 7-12	146	
English	English Language Arts: Content Knowledge (5038)	Certification in English 7-12	167
History	Social Studies: Content Knowledge (0081 or 5081)	Certification in Social Studies 7-12	157
Mathematics	Mathematics: Content Knowledge (5161)	Certification in Mathematics 7-12	160
Political Science	Social Studies: Content Knowledge (0081 or 5081)	Certification in Social Studies 7-12	157
Spanish	Spanish: World Language (5195) *and* Fundamental Subjects: Content Knowledge (0511 or 5511)	Certification in Spanish K-12	166 Spanish & 150 Fundamental Subjects
Middle Level (4-8) Praxis II			
Middle Level	PA Grades 4-8 Core Assessment (5152)	Certification in Middle Level	NA
	Pedagogy Subtest (5153)		162
	English Language Arts & Social Studies Subtest (5154)		152
	Mathematics and Science Subtest (5155)		164
Middle Level	PA Grades 4-8 Subject Concentration: Social Studies (5157)	Certification in Middle Level Social Studies	150
Middle Level	PA Grades 4-8 Subject Concentration: English/Language Arts (5156)	Certification in Middle Level: English & L.A.	156
Middle Level	PA Grades 4-8 Subject Concentration: Mathematics (5158)	Certification in Middle Level Mathematics	173
Middle Level	PA Grades 4-8 Subject Concentration: Science (5159)	Certification in Middle Level: Science	156
Elementary and Early Childhood (PreK-4) PECT			
Special Education Tests PECT			
Elementary and Early Childhood	PreK-4 (PECT)	PreK-4 Certification	220
Dual Level Certification in Special Education (for both PreK-4 and Middle Level)	Special Education PreK-8 (PECT)	Certification in Special Education PreK-8	220
Dual Certification in Special Education	Special Education 7-12 (PECT)	Certification in Special Education 7-12	220

Elementary and Early Childhood Education

Total minimum number of credits required for a major in Elementary and Early Childhood Education Leading to the B.A. degree — 124.
Total minimum number of credits required for a major in Elementary and Early Childhood Education leading to the B.A. degree with Dual Special Education Certification - 134

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 and Early Childhood Education Major

Elementary and 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. Elementary and Early Childhood Education majors take methods of teaching courses in reading, language arts, mathematics, science, social studies, the arts, physical education and health, 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, appropriate basic skills assessments, and student teaching;
2. complete the following General Education Curriculum requirements:

- Oral Communications - fulfilled by OPO courses in Education major;
- Computer Literacy - CS 115 (3 cr.)
- English Composition and Literature - 7 credits, completed within the first 48 credit hours as required by the PDE:
  ENG 101—Composition (4 cr.)
  ENG 120—Introduction to Literature and Culture (3 cr.)
- Foreign Language or Philosophy - 3 credits (Foreign Language is highly recommended)
- First-Year Foundations - FYF 101 (3 cr.)
- History - 6 credits:
  HST 101--Historical Foundations of the Modern World
  HST 125—American History I
- Mathematics - 6 credits, completed within first 48 credit hours as required by the PDE:
  MTH 103—Mathematics for Elementary School Teachers I
  MTH 104—Mathematics for Elementary School Teachers II
  or two higher numbered courses in mathematics
- Psychology - 3 credits:
  PSY 101—General Psychology
- Science - 6 credits in two different areas and at least one course that includes a laboratory component:
  Biology —BIO 105 or higher
  Earth Environmental Sciences—EES 105 or higher
  Chemistry —CHM 105 or higher
  Physics —PHY 105 or higher
- Social Sciences - 3 credits in one of the following areas:
  Anthropology —ANT 101 - Introduction to Anthropology or
  Economics—EC 102 - Principles of Economics II or
  Political Science—PS 111 - Introduction to American Politics (highly recommended) or
  Sociology —SOC 101 - Introduction to Sociology
- Visual and Performing Arts - 3 credits in one of the following areas:
  ART 101 - Experiencing Art or
  DAN 100 - Dance Appreciation: Comprehensive Dance Forms or
  MUS 101 - Introduction to Music I or
  THE 100 - Approach to Theatre

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)

- To enroll in ED 190, students must have a minimum GPA of 2.5, Field Experience Placement Form completed, and current, valid Act 34 State Police Criminal Record Check, Act 151 Child Abuse History Clearance, Act 114 FBI Fingerprint Check, and Act 24 Arrest/Conviction Report and Certification Form which report "no record" submitted to the Coordinator of Field Placements before established deadlines.
- Students must earn a grade of 2.5 or higher in ED 190 to proceed to other Education courses.
- ED 191 - Integrating Technology into the Classroom (C.I. course).
- Students must have a minimum GPA of 2.5 to enroll in ED 191 and have completed or be enrolled in ED 190.
- Students must earn a final grade of 2.5 or higher in ED 191 to proceed to other Education courses.

NOTE: Students must earn a cumulative GPA of 2.85 or higher to proceed to 200-level Education courses.

- EDSP 210 - Teaching Students with Special Needs
- ED 220 - Teaching Culturally and Linguistically Diverse Learners
- EDSP 225 - Special Education Methodology I with Field Experience (30 hours of field experience; OPO course)
- ED 263 - Child Development and Cognition I (15 hours of field experience)
- ED 264 - Child Development and Cognition II (30 hours of field experience)

NOTE: Students must meet all the requirements for and be admitted to the Teacher Education Program to proceed to all 300-level Education courses.

- 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
- ED 323 - Differentiated Reading
- ED 324 - Children's Literature
- ED 325 - Applied Reading Strategies (15 hours of field experience; Prerequisite: ED 321)
- ED 330 - Mathematics in Early Childhood and Elementary Education
- ED 341 - Language Arts in Early Childhood and Elementary Education (OPO course)
- ED 344 - Assessment in Early Childhood and Elementary Education (This course replaces 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 in Early Childhood and Elementary Education
- ED 360 - Social Studies in Early Childhood and Elementary Education
- ED 363 - School, Family, and Community (This course is not required 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)

Students should regularly consult with their academic advisors and the Education Department for any changes or considerations. The Education Department maintains specific advising checklists and policy documents to help guide students in their respective programs.

Middle Level Education

Total minimum number of credits required for a major in Middle Level Education leading to the B.A. Degree - 120.

Total minimum number of credits required for a major in Middle Level Education leading to the B.A. degree with Dual Special Education Certification - credits vary according to concentration.

Mission of the Middle Level Education Program

The mission of the Middle Level Education Program is to develop competent, caring, and ethical educators with strong subject matter content preparation and authentic, clinical field experiences. This preparation will address the broad set of issues, knowledge, and competencies that are relevant to middle school teaching and learning in Science, Mathematics, English/Language Arts and Reading, and Social Studies. Equipped with this knowledge and these skills, the teaching candidates will enable their students in grades four through eight to achieve academic success.

Middle Level Education is a major leading to fourth through eighth grade (4-8) certification. Candidates will choose to complete one of the following middle level concentration areas:

- English/Language Arts/Reading
- Mathematics
- Science
- Social Studies
- Mathematics and Science

Middle level education majors take courses in methods of teaching, educational theory and practice, as well as content courses across all four concentrations. All middle level education students must complete the following requirements:

1. complete all coursework, field experiences, clearances, appropriate basic skills and mastery tests, and student teaching;
2. complete the following General Education Curriculum Requirements:

- Oral Communications - fulfilled by OPO courses in the Education major;
- Computer Literacy - 3 credits CS 115 (3cr.)
- English Composition and Literature - 7 credits, completed 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 - FYF 101 (3 cr.)
- History - 3 credits
  HST 101-- Historical Foundations of the Modern World
  Mathematics - 6 credits, completed within first 48 credit hours as required by the PDE; refer to math requirement for each concentration area
- Psychology - 3 credits: PSY 101—General Psychology
- Science - 6 credits in two different areas and at least one course that includes a laboratory component;refer to science requirement for each concentration area
- Social Sciences - 3 credits; refer to Social Science requirement for each concentration area
- 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 180 - Educational Psychology
- ED 190 - Effective Teaching with Field Experience (40 hours)
- To enroll in ED 190, students must have a minimum GPA of 2.5,Field Experience Placement Form completed, and current, valid Act 34 State Police Criminal Record Check, Act 151 Child Abuse History Clearance, Act 114 FBI Fingerprint Check, and Act 24 Arrest/Conviction Report and Certification Form which report "no record" submitted to the Coordinator of Field Placements before established deadlines.
- Students must earn a grade of 2.5 or higher in ED 190 to proceed to other Education courses.
- ED 191 - Integrating Technology into the Classroom (C.I. course)
- Students must have a minimum GPA of 2.5 to enroll in ED 191 and have completed or be enrolled in ED 190.
- Students must earn a final grade of 2.5 in ED 191.

NOTE: Students must earn a cumulative GPA of 2.85 or higher to proceed to 200-level Education courses.

- EDSP 210 - Teaching Students with Special Needs
- ED 220 - Teaching Culturally and Linguistically Diverse Learners
- EDSP 225 - Special Education Methodology I with Field Experience (30 hours; OPO course)

NOTE: Students must meet all the requirements for and be admitted to the Teacher Education Program to proceed to all 300-level Education courses.

- ED 326 - Adolescent Literature (English, Language Arts and Reading Concentration only)
- ED 345 - Assessment in Education
- ED 375 - Middle Level and Secondary Education Methods with Field Experience (40 hours; 4 credits)
- ED 380 - Content Area Literacy (this course is replaced by EDSP 302 - Special Education Methods - for students completing the dual certification in Middle Level and Special Education, 4-8)
- EDSP 388 - Inclusionary Practices (taken in conjunction with ED 390)
- Methods courses as relevant to specialization (40 hours of field experience; 4 credit courses);
    - English concentration - ENG 393;
    - Science concentration - ED 371;
    - Social Science concentration - ED 381;
    - Mathematics concentration - MTH 303;
    - Mathematics and Science concentration - MTH 303 and ED 371

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

ENGLISH/LANGUAGE ARTS/READING CONCENTRATION: Candidates will complete all afore-cited General Education, Education and Methods requirements in addition to the following content courses:

- ENG 201, 225, and three of the following English courses: ENG 233, 234, 281 (recommended), 282 (recommended), and ENG 324
- MTH 101, 103, 104, and 150
- HST 125
- BIO 105, EES 105, CHM 105, PHY 105
- PS 111

MATHEMATICS CONCENTRATION: Candidates will complete all afore-cited General Education, Education and Methods requirements in addition to the following content courses:

- MTH 101, 103, 104, 111, 114, 150, 231, and 343
- ENG 201 and 225
- BIO 105, EES 105, CHM 105, PHY 105
- HST 125
- PS 111

SCIENCE CONCENTRATION: Candidates will complete all afore-cited General Education, Education and Methods requirements in addition to the following content courses:

- BIO 121, 122, 225
- EES 211, 251, 280
- CHM 105
- PHY 105
- ENG 201 and 225
- MTH 101, 103, 104, and MTH 150
- HST 125
- PS 111

SOCIAL STUDIES CONCENTRATION: Candidates will complete all afore-cited General Education, Education and Methods requirements in addition to the following content courses:

- HST 102, 125, 126, and 325 or 356 or another approved 300-level history course
- EC 102
- PS 111
- PS 141 or 151
- SOC 101 or ANT 101
- ENG 201 and 225
- MTH 101, 103, 104, and 150
- BIO 105, EES 105, CHM 105, and PHY 105

MATHEMATICS AND SCIENCE CONCENTRATION: Candidates will complete all afore-cited General Education, Education and Methods requirements in addition to the following content courses:

- BIO 105, 121, 122; CHM 105; PHY 105; and EES 105, EES 211
- MTH 103, 104, 111, 114, and 150
- ENG 201 and 225
- HST 125
- PS 111

Middle Level Education Major with Dual Special Education Certification

Students majoring in Middle Level Education and also pursuing dual certification in Special Education PK-8 will complete the following courses in addition to the afore-cited Middle Level Education program requirements (not 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 and Secondary Education Methods with Field Experience 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.

Secondary Education Programs of Study for the Major and Minor Leading to Secondary Certification

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 Science, English, General Science, Mathematics, Physics; Social Studies, and 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. Students may choose to major or minor in Secondary Education; both the major and the minor lead to certification.

Beginning in 2015-2016, students may choose to pursue a major in Secondary Education, but it is important to note that the major in Secondary Education is *not* a stand-alone major. It must be taken in conjunction with one of the nine content area certification majors. English, History, Mathematics, and Spanish are the four content majors at Wilkes University that would readily accommodate the option for students to complete a Secondary Education major within an eight-semester timeframe. The other five content majors—Biology, Chemistry, Earth and Environmental Science, Physics, and Political Science—may not readily allow for completion of a major in Secondary Education within an eight-semester timeframe. However, students in these five majors may choose to pursue a major in Secondary Education if they are willing to take coursework beyond the eight semesters. Students in all nine majors have the option of pursuing the minor in Secondary Education.

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

- **Schedule a 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 programs of study in their academic major and the Education courses that will lead to certification.
- **Study major area of study and declare the major or minor in Secondary Education:** Students should begin their studies in an academic major related to certification and declare Secondary Education as a major or minor.
- **Fulfill English and Mathematics Requirements:** As required by the PDE, within the first 48 credit hours, students 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 and earn a final grade of 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, however, 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), Act 114 (Federal Criminal History) and Act 124 (Arrest Conviction Report and Certification Form) 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 University.

- **Apply for admission to the 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 PAPA exams or have achieved the required SAT or ACT scores in high school.
- **Pass all modules of a test of basic skills** in Reading, Writing, and Mathematics (PAPA or Praxis CORE **or** have earned SAT/ACT scores that qualifies student for the exemption) to register for any 300-level course related to the minor in Secondary Education.
- **Achieve the 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. Then, to enter 300-level courses, students must achieve a 3.0 GPA.
- **Register for and pass PRAXIS II:** Preferably prior to student teaching or at the conclusion of formal studies in the chosen major field, or prior to student teaching, 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 PAPA tests are not passed before enrolling in 300-level courses.

The Secondary Education Major* and Minor

The Education minor consists of the following courses:

ED 180 - Educational Psychology

ED 190 Effective Teaching with Field Experience (40 hours)

- To enroll in ED 190, students must have a minimum GPA of 2.5, *Field Experience Placement Form* completed, and current, valid Act 34 State Police Criminal Record Check, ACT 151 Child Abuse History Clearance, Act 114 FBI Fingerprint Check, and Act 24 Arrest/Conviction Report and Certification Form which report "no record" submitted to the Coordinator of Field Placements before established deadlines.
  Students must earn a grade of 2.5 or higher in ED 190 to proceed to other Education courses.

ED 191 - Integrating Technology into the Classroom (C.I. course).

- Students must have a minimum GPA of 2.5 to enroll in ED 191 and have completed or be enrolled in ED 190.

ED 220: Teaching Culturally and Linguistically Diverse Learners

EDSP 210: Teaching Students with Special Need

- Students must earn a final course grade of 2.5 in ED 190 and ED 191
- Students must earn an overall Grade Point Average (GPA) of 2.85
- Students must submit exemption qualifying SAT/ACT scores OR
- Students must complete practice modules of the Reading, Mathematics, and Writing tests available at http://www.longsdalepub.com/courses/papa/ or the designated pre-test site chosen by the Education Department. Registration information is available from the Education Department.

EDSP 225 - Special Education Methodology I with Field Experience (30 hours of field experience; OPO course)

- Students must earn a final course grade of 2.50 in ED 190 and ED 191 and
- Students must earn an overall Grade Point Average (GPA) of 2.85 and
- Students must submit qualifying SAT scores (of at least 1550, with no score lower than 500 in each area) or ACT scores of at least 23 OR
- Students must complete all modules of the PAPA test: Reading, Mathematics, and Writing. Registration information is available at http://www.pa.nesinc.com OR
- Student must complete all tests of the Praxis Core Academic Skills for Educators (CORE): Reading, Mathematics, and Writing. Registration information is available at www.ets.org/praxis/pa

NOTE: Students must meet all the requirements for and be admitted to the Teacher Education Program to proceed to all 300 level Education courses.

*ED 345 - Assessment in Education (required for major only)

*ED 375 – Middle Level and Secondary Education Methods with Field Experience (40 hours) (required for major only)

ED 380 - Content Area Literacy (*not* required for English majors who are only pursuing the minor.)

ED 3XX (Secondary Methods course in the area of the major degree)

These method courses are offered in the fall semester, *except* MTH 303, which is offered *in odd years only*.

- ED 300 - Teaching of Foreign Languages with Field Experience (40 hours)
- ED 371 - Teaching Methods in Science with Field Experience (40 hours)
- ED 381 - Teaching Methods Social Studies with Field Experience (40 hours)
- ENG 393 - The Teaching of English with Field Experience (40 hours)
- MTH 303 - The Teaching of Mathematics with Field Experience (40 hours)

- EDSP 388 - Inclusionary Practices (3 credits; co-requisite: ED 390)
- ED 390 - Student Teaching with Seminar (12 credits; OPO course)

Other *recommended* courses for Secondary Education are

- 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:** Students seeking 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:
  - BIO 121 – Principles of Modern Biology I
  - BIO 122 – Principles of Modern Biology II
  - BIO 225 – Population and Evolutionary Biology
  - BIO 226 – Cellular and Molecular Biology
  - BIO 391 – Senior Research Project I
  - BIO 392 – Senior Research Project II
  - BIO 397 – Professional Preparation Techniques
  - CHM 113 – Elements and Compounds Lab
  - CHM 115 – Elements and 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
  - MTH 111 – Calculus I
  - MTH 114 – Calculus
  - PHY 171 – Principles of Classical and Modern Physics
  - PHY 174 – Application of Classical and Modern Physics
  - Major Electives (12 – 16 credits): One from each of the four areas: Molecular and Cellular; Structural and Functional; Diversity and Populational; and Botanical

In addition, students must take PSY 101 (General Psychology) and the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

- **Chemistry:** 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 113 – Elements and Compounds Lab
  - CHM 115 – Elements and 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
  - CHM 246 – Analytical Chemistry Lab
  - CHM 248 – Analytical Chemistry
  - CHM 322 – Advanced Inorganic Chemistry
  - CHM 341 – Instrumental Methods for Chemical Analysis
  - CHM 343 – Instrumental Methods for Chemical Analysis Lab
  - CHM 355 – Physical Chemistry for Life Science
  - CHM 357 – Physical Chemistry for Life Science Lab
  - CHM 365 – Medical Biochemistry
  - CHM 370/371/372 (two credits total required; each may 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 – Computer Science I
  - MTH 111 – Calculus I

- MTH 112 – Calculus II
- MTH 212 – Multivariable Calculus
- PHY 201 – General Physics I
- PHY 202 – General Physics II
- Major Electives (six credits required)

In addition, students must take PSY 101 (General Psychology) and the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

- **Earth and Space Science or General Science:** 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 the following:
  - CHM 113 – Elements and Compounds Lab
  - CHM 115 – Elements and Compounds
  - CS Elective
  - EES 210 – Global Climatic Change
  - EES 211 – Physical Geology
  - 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 – Literature Methods
  - EES 304 – Environmental Data Analysis
  - EES 394 – Field Study
  - EES 391 – Senior Projects I
  - EES 392 – Senior Projects II
  - EES Elective:
  - EES 271 – Environmental Mapping I or
  - EES 272 – Environmental Mapping II
  - MTH 150 – Elementary Statistics
  - PHY 171 – Principles of Classical and Modern Physics
  - PHY 174 – Applications of Classical and Modern Physics

Optional course work for General Science certification

- BIO 121 – Principles of Modern Biology I
- BIO 122 – Principles of Modern Biology II or
- BIO 225 – Population and Evolutionary Biology
- CHM 114 – The Chemical Reaction Lab
- CHM 116 – The Chemical Reaction

In addition, students must take PSY 101 (General Psychology) and the required Education courses and special methods course (ED 371) followed by student teaching as listed under Secondary Education Requirements.

- **English:** 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 – Introduction to Literature and Culture
  - ENG 201 – Writing about Literature and Culture
  - ENG 225 – Comparative Grammar
  - ENG 324 – History of the English Language
  - Three of four survey courses (it is recommended that students seeking certification take all 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
- 12 credit hours in English courses at the 300-level, 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.

- **Mathematics:** Students seeking Mathematics certification should follow the Teacher Certification Track and elect to pursue a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) 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 this bulletin under the section for the Department of Mathematics and Computer Science. Students seeking certification in Mathematics must take the following courses:
  - CS 125 – Computer Science I
  - MTH 111 – Calculus I
  - MTH 112 – Calculus II
  - MTH 202 – Set Theory and Logic
  - MTH 212 – Multivariable Calculus
  - MTH 214 – Linear Algebra
  - MTH 311 – Real Analysis
  - MTH 331 – Introduction to Abstract Algebra I
  - MTH 343 – Introduction to Geometry
  - MTH 351 – Probability and Mathematical Statistics I
  - MTH 391 – Senior Seminar
  - PSY 101 – General Psychology
  - Mathematics Electives: nine credits for B.A.; twelve credits for B.S.
  - Science Electives: six credits for B.A.; twelve credits for B.S.

In addition, students must take PSY 101 (General Psychology) and the required Education courses and special methods course (MTH 303, offered in odd years only) followed by student teaching as listed under Secondary Education Requirements.

Physics: 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 Physics are required to take the following courses:

- PHY 201– General Physics I
- PHY 202– General Physics II
- PHY 203–General Physics III
- PHY 311–Thermodynamics
- PHY 312–Analytical Mechanics
- PHY 314–Quantum Mechanics
- PHY 391–Senior Projects I
- PHY 392–Senior Projects II
- MTH 111 – Calculus I
- MTH 112 – Calculus II
- MTH 211–Differential Equations
- MTH 212 – Multivariable Calculus
- EE 337–Electricity & Magnetism I
- EGR 140–Comp.& Stat Analysis *or* CS 125
- CHM 113 – Elements and Compounds Lab
- CHM 115 – Elements and Compounds

Social Studies: Students seeking Social Studies certification will major in either 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 – American History I
- HST 126 – American History II
- HST 297 – Historical Research and Methods
- HST 397 – Seminar
- History Electives: 15 credits at the 300-level with the following distribution: two courses in American topics; two courses in non-American topics; and one course any topic.

The following courses are also required of History majors for Social Studies Certification:

- ANT 101 – Introduction to Anthropology or ANT 102 – Cultural Anthropology
- EC 101 – Principles of Economics or EC 102 – Principles of Economics II
- HST 125 – American History I
- HST 126 – American History II
- PSY 101 – General Psychology
- PSY 221 – Developmental Psychology or PSY 222 – Adolescent Psychology
- SOC 101 – Introduction to Sociology
- Mathematics – six credits (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 the Social Sciences
- PS 380 – Political Science Senior Project
- Major Electives: 21 credits (nine credits must be at the 300-level)

The following courses are also required of Political Science majors for Social Studies Certification:

- ANT 101 – Introduction to Anthropology or ANT 102 – Cultural Anthropology
- EC 101 – Principles of Economics or EC 102 – Principles of Economics II
- HST 125 – American History I
- HST 126 – American History II
- PS 111 – Introduction to American Politics
- PS 141 – Introduction to International Politics
- PSY 101 – General Psychology
- PSY 221 – Developmental Psychology or PSY 222 – Adolescent Psychology
- SOC 101 – Introduction to Sociology
- Mathematics – six credits (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.

Spanish: The B.A. curriculum offers flexibility so that students seeking PK-12 certification can include the professional semester of student teaching in the seventh or eighth semester. Students seeking PK-12 certification in Spanish must take the following courses:

- SP 101 – Elementary Spanish I
- SP 102 – Elementary Spanish II
- SP 203 – Intermediate Spanish I
- SP 204 – Intermediate Spanish II
- SP 205 – Conversation
- SP 206 – Advanced Grammar, Stylistics, and Composition
- SP 208 – Culture and Civilization of Spain
- SP 209 – Cultures and Civilization of Latin America
- SP 220 – Listening and Comprehension
- SP 298 - Topics
- SP 301 – Introduction to Latin American Literature
- SP 307 – Survey of Spanish Literature I or SP 308 – Survey of Spanish Literature II
- ANT 102 – Cultural Anthropology
- PSY 221 – Developmental Psychology

In addition, students must take PSY 101 (General Psychology) and the required Education courses and special methods course (ED 300) followed by student teaching as listed under Secondary Education Requirements.

ELEMENTARY AND EARLY CHILDHOOD EDUCATION MAJOR LEADING TO PK-4

Recommended Course Sequence

124 Credits

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

First Semester

FYF 101 First-Year Foundations	3
PSY 101 General Psychology	3
HST 101 Historical Foundations of the Modern World	3
ENG 101 Composition	4
CS 115 Computers and Applications	3
	16

Second Semester

ED 190 Effective Teaching *40	3
ED 191 Integrating Technology into the Classroom	3
PS 111 Introduction to American Politics	3
Science Elective	3
FL Elective	3
	15

Third Semester

MTH 103 Mathematics for Elementary School Teachers I	3
ENG 120 Introduction to Literature and Culture	3
HST 125 American History	3
EDSP 210 Teaching Students with Special Needs	3
ED 263 Child Development and Cognition I *15	3
	15

Fourth Semester

Science Elective	3
MTH 104 Mathematics for Elementary School Teachers II	3
ED 220 Teaching Culturally and Linguistically Diverse Learners	3
ED 264 Child Development and Cognition II *30	3
EDSP 225 Special Education Methodology I *30	3
	15

Fifth Semester

ART 101/ DAN 100/ MUS 101/ THE 100	3
ED 310 Health, Physical Education, and Safety	3
ED 321 Literacy Foundations I *30	3
ED 324 Children's Literature	3
ED 360 Social Studies in EC & Elem. Ed.	3
	15

Sixth Semester

ED 330 Mathematics in Early Childhood and Elementary Education	3
ED 322 Literacy Foundations II	3
ED 341 Language Arts	3
ED 345 Assessment in Education	3
ED 370 Science in Early Childhood and Elementary Education	3
ED 325 Applied Reading Strategies *15	3
	18

Seventh Semester

ED 344 Assessment in Early Childhood & Elementary Education	3
ED 350 The Arts in Early Childhood and Elementary Education	3
ED 323 Differentiated Reading	3
ED 385 Classroom Management	3
ED 363 School, Family, and Community	3
	15

Eighth Semester

ED 390 Student Teaching with Seminar **40	12
EDSP 388 Inclusionary Practices	3
	15

**Denotes field experience hours*

***Denotes pre-student teaching hours completed during the first two weeks of the eighth semester.*

ELEMENTARY AND EARLY CHILDHOOD EDUCATION MAJOR LEADING TO PK-4 CERTIFICATION WITH DUAL CERTIFICATION IN SPECIAL EDUCATION (PK-8)

Recommended Course Sequence

133 Credits

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

First Semester

FYF 101 First-Year Foundations	3
ED 180 Educational Psychology	3
HST 101 Historical Foundations of the Modern World	3
ENG 101 Composition	4
CS 115 Computers and Applications	3
	16

Second Semester

ED 190 Effective Teaching *40	3
ED 191 Integrating Technology into the Classroom	3
PS 111 Introduction to American Politics	3
PSY 101 General Psychology	3
Science Elective	3
FL Elective	3
	18

Third Semester

MTH 103 Mathematics for Elementary School Teachers I	3
HST 125 American History I	3
ENG 120 Introduction to Literature and Culture	3
EDSP 210 Teaching Students with Special Needs	3
ED 263 Child Development and Cognition *1	3
	15

Fourth Semester

ART 101/DAN 100/MUS 101/ THE 100	3
ED 341 Language Arts	3
MTH 104 Mathematics for Elementary School Teachers II	3
ED 220 Teaching Culturally and Linguistically Diverse Learners	3
ED 264 Child Development and Cognition I *30	3
EDSP 225 Special Education Methodology I *30	3
	18

Fifth Semester

ED 310 Health, Physical Education, and Safety	3
ED 330 Mathematics in Early Childhood & Elementary Education	3
ED 321 Literacy Foundations I *30	3
ED 350 The Arts in Early Childhood and Elementary Education	3
EDSP 226 Spec. Ed. Methodology II *20	3
	15

Sixth Semester

EDSP 327 Behavior Management *20	3
ED 322 Literacy Foundations II	3
ED 345 Assessment in Education	3
ED 370 Science in EC & Elementary Education	3
ED 325 Applied Reading Strategies *15	3
EDSP 300 Assessment in Special Education	3
	18

Seventh Semester

ED 324 Children's Literature	3
ED 323 Differentiated Reading	3
ED 385 Classroom Management	3
ED 360 Social Studies in EC & Elementary Education	3
EDSP 302 Special Ed. Methods	3
	15

Education Major leading to PK-4 Certification with Dual Certification in Special Education (PK-8)

Eighth Semester

ED 390 Student Teaching with Seminar **40	12
EDSP 388 Inclusionary Practices	3
	15
**Denotes field experience hours* ***Denotes pre-student teaching hours completed during the first two weeks of the eighth semester.*	

ELEMENTARY AND EARLY CHILDHOOD EDUCATION MAJOR WITH DUAL SPECIAL EDUCATION CERTIFICATION

Requirements

Students majoring in Elementary and Early Childhood Education pursuing dual certification in Special Education PK-8 complete the following courses in addition to the afore-cited Elementary and Early Childhood program requirements (no 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 course ED 344 - Assessment in Early Childhood and Elementary Education.)
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

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN ENGLISH, LANGUAGE ARTS, AND READING

Recommended Course Sequence

124 Credits

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
HST 125 – American History I	3
Total Credits	**16**
Second Semester	
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
ENG 120 – Introduction to Literature & Culture	3
HST 101 – Historical Foundations of the Modern World	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**15**
Third Semester	
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 201 – Writing About Literature & Culture	4
FL or PHL 101	3
MTH 103 – Mathematics for Elem. School Teachers I	3
PSY 101 – General Psychology	3
Total Credits	**16**
Fourth Semester	
BIO/CHM/EES/PHY 105	3
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
ENG 225 – Comparative Grammar	3
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**15**
Fifth Semester	Credits
BIO/CHM/EES/PHY 105	3
MTH 150 - Elementary Statistics	3
ENG 233/234/281/282 – Literature Survey	3
ENG 324 – History of the English Lang.	3
ART 101/DAN 100/MUS 101/ THE100	3
Total Credits	**15**
Sixth Semester	
ED 326 - Adolescent Literature	3

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN ENGLISH, LANGUAGE ARTS, AND READING WITH DUAL CERTIFICATION IN SPECIAL EDUCATION (PK-8)

Recommended Course Sequence

132 Credits

First Semester	Credits
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
HST 101 – Historical Foundations of the Modern World	3
PSY 101 – General Psychology	3
Total Credits	**16**
Second Semester	
CS 115 – Computers & Applications	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
ENG 120 – Introduction to Literature & Culture	3
BIO/CHM/EES/PHY 105	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**18**
Third Semester	
HST 125 - American History I	3
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 201 – Writing About Literature & Culture	4
FL or PHL 101	3
MTH 103 – Mathematics for Elem. School Teachers I	3
Total Credits	**16**
Fourth Semester	
BIO/CHM/EES/PHY 105	3
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
ENG 233/234/281/282 - Literature Survey	3
ENG 225 – Comparative Grammar	3
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**18**
Fifth Semester	Credits
EDSP 226 – Spec. Ed. Method. II (20)*	3
ENG 233/234/281/282 - Literature Survey	3
PS 111 - Introduction to American Politics	3
ENG 324 – History of the English Language	3
ART 101/DAN 101/MUS 101/THE 100	3

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN MATHEMATICS

Recommended Course Sequence

127 Credits

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
FYF 101 – First-Year Foundations	3
HST 125 – American History I	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**15**
Second Semester	
BIO/CHM/EES/PHY 105	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
ENG 101 – Composition	4
HST 101 – Historical Foundations of the Modern World	3
Total Credits	**16**
Third Semester	
BIO/CHM/EES/PHY 105	3
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
MTH 103 – Mathematics for Elem. School Teachers I	3
PSY 101 – General Psychology	3
Total Credits	**15**
Fourth Semester	
BIO/CHM/EES/PHY 105	3
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
MTH 104 – Math for Elem. School Teachers II	3
MTH 150 – Elementary Statistics	3
Total Credits	**15**
Fifth Semester	Credits
BIO/CHM/EES/PHY 105	3
ED 380 – Content Area Literacy	3
ENG 201 – Writing About Literature & Culture	4
MTH 111 – Calculus I	4
MTH 303 – Teaching Math in ML/ Sec. Schools (40)*	4
Total Credits	**18**
Sixth Semester	
ED 345 – Assessment in Education	3
ED 375 – Middle Level & Secondary Ed. Methods (40)*	4

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN MATHEMATICS AND SCIENCE

Recommended Course Sequence

130 Credits

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
MTH 103 – Mathematics for Elem. School Teachers I	3
Total Credits	**16**
Second Semester	
EES 105 – Planet Earth	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
HST 101 – Historical Foundations of the Modern World	3
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**15**
Third Semester	
ART 101/DAN 100/MUS 101/THE 100	3
BIO 105 – The Biological World	3
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
HST 125 – American History I	3
PSY 101 – General Psychology	3
Total Credits	**18**
Fourth Semester	
CHM 105 – Chemistry & Modern Society	3
EES 211/251/280	4
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
MTH 150 – Elementary Statistics	3
Total Credits	**16**
Fifth Semester	Credits
BIO 121 – Principles of Modern Biology I	4
ENG 201 – Writing About Literature & Culture	4
MTH 111 – Calculus I	4
MTH 303 – Teaching Math in ML & SS (40)*	4
Total Credits	**16**
Sixth Semester	
BIO 122 – Principles of Modern	4

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN MATHEMATICS AND SCIENCE AND DUAL CERTIFICATION IN SPECIAL EDUCATION (PK-8)

Recommended Course Sequence

135 Credits

First Semester	Credits
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
MTH 103 – Mathematics for Elem. School Teachers I	3
PSY 101 – General Psychology	3
Total Credits	**16**
Second Semester	
CS 115 – Computers & Applications	3
EES 105 – Planet Earth	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
HST 101 - Historical Foundations of the Modern World	3
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**18**
Third Semester	
ART 101/DAN 100/MUS 101/THE 100	3
BIO 105 – The Biological World	3
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
HST 101 – Historical Foundations. of the Modern World	3
MTH 150 – Elementary Statistics	3
Total Credits	**18**
Fourth Semester	
CHM 105 – Chemistry & Modern Society	3
ED 220 – Teaching . . . Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
EDSP 227 – Behavior Management in Special Ed. (20)*	3
EES 211/251/280	4
Total Credits	**16**
Fifth Semester	Credits
BIO 121 – Principles of Modern Biology I	4
EDSP 300 – Spec. Ed. Assessment & Evaluation	3
PHY 105 – Concepts in Physics	3
MTH 111 – Calculus I	4
MTH 303 – Teaching Mathematics in Middle (40)*	4
Total Credits	**18**

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN MATHEMATICS WITH DUAL CERTIFICATION IN SPECIAL EDUCATION (PK-8)

Recommended Course Sequence

132 Credits

First Semester	Credits
BIO/CHM/EES/PHY 105	3
ED 180 – Educational Psychology	3
FYF 101 – First-Year Foundations	3
HST 101 – Historical Foundations of the Modern World	3
MTH 101 – Solving Probs. Using Math	3
PSY 101 – General Psychology	3
Total Credits	**18**
Second Semester	
CS 115 – Computers & Applications	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
ENG 101 – Composition	4
BIO/CHM/EES/PHY 105	3
Total Credits	**16**
Third Semester	
HST 125 - American History I	3
EDSP 210 – Teaching Students with Spec. Needs	3
ED 220 – Teaching . . . Diverse Learners	3
ENG 120 – Introduction to Literature & Culture	3
MTH 103 – Mathematics for Elem. School Teachers I	3
MTH 150 – Elementary Statistics	3
Total Credits	**18**
Fourth Semester	
BIO/CHM/EES/PHY 105	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
EDSP 227 – Behavior Management in Spec. Ed. (20)*	3
ENG 201 – Writing About Literature & Culture	4
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**16**
Fifth Semester	Credits
BIO/CHM/EES/PHY 105	3
EDSP 226 – Spec. Ed. Method. II (20)*	3
EDSP 300 – Spec. Ed. Assessment & Evaluation	3
MTH 111 – Calculus I	4
MTH 303 – Teaching Math in ML & SS (40)*	4
Total Credits	**17**

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN SCIENCE

Recommended Course Sequence

130 Credits

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
HST 125 – American History I	3
Total Credits	**16**
Second Semester	
CHM 105 – Chemistry & Modern Society	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
HST 101 – Historical Foundations of the Modern World	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**15**
Third Semester	
EES 211 – Physical Geology	4
EDSP 210 – Teaching Students with Spec. Needs	3
FL or PHL 101	3
MTH 103 – Mathematics for Elem. School Teachers I	3
PSY 101 – General Psychology	3
Total Credits	**16**
Fourth Semester	
EES 251 – Synoptic Meteorology	4
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
ENG 120 – Introduction to Literature & Culture	3
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**16**
Fifth Semester	Credits
ART 101/DAN 100/MUS 101/THE 100	3
BIO 121 – Principles of Modern Biology I	4
ENG 201 - Writing about Literature and Culture	4
Elective	3
MTH 150 – Elementary Statistics	3
Total Credits	**17**
Sixth Semester	
BIO 122 – Principles of Modern	4

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN SOCIAL STUDIES

Recommended Course Sequence

124 Credits

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
HST 101 – Historical Foundations of the Modern World	3
Total Credits	**16**
Second Semester	
BIO/CHM/EES/PHY 105	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
HST 102 – Europe Before 1600	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**15**
Third Semester	
BIO/CHM/EES/PHY 105	3
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
MTH 103 – Mathematics for Elem. School Teachers I	3
PSY 101 – General Psychology	3
HST 125 - American History I	3
Total Credits	**18**
Fourth Semester	
EC 102 – Principles of Economics II	3
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
HST 126 – American History II	3
MTH 104 – Math for Elem. School Teachers II	3
Total Credits	**15**
Fifth Semester	Credits
BIO/CHM/EES/PHY 105	3
ART 101/DAN100/MUS101/ THE100	3
ENG 225 - Comparative Grammar	3
MTH 150 – Elementary Statistics	3
PS 111 – Introduction to American Politics	3
Total Credits	**15**
Sixth Semester	
BIO/CHM/EES/PHY 105	3

MIDDLE LEVEL EDUCATION MAJOR LEADING TO CERTIFICATION WITH A CONCENTRATION IN SOCIAL STUDIES AND DUAL CERTIFICATION IN SPECIAL EDUCATION (PK-8)

Recommended Course Sequence

132 Credits

First Semester	Credits
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
HST 101 – Historical Foundations of the Modern World	3
PSY 101 – General Psychology	3
Total Credits	**16**
Second Semester	
BIO/CHM/EES/PHY 105	3
CS 115 – Computers and Applications	3
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
HST 102 – Europe Before 1600	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**18**
Third Semester	
BIO/CHM/EES/PHY 105	3
EDSP 210 – Teaching Students with Spec. Needs	3
EC 102 – Principles of Economics II	3
ENG 120 – Introduction to Literature & Culture	3
HST 125 – American History I	3
MTH 103 – Mathematics for Elem. School Teachers I	3
Total Credits	**18**
Fourth Semester	
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Spec. Ed. Methodology I (30)*	3
EDSP 227 – Behavior Management in Special Ed. (20)*	3
HST 126 – American History II	3
MTH 104 – Math for Elem. School Teachers II	3
PS 111 – Introduction to American Politics	3
Total Credits	**18**
Fifth Semester	Credits
BIO/CHM/EES/PHY 105	3
ART 101/DAN 100/MUS 101/THE 100	3
EDSP 226 – Special Ed. Methodology (20)*	3
FL or PHL 101	3
MTH 150 – Elementary Statistics	3
Total Credits	**15**

SECONDARY EDUCATION CERTIFICATION

Required Courses & Recommended Course Sequence for the Major

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
PSY 101 – General Psychology	3
Total Credits	**16**

Second Semester	
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
MTH 101 – Solving Problems Using Math	3
Social Science Elective (Distribution Req.)	3
Major Elective	6
Total Credits	**18**

Third Semester	
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
HST 101 – Historical Foundations of the Modern World	3
Math Elective (2nd MTH required by PDE)	3
Science Elective (Distribution Req.)	3
Major Elective	3
Total Credits	**18**

Fourth Semester	
ED 220 – Teaching … Diverse Learners	3
Science Elective (Distribution Req.)	3
Visual & Perform. Arts Elective (Dist. Req.)	3
Major Electives	9
Total Credits	**18**

Fifth Semester	
EDSP 225 – Sp. Educ. Methodology I (30)*	3
FL or PHL 101	3
Major Electives	12
Total Credits	**18**

Sixth Semester	
Major Electives	9
ED 345 - Assessment	3
ED 375 - Middle Level & Secondary Ed. Methods	4
Total Credits	**16**

Seventh Semester	
ED 380 – Content Area Literacy	3
EDXXX – Concentration Methods (40)*	4
Major Electives	9
Total Credits	**16**

Eighth Semester	
ED 390 – Student Teaching (40)***	12
EDSP 388 – Inclusionary Practices	3
Total Credits	**15**

**Denotes field experience hours*
****Denotes pre-student teaching hours completed during the first two weeks of the eighth semester.*

NOTE: Since the Education Major must be pursued in combination with one of nine content area majors, this sequence demonstrates only one way all the required courses could be taken by each of four of the content area majors: English, History, Mathematics, and Spanish. These majors easily can allow students to complete the dual major within the eight-semester timeframe.

However, students majoring in the five other academic areas— Biology, Chemistry, Earth & Environmental Sciences, Physics, or Political Science who would like to pursue a major in Secondary Education, will most likely need to take courses beyond the eight-semester timeframe to complete the dual major.

The required academic major courses, which all differ in total credits, and the required sequence of those courses, may be accommodated to pursue the major in Secondary Education. **To ensure completion of both majors in a timely manner, early in their matriculation at Wilkes, students should seek advice and guidance from the major content area advisor as well as from the Coordinator of Teacher Education when planning their individual sequence of courses.**

Required Courses & Recommended Course Sequence for the Minor

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
PSY 101 – General Psychology	3
Total Credits	**16**

Second Semester	
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
MTH 101 – Solving Problems Using Math	3
Social Science Elective (Distribution Req.)	3
Major Elective	3
Total Credits	**15**

Third Semester	
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
HST 101 – Historical Foundations of the Modern World	3
Math Elective (2nd MTH required by PDE)	3
Science Elective (Distribution Req.)	3
Major Elective	3
Total Credits	**18**

Fourth Semester	
ED 220 – Teaching … Diverse Learners	3
Science Elective (Distribution Req.)	3
Visual & Perform. Arts Elective (Dist. Req.)	3
Major Electives	6
Total Credits	**15**

Fifth Semester	
EDSP 225 – Sp. Educ. Methodology I (30)*	3
FL or PHL 101	3
Major Electives	9
Total Credits	**15**

Sixth Semester	
Major Electives	18
Total Credits	**18**

Seventh Semester	
ED 380 – Content Area Literacy	3
EDXXX – Concentration Methods (40)*	4
Major Electives	9
Total Credits	**16**

Eighth Semester	
ED 390 – Student Teaching (40)***	12
EDSP 388 – Inclusionary Practices	3
Total Credits	**15**

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

SECONDARY EDUCATION CERTIFICATION FOR THE MINOR WITH DUAL CERTIFICATION IN SPECIAL EDUCATION 7-12

Recommended Course Sequence

First Semester	Credits
CS 115 – Computers and Applications	3
ED 180 – Educational Psychology	3
FYF 101 – First-Year Foundations	3
HST 101 – Historical Foundations of the Modern World	3
MTH 101 – Solving Problems Using Math	3
Total Credits	**15**

Second Semester	
ED 190 – Effective Teaching (40)*	3
ED 191 – Integrating Technology into the Classroom	3
ENG 101 – Composition	4
PSY 101 – General Psychology	3
Science Elective (Distribution Req.)	3
Total Credits	**16**

Third Semester	
EDSP 210 – Teaching Students with Spec. Needs	3
ENG 120 – Introduction to Literature & Culture	3
Major Electives	6
Science Elective (Distribution Req.)	3
Visual & Perform. Arts Elective (Dist. Req.)	3
Total Credits	**18**

Fourth Semester	
ED 220 – Teaching … Diverse Learners	3
EDSP 225 – Sp. Educ. Methodology I (30)*	3
FL Elective (Distribution Requirement)	3
Social Science Elective (Distribution Req.)	3
Major Electives	6
Total Credits	**18**

Fifth Semester	Credits
EDSP 227 – Behavior Management in Spec. Ed. (20)*	3
Math Elective (2nd MTH required by PDE)	3
Major Electives	9
Social Science Elective	3
Total Credits	**18**

Sixth Semester	
EDSP 226 – Spec. Ed. Methodology II (20)*	3
EDSP 302 – Special Ed. Methods	3
Major Electives	9-12
Total Credits	**15 -18**

Seventh Semester	
EDXXX – Concentration Methods (40)*	4
ED 380 – Content Area Literacy	3
EDSP 300 – Assessment in Spec. Ed.	3
Major Electives	6
Total Credits	**16**

Eighth Semester	
ED 390 – Student Teaching (40)**	12
EDSP 388 – Inclusionary Practices	3
Total Credits	**15**

**Denotes field experience hours*
***Denotes pre-student teaching hours completed during the first two weeks of the eighth semester.*

NOTE: Since the Education Minor with dual certification in Special Education may be pursued in combination with nine different majors (Biology, Chemistry, Earth & Environmental Sciences, English, History, Mathematics, Physics, Political Science, or Spanish), this sequence demonstrates only one way all the required minor courses with dual certification in Special Education may be taken. The required content area major courses, which all differ in total credits, and the required sequences of those courses, may be accommodated to pursue the minor in Education with dual certification in Special Education. **To ensure completion of the minor with dual certification in four years, early in their matriculation at Wilkes, students should seek advice and guidance from the major advisor as well as from the Coordinator of the Secondary Education program when planning their individual sequence of courses.**

TEACHER EDUCATION

Requirements

Admission Requirements:

Students preparing for teacher certification must be formally admitted to the Teacher Education Program at Wilkes University. Students are expected to review and comply with policy documents available in the Education Department office (Breiseth Hall, Rm. 204). Policies may change due to new or updated PDE regulations.

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

1. complete 48 semester hour credits (including 6 credits of Mathematics and 6 credits of English as required by the PDE);
2. attain 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. achieve final grades of 2.5 or higher in ED 180, ED 190, and ED 191;
4. achieve an overall GPA of 2.85 in order to proceed from 100-level ED courses to 200-level ED courses;
5. achieve an overall GPA of 3.0 to be formally admitted into the Teacher Education Program and to continue in courses at the 300-level;
6. take and pass a test of basic skills (Preservice Academic Performance Assessment [PAPA] or the Praxis Core) in Reading, Writing, and Mathematics or have earned SAT scores of 1550 with at least 500 in each area or have earned a composite score of 23 on the American College Test (ACT) in order to be formally admitted into the Teacher Education Program and to register for 300-level Education courses;
7. maintain a cumulative 3.0 GPA in order to be retained in the program following formal admission (as required by PDE);
8. submit current, valid Act 34 State Police Criminal Record Check, ACT 151 Child Abuse History Clearance, Act 114 FBI Fingerprint Check, and Act 24 Arrest/Conviction Report and Certification Form, which report "no record;" and
9. complete and submit formal Teacher Education Program Application, personal Philosophy of Education, Disposition Assessment, signed Code of Professionalism and Academic Honesty, and signed Agreement of Understanding of GPA and Test of Basic Skills Policies. This process is completed during ED 190 or upon transfer from another institution.

NOTE: Post-baccalaureate candidates for initial certification are not required to take the Test of Basic Skills. Post-baccalaureate candidates must take the specific certification area test(s). Individuals who are already certified and seek additional certification(s) must take the test(s) corresponding to the new certification area(s).

Student Teaching Requirements

1. Successful completion of the requirements for TEP Admission and Retention;
2. Achievement of the major and minor GPA requirements;
3. Attendance at the Student Teaching Placement Meeting in the semester prior to student teaching;
4. Completion of all required paperwork obtained at the Student Teaching Placement Meeting in the semester prior to student teaching;
5. Submission of all clearances with no offenses;
6. Completion of all required course work and fieldwork, with the exception of ED 390: Student Teaching and EDSP 388: Inclusionary Practice;
7. Registration form with advisor's signature for PK-4 and Middle Level Education majors; or
8. Approval For Secondary Education minors, approval of student teaching eligibility by the major academic department chair and advisor, the Education Department, and the Teacher Education Committee.

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. Students should not plan to work while student teaching.

Program Requirements for Graduation and Certification

1. Meet the major and minor GPA requirements;
2. Completed all Wilkes University and TEP requirements;
3. Successfully complete Student Teaching, including satisfactory scores on each category of the Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430);
4. Provide evidence of passing scores on all relevant PRAXIS II tests or PECT (PA Educator Certification Tests) for the appropriate area or subjects. NOTE: A student may graduate without passing all PRAXIS II tests or PECT, but cannot obtain PDE certification;
5. Complete the Wilkes University application for graduation, which is provided by the University Registrar;
6. Review and complete the graduation audit with academic advisor and submit documentation to Student Services;
7. Submit PDE Application online via TIMS (Teacher Information Management System).

NOTE: Program Requirements may change at the discretion of the Pennsylvania Department of Education.

Tests Required for Specific Certification Areas

- PreK-4: Pennsylvania Educator Certification Test, which is administered by Pearson Education, Inc.
- Special Education PreK-8: Pennsylvania Educator Certification Test, which is administered by Pearson Education, Inc.
- Special Education 7-12: Pennsylvania Educator Certification Test, which is administered by Pearson Education, Inc.
- Middle Level: Praxis II for PA Grade 4-8 Core Assessment and appropriate Subject Concentrations, which are administered by Educational Testing Service (ETS).
- Secondary 7-12: Praxis II in appropriate content area, which is administered by Educational Testing Service (ETS)

DEPARTMENT OF ENTREPRENEURSHIP, LEADERSHIP AND MARKETING

Department of Entrepreneurship, Leadership and Marketing

Chairperson: Dr. Anne Heineman Batory

Faculty

Professors: Alves, Batory, Liuzzo, Rexer, Taylor
Associate Professors: Chisarick, Edmonds, Frear, Hao, Matus, Sowcik, Xiao
Assistant Professors: Clevenger, Erenay, Ferrara, Gordon, Houlihan
Visiting Assistant Professors: Hughes, Osei
Adjunct Faculty: Albany, Alessi, Allen, Bechtold, Castano, Ferdowsian, Gayoso, Gorman, Hanson, Hopkins, Kane, Kosicki, Moser, G. Myers, S. Myeers, Ridley, Sabatini, Savitski, Swantek, Turel, Tuzzolino, Udomsak
Faculty Emeriti: Broadt, Capin, Gera, Raspen
Associate Dean: Dr. Justin Matus
Director of Allan P. Kirby Center: Dr. Rodney Ridley
Director of Arizona Business Programs: Dr. Anthony Liuzzo
Director of Assessment and Accreditation: Dr. Justin Matus
Director of Leadership Programs: Dr. Matthew Sowcik
Director of MBA and ABBA Programs: Dr. Justin Matus
Assistant Director, Sidhu School Initiatives: Dina Udomsak
Assistant Director, Leadership Programs: Bridget Turel

- Entrepreneurship
- Leadership
- Marketing
- Personal And Professional Development

ACCELERATED BBA PROGRAM (ABBA)

Accelerated BBA program

The Accelerated BBA program has been formulated especially for working adults—to take advantage of their career experience, to teach real-world business skills that have immediate application, and to expand their career opportunities. The twelve courses in the core sequence ground students in the fundamentals of business practice that are critical to a managerial perspective on the enterprise. The Sidhu School's signature Personal & Professional Development (PPD) program has been customized to help mature adults already embarked on a career to round out their life skills and realize their full professional potential.

The program's schedule was designed specifically with adult learners in mind: Courses are taken one at a time for a 5-to-8 week term: no other courses to distract you. Courses meet once a week from 6 until 10 PM: the same day, every week, every course, throughout the program... (For example: Cohort 1, starting in September, will have all physical class meetings occurring on Wednesday nights, throughout the entire program.) In addition to the material covered in class meetings, instructors will provide an additional, equivalent-sized body of material for you on the course web site, which you can cover at your own pace, and at times that fit into your schedule. Instructors will offer both conventional and"virtual" office hours, making themselves available for face-to-face discussions over the web or in their office (of course, you can always blank your webcam if you feel like talking to them in your pajamas).

The Adult BBA program offers the 18 courses that satisfy requirements in the business administration major. Courses can be taken in any order, except where noted.

All course are 3 credits.

ABBA 151: Entrepreneurship and InnovationABBA 152: The Leadership ProcessABBA 153: Business CommunicationsABBA 154: Business EconomicsABBA 161: Financial AccountingABBA 162: Managerial AccountingABBA 235: The Legal Environment and Business LawABBA 251: Principles of ManagementABBA 257: Information Technology for BusinessABBA 319: Statistics for BusinessABBA 321: Principles of MarketingABBA 340: Corporate FinanceABBA 352: Production and Operations in BusinessABBA 353: Management of Human ResourcesABBA 354: Organizational StudiesABBA 358: International Business ManagementABBA 361: Business Strategy and Decision-Making *(advisor permission required)*ABBA 362: Professional Business Experience *(advisor permission required)*
The business administration degree requires 120 credits. In addition to the courses listed here, participants must satisfy bachelor degree requirements, including general education courses.

ENTREPRENEURSHIP

Entrepreneurship Major

Coordinator: Dr. Anne Heineman Batory

Total minimum number of credits required for a major in Entrepreneurship leading to the Bachelor of Business Administration degree – 122
Total minimum number of credits required for a minor in Entrepreneurship – 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 who are pursuing 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 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 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 builds upon the knowledge and experience from courses in the Personal and Professional Development Series, the Sidhu Foundations courses, and the Sidhu Undergraduate Core Courses.

The Entrepreneurship major requires an additional 27 credits, including:

Requirements for the Entrepreneurship Major 18 Credits

BA-336 – Advanced Topics in Business Law 3
ENT-203 – Opportunity Identification: Innovation and Creativity 3
ENT-342 – Entrepreneurial Finance 3
ENT-385 – Opportunity Assessment: Technical, Economic, and Market Feasibility 3
MGT-209 – Business Correspondence & Reports 3
MGT-356 – Social Responsibility of Business 3

Electives for the Entrepreneurship Major 6 Credits

MKT-322 – Advertising 3
MKT-327 – Marketing Seminar 3
MKT-328 Consumer Behavior 3
ENT-384 – Small Business Consultancy 3
ENT-395 – Independent Study 3
ENT-396 – Independent Research 3
ENT 198/298/398 – Topics

Additional Requirement for the Entrepreneurship Major 3 Credits

Each student with a major in Entrepreneurship must complete 3 additional credits in a course with the prefix ART, COM, EGM, DAN, ENG, MUS, or THE

Entrepreneurship Major- Required Courses and Recommended Course Sequence

First Semester	Credits	Fifth Semester	
BA-151 – Integrated Management Experience I	3	BA-335 – Law & Business	3
CS-115 – Computers and Applications	3	ENT-321 – Analyzing Markets & Competitions	3
ENG-101 – Composition	4	FIN-240 – Introduction to Finance	3
FYF-101 – First-Year Foundations	3	MGT-356 – The Social Responsibility of Business	3
HST-101 – Historical Fnds. of the Modern World	3	Social Science Distribution Requirement (Area III)	3
PPD-101 – Personal & Professional Development I	1	PPD-301 – Personal & Professional Development V	1
Total Credits	**17**	**Total Credits**	**16**
Second Semester		**Sixth Semester**	
Arts Distribution Requirement (Area IV)	3	BA-336 – Advanced Topics in Business	3
BA-152 – Integrated Management Exp. II	3	ENT-342 – Entrepreneurial Finance	3
COM-101 – Fundamentals of Public Speaking	3	ENT-385 – Tech, Economic, & Market Feasibility	3
Humanities Distribution Requirement (Area I)	3	Free Elective	3
MTH-101 – Solving Problems Using Mathematics	3	Major Elective	3
Total Credits	**15**	**Total Credits**	**15**
Third Semester		**Seventh Semester**	
ACC-161 – Financial Acctg & Decision Making	3	ENT-461 - Practicing Entrepreneurship	3

Entrepreneurship Minor

Total minimum number of credits required for a minor in Entrepreneurship – 18

For majors in other disciplines, The Jay S. Sidhu School of Business and Leadership offers an 18 credit minor in Entrepreneurship. Students who may be contemplating pursuit of entrepreneurial opportunities will find the Entrepreneurship Minor to be an excellent complement to their chosen majors. Courses required to complete the Entrepreneurship Minor are:

MKT-221 - Marketing	3
ENT-151 – Integrated Management Experience I	3
ENT-152 – Integrated Management Experience II	3
(OR BA-153 – Management Foundations + ENT-252 or [[LDR-202]])	3
ENT-201 – Nature and Essence of Entrepreneurship	3
ENT-461 – Practicing Entrepreneurship	3
AND ONE OF THE FOLLOWING:	
ENT-384 – Small Business Consultancy or	3
ENT-462 – Entrepreneurship Internship	3

LEADERSHIP

Leadership Studies Minor

Director: Dr. Matthew Sowcik

Total minimum number of credits required for a minor in Leadership Studies – 18

The current generation of college students will be responsible for dealing with a growing leadership crisis and finding solutions to some of the most difficult problems of our time. Challenges facing society include economic polarity, dramatic demographic changes, as well as issues of natural resources and energy, national security, foreign diplomacy, international conflict, and economic instability, to name just a few. Leadership education has the potential to transform and develop the current generation of college students into future leaders of tomorrow. The Leadership Studies Minor, offered in the Sidhu School of Business and Leadership, is an interdisciplinary, academic and applied program of study that focuses on the fluid process and components of the interaction between leaders and followers in a particular context. Students from all majors will have an opportunity to learn about leadership, while preparing to take an active leadership role in their future career.

There are a number of benefits for students choosing to complement their major with a minor in Leadership Studies. Research suggests that undergraduate leadership education can impact a student's personal/professional skills, increase self-confidence, increase interpersonal skills, and make students more effective decision makers, conflict negotiators, and goal setters. The Leadership Studies minor aims to improve a student's self awareness, develop stronger personal values, increase communication effectiveness, and increase a student's organizational skills.

Additionally, the Leadership Studies minor can increase a student's likelihood to be involved with community action programs and more willing to serve others. Research on leadership education supports the notion that students in leadership programs are more committed to developing leadership in others and are more willing to promote understanding across racial and ethnic groups. Students taking the minor in Leadership Studies will learn how to become effective social change agents at the institutions where they learn, the organizations where they work, and the communities where they live. Finally, these increased competencies and skills not only serve the personal needs of each student, by developing a well rounded individual, it also helps a student's marketability in pursuing jobs after college.

REQUIREMENTS FOR THE LEADERSHIP STUDIES MINOR (18 credits total)

Each student with a minor in Leadership Studies must complete the following 9 credits:

LDR-201. Introduction to Leadership
LDR-202. Advanced Leadership Theory and Practice
LDR-361: Leadership Capstone

Each student with a minor in Leadership Studies must complete one course from each of the following content areas, for a total of 9 credits:

Leadership Issues (see options below)
Leadership Skills (see options below)
Leadership in Context (see options below)

Leadership Issues (3 credits) (Courses listed have no or minimum prerequisite requirements)
EES-218. Environmental Ethics
EES-210. Global Climatic Change
MGT-356. The Social Responsibility of Business
PHL-110. Introduction to Ethical Problems
PHL-216 Philosophies of Nonviolence
SOC-251 Sociology of Minorities
WS-101. Introduction to Women's Studies
Or 3 credits of Personal and Professional Development courses pertaining to leadership issues

Leadership Behaviors/Skills (3 credits) (Courses listed have no or minimum prerequisite requirements)

COM-202. Interpersonal Communication
COM-203. Small Group Communication
COM-301. Persuasion
COM-303. Organizational Communication
COM-304. Intercultural Communication
ENG-202. Technical and Professional Writing
ENT-203. Opportunity Identification: Innovation and Creativity
MGT-209. Business Correspondence and Reports
Or 3 credits of Personal and Professional Development courses pertaining to leadership behaviors/skills

Leadership In Context (3 credits)

ANT-212. People and Cultures of the World
ENT-252. The Entrepreneurial Leader
MGT-358 International Business
MGT-251. Management of Organizations and People
PS-260. Introduction to Political Thinking
SOC-352. Social Stratification
Or 3 credits of Personal and Professional Development courses pertaining to leadership in context

MARKETING

Marketing Major

Coordinator: Dr. Anne Heineman Batory

Marketing majors choose courses to prepare themselves for careers in marketing fields that range from product management, advertising, sales and account management to retailing, e-business, distribution management, and strategic marketing planning in entrepreneurial, corporate, or not-for-profit organizations. Students can look forward to career opportunities in large and small organizations representing a spectrum of industrial, consumer goods, service, and e- commerce firms in public- and private-sector institutions. Our students are expected to engage with the marketplace. Enhancing corporate competitiveness and delivering customer value is the starting goal for faculty and students in the Marketing Major. Consumer behavior, market segmentation, products as solutions, pricing, and brand strategy are taught with innovation and application. Sidhu Marketing Majors get much more than a classroom education – they partner with area businesses and organizations to deliver value for our community. For example, class projects give students the chance to tackle key marketing issues for many local and regional organizations. Many students participate in consulting projects through the Wilkes Small Business Development Center. Students are also invited to demonstrate their skills by participating in national competitions such as Collegiate Effie Challenges.

The Marketing major requires an additional 27 credits, including:

Requirements for the Marketing Major (27 credits total) Credits

Each student with a major in Marketing must complete 15 of the following credits:	
COM-302 – Public Relations (*prerequisite COM 260)	3
MGT-257 – Management Information Systems	3
MGT-209 – Business Correspondence and Reports	3
MKT-322 – Advertising	3
MKT-324 – Retailing	3
MKT-326 – The Selling Process	3
MKT-327 – Marketing Seminar	3
MKT-328 – Consumer Behavior	3
MKT 198/298/398 – Topics	3

Each student with a major in Marketing may also complete up to 12 of the following credits (or additional courses above):	
ENT-201 – Nature and Essence of Entrepreneurship	3
ENT-203 – Opportunity Identification: Innovation and Creativity	3
ENT-252 – The Entrepreneurial Leader	3
ENT-384 – Small Business Consultancy	3
ENT-385 – Opportunity Assessment: Technical, Economic, and Market Feasibility	3
ENT 198/298/398 – Topics	3
MGT-257 – Management Information Systems	3
MGT-209 – Business Correspondence and Reports	3
MGT-352 – Production and Operations Management	3

Marketing Major Required Courses and Recommended Course Sequence

First Semester	Credits	Fifth Semester	Credits
BA-151 – Integrated Management Experience I	3	BA-319 – Business Statistics	3
CS-115 – Computers and Applications	3	BA-335 – Law & Business	3
ENG-101 – Composition	4	Science Distribution Requirement (Area II)	3
FYF-101 – First-Year Foundations	3	Free Elective	3
PPD-101 – Personal & Professional Development I	1	MKT Major Course	3
Total Credits	**14**	PPD-301 – Personal & Professional Development V	1
		Total Credits	**16**
Second Semester		**Sixth Semester**	
Arts Distribution Requirement (Area IV)	3	Humanities Distribution Requirement (Area I)	3
BA-152 – Integrated Management Exp. II	3	FIN-240 – Introduction to Finance	3
COM-101 – Fundamentals of Public Speaking	3	MKT Major Course	3
Humanities Distribution Requirement (Area I)	3	MKT Major Course	3
Social Science Distribution Requirement (Area III)	3	MKT Major Course	3
Total Credits	**15**	**Total Credits**	**15**
Third Semester		**Seventh Semester**	
ACC-161 – Financial Acctg & Decision Making	3	MGT-358 – International Business	3
MGT-251 – Management of Organizations & People	3	MKT Major Elective Course	3

Marketing Minor

Total minimum number of credits required for a minor in Marketing – 18

For majors in other disciplines, The Jay S. Sidhu School of Business and Leadership offers an 18 credit minor 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:

MKT 221 - Marketing	3
Plus 15 credits of MKT or MKT related courses approved by the Department Chair	15

PERSONAL AND PROFESSIONAL DEVELOPMENT

The Personal and Professional Development Series

Director: Dr. Matthew Sowcik

At the Sidhu School we believe that leadership and career development matters. The Personal and Professional Development Series (PPD) is a four credit program closely linked to the Sidhu School business curriculum. It is an innovative, integrated, developmental advising/coaching program designed to unleash and nurture each student's personal and professional potential.

Employers in business, government, military and social organizations all agree that superior performance depends on effective leadership up and down the line. This calls for leaders with self-awareness, empathy, emotional intelligence, vision, integrity, and compassion. Research has shown that superior leaders are authentic. They understand their own strengths and values, and the effect they have on others. They are competent, caring, resilient, and consistent. They listen, analyze, and are able to provide vision, energy, and motivation. These are capabilities, skills and behaviors the Sidhu School seeks to cultivate in its students.

The PPD provides an environment where each student can link academic content in their curriculum with career planning, extracurricular activities and leadership development. Each student has the opportunity to build a strong professional network, face social and business challenges, and practice meaningful leadership.

Throughout the PPD program students undertake on-going self-assessment, build their emotional intelligence, strengthen team building competencies, engage in field work/career preparation experiences, learn to take advantage of coaching/mentoring activities, and formulate developmental action plans and a leadership portfolio. In the process, they discover strengths and areas for improvement, nurture their passions, and facilitate their own authentic leadership journey.

The Personal and Professional journey consists of two bookend courses (PPD 101 and PPD 401), which are consistent for every student throughout the program. These two courses provide an introductory and capstone experience that build the foundation for the PPD program. Additionally, students choose a one credit course each in the areas of leadership competency and career focus, to customize the program to their specific developmental needs. The one credit elective courses vary each semester and are taught by subject matter experts.

- PPD-101. Personal & Professional Development I: Introduction to PPD
- PPD-201. Personal & Professional Development III: Topics in Career Development
- PPD-301. Personal & Professional Development V: Topics in Leadership Competencies
- PPD-401. Personal & Professional Development VII: Leadership Legacy

DEPARTMENT OF INTEGRATIVE MEDIA AND ART

Department of Integrative Media and Art

Credit Requirements

Total minimum number of credits required for a major in Integrative Media leading to the B.A. degree—122
Total minimum number of credits required for a minor in Integrative Media - 21
Total minimum number of credits required for a minor in Studio Art - 18
Total minimum number of credits required for a minor in Art History - 18

Integrative Media Major

The transformation and convergence of media, information, technology, art, culture, business, and entertainment has created a global growth market that is reorienting the ways in which we learn about ourselves and others, conduct business, express ourselves, and play.

Wilkes University requires a minimum of 122 credit hours for a B.A. degree in Integrative Media. These include completion of the General Education Requirements, 40 credit hours of Integrative Media Core courses, and completion of a minor in one of the following cognate disciplines: Art; Business Administration; Communication Studies; Computer Science; English; Entrepreneurship; Marketing; Theatre Arts (Acting and Directing); or Theatre Arts (Theatre Design).

The Integrative Media major uses integrated product development as a conceptual framework. Simulating real working environments, students will come together to work in teams, combining various skills to fill core positions including production manager, producer, director, art director, editor, motion designer, writer, interactive guru, coder, animator, f/x artist, etc., as in a production studio. Students will develop a significant portfolio to present to prospective employers within deadline-oriented, high-end studio environments as in feature film, broadcast, interactive, government, corporate, and independent production companies.

The Integrative Media major core curriculum consists of at least 40 credits hours of study comprising the following courses:

ART 111	Fundamentals of Color and Design	3 cr
BA/ENT 153	Management Foundations I	3 cr
CS 125	Computer Science I	4 cr.
COM 102	Principles of Communication	3 cr
ENG 202	Technical & Professional Writing	3 cr
ENT 203	Opportunity Identification: Creativity, & Innovation	3 cr
IM 101	Integrative Media Foundations I	3 cr
IM 201	Integrative Media Foundations II	3 cr
IM 301	Principles of Motion and Layering	3 cr
IM 302	Integrative Media Principles of Interactivity	3 cr
IM 320	Integrative Media Concept Development & Processes*	3 cr
IM 391	Integrative Media Project I*	3 cr
IM 392	Integrative Media Project II*	3 cr
IM 399	Cooperative Education	1-6 cr.
IM 400	Integrative Media Portfolio Capstone*	3 cr

**Each of these courses must be completed with a minimum final grade of 2.5 in order to meet degree requirements.*

Cognate Minors

Students majoring in Integrative Media are required to complete a minor in a cognate discipline (Art, Business Administration, Communication Studies, Computer Science, English, Entrepreneurship, Marketing, or Theatre Arts – Acting and Directing, or Theatre Arts – Theatre Design). This minor area of study provides for each student a specialized skill concentration within the Integrative Media program experiences. Students will be continually asked to use the knowledge and skills from their cognate minor discipline within the Integrative media project team structure. To the extent possible, courses in each cognate minor have been selected to augment the Integrative Media major program. Students interested in pursuing a double major should consult carefully with their academic advisor. Also available for experience is involvement in Studio 20. This student operated production club works with non-profit, start-up, and internal Wilkes clients to produce a variety of creative content in a real-world production setting.

ART MINOR

Requirements

The minor in Art History requires that students complete ART 140 (Art History I), ART 141 (History of Art II) and 6 credits of art history topics courses. A total of 18 credit hours is required for the minor in Art History.

The minor in Studio Art accepts any courses above the ART 101 level, with no more than 6 credits in art history. A total of 18 credit hours are required for the minor in Studio Art.

INTEGRATIVE MEDIA - COGNATE MINORS

Requirements

Cognate Minor in Art - 18 credits

The following courses are required for a cognate minor in Art:

ART 111 Fundamentals of Color and Design 3 cr. (included in the IM core curriculum)
ART 113 Drawing 3 cr.
ART 134 Computer Graphics I 3 cr.
ART 234 Computer Graphics II 3 cr.
ART electives 6 cr.

Cognate Minor in Business Administration - 18 credits

The following courses are required for a cognate minor in Business Administration:

BA/ENT 153 Management Foundations 3 cr. (included in the IM core curriculum)
ACC 161 Financial Accounting & Decision-Making 3 cr.
ENT 203 Opportunity Development:
Creativity & Innovation 3 cr. (included in the IM core curriculum)
BA 321 Marketing 3 cr.
BA 322 Advertising 3 cr.
BA 351 Management of Organizations and People 3 cr.

Cognate Minor in Communication Studies - 21 credits

The following courses are required for a cognate minor in Communication Studies:

COM 102 Principles of Communication 3 cr. (included in the IM core curriculum)
COM 124 Mass Media Literacy 3 cr.
COM 203 Small Group and Team Communications 3 cr.
COM 222 Broadcast Production 3 cr.
COM 262 Visual Communications 3 cr.
COM 322 Advanced Video Production 3 cr.
COM 323 Advanced Audio 3 cr.

Cognate Minor in Computer Science - 25 credits

The following courses are required for a cognate minor in Computer Science:

CS 125 Computer Science I 4 cr. (included in the IM core curriculum)
CS 126 Computer Science II 4 cr.
CS 225 Computer Science III 4 cr.
CS 226 Computer Science IV 4 cr.
CS 283 Web Development I 3 cr.
CS 325 Database Management 3 cr.
CS 383 Web Development II 3 cr.

Cognate Minor in English - 18 credits

The following courses are required for a cognate minor in English:

ENG 120 Introduction to Literature and Culture 3 cr.
ENG 202 Technical and Professional Writing 3 cr. (included in the IM core curriculum)
ENG 203 Introduction to Creative Writing 3 cr.
ENG 308 Rhetorical Analysis of Non-Fiction Prose 3 cr.
English writing or literature electives numbered 300 and above 6 cr.

Cognate Minor in Entrepreneurship - 18 credits

The following courses are required for a cognate minor in Entrepreneurship:

BA/ENT 153 Management Foundations 3 cr. (included in the IM core curriculum)
ACC 161 Financial Accounting and Decision-Making 3 cr.
BA 321 Marketing 3 cr.
ENT 301 Nature and Essence of Entrepreneurship 3 cr.
ENT 361 Practicing Entrepreneurship 3 cr.
ENT 384 Small Business Consultancy or
ENT 362 Entrepreneurship Internship 3 cr.

Cognate Minor in Marketing - 18 credits

The following courses are required for a cognate minor in Marketing:

BA/ENT 153 Management Foundations 3 cr. (included in the IM core curriculum)
ENT 201 Nature and Essence of Entrepreneurship 3 cr.
ENT 203 Opportunity Identification: Innovation and Creativity 3 cr. (included in the IM core curriculum)
MKT 321 Marketing 3 cr.
MKT 322 Advertising 3 cr.
MKT 327 Marketing Seminar or
MKT 328 Consumer Behavior 3 cr.

Cognate Minor in Theatre Arts (Acting & Directing) - 18 credits

The following courses are required for a cognate minor in Theatre Arts (Acting & Directing):

ART 111 Fundamentals of Color & Design 3 cr. (included in the IM core curriculum)
THE 131 Acting I 3 cr.
THE 234 Directing I 3 cr.
THE 335 Directing II 3 cr.
Two Theatre Arts Elective 6 cr.

Cognate Minor in Theatre Arts (Theatre Design) - 18 credits

The following courses are required for a cognate minor in Theatre Arts (Theatre Design):

ART 111 Fundamentals of Color & Design 3 cr. (included in the IM core curriculum)
IM 350 3-Dimensional Environments & Animation 3 cr.
THE 111 Stagecraft 3 cr.
THE 221 Scene Design 3 cr.
THE 226 Scene Painting 3 cr.
One Theatre Arts Elective 3 cr.

INTEGRATIVE MEDIA MINOR

Requirements

The minor in Integrative Media offers to the student body the foundational skill set delivered within the art, design, and technology core and elective IM courses. As with the major, these courses follow real world production roles and cycles fulfilling a range of creative and non-creative content creation positions as stated in the IM major description. There are many majors that would benefit through the understanding of new media production processes as critically relational to their area of study.

Required courses include:

Core Courses (12 cr.)
IM 101 – Integrative Media Foundations I 3 cr.
IM 201 – Integrative Media Foundations II 3 cr.
IM 320 – Integrative Media Concept Development & Practices 3 cr.
IM 391 – Integrative Media Project I 3 cr.

One of the following courses (3 cr.)
IM 301 – Principles of Motion and Layering 3 cr.
IM 302 – Principles of Interactivity 3 cr.
IM Electives (2) 6 cr.
Note: Any IM course not taken can qualify as an elective.

Minimum Total Required Credits 21 cr.

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN ART

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
ART 111 Fundamentals of Color & Design	3
Distribution Requirements	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
ART 134 Computer Graphics I	3
CS 125 Computer Science I	4
Distribution Requirements	6
IM 101 Integrative Media Foundations I	3
Total Credits	**16**

Third Semester	
ART 113 Drawing	3
ART 234 Computer Graphics II	3
Distribution Requirement	3
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
Total Credits	**15**

Fourth Semester	
Electives	3
COM 102 Principles of Communication	3
Distribution Requirement	3
ENG 202 Technical & Professional Writing	3
IM 301 Principles of Motion & Layering	3
Total Credits	**15**

Fifth Semester	
Distribution Requirement	3
Electives	6
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
Total Credits	**15**

Sixth Semester	
Art Elective	3
Distribution Requirement	3
Electives	6
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
Art Elective	3
Electives	6 - 9
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
Total Credits	**12 - 18**

Eighth Semester	
Electives	9 - 12
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN BUSINESS ADMINISTRATION

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
ART 111 Fundamentals of Color & Design	3
Distribution Requirements	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
ACC 161 Financial Accounting. & Decision-Making	3
CS 125 Computer Science I	4
Distribution Requirements	6
IM 101 Integrative Media Foundations I	3
Total Credits	**16**

Third Semester	
Distribution Requirements	6
Elective	3
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
Total Credits	**15**

Fourth Semester	
COM 102 Principles of Communication	3
Distribution Requirement	3
Elective	3
ENG 202 Technical & Professional Writing	3
IM 301 Principles of Motion & Layering	3
Total Credits	**15**

Fifth Semester	
BA 321 Marketing	3
Distribution Requirements	6
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
Total Credits	**15**

Sixth Semester	
BA 322 Advertising	3
Electives	9
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
BA 351 Management of Organizations & People	3
Electives	9
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
Total Credits	**15 - 18**

Eighth Semester	
Electives	9 - 12
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN COMMUNICATION STUDIES

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
ART 111 Fundamentals of Color & Design	3
COM 101 Fundamentals of Public Speaking	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
COM 102 Principles of Communication	3
CS 125 Computer Science I	4
Distribution Requirements	6
IM 101 Integrative Media Foundations I	3
Total Credits	**16**

Third Semester	
COM 221 Audio Production	3
Distribution Requirements	6
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
Total Credits	**15**

Fourth Semester	
Distribution Requirement	3
COM 124 Mass Media Literacy	3
COM 203 Small Group and Team Communications	3
ENG 202 Technical & Professional Writing	3
IM 301 Principles of Motion & Layering	3
Total Credits	**15**

Fifth Semester	
COM 222 Broadcast Production	3
Distribution Requirements	6
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
Total Credits	**15**

Sixth Semester	
COM 262 Visual Rhetoric	3
COM 322 Advanced Video Production	3
Distribution Requirements	6
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
Electives	12
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
Total Credits	**15 - 18**

Eighth Semester	
Electives	9
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 15**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN COMPUTER SCIENCE

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
CS 125 Computer Science I	4
ART 111 Fundamentals of Color & Design	3
Distribution Requirement	3
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
CS 126 Computer Science II	4
Distribution Requirements	6
ENG 101 Composition	4
IM 101 Integrative Media Foundation I	3
Total Credits	**17**

Third Semester	
CS 225 Computer Science III	3
Distribution Requirement	3
Elective	3
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
Total Credits	**15**

Fourth Semester	
COM 102 Principles of Communication	3
CS 226 Computer Science IV	3
Distribution Requirement	3
ENG 202 Technical & Professional Writing	3
IM 301 Principles of Motion & Layering	3
Total Credits	**15**

Fifth Semester	
CS 283 Web Development I	3
Distribution Requirement	3
Elective	3
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
Total Credits	**15**

Sixth Semester	
CS 325 Database Management	3
Distribution Requirement	3
Electives	6
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
CS 383 Web Development II	3
Electives	6 - 9
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
Total Credits	**12 - 18**

Eighth Semester	
Electives	9 - 12
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN ENGLISH

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
ART 111 Fundamentals of Color & Design	3
Distribution Requirement	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
CS 125 Computer Science I	4
Distribution Requirements	6
ENG 120 Introduction to Literature & Culture	3
IM 101 Integrative Media Foundations I	3
Total Credits	**16**

Third Semester	
Distribution Requirements	6
Elective	3
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
Total Credits	**15**

Fourth Semester	
COM 102 Principles of Communication	3
Distribution Requirement	3
ENG 202 Technical & Professional Writing	3
ENG 203 Introduction to Creative Writing	3
IM 301 Principles of Motion & Layering	3
Total Credits	**15**

Fifth Semester	
Distribution Requirement	3
Electives	6
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
Total Credits	**15**

Sixth Semester	
Distribution Requirement	3
Electives	6
ENG 308 Rhetorical Analysis & Non-fiction Prose Writing	3
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
Electives	9
ENG Elective	3
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
Total Credits	**15 - 18**

Eighth Semester	
Electives	6 - 9
ENG Elective	3
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN ENTREPRENEURSHIP

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
ART 111 Fundamentals of Color & Design	3
Distribution Requirement	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
ACC 161 Financial Accounting. & Decision-Making	3
CS 125 Computer Science I	4
Distribution Requirements	6
IM 101 Integrative Media Foundation I	3
Total Credits	**16**

Third Semester	
Distribution Requirements	6
Elective	3
ENT 201 Nature and Essence of Entrepreneurship	3
IM 201 Integrative Media Foundations II	3
Total Credits	**15**

Fourth Semester	
COM 102 Principles of Communication	3
Distribution Requirement	3
ENG 202 Technical & Professional Writing	3
ENT 203 Opportunity Identification	3
IM 301 Principles of Motion & Layering	3
Total Credits	**15**

Fifth Semester	
Distribution Requirements	6
ENT 361 Practicing Entrepreneurship	3
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
Total Credits	**15**

Sixth Semester	
BA 321 Marketing	3
Distribution Requirement	3
Electives	6
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
Electives	9
ENT 384 Small Business Consultancy or	
ENT 362 Internship	3
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
Total Credits	**15 - 18**

Eighth Semester	
Electives	9 - 12
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN MARKETING

Recommended Course Sequence

First Semester	
FYF 101 First-Year Foundations	3
ENG 101 Composition	4
ART 111 Fundamentals of Color & Design	3
Distribution Requirements	6
Total Credits	**16**

Second Semester	
IM 101 Integrative Media Foundations I	3
BA 153 Management Foundations	3
CS 125 Computer Science I	4
Distribution Requirements	6
Total Credits	**16**

Third Semester	
IM 201 Integrative Media Foundations II	3
ENT 201 Nature and Essence of Entrepreneurship	3
Elective	3
Distribution Requirements	6
Total Credits	**15**

Fourth Semester	
IM 301 Principles of Motion & Layering	3
COM 102 Principles of Communication	3
ENG 202 Technical & Professional Writing	3
MKT 321 Marketing	3
Distribution Requirement	3
Total Credits	**15**

Fifth Semester	
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
ENT 203 Opp. Id.: Innovation & Creativity	3
Distribution Requirement	3
Elective	3
Total Credits	**15**

Sixth Semester	
IM 391 Integrative Media Project I	3
MKT 322 Advertising	3
Distribution Requirement	3
Elective	6
Total Credits	**15**

Seventh Semester	
IM 392 IM Project II	3
IM 399 Cooperative Education	0 - 3
MKT 327 Marketing Seminar or	3
MKT 328 Consumer Behavior	
Electives	9 - 6
Total Credits	**15**

Eighth Semester	
IM 400 Integrative Media Portfolio Capstone	3
IM 399 Cooperative Education	0 - 3
Elective	12 - 9
Total Credits	**15**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN THEATRE ARTS AND A CONCENTRATION IN ACTING AND DIRECTING

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
Distribution Requirements	6
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
ART 111 Fundamentals of Color & Design	3
CS 125 Computer Science I	4
Distribution Requirements	6
IM 101 Integrative Media Foundation I	3
Total Credits	**16**

Third Semester	
Distribution Requirement	3
Elective	3
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
THE 131 Acting I	3
Total Credits	**15**

Fourth Semester	
COM 102 Principles of Communication	3
Distribution Requirement	3
ENG 202 Technical & Professional Writing	3
IM 301 Principles of Motion & Layering	3
THE 234 Directing I	3
Total Credits	**15**

Fifth Semester	
Distribution Requirement	3
Elective	3
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
THE 335 Directing II	3
Total Credits	**15**

Sixth Semester	
Distribution Requirement	3
Electives	6
IM 391 Integrative Media Project I	3
THE Elective	3
Total Credits	**15**

Seventh Semester	
Electives	6 - 9
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
THE Elective	3
Total Credits	**12 - 18**

Eighth Semester	
Electives	9 - 12
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

INTEGRATIVE MEDIA, B.A. - COGNATE MINOR IN THEATRE ARTS AND A CONCENTRATION IN THEATRE DESIGN

Recommended Course Sequence

First Semester	
BA 153 Management Foundations	3
Distribution Requirements	6
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
ART 111 Fundamentals of Color & Design	3
CS 125 Computer Science I	4
Distribution Requirements	6
IM 101 Integrative Media Foundation I	3
Total Credits	**16**

Third Semester	
Distribution Requirement	3
Elective	3
ENT 203 Opportunity Identification	3
IM 201 Integrative Media Foundations II	3
THE 121 Stagecraft	3
Total Credits	**15**

Fourth Semester	
COM 102 Principles of Communication	3
Distribution Requirement	3
ENG 202 Technical & Professional Writing	3
IM 301 Principles of Motion & Layering	3
THE 221 Scene Design	3
Total Credits	**15**

Fifth Semester	
Distribution Requirement	3
Elective	3
IM 302 Principles of Interactivity	3
IM 320 Concept Development & Processes	3
THE 226 Scene Painting	3
Total Credits	**15**

Sixth Semester	
Distribution Requirement	3
Electives	6
IM 350 3-Dimensional Environment & Animation	3
IM 391 Integrative Media Project I	3
Total Credits	**15**

Seventh Semester	
Electives	6 - 9
IM 392 Integrative Media Project II	3
IM 399 Cooperative Education	0 - 3
THE Elective	3
Total Credits	**12 - 18**

Eighth Semester	
Electives	9 - 12
IM 399 Cooperative Education	0 - 3
IM 400 Integrative Media Portfolio Capstone	3
Total Credits	**12 - 18**

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Department of Mathematics and Computer Science

Chairperson: Dr. Barbara A. Bracken

Faculty

Professors: Koch,
Associate Professors: Bracken, Harrison, Kapolka, Kong, Lew, Sullivan
Assistant Professor: Sullivan, Young, Chepushtanova
Faculty of Practice: Pryor
Math Specialist: Gapinski
Faculty Emeriti: Merrill, Tillman, Wong, Berard

COMPUTER INFORMATION SYSTEMS

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, in cooperation with the Jay S. Sidhu School of Business and Leadership, offers an interdisciplinary program leading to the B.S. 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.

Recommended Course Sequence

First Semester Credits

CS 125 Computer Science I	4
ACC 161 Financial Accounting and Decision Making	3
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
	14

Second Semester

CS 126 Computer Science II	4
ACC 162 Managerial Accounting and Decision Making	3
MTH 111 Calculus I	4
CS 246 C and Unix	3
Distribution Requirements	3
	17

Third Semester

CS 225 Computer Science III	3
CS 285 Mobile Applications or CS 283 Web Development I	3
ENG 202 Technical & Professional Writing	3
Distribution Requirements	6
	15

Fourth Semester

CS 226 Computer Science IV	3
MTH 150 Elementary Statistics	3
BA 153 Management Foundations	3
Distribution Requirements	6
	15

Fifth Semester

CS 324 Systems Analysis **OR** CS 325 Database Management	3
CS 317 Software Integration or CS Elective	3
CS 285 Mobile Applications **OR** CS 283 Web Development I	3
MGT 251 Management of Organizations and People	3
Distribution Requirements	3-6
	15-18

Sixth Semester

CS Electives	6
MGT 354 Organizational Behavior	3
Distribution Requirements or Free Electives	6
	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
	13-16

Eighth Semester

CS 392 Senior Projects II	2
Distribution Requirements **OR** Free Electives	12-15
	14-17

Summary of the minimum credit distribution for the major in Computer Information Systems:

Business Administration (18 credits) Credits

Required Courses (15 credits)

ACC 161 – Financial Accounting and Decision Making 3
ACC 162 – Managerial Accounting and Decision Making 3

BA 153 – Management Foundations 3
MGT 251 – Management of Organizations and People 3
MGT 354 – Organizational Behavior 3

Elective (3 credits)

MKT 221 – Marketing 3
FIN 341 – Managerial Finance 3
MGT 352 – Production and Operations Management 3

Computer Science Courses (41 credits) Credits

Required Courses (32 credits)

CS 125 – Computer Science I 4
CS 126 – Computer Science II 4
CS 225 – Computer Science III 3
CS 226 – Computer Science IV 3
CS 246 – C and Unix 3
CS 283 – Web Development I 3
CS 285 – Mobile Applications 3
CS 317 – Software Integration 3
CS 324 – Systems Analysis 3
CS 325 – Database Management 3
CS 391 – Senior Projects I 1
CS 392 – Senior Projects II 2

Electives (9 credits)

CS 321 – Simulation and Data Analysis 3
CS 334 – Software Engineering 3
CS 335 – Advanced Database Concepts 3
CS 340 – Artificial Intelligence 3
CS 350 – Object-Oriented Programming 3
CS 355 – Computer Networks 3
CS 360 – Linear Programming 3
CS 363 – Operations Research 3
CS 366 – 3-Dimensional Environments and Animation 3
CS 367 – Computer Graphics 3
CS 383 – Web Development II 3
MTH 354 – Statistical Methodology 3

Additional Courses (61 credits) Credits

Distribution Requirements 24
ENG 101 – Composition 4
ENG 202 – Technical and Professional Writing 3
FYF 101 – First-Year Foundations 3
Free Electives 17
MTH 111 – Calculus I 4
MTH 150 – Elementary Statistics 3

COMPUTER INFORMATION SYSTEMS MINOR

Requirements

Computer Information Systems Minor

A minor in Computer Information Systems requires the completion of 17 credits, consisting of the following courses:

Required Courses (14 credits) Credits

CS 125 – Computer Science I 4

CS 126 – Computer Science II 4

CS 225 – Computer Science III 3

CS 324 – Systems Analysis 3

One additional course (3 credits) selected from the following Credits

CS 226 – Computer Science IV 3

CS 317 – Software Integration 3

CS 321 – Simulation and Data Analysis 3

CS 325 – Database Management 3

CS 334 – Software Engineering 3

CS 335 – Advanced Database Concepts 3

CS 340 – Artificial Intelligence 3

CS 350 – Object-Oriented Programming 3

CS 355 – Computer Networks 3

CS 360 – Linear Programming 3

CS 363 – Operations Research 3

CS 366 – 3- Dimensional Environments and Animation 3

CS 367 – Computer Graphics 3

CS 383 – Web Development II 3

MTH 354 – Statistical Methodology 3

Because certain required and elective courses are offered in either alternative semesters, or alternative 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 and timely degree progress.

COMPUTER SCIENCE

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.

The Department of Mathematics and Computer Science offers a program study leading to the B.A. or B.S degree with a major in Computer Science. Interested students may also pursue Computer Science as a minor area of study.

Computer Science Major

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—the Gaming and Media Design track and the Classic track. The gaming and media design track prepares students for work in the expanded gaming industry, while the traditional track prepares students for graduate study and research in the discipline or for employment in government or industry. Students are encouraged, through the pursuit 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 alternative semesters or alternative 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 Major - Classic Track - Required Courses and Recommended Course Sequence

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
CS-246 C and Unix	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 Requirements	9	6
	16	**17**

Fourth Semester	B.A.	B.S.
CS-226 Computer Science IV	3	3
MTH-231 Discrete Mathematics	3	3
Laboratory Science Sequence	0	4
Distribution Requirement(s)	6	3
ENG-202 Tech. & Prof. Writing	3	3
	15	**16**

Fifth Semester	B.A.	B.S.
CS-326 Operating System Principles or CS-328Analysis of Algorithms	3	3
MTH-150 Elementary Statistics or MTH-351 Probability and Statistics I	3	3
Laboratory Science Elective	0	4
Distribution Requirements or Free Electives	9	6
	15	**16**

Sixth Semester	B.A.	B.S.
CS-334 Software Engineering	3	3
CS Elective or CS330 Computer Arch.	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
	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-328Analysis of Algorithms	3	3
Free Electives	6-9	6-9
	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-319Programming Languages or CS-323 Theory of Computation or CS-327 Compiler Design	3	3
Free Electives	6-9	6-9
	14-17	**14-17**

Computer Science Major - Gaming and Media Design Track (B.S. Degree) - Required Courses and Recommended Course Sequence

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
	14-15

Second Semester

CS-126 Computer Science II	4
MTH-112 Calculus II	4
CS-246 C and Unix	3
Eng 101 Composition or Distribution Requirement	4/3
	14-15

Third Semester

CS-225 Computer Science III	3
MTH-202 Set Theory and Logic	4
Laboratory Science Sequence	4
Distribution Requirements	6
	17

Fourth Semester

CS-226 Computer Science IV	3
MTH-231 Discrete Mathematics	3
Laboratory Science Sequence	4
CS 366 3-D Env. & Animation or Ditribution Requirement	3
ENG-202 Technical & Prof. Writing	3
	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 I	4
	13

Sixth Semester

CS-334 Software Engineering	3
CS 366 3-D Env. & Animation or CS 368 3D Game Development	3
CS Elective or Distribution Requirement	3
Distribution Requirements	6
	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
	13-16

Eighth Semester

CS 368 3-D Game Development or CS Elective	3
CS-392 Senior Projects II	2
Free Electives	9-12
	14-17

Science Electives for Computer Science Majors

B.A. candidates

see General Education Curriculum requirements

B.S. candidates

A laboratory science sequence, which must be one of the following:
BIO 121; BIO 122
CHM 113 & 115; CHM 114 & 116
EES 211; EES 230
PHY 201; PHY 202
and
one additional four-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be number above 200, except that BIO 121, BIO 122, CHM 113 and 115, CHM 114 and 116 are also acceptable in fulfilling 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 a required course.
Gaming and Media Design: Any two 300-level CS courses not listed as required courses.

Summary of the minimum credit distribution for the major in Computer Science – Classic Track:

B.A. B.S.

CS 125 – Computer Science I 4 4

CS 126 – Computer Science II 4 4

CS 225 – Computer Science III 3 3

CS 226 – Computer Science IV 3 3

CS 246 – C and Unix 3 3

CS 326 – Operating System Principles 3 3

CS 328 – Algorithms 3 3

CS 330 – Computer Architecture 3 3

CS 334 – Software Engineering 3 3

CS 391 – Senior Projects I 1 1

CS 392 – Senior Projects II 2 2

CS 319 – Principles of Programming Languages or

CS 323 – Theory of Computation or

CS 327 – Compiler Design 3 3

CS Electives 9 9

MTH 111 – Calculus I 4 4

MTH 112 – Calculus II 4 4

MTH 202 – Set Theory and Logic 4 4

MTH 231 – Discrete Mathematics 3 3

MTH 150 – Elementary Statistics or

MTH 351 – Probability and Statistics I 3 3

ENG 101 – Composition 4 4

ENG 202 – Technical and Professional Writing 3 3

FYF 101 – First-Year Foundations 3 3

Science Electives 6 12

Distribution Requirements 18 18

Free Electives 24 18

Total minimum number of credits required for degree completion 120 120

Summary of the minimum credit distribution for the major in Computer Science – 120

Gaming and Media Design Track:

Computer Science Courses (41 credits) Credits

CS 125 – Computer Science I 4

CS 126 – Computer Science II 4

CS 225 – Computer Science III 3

CS 246 – C and Unix 3

CS 226 – Computer Science IV 3

CS 328 – Algorithms 3

CS 334 – Software Engineering 3

CS 340 – Artificial Intelligence 3

CS 366 – 3-Dimensional Environments and Animation 3

CS 367 – Computer Graphics 3

CS 368 – 3-Dimensional Game Development 3

CS 391 – Senior Projects I 1

CS 392 – Senior Projects II 2

CS Electives 6

MTH 111 – Calculus I 4

MTH 112 – Calculus II 4

MTH 202 – Set Theory and Logic 4

MTH 231 – Discrete Mathematics 3

MTH 150 – Elementary Statistics or

MTH 351 – Probability and Statistics 3

ENG 101 – Composition 4

ENG 202 – Technical and Professional Writing 3

FYF 101 – First-Year Foundations 3

PHY 201 – General Physics I 4

Science Electives 8

Distribution Requirements 18

Free Electives 18

Total minimum number of credits required for degree completion 120

Computer Science Minor

A minor in Computer Science requires the completion of 17 credits, consisting of the following courses:

Required Courses (14 credits) Credits

CS 125 – Computer Science I 4
CS 126 – Computer Science II 4
CS 225 – Computer Science III 3
CS 226 – Computer Science IV 3
and
one additional 300-level course, excluding CS 321, CS 324, CS 360, CS 363, and CS 364. 3

Total Credits 17

MATHEMATICS

Mathematics

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. 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.

The Department of Mathematics and Computer Science offers programs of study leading to the B.A. and B.S. in Mathematics. In addition, students may pursue a minor area of study in either Mathematics or Statistics.

Mathematics Major

The Department of Mathematics and Computer Science offers three tracks leading to the baccalaureate degree in Mathematics: the Standard Mathematics Track; the Computational 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 upon the upper-level electives chosen in consultation with the faculty advisor. The Standard Track, when combined with an appropriate second major or minor area of study, can also provide an excellent foundation for professions in business and management, economics, law, medicine, and actuarial, computing, engineering, environmental, and physical sciences. Computational Mathematics is increasingly important in all fields of sciences, especially such fields as oil and gas exploration. In addition, the Computational Mathematics Track offers students with a strong interest in both mathematics and computer science the opportunity to explore the relationships between the two fields. All three tracks share a common core of study in discrete mathematics, analysis, probability, and statistics.

In the Standard and Teacher Certification Tracks, students may opt for either a Bachelor of Arts or a 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. The Computational Mathematics Track is offered only as a Bachelor of Science degree.

Students interested in Secondary Education certification should make an appointment with the chairperson of the Education Department as early in their program of study as possible in order 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 the requirements for the minor in Secondary Education should be directed to the Education Department.

Recommended Course Sequence

Mathematics Major - Standard Track- Required Courses and Recommended Course Sequence

First Semester Credits	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
Science Elective	-	4
	16-17	**17-18**

Third Semester	B.A.	B.S.
MTH 202 Set Theory and Logic	4	4
MTH 211 Intro. to Ordinary	4	4
Differential Equations		
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 Requirement	-	3
Free Elective	3	0
	13	**14**

Fifth Semester	B.A.	B.S.
MTH 311 Functions of a Real Variable or MTH 331Intro 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.
Mth/CS Electives	6	6
Free Electives	9	9
	15	**15**

Seventh Semester	B.A.	B.S.
MTH 391 Senior Seminar	1	1
MTH 311 Functions of a Real Variable or MTH 331Intro. to Abstract Algebra I	4	4
MTHh/CS Elective	-	3
Free Electives	9	7
	14	**15**

Eighth Semester	B.A.	B.S.
MTH 392 Senior Seminar	2	2
Mth/CS Elective	3	3
Free Electives	9	9
	14	**14**

Mathematics Major - Computational Track- Required Courses and Recommended Course Sequence

First Semester	Credits
CS 125 – Computer Science I	4
ENG 101 – Composition or	4
Distribution Requirement	3
FYF 101 – First-Year Foundations	3
MTH 111 – Calculus I	4
Total Credits	**14-15**

Second Semester	
CS 126 – Computer Science II	4
ENG 101 – Composition or	4
CS 246 C and Unix	3
Distribution Requirement	3
MTH 112 – Calculus II	4
Total Credits	**18**

Third Semester	
CS 225 – Computer Science III	3
Distribution Requirement	3
MTH 202 – Set Theory and Logic	4
MTH 211 – Differential Equations	4
Total Credits	**14**

Fourth Semester	
CS 226 – Computer Science IV	3
MTH 212 – Multivariable Calculus	4
MTH 214 – Linear Algebra	3
Science Requirement	4
Total Credits	**14**

Fifth Semester	Credits
Distribution Requirements	6
MTH 311 – Real Analysis or	
MTH 361 – Partial Differential Equations	3
MTH 351 – Probability and Statistics or	
CS 328 – Algorithms	3
Science Requirement	4
Total Credits	**16-17**

Sixth Semester	
Distribution Requirements	3
MTH 231 – Discrete Mathematics	3
MTH 364 – Numerical Analysis or	
MTH 365 – Numerical Linear Algebra	3
MTH Elective	3
Science Elective	4
Total Credits	**16**

Seventh Semester	
Free Electives	6
MTH 311 – Real Analysis or	
MTH 361 – Partial Differential Equations	4/3
MTH 351 – Probability and Statistics or	
CS 328 – Algorithms	3
MTH 391 – Senior Seminar I	1
MTH Elective	3
Total Credits	**16-17**

Eighth Semester	
Free Electives	6
MTH 364 – Numerical Analysis or	
MTH 365 – Numerical Linear Algebra	3
MTH 392 – Senior Seminar II	2
MTH Elective	3
Total Credits	**14**

Mathematics Major - Teacher Certification 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
PSY 101 General Psychology	3	3
Distribution Requirements	6	3
Lab Science Sequence I	-	4
	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
	16	**17**

Fourth Semester	B.A.	B.S.
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	-
	16	**14**

Fifth Semester	B.A.	B.S.
ED SP210 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	-	3
Distribution Requirement	0	3
Free Electives	3	0
	13-14	**13-14**

Sixth Semester	B.A.	B.S.
MTH/CS Elective(s)	)3	9
ED 220 Teaching...Diverse Learners	3	3
EDSP 225 Special Education Methodology	3	3
ED 380 Content Area Literacy	3	3
Free Elective	3	0
	15	**18**

Seventh Semester	B.A.	B.S.
MTH 343 Intro. to Geometry or MTH 303 Teaching 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
	14-15	**14-15**

Eighth Semester	B.A.	B.S.
EDSP 388 Inclusionary Practices	3	3
ED 390 Intern Teaching	12	12
	15	**15**

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; BIO122;
CHM 113 & 115; CHM 114 & 116;
EES 211; EES 230;
PHY 201; PHY 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, BIO 122, CHM 113 and 115 or CHM 114 and 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

In Conjunction with the Secondary Education Major or Minor

Students interested in becoming secondary teachers in Mathematics should make an appointment with the chairperson of the Education Department or the Coordinator of the Secondary Education Program as early as possible in their course of study to plan their professional studies. These students will declare a major in Mathematics and as well as a major or minor in Secondary Education. The major in Secondary Education must be taken in conjunction with an approved major; it cannot stand alone as a major. Upon successful completion of the secondary education program, students may become certified in Pennsylvania to teach in grades 7-12 in their chosen field.

Students interested in pursuing either the major or the minor in Secondary Education should refer to the Education Department section of this bulletin for complete details of the curriculum and other degree requirements. Students should also consult carefully with their Education program and Mathematics program advisors in planning their course of studies.

Total credits required for Secondary Education minor - 40 credits

Total credits required for Secondary Education major - 47 credits

Required courses for the major(*) or minor in Secondary Education are as follows:

ED 180 – Educational Psychology - 3 cr.
ED 190 – Effective Teaching with Field Experience - 3 cr.
ED 191 – integrating Technology into the Classroom - 3 cr.
EDSP 210 – Teaching Students with Special Needs - 3 cr.
ED 220 – Teaching Culturally and Linguistically Diverse Learners - 3 cr.

EDSP 225 – Special Education Methods I with Field Experience - 3 cr.
ED 300 – Teaching of a Foreign Language with Field Experience - 4 cr.
*ED 345 – Assessment - 3 cr.
*ED 375 – Middle Level/Secondary School Methods with Field Experience - 4 cr.
MTH 303 – Teaching of Mathematics in Middle Level/Secondary Schools (with Field Experience) - 4 cr.
ED 380 – Content Area Literacy - 3 cr.
EDSP 388 – Inclusionary Practices (taken concurrently with ED 390) - 3 cr.
ED 390 – Student Teaching with Seminar -12 cr.

***** *These additional courses required in order to complete the major in Secondary Education.*

- All Teacher Education candidates must apply for admission to the Teacher Education Program in the sophomore or junior year.
- To be admitted into the Teacher Education Program, candidates must;
  - Attain a 3.0 GPA
  - Complete 48 credits including six credits in both Mathematics and English
  - Pass a test of basic skills
  - Submit required clearances showing 'no record'
- To remain in the Teacher Education Program, candidates must:
  - Maintain a 3.0 GPA
  - Adhere to the Code of Professionalism and Academic Honesty
- To be certified as a teacher in Pennsylvania in grades 7-12, candidates must:
  - Successfully complete all required Education courses, including student teaching
  - Graduate with a 3.0 cumulative GPA
  - Pass the appropriate exit test(s) in their content area
  - Apply for certification through the Pennsylvania Teacher Information Management System (TIMS).

Summary of the minimum credit distribution for the major in Mathematics:

Standard Mathematics Track	B.A.	B.S.
CS 125 – Computer Science I	4	4
MTH 111 – Calculus I	4	4
MTH 112 – Calculus II	4	4
MTH 202 – Set Theory and Logic	4	4
MTH 211 – Introduction to Ordinary Differential Equations	4	4
MTH 212 – Multivariable Calculus	4	4
MTH 214 – Linear Algebra	3	3
MTH 311 – Real Analysis	4	4
MTH 331 – Abstract Algebra I	4	4
MTH 351 – Probability and Statistics I	3	3
MTH 391 – Senior Seminar I	1	1
MTH 392 – Senior Seminar II	2	2
MTH/CS Electives	9	12
ENG 101 – Composition	4	4
FYF 101 – First-Year Foundations	3	3
Science Electives	6	12
Distribution Requirements	18	18
Free Electives	39	30
Total minimum number of credits required for degree completion	**120**	**120**

Summary of the minimum credit distribution for the major in Mathematics:

Computational Mathematics Track	Credits
CS 125 – Computer Science I	4
CS 126 – Computer Science II	4
CS 225 – Computer Science III	3
CS 226 – Computer Science IV	3
CS 246 – C and Unix	3
CS 328 – Algorithms	3
MTH 111 – Calculus I	4
MTH 112 – Calculus II	4
MTH 202 – Set Theory and Logic	4
MTH 211 – Introduction to Ordinary Differential Equations	4
MTH 212 – Multivariable Calculus	4
MTH 214 – Linear Algebra	3
MTH 231 – Discrete Mathematics	3
MTH 311 – Real Analysis	4
MTH 351 – Probability and Statistics I	3
MTH 361 - Partial Differential Equations	3
MTH 364 – Numerical Analysis	3
MTH 365 – Numerical Linear Algebra	3
MTH 391 – Senior Seminar I	1
MTH 392 – Senior Seminar II	2
MTH Electives	9
ENG 101 – Composition	4
FYF 101 – First-Year Foundations	3
Area I: The Humanities	9
Area II: The Scientific World	12
Area III: Behavioral and Social Sciences	6
Area IV: Visual and Performing Arts	3
Free Electives	12
Total minimum number of credits required for degree completion	**124**

Summary of the minimum credit distribution for the major in Mathematics:

Teacher Certification Track	B.A.	B.S.
CS 125 – Computer Science I	4	4
MTH 111 – Calculus I	4	4
MTH 112 – Calculus II	4	4
MTH 202 – Set Theory and Logic	4	4
MTH 212 – Multivariable Calculus	4	4
MTH 214 – Linear Algebra	3	3
MTH 303 – Teaching Mathematics in Secondary Schools	3	3
MTH 311 – Real Analysis	4	4
MTH 331 – Abstract Algebra I	4	4
MTH 343 – Geometry	3	3
MTH 351 – Probability and Statistics I	3	3
MTH 391 – Senior Seminar I	1	1
MTH/CS Electives	3	9
ED 180 – Educational Psychology	3	3
ED 190 – Effective Teaching	3	3
ED 191 – Integrating Technology into the Classroom	3	3
ED 220 – Teaching Culturally and Linguistically Diverse Learners	3	3
ED 380 – Content Area Literacy	3	3
ED 390(A) – Intern Teaching	12	12
EDSP 210 – Teaching Students with Special Needs	3	3
EDSP 225 – Special Education Methodology	3	3
EDSP 388 – Inclusionary Practices	3	3
ENG 101 – Composition	4	4
FYF 101 – First-Year Foundations	3	3
PSY 101 – General Psychology	3	3
Science Electives	6	12

MATHEMATICS MINOR

Requirements

Mathematics Minor

A minor in Mathematics requires the completion of a minimum of 21 credits, consisting of the following courses:

Credits

MTH 111 – Calculus I 4
MTH 112 – Calculus II 4
Any two MTH courses numbered 300 or higher, excluding MTH 303, MTH 391, and MTH 392 6-8
and
two of the following courses (electives): 7-8
MTH 202
MTH 211
MTH 212
MTH 214
MTH 231

Minimum total credits required for a minor in Mathematics: 21-24

STATISTICS MINOR

Requirements

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.

Credits

CS 125 – Computer Science I 4
MTH 111 – Calculus I and 4
MTH 112 – Calculus II 4
MTH 351 – Probability and Mathematical Statistics I 3
MTH 352 – Probability and Mathematics Statistics II 3
MTH 354 – Statistical Methodology 3

Minimum total credits required for a minor in Statistics: 21

ENGLISH

English Department

Chairperson: Dr. Mischelle Anthony

Faculty

Associate Professors: Anthony, Davis, Farrell, Hamill, Kelly, Kuhar, Stanley, Starner
Faculty of Practice: Grier
Adjunct Faculty: Black, Gearhart, Kemmerer, McIntyre, Muklewicz, Reibe
Faculty Emeriti: Fiester, P. Heaman, R. Heaman, Karpinich

ENGLISH MINOR

Requirements

The Department of English offers minor degree programs of study in the following areas: English, Creative Writing, and Workplace Writing. See details of these programs in the following sections

English Minor

The minor in English is designed to cultivate students' knowledge of literature and writing by enhancing their ability to discover meaning in a variety of literary works and to develop their writing skills. This minor provides students with practical skills in communication, writing, and analysis that enhance personal growth and prepare students for careers in a variety of challenging areas. The minor in English includes the fulfillment of General Education Curriculum requirements in composition and literature along with fifteen credits in literature, writing, or language studies courses numbered 200 or above.

English Minor In Creative Writing

The minor in Creative Writing offers students the opportunity to develop their creative writing skills by exploring the full range of literary genres. The minor in Creative Writing requires fulfillment of General Education Requirements in composition and literature along with 15 additional credits including the completion of ENG 203, ENG 303 and nine credit hours among ENG 190 (maximum 3 credits), 200-level literature survey courses (maximum 6 credits from ENG 233, 234, 281, 282), 300-level literature courses (maximum 6 credits), ENG 395/396, ENG 399. The department strongly recommends that students who minor in Creative Writing take advantage of the opportunity to write creatively for the university's literary magazine, Manuscript, published by the Manuscript Society.

English Minor In Workplace Writing

The minor in Workplace Writing offers students the opportunity to develop writing skills adaptable to the workplace. The minor in Workplace Writing requires fulfillment of General Education Requirements in composition and literature and 15 additional credits including completion of ENG 202 and twelve credit hours among ENG 190 (maximum of 3 credits), ENG 218, ENG 225, ENG 228, ENG 308, ENG 395/396, or ENG 399. The department strongly recommends that students who minor in Workplace Writing take advantage of the opportunity to work on the English program’s newsletter, Inkwell Quarterly, published by the English Department.

ENGLISH, B.A.

Requirements

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 in English — 18 (beyond Eng 101)

Wilkes University requires a minimum of 120 credit hours for a B.A. degree in English. These include completion of General Education Curriculum requirements and 39 credits 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 examine the diversity of human identity and experience through the study of literature. The skills, values, and habits of thought acquired through the study of language and literature prepare students for leadership positions and careers in teaching, graduate school, law, communications, journalism, publishing, 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, writing, digital humanities, 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 Concentration in English

Students who concentrate their studies in literature are required to take ENG 101, ENG 120(Introduction to Literature and Culture), 201 (Writing About Literature and Culture), and three of four survey courses: ENG 233 (Survey of English Literature I), 234 (Survey of English Literature II), 281 (Survey of American Literature I), and 282 (Survey of American Literature II). 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, ENG 397 (English Seminar), and a Senior Capstone project.

Writing Concentration in English

Students who pursue a concentration in writing are required to take ENG 101, ENG 120, ENG201 and an additional nine credit hours in other writing courses numbered above 200. Students must take three of four survey courses: ENG 233, 234, 281 and 282. In addition, students must complete nine credit hours in advanced literature courses numbered above 300, including ENG 397 (English Seminar), and a Senior Capstone project.

Digital Humanities Concentration in English

Students who concentrate in Digital Humanities must take ENG 101, ENG 120, ENG 201 and three of the four survey courses: ENG 233, ENG 234, ENG 281, and ENG 282. In addition, students must complete nine credit hours in Digital Humanities-designated courses numbered 200 and above, including ENG 222 (Introduction to Digital Humanities), as well as nine credits in advanced English courses numbered 300 or above, including ENG 397. Students must also complete a Digital Humanities-designated senior capstone project.

Certifications in Secondary Education and Middle Level Education

Students interested in Secondary Education or Middle Level Education certification should make appointments as early as possible with the chairpersons of the English program and 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 majoring in English with a minor in Secondary Education and seeking certification as secondary public school teachers of English (seventh through twelfth grade certification) must take ENG 101, ENG 120 (Introduction to Literature and Culture), ENG 201 (Writing About Literature and Culture), ENG 225 (Comparative Grammar), ENG 324 (History of the English Language), ENG 393 (The Teaching of English in Secondary Schools), and three of four survey courses: ENG 233 (Survey of English Literature I), 234 (Survey of English Literature II), 281 (Survey of American Literature I), and 282 (Survey of American Literature II). 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 ENG 397 (English Seminar).

Required Education courses are ED 180 (Educational Psychology), ED 190 (Effective Teaching with Field Experience), ED 191 (Integrating Technology into the Classroom), ED 220 (Teaching Culturally and Linguistically Diverse Learners), ED 390 (Student Teaching with Seminar), EDSP 210 (Teaching Students with Special Needs), EDSP 225 (Special Education Methodology I with Field Experience), and EDSP 388 (Inclusionary Practices).

Students interested in Secondary Education should make an appointment with the coordinator of the Secondary Education program as early as possible to design an effective and efficient course of study that incorporates all requirements of the major and minor degree programs. 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 3.0 GPA and pass the appropriate PAPA and 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 this Bulletin for a complete outline of Pennsylvania Department of Education (PDE) and program requirements. Students seeking certification as Middle Level public school teachers should also consult carefully with their education program and English program advisors in planning their program.

Recommended Course Sequence

First Semester	
Distribution Requirements	9
ENG 101 Composition	4
FYF 101 First-Year Foundations	3
Total Credits	**16**

Second Semester	
Distribution Requirements	9
ENG 120 Introduction to Literature and Culture	3
Free Elective	3
Total Credits	**15**

Third Semester	
ENG 201 Writing about Literature and Culture	4
English Survey Elective (ENG 233,282)	3
Free Electives	9
Total Credits	**16**

Fourth Semester	
English Survey Electives (ENG 234,281)	6
Free Electives	9
Total Credits	**15**

Fifth Semester	
Free Electives	9
Major Electives*	6
Total Credits	**15**

Sixth Semester	
Free Electives	6
Major Electives*	9
Total Credits	**15**

Seventh Semester	
ENG 397 Seminar	3
Free Electives	12
Total Credits	**15**

Eighth Semester	
Free Electives	12
Major Capstone	1
Total Credits	**13**

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

FINANCE, ACCOUNTING AND MANAGEMENT DEPARTMENT

Finance, Accounting and Management Department

Chairperson: Dr. Jennifer J. Edmonds

Faculty

Professors: Alves, Batory, Liuzzo, Rexer, Taylor
Associate Professors: Chisarick, Edmonds, Frear, Hao, Matus, Sowcik, Xiao
Assistant Professors: Clevenger, Erenay, Ferrara, Gordon, Houlihan
Visiting Assistant Professors: Hughes, Osei
Adjunct Faculty: Albany, Alessi, Allen, Bechtold, Castano, Ferdowsian, Gayoso, Gorman, Hanson, Hopkins, Kane, Kosicki, Moser, G. Myers, S. Myeers, Ridley, Sabatini, Savitski, Swantek, Turel, Tuzzolino, Udomsak
Faculty Emeriti: Broadt, Capin, Gera, Raspen
Associate Dean: Dr. Justin Matus
Director of Allan P. Kirby Center: Dr. Rodney Ridley
Director of Arizona Business Programs: Dr. Anthony Liuzzo
Director of Assessment and Accreditation: Dr. Justin Matus
Director of Leadership Programs: Dr. Matthew Sowcik
Director of MBA and ABBA Programs: Dr. Justin Matus
Assistant Director, Sidhu School Initiatives: Dina Udomsak
Assistant Director, Leadership Programs: Bridget Turel

- Accounting
- Business Management
- Finance
- Management
- Sports and Events Management

ACCOUNTING

Accounting Major

Coordinator: Dr. Marianne Rexer

Total minimum number of credits required for a major in Accounting leading to the B.S. degree — 122.
Total minimum number of credits required for a minor in Accounting — 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 for licensure 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 Accounting curriculum comprises seven 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 the curriculum is the Sidhu School Foundation courses, which transmit a common educational experience to all Majors within the Sidhu School by addressing topics that are recognized to be basic and necessary to all practicing professionals.

The third tier of educational experience provides a general background in statistical, financial, and managerial techniques.

The fourth tier of basic educational skills relates to the field 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 fifth 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.

The sixth tier requires completion of at least 4 credits geared toward the undergraduate student's Personal & Professional Development. These courses are intended to prepare students to recognize and use their unique strengths and skills while allowing them to reflect and prepare for a meaningful life and career.

A seventh tier, a five-and-a-half-year BS/M.B.A. 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 course work. Upon successful completion, the student will have earned a Bachelor of Science (B.S.) degree in Accounting and a Master of Business Administration (M.B.A.) degree with 161 credit hours of course work.

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.

The Accounting major requires an additional 30 credits, including:

Requirements for the Accounting Major (30 credits total) Credits

ACC-201 – Intermediate Accounting I	3
ACC-202 – Intermediate Accounting II	3
ACC-301 – Advanced Financial Accounting	3
ACC-311 – Advanced Managerial Accounting	3
ACC-321 – Taxes	3
ACC-322 – Advanced Taxes	3
ACC-331 – Auditing	3
ACC-341 – Accounting Information Systems	3
BA-336 – Advanced Topics in Business Law	3
MGT-352 – Productions & Operations Management	3

Accounting Major- Required Courses and Recommended Course Sequence

First Semester Credits

ACC-151 Integrated Management Experience I	3
CS-115 Computers and Applications	3
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
EC-101 Principles of Economics	3
PPD-101 Personal and Professional Development I	1
	17

Second Semester

ACC-152 Integrated Management Experience II	3
COM-101 Fundamentals of Public Speaking	3
MTH-101 Solving Problems Using Math	3
EC-102 Principles of Economics II	3
ENG-120 Reading Classical Traditions	3
	15

Third Semester

ACC-161 Financial Accounting & Decision Making	3
MGT 251 Management of Organizations & People	3
HST-101 Historical Foundations of the Modern World	3
Arts Distribution Requirement (Area IV)	3
Science Distribution Requirement (Area II)	3
PPD-201 Personal and Professional Development III	1
	16

Fourth Semester

ACC-162 Managerial Accounting & Decision Making	3
MKT 221 Marketing	3
FIN-240 Introduction to Finance	3
Social Science Distribution Area Requirement (Area III)	3
Free Elective (Science Distribution Requirement)	3
	15

Fifth Semester

ACC-201 Intermediate Accounting I	3
ACC-321 Taxes	3
BA-335 Law and Business	3
BA-319 Business Statistics	3
Humanities Distribution Requirement (Area I)	3
PPD-301 Personal and Professional Development V	1
	16

Sixth Semester

ACC-202 Intermediate Accounting II	3
ACC-322 Advanced Taxes	3
BA-336 Adv. Topics in Business Law	3
MGT-352 Production and Operations Management	3
MGT-354 Organizational Behavior	3
	15

Seventh Semester

ACC-301 Advanced Financial Accounting	3
ACC-331 Auditing	3
Free Elective	3
MGT-358 International Business	3
BA-461 Business Strategy and Decision Making	3
PPD-401 Personal and Professional Development VII	1
	16

Eighth Semester

ACC-311 Advanced Managerial Accounting	3
ACC-341 Accounting Information Systems	3
ACC-462 Accounting Internship	3
Free Elective	3
	12

** Accounting 462 may be taken for 6 credits in place of the Free Elective in semester 8.*

Accounting Minor

Total number of credits required for a minor in Accounting - 18

For majors in other disciplines, The Jay S. Sidhu School of Business and Leadership offers an 18-credit minor in Accounting. Courses required to complete the Accounting Minor are:

Requirements for the Accounting Minor Credits

ACC-161 – Financial Accounting and Decision Making	3
ACC-162 – Managerial Accounting and Decision Making	3
ACC-201 – Intermediate Accounting I	3
ACC-202 – Intermediate Accounting II	3
plus 6 credits of ACC courses	6

BUSINESS MANAGEMENT

Accelerated BBA Program

The Sidhu School offers a Bachelor of Business Administration degree through an accelerated degree completion option for adult learners, Applicants are required either: 1) to have five or more years of professional, military, and/or equivalent experience; and to have completed undergraduate coursework at an accredited institution of higher education; or 2) to possess an earned associate's degree or higher from an accredited institution of higher education.

In order to fulfill the requirements for graduation, students are responsible for satisfying all Wilkes bachelor's degree requirements, including general education requirements and the Accelerated Bachelor of Business Administration (ABBA) curriculum. A total of 66 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 traditional undergraduate Bachelor of Business Administration degree. It consists of 54 credits earned through eighteen courses, each of which is worth three credits. The design ensures that students will receive complete equivalent coverage of all learning outcomes in compliance with the standards of the Accreditation Council for Business Schools and Programs (ACBSP). Students may take three courses each term, including fall, summer, and spring, leading to the completion of the program in six trimesters over a period of two years.

Business Administration Major (Accelerated BBA Program) Required Courses and Course Sequence

Trimester 1	Trimester 2
ABBA 151 - Entrepreneurship and Innovation ABBA 152 - The Leadership Process ABBA 153 - Business Communications	ABBA 154 - Business Economics ABBA 161 - Financial Accounting ABBA 162 - Managerial Accounting
Trimester 3	**Trimester 4**
ABBA 235 - The Legal Environment and Business Law ABBA 251 - Principles of Management ABBA 257 - Information Technology for Business	ABBA 319 - Statistics for Business ABBA 321 - Principles of Marketing ABBA 340 - Corporate Finance
Trimester 5	**Trimester 6**
ABBA 352 - Production and Operations in Business ABBA 353 - Management of Human Resources ABBA 354 - Organizational Studies	ABBA 358 - International Business Management ABBA 461 - Business Strategy and Decision-Making ABBA 462 - Professional Business Experience

FINANCE

Finance Major

Coordinator: Dr. Dean Frear

Total minimum number of credits required for a Major in Finance leading to the Bachelor of Business Administration degree — 122.
Total minimum number of credits required for a minor in Finance — 18.

The Finance Major at Wilkes is constructed upon the Sidhu School's common foundation courses and the General Education requirements of the University. Finance Majors begin their studies with FIN 240. Subsequent courses cover other topics such as investment management, long-term strategic financial planning, risk management and insurance, and money and banking.

The most common career path for graduates in this major is in the financial division of a multiline business that may move up the corporate ladder to the CFO position. Other paths are to be found in the banking, insurance, and securities industries. For those considering an academic career, the major may lead to an MBA and/or doctoral program. Finally, a Finance Major has the flexibility to choose a skill path that emphasizes such areas marketing, quantitative analysis or systems design.

Requirements for the Finance Major (27 credits total) Credits

Each student with a major in Finance must complete the following 15 credits:	
FIN-230 – Money and Banking	3
FIN-341 – Managerial Finance	3
FIN-343 – Investments and Portfolio Management	3
FIN-345 – Long-Range Financial Planning	3
MGT-257 – Management Information Systems	3

Each student with a major in Finance must complete 12 of the following credits:	
ACC-201 – Intermediate Accounting I	3
ACC-202 – Intermediate Accounting II	3
ACC-321 – Taxes	3
ACC-322 – Advanced Taxes	3
EC 340 – International Trade and Finance	3
ENT-342 – Entrepreneurial Finance	3
ENT-384 – Small Business Consultancy	3
FIN-319 – Financial Derivatives	3
FIN-342 – Property and Life Insurance	3
FIN-358 – International Finance	3
FIN 198/298/398 – Topics	3

Finance Major- Required Courses and Recommended Course Sequence

First Semester Credits

BA-151 Integrated Management Experience I	3
CS-115 Computers and Applications	3
ENG-101 Composition	4
FYF-101 First-Year Foundations	3
EC-101 Principles of Economics	3
PPD-101 Personal and Professional Development I	1
	17

Second Semester

BA-152 Integrated Management Experience II	3
COM-101 Fundamentals of Public Speaking	3
MTH-101 Solving Problems Using Math	3
EC-102 Principles of Economics II	3
ENG-120 Reading Classical Traditions	3
	15

Third Semester

ACC-161 Financial Accounting & Decision Making	3
MGT 251 Management of Organizations & People	3
FIN-240 Introduction to Finance	3
Social Science Distribution Requirement (Area III)	3
HST-101 Historical Foundations of the Modern World	3
PPD-201 Personal and Professional Development III	1
	16

Fourth Semester

ACC-162 Managerial Accounting & Decision Making	3
MGT-257 Management Information Systems	3
FIN-230 Money and Banking	3
MKT-221 Marketing	3
Arts Distribution Requirement (Area IV)	3
	15

Fifth Semester

Humanities Distribution Requirement (Area I)	3
Science Distribution Requirement (Area II)	3
BA-335 Law and Business	3
BA-319 Business Statistics	3
FIN Major Elective	3
PPD-301 Personal and Professional Development V	1
	16

Sixth Semester

FIN-341 Managerial Finance	3
FIN-345 Long Range Financial Planning	3
MGT 354 Organizational Behavior	3
FIN Major Elective	3
Free Elective	3
	15

Seventh Semester

MGT-358 International Business	3
FIN 343 Investments & Portfolio Management	3
FIN Major Elective	3
Science Distribution Requirement (Area II)	3
Free Elective	3
PPD-401 Personal and Professional Development VII	1
	16

Eighth Semester

BA-461 Business Strategy and Decision Making	3
BA-462 Professional Business Experience	3
Major Elective	3
Free Elective	3
	12

Requirements for the Finance Minor Credits

ACC-161 – Financial Accounting & Decision Making	3
FIN-240 – Introduction to Finance	3
FIN-341 – Managerial Finance	3
plus 9 credits of FIN courses	9

Finance Minor

Total number of credits required for a minor in Finance - 18

For majors in other disciplines, The Jay S. Sidhu School of Business and Leadership offers an 18 credit minor in Finance. Courses required to complete the Finance minor are:

MANAGEMENT

Management Major

Coordinator: Dr. Jennifer J. Edmonds

Total minimum number of credits required for a Major in Management leading to the Bachelor of Business Administration degree — 122.
Total minimum number of credits required for a minor in Management — 18.

Sidhu students who major in Management develop the skills and competencies to make a difference in organizations, teams, and communities. The Management courses equip students with essential knowledge and capabilities to excel as leaders in many areas including operations management, human resources, sustainability management, and more. Course experiences help our students to develop their critical thinking, persuasive communication, teamwork, and leadership skills. Sidhu management students are prepared to excel in executive and managerial careers in business, industry, and governmental organizations.

Requirements for the Management Major (27 credits total) Credits

Each student with a major in Management must complete the following 18 credits:	
LDR-201 – Introduction to Leadership	3
MGT-209 – Business Correspondence and Reports	3
MGT-257 – Management Information Systems	3
MGT-352 – Production and Operations Management	3
MGT-353 – Human Resources	3
MGT-356 – The Social Responsibility of Business	3

Each student with a major in Management must complete 9 of the following credits:	
BA 336 - Advanced Topics in Business Law	3
BA 337 - Legal Aspects of Sport/ Event Management	3
ENT-201 – Nature and Essence of Entrepreneurship	3
ENT-203 – Opportunity Identification: Innovation and Creativity	3
ENT-252 – The Entrepreneurial Leader	3
ENT-342 – Entrepreneurial Finance	3
ENT-384 – Small Business Consultancy	3
ENT-385 – Opportunity Assessment: Technical, Economic, and Market Feasibility	3
FIN-230 – Money and Banking	3
FIN-319 – Financial Derivatives	3
FIN-342 – Property and Life Insurance	3
FIN-343 – Investments and Portfolio Management	3
FIN-345 – Long-Range Financial Planning	3
FIN-358 – International Finance	3
LDR 202 - Advanced Topics in Leadership	3
MGT 198/298/398 – Topics in Management	3
MKT-322 – Advertising	3
MKT-324 – Retailing	3
MKT-326 – The Selling Process	3
MKT-327 – Marketing Seminar	3
MKT-328 – Consumer Behavior	3
SEM-201 – Introduction to Sports Management	3
SM-325 – Special Events Marketing	3
SEM-355 - Facility & Event Management	3

Management Major- Required Courses and Recommended Course Sequence

First Semester	Credits	Fifth Semester	Credits
BA-151 – Integrated Management Experience I	3	BA-319 – Business Statistics	3
CS-115 – Computers and Applications	3	BA-335 – Law & Business	3
ENG-101 – Composition	4	MGT-353 – Human Resource Management	3
FYF-101 – First-Year Foundations	3	HST-101 – Historical Foundations of the Modern World	3
EC-101 – Principles of Economics	3	Free Elective	3
PPD-101 – Personal & Professional Development I	1	PPD-301 – Personal & Professional Development V	1
Total Credits	**17**	**Total Credits**	**16**
Second Semester		**Sixth Semester**	
EC-102 Principles of Economics II	3	LDR-201 – Introduction to Leadership	3
BA-152 – Integrated Management Exp. II	3	MGT-352 – Production & Operations Management	3
MTH-101 – Solving Problems Using Mathematics	3	MGT-354 - Organizational Behavior	3
ENG-120 Reading Classical Traditions	3	Free Elective	3
Social Science Distribution Requirement (Area III)	3	Humanities Distribution Requirement (Area I)	3
Total Credits	**15**	**Total Credits**	**15**
Third Semester		**Seventh Semester**	
ACC-161 – Financial Acctg & Decision Making	3	MGT-358 – International Business	3
MGT-251 – Management of Organizations & People	3	Major Elective	3
MKT-221 – Marketing	3	Major Elective	3

Management Minor

Total number of credits required for a minor in Management - 18

For majors in other disciplines, The Jay S. Sidhu School of Business and Leadership offers an 18-credit minor in Management.
The following Minor requirements are applicable to students with majors inside the Sidhu School:

Requirements for the Management Minor (18 credits total) Credits

ACC-161 – Financial Accounting & Decision Making	3
BA-151 – Integrated Management Experience I	
BA-152 – Integrated Management Experience II	3
plus 9 credits of BA or MGT courses	

The following Minor requirements are applicable to students with majors outside the Sidhu School:

Requirements for the Management Minor (18 credits total) Credits

ACC-161 – Financial Accounting & Decision Making	3
BA-153 – Management Foundations	3
BA-335 – Law & Business	3
FIN-240 – Introduction to Finance	3
MGT-251 – Management of Organizations & People	3
MKT-221 – Marketing	3

SPORTS MANAGEMENT

Sports Management Major

Coordinator: Dr. Jennifer J. Edmonds

Total minimum number of credits required for a Major in Sports Management leading to the Bachelor of Business Administration degree — 125.
Total minimum number of credits required for a minor in Sports Management — 18.

The Sports Management major provides students with the opportunity to develop expertise in business management applied to the world of sport and recreation. As sports have evolved into an integral part of the American culture, the operations of sport programs have become more sophisticated and complex. Managers of sport programs and sport/recreational facilities must become familiar with the intricacies of sport/recreational activities and be effective as business professionals.

Requirements for the Sports Management Major (30 credits total)

Each student with a major in Sports Management must complete the following 21 credits:	
BA-337 – Legal Aspects of Sports/ Event Management	3
MGT-352 – Production and Operations Management	3
SEM-201 – Introduction to Sports Management	3
SM-325 – Special Events Marketing	3
SM-355 – Facility & Event Management	3
SOC-261 – Sociology of Sport	3
SM-365 – Wilkes Sports Management Experience	3

Each student with a major in Sports Management must complete 9 credits from the following list:	
COM-302 – Fundamentals of Public Relations	3
COM-303 – Organizational Communication	3
ENT-398 – Topics in Entrepreneurship	3
LDR-201 – Introduction to Leadership	3
MGT-209 – Business Correspondence & Reports or COM-260	3
MGT-257 – Management Information Systems	3
MGT-353 – Human Resource Management	3
MKT-326 – The Selling Process	3
NSG-200 – Principles of Normal Nutrition	3

Sports Management Major- Required Courses and Recommended Course Sequence

First Semester	Credits	Fifth Semester	Credits
BA-151 – Integrated Management Experience I	3	SM-355 – Facility & Event Management	3
CS-115 – Computers and Applications	3	BA-319 – Business Statistics	3
EC-101 – Principles of Economics	3	BA-335 – Law & Business	3
ENG-101 – Composition	4	Humanities Distribution Requirement	3
FYF-101 – First-Year Foundations	3	SM Major Elective	3
PPD-101 – Personal & Professional Development I	1	PPD-301 – Personal & Professional Development V	1
Total Credits	**17**	**Total Credits**	**16**
Second Semester		**Sixth Semester**	
BA-152 – Integrated Management Experience II	3	BA-337 – Legal Aspects of Sports/Event Management	3
COM-101 – Fundamentals of Public Speaking	3	MGT-354 – Organizational Behavior	3
MTH-101 – Problem Solving Using Math	3	SM Major Elective	3
EC-102 – Principles of Economics II	3	MGT-352 – Production & Operations Management	3
ENG-120 – Reading Classical Traditions	3	Free Elective	3
Total Credits	**15**	**Total Credits**	**15**
Third Semester		**Seventh Semester**	
ACC-161 – Financial Accounting & Decision Making	3	Free Elective	3
HST-101 – Historical Foundations of the Modern World	3	MGT-358 – International Business	3
SM-201 – Introduction to Sports Management	3	Social Science Distribution Requirement	3
MKT-221	3	Arts Distribution	3

Sports Management Minor

For majors in other disciplines, The Jay S. Sidhu School of Business and Leadership offers an 18-credit minor in Sports Management.

Total number of credits required for a minor in Sports Management -18

SM-201 – Introduction to Sports Management	3
SM-355 – Facility & Event Management	3
BA-337 – Legal Aspects of Sports & Event Management	3
SM-465 – Wilkes Sports Management Experience	3

And 2 of the following courses:

COM-302 – Fundamentals of Public Relations	3
COM-303 – Organizational Communication	3
ENT-398 – Topics in Entrepreneurship	3
SOC-261 – Sociology of Sport	3
MGT-353 – Human Resource Management	3
MKT-326 – The Selling Process	3
NSG-200 – Principles of Normal Nutrition	3

INTERDISCIPLINARY MAJORS

Interdisciplinary Majors

INTERDISCIPLINARY

Interdisciplinary Majors

Individualized Studies

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 to the Academic Studies Committee no later than the first semester of the student's junior year 1) an Individualized Studies request form and 2) a coherent written proposal for a specialized program of study. The Individualized Studies request form is available in the Office of the Registrar.

The proposal should articulate what the program of study is, why the existing structured degree programs do not fulfill the requirements of the specialized program 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; the student should, however, seek the advice of his or her advisor in formulating the plan. The program of studies may incorporate courses offered by all departments at the University and must be of a duration to require, minimally, three additional semesters of full-time study for completion. NOTE: All prerequisites for courses included in the specialized program must be met.

The student's record must demonstrate consistent excellence in academic achievements. In addition, with approval of the appropriate department chairperson and the Academic Standards Committee, academic credit may be assigned for Prior Learning Experience, that is, learning achieved by means of appropriate off-campus study, work, and travel, or for knowledge and skills developed prior to enrollment at the University. For information on Prior Learning Assessment Policies and Procedures at Wilkes University, contact the Prior Learning Assessment Coordinator in the University College.

The entire proposal must be submitted to and approved by the student's advisor(s) and by the Academic Standards Committee before work is begun on the specialized program of study.

Degree Requirements

The minimal requirements for the baccalaureate degree in Individualized Studies are 1) the accumulation of at least 120 credits, 2) completion of the Wilkes University General Education Curriculum, including a capstone experience, and 3) the completion of an appropriate number of junior- and senior-level courses.

For examples of existing specialized and expanded degree programs, see descriptions of the following majors: Applied and Engineering Sciences; Biology with a minor in Earth and Environmental Sciences and a Marine Science option; Computer Information Systems; Criminology; Earth and Environmental Sciences with a Marine Science option; Health Sciences; Integrative Media; International Studies; Medical Technology; Musical Theatre; and Nursing.

Recommended Course Sequence

INTERDISCIPLINARY MINORS

Interdisciplinary Minors

INTERDISCIPLINARY MINOR

Interdisciplinary Minors

Women's and Gender Studies

Director: Dr. Jennifer Thomas

Women's and Gender Studies Coordinating Committee:

Dr. Mischelle Anthony, English; Mrs. Naomi Baker, Theatre; Dr. Anne Batory, Business; Dr. Robert Bohlander, Psychology; Dr. Barbara Bracken, Mathematics; Dr. Jane Elmes-Crahall, Communication Studies; Dr. Helen Davis, English; Mrs. Maria Grandinetti, Nursing; Dr. Thomas Hamill, English; Dr. Sean Kelly, English; Dr. James Merryman, Anthropology; Dr. Gina Morrison, Education; Dr. Meridith Selden, Psychology; Dr. Chad Stanley, English; Dr. Wagiha Taylor, Business; Dr. Jennifer Thomas, Psychology; Dr. Deborah Tindell, Psychology; Dr. Robert Tuttle, Sociology; Dr. Diane Wenger, History

Total minimum number of credits required for a minor in Women's and Gender Studies — 18.

The Women's and Gender 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 and Gender Studies Minor focuses on expanding traditional scholarship by studying the ways in which 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 an additional 15 hours of designated Women's and Gender 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 experience in the student's major area of study. Students who intend to pursue a minor in Women's and Gender Studies should take WS 101 before taking more than two other courses offered in the minor.

Students who wish to declare the minor in Women's and Gender Studies should contact the Director of Women's and Gender Studies Program, who will aid in the selection of courses and assist in the development of the senior-year research project.

Minors are also available in a variety of other fields including, but not limited to, Aerospace Studies, Art, Computer Engineering, Criminology, Dance, International Studies, Music, Neuroscience, Policy Studies, and Statistics. See the appropriate sections in this bulletin for details about these areas of minor study.

Recommended Course Sequence

SPECIAL PROGRAMS

Special Programs

ARMY MILITARY SCIENCE

Army ROTC (Military Science)

CHAIRPERSON: LIEUTENANT COLONEL HAINES

Faculty
Professor: Major Ramsey

Wilkes University offers students the opportunity to participate in Army ROTC at nearby King's College through the Northeast Pennsylvania Officer Training Corps Battalion. The classes are given in Benaglia Hall at King's College, a five-minute walk north on Franklin Street from Wilkes University. Students who 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 the freshman year, increases to $350 per month during the sophomore year, $450 during the junior year, and $500 during the 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 and confidence courses. During breaks and vacations, students may volunteer for active army training in such areas 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: 1) the Basic Course, normally given during the freshman and sophomore years and comprising MS 211, MS 212, MA 221, and MS 222, and 2) the Advanced Course, normally taken during the junior and senior years and comprising 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 may 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 and 30 days paid vacation per year.

For more information on the Army ROTC program at Wilkes University, contact the Army ROTC Department at ext. 5301 or 570-208-5900, ext. 5301.

Basic Course

The Basic Course constitutes a two-year program for freshmen and sophomores and is designed to provide a basic level of military knowledge and a general knowledge of roles, organization, missions, and basic leadership techniques. The program consists of two one-credit and two two-credit courses. Students enrolled in the Basic Course who are not receiving Army ROTC scholarships incur no military obligations.

Army ROTC Basic Course

Required Courses and Recommended Course Sequence

First Semester Credits

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

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 may enroll in more than one basic level class under the ROTC Compressions 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.

Army ROTC Advanced Course

Required Courses and Recommended Course Sequence

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.

Recommended Course Sequence

OTHER SPECIAL PROGRAMS

Special Programs

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 U.S. in the summer, spring, and 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 the sophomore year.

Study Abroad

Study Abroad is an elective option open 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 who wish to use financial aid to assist with the costs of study abroad must complete the "Consortium Financial Aid Agreement" form, available in the Office of the Registrar. 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: 1) a pre-travel orientation; 2) the concentrated group travel experience; 3) a writing emphasis; and 4) 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 no credit will pay only touring costs, generally not to exceed $3,000. Travel fees are intended to include all costs, including air and overland travel, hotels, meals, transfers, visas, and inoculations, where required.

Credits earned for the Study Tour Experience may 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.

Recommended Course Sequence

PRE-LAW STUDIES

Pre-Law Studies

Coordinating Pre-Law Advisor: Dr. Kyle Kreider

Pre-Law Advisory Council: Professors Hepp, Kuhar, Liuzzo, Whitman

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 principles 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, and 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 the students 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 recommend that the LSAT be taken during the month of June between the junior and senior years of undergraduate study.

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 that too often affect student thinking about law schools.

Recommended Course Sequence

PRE-MBA STUDIES

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 M.B.A. 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 M.B.A. degree can register for the Pre-M.B.A. Program during any year of undergraduate study. This program is designed to prepare students with a variety of academic backgrounds for the M.B.A. program. Undergraduate students may use undergraduate required and elective courses to satisfy M.B.A. 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 M.B.A. 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 orENT-201
Marketing	BA 321
Business 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
Management Information Systems	BA 257 or ACC-341 or EGM 321

Students who enter the Pre-M.B.A. program will be counseled by a graduate advisor. Advising sessions are used as an opportunity to prepare students for entrance into the M.B.A. 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-M.B.A. 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.

Recommended Course Sequence

THE SCHOOL OF NURSING

School of Nursing

Dean: Dr. Deborah A. Zbegner

Faculty

Associate Professors: Malkemes (Chairperson, Undergraduate Program), Merrigan, Stewart,Zielinski
Assistant Professors: Chmil, Havrilla, Hirthler (Chairperson, Graduate Program), Lucas, Miskovsky, Pajalich, Sweeney
Faculty of Practice: Daughtry, Harrington, McCormick, Ruppert
Visiting Professor: Weidner
Adjunct Faculty: Babcock
Faculty Emeriti: Castor, Druffner, Schreiber, Telban
Director of Clinical Nursing Simulation Center: Chmil
Clinical Associate: Dennis
Simulation Coordinator: Hauze
Student Affairs Coordinator: Drozdis
Clinical Placement Coordinator: Novitiski

ACCELERATED BACCALAUREATE PROGRAM

Accelerated Baccalaureate Program for Second Degree Students

This program admits students who already hold a baccalaureate degree in a discipline other than nursing and have no previous nursing education, Upon successful completion of the program, students are awarded a Bachelor's Degree with a Major in Nursing. Completion of the requirements for this 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 and the family within a community.

The curriculum flows from both the University's and the School's philosophies and addresses the nursing needs of the community 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 are 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.

Prerequisites

- Applicants must have received a baccalaureate degree from an accredited institution with a minimum undergraduate GPA of 3.0.
- The following courses are required prerequisites:
  - a 3-credit course in Elementary Statistics
  - two semesters of Anatomy and Physiology, with related laboratory experiences
  - one semester of microbiology, with related laboratory experience
- A self-study Medical Terminology module must be completed (details and information provided by the School of Nursing).
- In addition to the required health and clearance documents noted above, any student transferring into the nursing program from another school or from another program or from an undeclared status at Wilkes University must be in good academic standing and must make arrangements with the School of Nursing to complete the Assessment Technologies Institute (ATI) Nursing Admission Exam, Test of Academic Skills (TEAS) before May 1st of the year preceding the start of the entry level clinical nursing course. Candidates must have a composite score of 58.7 or better in the following areas: reading, mathematics, science, and English/language usage, in order to be considered for admission into the School of Nursing. The exam may only be repeated once.
- 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 Accelerated Baccalaureate Program for Second Degree Students.

Length of the Program

- The total number of credits required to complete the Accelerated Baccalaureate Program for Second Degree Students, beyond the pre- and co-requisite requirements, is 48.
- The Accelerated Baccalaureate Program for Second Degree Students can be completed in three full-time semesters.

Academic Progression

Any grade below 80 in a nursing course is a failure. Students must earn an 80 or better in ALL nursing courses. A nursing student who earns less than an 80 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.

Accelerated Baccalaureate Program for Second Degree Students*- Required Courses and Recommended Course Sequence

First Semester - Fall	Credits
NSG 211 – Physical Assessment	3
NSG 330 – Nursing Practice I	12
Total Credits	**15**
(with Nutrition	**18)**

Second Semester - Spring	
NSG 224 – Pharmacotherapeutics and Decision-Making in Nursing	3
NSG 331 – Nursing Practice II	12
NSG 346 – Contemporary Issues and Trends in Nursing	3
Total Credits	**18**

Third Semester - Summer	
NSG 332 – Nursing Practice III	12
NSG 342 – Introduction to Nursing Research	3
Total Credits	**15**

*Clinical Hours will be distributed among Acute, Chronic, and Community Settings

Additional Nursing Expenses and Fees for Accelerated Baccalaureate Students

Item	Semester One	Semester Two	Semester Three
National Student Nurses Association (NSNA)	$45		
Uniform Shirt	$30 - $35		
Uniform Pants	$25		
Uniform Shoes	$40 and up		
Stethoscope, penlight, bandage scissors	$55 - $85		
Hemostats	$6		
BP Cuff	$40		
AHA CPR Certification for Health Care Providers	$35 and up		
Certified Background Resources	$128 and up		$128 and up
Criminal Record Check	$40 and up		$40 and up
PA Child-Abuse-History Clearance	$10		
Physical, Immunizations, and PPD	$100 and up*		$100 and up*
Urine for Drug Screen	$50 and up		$50 and up
School of Nursing Assessment Fee	$320 per semester starting with NSG 330	$320 per semester	$320 per semester

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.

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).

LPN-BS PROGRAM

LPN-BS Program

Licensed Practical Nurse (LPN) students have the opportunity to challenge five specific courses 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 Associate Dean of the School of 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).

NURSING

Nursing

Total minimum number of credits required for a major in Nursing leading to the B.S. degree — 126.

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, and nursing theories and research. The curriculum is based on the development of the individual and the family within a community. The curriculum flows from the philosophy and covers a four-year academic period. It includes integrated nursing courses, electives, and the General Education Curriculum 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. NOTE: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 computer-assisted instructional materials and with low fidelity and high fidelity manikins. 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 or practical experience or both, which involve repetitive learning, justify advancing the applicant to higher-level responsibilities.

All students are required to have a personal interview.

Undergraduate Nursing Programs

Students majoring in Nursing are required to have completed courses in English (4 units), Social Studies (3 units), Mathematics (2 units, including algebra), and Science (two units, including Biology and Chemistry) during their secondary school program.

The student of nursing assumes all of 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 complete the required health and clearance documents and submit all requirements as directed by Certified Background (CertifiedBackground.com) by June 30th every year of enrollment in clinical nursing courses. Failure to complete requirements by June 30th results in the assessment of a $100 late fee. Students must contact Lori Drozdis, Experiential Director (at lori.drozdis@wilkes.edu or (570) 408-4092) for the required code.

In addition to the required health and clearance documents noted above, any student transferring into the nursing program from another school or from another program or from an undeclared status at Wilkes University must be in good academic standing and must make arrangements with the School of Nursing to complete the Assessment Technologies Institute (ATI) Nursing Admission Exam, Test of Academic Skills (TEAS) before May 1st of the year preceding the start of the entry level clinical nursing course (NSG 210). Candidates must have a composite score of 58.7 or better in the following areas: reading, mathematics, science, and English/language usage, in order to be considered for admission into the School of Nursing. The exam may only be repeated once.

Students must also meet the technical standards essential to the practice of nursing, as defined in the Undergraduate Nursing Student Handbook to progress into clinical nursing courses.

Satisfactory clinical performance is an essential component of the Wilkes Nursing program. Students become eligible to progress into clinical nursing courses when they have met the following prerequisite course requirements: nursing majors must earn a 2.0 or better in the required prerequisite sciences (BIO 113, 115-116, CHM 111) and in ENG 101. In order to remain in clinical courses and progress in the nursing curriculum, students must earn a 2.0 or better in the required co-requisite science (PHY 170 and EES 242). Students must also earn a 2.5 or better in ALL nursing courses and maintain a 2.5 or better cumulative GPA at all times. A nursing student who earns less than a 2.5 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

Nursing Major- Required Courses and Recommended Course Sequence

First Semester

NSG-171 Health Care Terminology	1
BIO-115 Human Anatomy and Physiology I	4
CHM-111 Fundamentals of Chemistry	4
ENG-101 Composition* or	4
PSY-101 General Psychology* or	3
SOC-101 Intro. to Sociology* or	
ANT-101 Intro. to Anthropology*	
FYF-101 First-Year Foundations	3
Total Credits	**15-16**

Second Semester

BIO-113 Microbiology	4
BIO-116 Human Anatomy and Physiology II	4
ENG-101 Composition* or	4
PSY-101 General Psychology* or	3
SOC-101 Intro. to Sociology* or	
ANT-101 Intro. to Anthropology*	
ANT102, 212, SOC-251 or 263 or Distribution Requirement	3
Total Credits	**17-18**

Third Semester

NSG-200 Principles of Normal Nutrition	3
NSG-210 Principles of Nursing	6
NSG-211 Physical Assessment	3
Distribution Requirement	3
Total Credits	**15**

Fourth Semester

NSG 212 Nursing Care of the Adult Client I	4
NSG 213 Nursing Care of the Psychiatric Mental Health Client	4
NSG 214 Pathophysiology for the Professional Nurse	3
EES-242 Environmental Health	3
ANT-102, 212, SOC-251 or 263 or Distribution Requirement	3
Total Credits	**17**

Fifth Semester

NSG-221 Nursing Care of the Adult Client II	4
NSG-223 Nursing Care of the Older Adult	4
NSG-224 Pharmacotherapeutics and Decision-Making in Nursing	3
PSY Elective	3
MTH-150 Elementary Statistics**	3
Total Credits	**17**

Sixth Semester

NSG-226 Nursing Care of the Developing Family	6
NSG-227 Nursing Care of the Adult Client III	4
Distribution Requirements	6
Total Credits	**16**

Seventh Semester

NSG-340 Advanced Care Concepts	6
NSG-342 Introduction to Nursing Research	3
Electives	5
Total Credits	**14**

Eighth Semester

NSG 345 Senior Practicum	8
NSG 346 Contemporary Issues and Trends in Nursing	3
Electives	3
Total Credits	**14**

* Please note: Students must take ENG-101 and both PSY101 and SOC101 or ANT-101during their freshman year.
**Please note: MTH-150 is required and prerequisite to NSG 342.

Additional Nursing Expenses and Fees for Traditional Baccalaureate Students

Item	Freshman	Sophomore	Junior	Senior
Capstone Project				
National Student Nurses Association (NSNA)	$45	$45	$45	$45
Uniform Shirt		$30 - $35		
Uniform Pants		$25		
Uniform Shoes		$40 and up		
Stethoscope, penlight, bandage scissors		$55 - $85		
Hemostats		$6		
BP Cuff		$40		
AHA CPR Certification for Health Care Providers		$35 and up		$35 and up
Certified Background Resources		$128 and up	$128 and up	$128 and up
Criminal Record Check		$40 and up	$40 and up	$40 and up
PA Child-Abuse-History Clearance		$10		
Physical, Immunizations, and PPD		$100 and up*	$100 and up*	$100 and up*
Urine for Drug Screen		$50 and up	$50 and up	$50 and up

**May be covered by the student's medical insurance*

***Will be billed by the 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.

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).

RN-BS PROGRAM

RN-BS Program

The online program is designed for students who are already Registered Nurses (RNs) and have graduated from an associate's degree or a diploma program in nursing. This practice is in compliance with the Pennsylvania Articulation Plan to promote education 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 42 Wilkes Nursing credits. Registered Nurse students meet the same academic requirements as the traditional students, with the exception of the total number of credits required for degree completion. (The total number of credits required for RNs to complete the B.S. in Nursing is 120. The Wilkes University core credits are included in this number.)

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).

RN to BS Course Sequence

NSG-290 Transition to Baccalaureate Nursing
NSG-347 Leadership and Management Practicum
NSG-342 Introduction to Nursing Research
NSG-346 Contemporary Issues and Trends in Nursing
NSG-341 Nursing Informatics
NSG-343 Cultural Competency and Diversity in Nursing
NSG-344 Concepts of Genetics and Genomics in Nursing
NSG-348 Baccalaureate Capstone
Nursing Elective (NSG-394) or Core Requirement

The following course sequence is an example of a two year completion of an RN to BS degree:

Year 1

Term 1
Transition to Baccalaureate Nursing (7 credits - 16 weeks)
Leadership and Management Practicum (3 credits - 8 weeks)

Term 2
Introduction to Nursing Research (3 credits - 8 weeks)
Contemporary Issues and Trends in Nursing (3 credits - 8 weeks)
Informatics in Nursing (3 credits - 8 weeks)

Year 2

Term 1
Concepts of Genetics and Genomics in Nursing (3 credits - 8 weeks)
Diversity in Health Care (3 credits - 8 weeks)
Nursing Elective or Core Course Requirement (3 credits - 8 weeks)

Term 2
Baccalaureate Capstone (3 credits - 8 weeks)

THE SCHOOL OF PHARMACY

The School of Pharmacy

DEAN: Dr. Bernard W. Graham,
Assistant/Associate Deans: Dr. Harvey A. Jacobs, Dr.Julie Olenak
Chairperson, Department of Pharmaceutical Sciences: Dr. Zbigniew Witczak
Chairperson, Department of Pharmacy Practice: Dr. Edward Foote

Faculty

Professors: Foote, Graham, Witczak
Associate Professors: Bohan, Bolesta, Bommareddy, J. Ference, Jacobs, Kristeller, Longyhore, Malinowski, McManus, Olenak, Roke-Thomas, Trombetta, VanWert, Wright
Assistant Professors: K. Ference, Franko, Hoot, Manning,Patel, Pezzino
Instructors: Holt-Macey, Koos, Rule
Professor Emeriti: Kibbe

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., pharmaceutics, 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.

PHARMACY

Pharmacy

Our Mission

Our mission is to develop pharmacists who will provide high quality health care and to make meaningful contributions to the science and practice of pharmacy.

Our Vision

We will be recognized as an exceptional pharmacy program through innovative education, contemporary practice, and valuable scientific contributions.

Our Values

Teamwork. Professionalism. Lifelong Learning. Cultural Competency. Personalized Attention. Community Engagement.

Accreditation

Wilkes University's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education, 135 South LaSalle Street, Suite 4100, Chicago, IL 60503, (312) 664-3575, FAX (312) 664-4652, web site: www.acpe-accredit.org.

The Doctor of Pharmacy Program

The six-year Pharmacy Program at Wilkes University consists of two components. The first is the two-year Pre-pharmacy Program, and the second is the Professional Program.

Pre-Pharmacy Guaranteed Seat Program

Admission to the Pre-pharmacy Guaranteed Seat Program (Enrollment Limit: up to 90)

Students may only enter the Pre-pharmacy Guaranteed Seat Program as freshmen from high school. Minimum criteria for consideration for admission are listed below.

Applicants for the Pre-pharmacy Guaranteed Seat Program must first complete a Wilkes University Application, which may be obtained from the Office of Admissions. Applicants who meet the SAT and class rank criteria will be forwarded an application for the School of Pharmacy. The School of Pharmacy will review these applications, 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/ACT scores, the Letter of Intent essay, 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 Pre-pharmacy Guaranteed Seat Program as seats become available. In some instances, students may not be notified of an available set in the Pre-pharmacy Guaranteed Seat Program until the summer. School of Pharmacy applications for the Pre-pharmacy Guaranteed Seat Program must be completed by February 1. There are typically many more applicants than seats in the entering Pre-pharmacy 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.

Applicants should review the Technical Standards set forth by the School of Pharmacy that are available at:

http://www.wilkes.edu/academics/colleges/nesbitt-college-of-pharmacy/program-information/pre-pharmacy-guaranteed-seat-program/technical-standards.aspx

These Technical Standards describe non-academic abilities that are required for admission to, continuation in, and graduation from the School of Pharmacy to obtain a Pharm.D. degree.

Minimally, each applicant to the Pre-Pharmacy Guaranteed Seat program 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 Pre-pharmacy Application (This application is in addition to the Wilkes University Admissions Application.), including the Letter of Intent;
- submit three recommendation letters from teachers, employers, pharmacists, or other individuals who can provide an objective appraisal of the student's ability;
- be prepared to discuss their knowledge of the pharmacy profession through individual research, optional shadowing experiences, or discussions with pharmacists; and
- successfully complete an interview with the School of Pharmacy.

PLEASE NOTE: Attaining minimum academic requirements does not infer or promise either an interview or admission into the Pre-pharmacy Guaranteed Seat Program!

Pre-pharmacy Program - Required Courses and Recommended Course Sequence**

First Semester	Credits
*BIO 121 – Principles of Modern Biology I	4
*CHM 113 – Elements & Compounds Lab	1
*CHM 115 – Elements & Compounds	3
ENG 101 – Composition or	
*MTH 111 – Calculus I	4
FYF 101 – First-Year Foundations	3
Total Credits	**15**

Second Semester	
*BIO 122 – Principles of Modern Biology II	4
*CHM 114 – The Chemical Reaction Lab	1
*CHM 116 – The Chemical Reaction	3
Distribution Requirements	6
ENG 101 – Composition or	
*MTH 111 – Calculus I	4
Total Credits	**18**

Third Semester	Credits
*CHM 231 – Organic Chemistry I	3
*CHM 233 – Organic Chemistry I Lab	1
*COM 101 – Fundamentals of Public Speaking	3
Distribution Requirements	6
*EC 102 – Principles of Economics II	3
Total Credits	**16**

Fourth Semester	
*CHM 232 – Organic Chemistry II	3
*CHM 234 – Organic Chemistry II Lab	1
Distribution Requirements	6
*MTH 150 – Elementary Statistics	3
*PHY 174 – Appls. of Classical & Modern Physics	4
Total Credits	**17**

**Denotes prerequisite course.*
***Some requirements may be fulfilled via satisfactory achievement on advanced placement tests or Wilkes' challenge examinations.*

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 advanced experiential education.

Admission to the Professional Program (Enrollment limit: 72)

To be admitted into the Professional Program of the School of Pharmacy, a student must have either enrolled in and successfully completed the Pre-pharmacy Guaranteed Seat Program at Wilkes University as outlined above or have submitted a successful application to the School of Pharmacy.

I. Admission through the Pre-pharmacy Guaranteed Seat Program

Students enrolled in the Wilkes University Pre-pharmacy Guaranteed Seat Program who meet ALL of the following conditions are automatically admitted to the Professional Program:

- You must 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, specifically by the end of the spring semester prior to admission. PREREQUISITE COURSES are listed in the PRE-PHARMACY PROGRAM (previous page) marked with a (*);
- You must maintain a PREREQUISITE COURSE cumulative GPA of 3.0 or better for the PREREQUISITE COURSES through the spring of the fourth semester (sophomore year). *Failure to maintain a prerequisite cumulative GPA of 3.0 or better in the PREREQUISITE COURSES through the spring of the fourth semester (sophomore) will result in forfeiture of the guaranteed seat*;
- You must maintain a cumulative GPA of 3.0 or better for all courses taken through the spring of the fourth semester (sophomore year). 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. Although non-prerequisite course credit hours may be transferred to Wilkes from other colleges, you should be aware that grades do not transfer. In other words, if you take courses somewhere else, the credit hours may be transferred, but your Wilkes GPA will not be affected. Failure to maintain a cumulative GPA of 3.0 or better in all courses taken through the spring of the fourth semester (sophomore year) will result in forfeiture of the guaranteed seat;
- You must earn grades of 2.0 or greater in all PREREQUISITE COURSES through the spring of the fourth semester (sophomore year). One PREREQUISITE COURSE grade of less than 2.0 may be repeated at Wilkes University with the higher grade replacing the lower grade on the official transcript. PREREQUISITE COURSES must be recorded with a grade of 2.0 or greater by the end of the spring semester prior to admission. *Earning a grade of less than 2.0 in a PREREQUISITE COURSE that cannot be repeated by the end of the spring semester prior to admission will result in forfeiture of the guaranteed seat. Also, earning two or more PREREQUISITE COURSE grades of less than 2.0, even if one is successfully repeated, will result in forfeiture of the guaranteed seat and dismissal from the program. (Please see below, Admission through the Application Process.)*
- If you feel you can complete ALL prerequisite courses and all except two General Education courses by the end of your spring freshman semester, or you have extenuating, non-academic circumstances that will prevent you from completing the program within two years, you should contact your advisor and the Assistant Dean of Student Affairs to discuss the appeal process and possibly obtain a modified Pre-Pharmacy Guaranteed Seat contract detailing the conditions for admission.
- You must score at least in the 25th percentile on the composite Pharmacy College Admission Test (PCAT). The School will only accept PCAT scores from the July, September, and October/November dates; we will not accept scores from the January test for the upcoming year. The School of Pharmacy will accept the highest PCAT scores of multiple attempts. *Failure to score at least in the 25th percentile in the PCAT after a single or multiple attempts will result in forfeiture of the guaranteed seat;*
- You must maintain the highest levels of academic and personal honesty and be free from criminal/drug-related offenses throughout the pre-pharmacy and pharmacy program. Pharmacy students must complete annual criminal background checks as a requirement for progression and retention within the School of Pharmacy;
- Students caught in the act of cheating, collusion, plagiarism, or other and all acts in violation of the Wilkes University policy on Intellectual Responsibility and Plagiarism or the Student Code of Conduct may be subject to dismissal from the Pre-pharmacy Guaranteed Seat Program;
- You must receive a favorable recommendation from your Pre-Pharmacy advisor at the end of your spring semester prior to admission. Failure to receive a favorable recommendation from your Pre-Pharmacy advisor at the end of your spring semester prior to admission will result in forfeiture of the guaranteed seat; and
- You must meet all the criteria set forth in the Technical Standards Document. *Failure to meet the criteria set forth in the*

Technical Standards Document may delay or prevent graduation from the Nesbitt School of Pharmacy.

A maximum of two uncompleted General Education Curriculum requirements will be considered for admission into the Professional Program in Pharmacy. Pre-Pharmacy Guaranteed Seat students with more than two uncompleted General Education courses may appeal to the Student Affairs Committee of the School of Pharmacy for consideration. There is no room in the Pharmacy Curriculum to complete General Education requirements. General Education Curriculum requirements may be completed at other accredited colleges or universities and transferred into Wilkes University with proper approval.

Students in the Wilkes University Pre-pharmacy 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 pre-pharmacy 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 a hiatus. Each spring, a select group of applicants is invited for an interview, based upon a complete evaluation of all submitted application materials. Any missing documentation will compromise the application. We must receive your PCAT results prior to the January 15th deadline.

The number of seats in the professional program available through the application process is dependent on the number of Pre-pharmacy Guaranteed Seat students able to claim a seat. A portion of remaining seats is available on an academically competitive basis to Wilkes Students with overall and prerequisite GPAs above a 3.0, and a portion of seats is 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 1) must complete and be enrolled at Wilkes University for two full-time consecutive semesters before enrollment in the Professional Program AND 2) 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 a "transfer student."

Applicants should review the Technical Standards set forth by the School of Pharmacy, which are available at:

http://www.wilkes.edu/academics/colleges/nesbitt-college-of-pharmacy/program-information/pre-pharmacy-guaranteed-seat-program/technical-standards.aspx

These Technical Standards describe non-academic abilities that are required for admission to, continuation in, and graduation from the School of Pharmacy to obtain a Pharm.D. degree.

How to Apply

To obtain a School of Pharmacy application, call or write

School of Pharmacy
Wilkes University
Wilkes-Barre, PA 18766
(570) 408-4280
1-800-WILKESU, ext. 4280

OR

download an application from:

http://www.wilkes.edu/academics/colleges/nesbitt-college-of-pharmacy/program-information/pharmd-program/how-to-apply.aspx

PLEASE NOTE: The School of Pharmacy application is in addition to the Wilkes University application. All applicants must complete the School of Pharmacy application and return it before January 15th for the upcoming Fall semester.

Pharmacy Professional Program – 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. A maximum of two deficient General Education courses will be considered for admission into the pharmacy program. Students with more than two deficient General Education courses may appeal to the Student Affairs Committee of the School of Pharmacy for consideration;
- must successfully (2.0 or higher) 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) by the end of the spring semester prior to admission. Preferential consideration will be given to Wilkes Students with GPAs of 3.0 or higher;
    - We will evaluate the grades of higher-level science courses to include in the GPA calculations.
- must obtain a minimum overall GPA of 3.00 and a minimum GPA in the Pharmacy Prerequisite Courses listed below for preferential consideration (non-Wilkes, transfer student) by the end of the spring semester prior to admission;
- must obtain a grade of C (2.0) or better in each of the Pharmacy Prerequisite Courses listed below by the end of the spring semester prior to admission. Prerequisite grades of less than 2.0 may be repeated with the higher grade factoring into the GPA.
    - However, applications will be placed at a lower priority if grades less than 2.0 in prerequisite courses are remediated and recorded.
    - Students repeating 4 or more prerequisite courses, even if all are successfully completed, will not be considered for admission.
    - 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;
- must maintain the highest levels of academic and personal honesty and be free from criminal/drug-related offenses throughout the pharmacy program.
    - Students caught in the act of cheating, collusion, plagiarism, or other and all acts in violation of the Wilkes University policy on Intellectual Responsibility and Plagiarism or the Student Code of Conduct may be subject to dismissal from the Pharmacy program;
    - Students will be required to submit for various types of criminal background checks annually, and as specified by external

practice sites. Violations may result in prevention or delays in graduation;
- must meet all the criteria set forth in the Technical Standards Document. Failure to meet the criteria set forth in the Technical Standards Document may delay or prevent graduation from the Nesbitt School of Pharmacy;
- must provide three completed recommendation forms;
- must successfully complete the interview process;
- must demonstrate acceptable written communication skills; and
- must submit scores on the Pharmacy College Admission Test (PCAT) by January 15th. The School will only accept PCAT scores from the July, September, and October/November dates; we will not accept scores from the January test since we will not receive the results prior to the January 15th application deadline.
  NOTE: Admission into the Professional Program in Pharmacy 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.

Pharmacy Professional Program – Prerequisite Courses

- 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 General Physics with lab
- One semester (4 credits) of Calculus
- One semester (3 credits) of Statistics
- One semester (3 credits) of Microeconomics
- One semester (3 credits) or 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.

Technical Standards
Students applying to and enrolling in the School of Pharmacy are expected to read, acknowledge, and understand the Technical Standards. These Technical Standards describe non-academic abilities that are required for admission to, continuation in, and graduation from the School of Pharmacy to obtain a Pharm.D. degree.

A candidate must have abilities and skills in the following five areas: 1) observational skills; 2) communication skills; 3) motor skills; 4) intellectual, conceptual, integrative, and quantitative skills; and 5) behavioral and social skills. Detailed descriptions of the Technical Standards are provided in the School of Pharmacy Application or by contacting the School of Pharmacy Dean's office.

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 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 progress further in the School. More inclusive policies, including but not limited to Technical Standards, 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 annually to all students in the Nesbitt School of Pharmacy Student Handbook. Advanced Pharmacy Practice Experiences (APPE) progression is described in the APPE Course Manual.

Experiential Curriculum Component
Experiential learning is a critical component of the curriculum at Wilkes. Before being placed in an experiential setting, (and repeated at varying intervals), all students are required to:

- possess an active Pennsylvania Pharmacy Intern License (comply with ACT 31 relating to CHILD ABUSE RECOGNITION AND REPORTING);
- possess professional liability insurance;
- have documentation of immunizations;
- pass a physical examination;
- be certified in Basic Cardiac Life Support (healthcare provider), Basic First Aid, and complete OSHA training;
- have a criminal background check completed by an approved provider when required; and
- complete other site-specific requirements, such as FBI fingerprint check, PA child abuse background check, etc.

These criteria are fully described throughout the curriculum, including deadlines and ramifications of non-compliance.

The Introductory Pharmacy Practice Experience (IPPE)
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 semesters. In addition, students will complete a 2-week (80-hour) IPPE III during the summer following the P-2 year. In the third year of the Professional Program, the P-3 year, the curriculum includes a two-semester course in service learning (longitudinal care) and 20 hours of IPPE IV. IPPE V is a self-directed IPPE and consists of 20 hours of independent pharmacy-related, service-oriented learning earned during the P1 through P3 years. IPPE's occur at practice sites and in the community in the Wilkes-Barre/Scranton area, not on campus.

The Advanced Pharmacy Practice Experience (APPE)
The fourth year of the Professional Program, the P-4 year, is devoted to Advanced Pharmacy Practice Experience (APPE). Each student will be assigned to one six-week rotation, plus six five-week rotations, some of which may be at some distance from Wilkes-Barre. To the extent possible, the School of Pharmacy will assist in locating safe, affordable housing for APPE's. Since patient care is a continuous activity, some experiences may be conducted outside of regular school and business hours. Note also that the APPE start and end dates do not adhere to the regular University calendar.

NOTE: The student is responsible for paying all transportation and housing costs associated with all experiential components of the curriculum, except where noted.

Graduation, Degree, and Licensure Requirements
It is the student's responsibility to comply with 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 U.S. 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. Students applying with degrees or courses from foreign Colleges or Universities will be evaluated to ensure significant portions of the General Education Requirements are satisfied.

All non-degreed students entering the Professional Programs are encouraged to complete the General Education Requirements prior to beginning the Professional Curriculum. As mentioned, a student may be deficient in two General Education Requirements and be granted admission into the program. Students will receive consultation and documentation from their advisor that these courses must be completed prior to graduation. Students with more than two deficient General Education courses may appeal to the Student Affairs Committee of the School of Pharmacy for consideration. This requirement is in place since there is limited room within the professional curriculum, including summers, to complete the courses.

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 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 the 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
Total Credits	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
Total Credits	18

P-1 Summer

PHA 335* 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	3
PHA-421** Pharmacotherapeutics I	2
PHA 423** Pharmacotherapeutics II	2
PHA-425** Pharmacotherapeutics III	3
Elective	2-3
Total Credits	15-16

P-2 Spring Semester

PHA-402 Pharmacy Care Lab III	1
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
Total Credits	18-19

P-2 Summer

PHA 445* IPPE III	2

P-3 Fall Semester

PHA-501 Pharmacy Care Lab IV	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
Total Credits	17-18

P-3 Spring Semester

PHA-502 Pharmacy Care Lab V	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	.5
PHA 560* IPPE V	.5
Elective	2-3
	16-17

**Introduction to Pharmacy Practice Experience*

***Sequential Courses*

P-4 Advanced Pharmacy Practice Experiential Year

APPE Rotations

The APPE portion of the curriculum consists of 7 rotations in various settings. One rotation is 6 weeks in duration, and the others are 5 weeks each in duration for a total of 35 credits over 36 weeks.

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.

SCHOOLS AND COLLEGES

College of Science and Engineering

College of Science and Engineering

Dean: Dr. William B. Hudson

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 lifelong learning.

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 section 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:

- Air and Space Studies
- Biology & Health Sciences
- Chemistry & Biochemistry
- Electrical Engineering & Physics
- Environmental Engineering and Earth Sciences
- Mathematics & Computer Science
- Mechanical Engineering and Engineering Management

Bachelor's and major programs of study offered in the College are as follows:

- 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
- Physics

Accreditation

- The Bachelor of Science in Mechanical Engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET.(www.abet.org)
- The Bachelor of Science in Electrical Engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET. (www.abet.org)
- The Bachelor of Science in Environmental Engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET. (www.abet.org)

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 lifelong learning.

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The College includes the following academic departments and divisions:

- Air and Space Studies
- Biology and Health Sciences
- Chemistry
- Electrical Engineering and Physics
- Environmental Engineering and Earth Sciences
- Mathematics and Computer Science
- Mechanical Engineering and Engineering Management

Bachelor's and major programs of study offered in the College are as follows:

- 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
- Physics

College of Arts, Humanities, and Social Sciences

Interim Dean: Dr. Thomas Baldino

The College of Arts, Humanities, and Social Sciences seeks to deliver programs of study within and across the broad array of liberal arts that are characterized by exceptional teaching, scholarship, and mentoring. The College is dedicated to preparing students for lifelong learning, graduate studies, and a variety of professional careers. The College provides educational and co-curricular experiences that foster effective written and oral communication skills, critical thinking capacities, research abilities, an understanding of the arts, and knowledge relevant to programs of study within and across the College. We place emphasis on ethics and aesthetics, and on promoting multicultural awareness, the celebration of diversity, civic responsibility, and community engagement.

The College of Arts, Humanities, and Social Sciences sees its vision as advancing the Wilkes tradition of liberal arts education by offering innovative educational experiences emphasizing academic excellence, scholarship, and civic responsibility, so as to prepare students for lifelong learning, rewarding careers, and creative and meaningful lives in our multicultural world. Toward that end, the College of Arts, Humanities, and Social Sciences prepares students for life and work in a diverse and changing world. The faculty of the College conveys an understanding of the interconnections of human experience through the foundation study of communication, art, expression, culture, and society. Within the programs of study in the College, 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 and civically responsible citizens of the world. Due to the broad interdisciplinary nature of the College, all students at Wilkes University engage in some area of study within the College while fulfilling the general education core experience required of all undergraduate students.

The College of Arts, Humanities, and Social Sciences seeks to promote the following values in our programs:

- discipline-specific and interdisciplinary knowledge and scholarship relevant to the various programs of study offered within and across the College;
- discipline-specific and interdisciplinary written communication, oral communication, and research skills that enable innovative academic inquiry, scholarship, and lifelong learning;
- discipline-specific and interdisciplinary critical thinking skills relevant to the various programs of study offered within and across the College;
- ethical reasoning, civic responsibility, and community engagement that demonstrate an appreciation of multiculturalism, diversity, and the liberal arts; and
- a culture of academic, personal, and professional mentoring that prepares students for lifelong learning, rewarding careers, and creative and meaningful 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 Sordoni Art Gallery, and the Wyoming Valley History Project enhance the liberal arts tradition 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 Darte 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, Manuscript, a literary magazine, Inkwell, a student literary publication, Zebra Communications, the student run public relations firm, at Studio 20, the student run design firm, and the professional television studio at the Shelburne Telecommunications Center. In the Writing Center, the faculty director and specially trained student writing consultants provide assistance in writing to the entire University.

The College comprises the following academic departments and divisions:

- Behavioral & Social Sciences
- Communication Studies
- Global History & Languages
- Humanities
- Integrative Media and Art
- Performing Arts

Bachelor of Arts degrees and minor programs of study offered in the College are as follows:

- Art (minor only)
- Criminology
- Communication Studies
- Dance (minor only)
- Economics (minor only)
- English
- History
- Integrative Media
- International Studies
- Music (minor only)
- Musical Theatre
- Neuroscience (minor only)
- Philosophy
- Policy Studies (minor only)
- Political Science
- Psychology

- Sociology
- Spanish
- Theatre Arts
- Women's and Gender Studies (minor only)

Mission Statement

The College of Arts, Humanities, and Social Sciences seeks to deliver programs of study within and across the broad array of liberal arts that are characterized by exceptional teaching, scholarship, and mentoring. The College is dedicated to preparing students for lifelong learning, graduate studies, and a variety of professional careers. The College provides educational and co-curricular experiences that foster effective written and oral communication skills, critical thinking capacities, research abilities, an understanding of the arts, and knowledge relevant to programs of study within and across the College. We place emphasis on ethics and aesthetics, and on promoting multicultural awareness, the celebration of diversity, civic responsibility, and community engagement.

The College of Arts, Humanities, and Social Sciences sees its vision as advancing the Wilkes tradition of liberal arts education by offering innovative educational experiences emphasizing academic excellence, scholarship, and civic responsibility, so as to prepare students for lifelong learning, rewarding careers, and creative and meaningful lives in our multicultural world. Toward that end, the College of Arts, Humanities, and Social Sciences prepares students for life and work in a diverse and changing world. The faculty of the College conveys an understanding of the interconnections of human experience through the foundation study of communication, art, expression, culture, and society. Within the programs of study in the College, 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 and civically responsible citizens of the world. Due to the broad interdisciplinary nature of the College, all students at Wilkes University engage in some area of study within the College while fulfilling the general education core experience required of all undergraduate students.

The College of Arts, Humanities, and Social Sciences seeks to promote the following values in our programs:

1. discipline-specific and interdisciplinary knowledge and scholarship relevant to the various programs of study offered within and across the College;
2. discipline-specific and interdisciplinary written communication, oral communication, and research skills that enable innovative academic inquiry, scholarship, and lifelong learning;
3. discipline-specific and interdisciplinary critical thinking skills relevant to the various programs of study offered within and across the College;
4. ethical reasoning, civic responsibility, and community engagement that demonstrate an appreciation of multiculturalism, diversity, and the liberal arts; and
5. a culture of academic, personal, and professional mentoring that prepares students for lifelong learning, rewarding careers, and creative and meaningful 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 Sordoni Art Gallery, and the Wyoming Valley History Project enhance the liberal arts tradition 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 Darte 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, Manuscript, a literary magazine, Inkwell, a student literary publication, Zebra Communications, the student run public relations firm, at Studio 20, the student run design firm, and the professional television studio at the Shelburne Telecommunications Center. In the Writing Center, the faculty director and specially trained student writing consultants provide assistance in writing to the entire University.

The College comprises the following academic departments and divisions:

- Behavioral and Social Sciences
- Communication Studies
- Global History and Foreign Languages
- Humanities
- Integrative Media and Art
- Performing Arts

Bachelor of Arts degrees and minor programs of study offered in the College are as follows:

- Art (minor only) Musical Theatre
- Communication Studies Neuroscience (minor only)
- Criminology Philosophy
- Dance (minor only) Policy Studies (minor only)
- Economics (minor only) Political Science
- English Psychology

- History Sociology
- Integrative Media Spanish
- International Studies Theatre Arts
- Music (minor only) Women's and Gender Studies (minor only)

School of Education

Interim Dean: Dr. Rhonda Wasiewicz

Teacher Education has been a part of Wilkes since long before we became a University in 1990. In June of 2008, the Wilkes University School of Education was formed to provide a more focused approach to addressing the unique curricular and programmatic needs of our baccalaureate and post-baccalaureate offerings. The school is comprised of undergraduate, masters, and doctoral departments with programs designed to provide a variety of educational experiences for aspiring and current teachers.

The Mission of the Undergraduate Teacher Education Program 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.

Wilkes offers degrees and certifications in Elementary and Early Childhood Education, Middle Level Education, minors in Reading and Secondary Education. Wilkes also offers certification programs in Special Education. Opportunities are also available for post-baccalaureate students in all certification areas. All certification programs are fully accredited by PDE.

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. All relevant coursework is infused with current classroom technology skills and applications pertinent to the field of education. Teacher Education candidates learn and apply the most relevant and current educational research and gain valuable understanding through extensive and diverse field and student teaching experiences in regional schools.

All Teacher Education candidates have the opportunity to teach in the Reading Academy and the Arts Academy and participate in the Annual Children's and Adolescent Literature Conference, all located on the Wilkes campus. They can become members of the Education Club that is dedicated to serving the educational community and, based on academic achievement, they can be inducted into the Wilkes University Chapter of Kappa Delta Pi, which is the International Education Honor Society.

Full-time and adjunct faculty who teach and mentor in the undergraduate programs have strong backgrounds and remain current in their respective fields. At Wilkes, students will find faculty and staff who demonstrate a strong commitment to students' educational success through developing relationships, academic support, and maximizing individual student's strengths. I am edified by the accomplishments of our faculty, staff, and students, and I look forward to continued successes and milestones as we collectively work to shape the future of education.

For information about Wilkes' masters programs, visit:
http://www.wilkes.edu/academics/graduate-programs/masters-programs/graduate-education/index.aspx.

For more information about Wilkes' Doctorate in Education Leadership, visit:
http://www.wilkes.edu/academics/graduate-programs/terminal-degrees/doctorate-of-education-edd/index.aspx.

The Jay S. Sidhu School of Business and Leadership

Dean: Dr. Jeffrey R. Alves

Faculty

Professors: Alves, Batory, Liuzzo, Rexer, Taylor
Associate Professors: Chisarick, Edmonds, Frear, Hao, Matus, Sowcik, Xiao
Assistant Professors: Clevenger, Erenay, Ferrara, Gordon, Houlihan
Visiting Assistant Professors: Hughes, Osei
Adjunct Faculty: Albany, Alessi, Allen, Bechtold, Castano, Ferdowsian, Gayoso, Gorman, Hanson, Hopkins, Kane, Kosicki, Moser, G. Myers, S. Myeers, Ridley, Sabatini, Savitski, Swantek, Turel, Tuzzolino, Udomsak
Faculty Emeriti: Broadt, Capin, Gera, Raspen
Associate Dean: Dr. Justin Matus
Director of Allan P. Kirby Center: Dr. Rodney Ridley
Director of Arizona Business Programs: Dr. Anthony Liuzzo
Director of Assessment and Accreditation: Dr. Justin Matus
Director of Leadership Programs: Dr. Matthew Sowcik
Director of MBA and ABBA Programs: Dr. Justin Matus

Assistant Director, Sidhu School Initiatives: Dina Udomsak
Assistant Director, Leadership Programs: Bridget Turel

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 graduate students.

The School was founded in 2004 and bears the name of Jay S. Sidhu, a 1973 graduate of the Wilkes M.B.A. program, a member of the University Board of Trustees, former President and chief executive of Sovereign Bancorp and currently chairman and chief executive officer of Customers Bank. Mr. Sidhu and Sovereign Bank, a financial institution based in Reading, Pennsylvania, provided Wilkes with a major gift to endow the School in Mr. Sidhu's name.

The Sidhu School offers six undergraduate majors: the Bachelor of Business Administration degree includes majors in entrepreneurship, finance, management, marketing and sports management plus an accelerated degree completion option for adult learners and the Bachelor of Science degree with a major in Accounting. The School also offers the Master of Business Administration degree, described in the Wilkes University Graduate and Professional Studies Bulletin. The Sidhu School also offers undergraduate programs and a Master of Business Administration at Wilkes' Mesa, AZ campus.

The Sidhu undergraduate business program is centered on self-development through three interconnected components: leadership development, a balanced set of foundation courses, and preparation for entry into specific careers and jobs. At the heart of the experience is the Personal and Professional Development (PPD) Series. Consisting of four 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, including alumni, and surrounding community and provides a linking thread throughout a student's academic experience. 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 and lives that demand individual commitment to excellence and genuine appreciation for teamwork.

The Accreditation Council for 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 to potential employers and therefore serves as a major competitive advantage for students completing business programs at Wilkes. In addition, the Sidhu School is a member of The Association to Advance Collegiate Schools of Business (AACSB).

Closely linked to the Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship, the Small Business Development Center, the Family Business Alliance and the Wilkes Enterprise Center. These 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.

Supporting the curriculum is a wealth of co-curricular and extracurricular opportunities for students to develop and hone their personal leadership skills. Sidhu student opportunities include Acts of Random Kindness, Enactus, Investment Club, Phi Beta Lambda, and Semester in Mesa. The Wilkes University ENACTUS (Entrepreneurship Action Us) 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. The team competes at national levels with shareholder-style presentations on their projects. These organizations are open to all students, regardless of major or career interests. ENACTUS students also have access to some of the best management training programs in the country through the organization's sponsors. The Wilkes Investment Club is comprised of students from all majors who are engaged in managing an investment portfolio of their own construction that is regularly updated based upon the research conducted by them. The Club is funded by contributions from our alumni and the Club's returns are used to finance various educational expenses. Phi Beta Lambda (PBL) is the largest collegiate business student organization in the world. The Sidhu chapter focuses on leadership, business competencies, and team skills. Participants develop a portfolio of documented accomplishments at the state and national levels. 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. Semester in Mesa, or SiMesa, is a semester in which students take a full academic load at the Mesa, AZ campus. In addition to course work, students are expected to participate in a service project. The semester is intended for select students with junior status. Sidhu students are also active in Athletics, Student Government, Programming Board, and many other campus clubs.

Undergraduate degree programs of study offered in The Sidhu School are as follows:

- Accelerated B.B.A. (B.B.A.)
- Accounting (B.S.)
- Entrepreneurship (B.B.A.)
- Finance (B.B.A.)
- Management (B.B.A.)
- Marketing (B.B.A.)
- SportsManagement (B.B.A.)

The Accounting, Entrepreneurship, Finance, Management, Marketing, and Sports Management majors within the Sidhu School each contain six tiers.

The first tier begins with a comprehensive study of the arts, sciences, mathematics, communications, and humanities. To become competitive, effective, organizational leaders and self-fulfilled individuals, Sidhu School 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 are the Sidhu School Foundation courses, which transmit a common educational experience to all Majors within the Sidhu School by addressing topics that are recognized to be basic and necessary to all practicing professionals.

Sidhu Undergraduate Foundation Courses

Each major in the Sidhu School must complete the following 21 credits:

- ACC 161. Financial Accounting & Decision Making
- ACC 162. Managerial Accounting & Decision Making
- BA 151. Integrated Management Experience I
- BA 152. Integrated Management Experience II
- EC 101. Principles of Economics I
- EC 102. Principles of Economics II
- MTH 101. Solving Problems Using Math (or higher)
  *Instead of the BA 151/152 sequence, transfer students take BA 153 (Management Foundations) plus an additional major elective

The third tier requires completion of 24 credits of core courses, common to all majors. These courses extend the knowledge base within the functional areas of business, and enable students to select a major.

Sidhu Undergraduate Core

Each major in the Sidhu School must complete the following 24 credits:

- BA 335. Law & Business
- BA 319. Business Statistics or ENT 321 (if ENT major)
- MKT 221. Marketing
- FIN 240. Introduction to Finance
- MGT 251. Management of Organizations and People or ENT 201 (if ENT major)
- MGT 354. Organizational Behavior or ENT 252 (if ENT major)
- MGT 358. International Business
- BA 461. Business Strategy and Decision Making (ENT 461 for entrepreneurship majors)

The fourth tier requires completion of at least 27 credits which are specific to each of the majors (Accounting, Entrepreneurship, Finance, Management, Marketing and Sports Management). Most majors require 15 credits; the remaining credits are satisfied with major elective courses. Students are encouraged to select one of the six undergraduate majors before entering their junior year. The Business Administration (BA) declaration is assumed to be an undeclared business major.

The fifth tier requires a 3-credit experiential component to bond classroom knowledge with practical experience and is common to all majors. The remaining courses can be taken to fulfill the major elective requirement.

- BA 462 Internship (ACC 462 for accounting majors, ENT 462 for entrepreneurship majors)
- BA 463. Business Field or Research Experience
- BA 464. International Business Experience
- SM 466 Professional Sports & Event Management Experience

The sixth tier requires completion of at least 4 credits geared toward the undergraduate student's Personal & Professional Development. These courses are intended to prepare students to recognize and use their unique strengths and skills while allowing them to reflect and prepare for a meaningful life and career. Each student must complete the entire PPD series.

- PPD 101. Personal & Professional Development I: Introduction to PPD
- PPD 201. Personal & Professional Development III: Topics in Career Development
- PPD 301. Personal & Professional Development V: Topics in Leadership Competencies
- PPD 401. Personal & Professional Development VII: Leadership Legacy

The Nesbitt College of Pharmacy and The School of Nursing

Dean of Pharmacy: Dr. Bernard W. Graham, Ph.D.
Interim Dean of Nursing: Dr. Deborah A. Zbegner

The Nesbitt College of Pharmacy and the School of Nursing represent the two clinically based academic programs of Wilkes University. These programs have themes 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 Pre-pharmacy Guaranteed Seat program and the four-year professional program. Students who successfully complete the Pre-pharmacy 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 School of Nursing, established in recognition of the growing demand for the University's array of nursing programs both regionally and nationally, houses a multitude of accredited undergraduate and graduate nursing programs. Students of nursing may matriculate directly into the Bachelor of Science or from careers as LPNs or RNs. Students who already hold a baccalaureate degree in another discipline and wish to pursue a career in the nursing profession may compete for a seat in the Accelerated Baccalaureate Program for Second Degree Students. Practicing professional nurses may choose to pursue the RN-MS program, which leads to an advanced practice master’s degree. In addition, a Doctorate of Nursing Practice is offered in the School of Nursing. A student may enter this program post-BSN or post-MSN.

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Academic Departments

- College of Arts, Humanities, & Social Sciences
- College of Science & Engineering
- The Jay S. Sidhu School of Business and Leadership
- The Nesbitt College of Pharmacy & the School of Nursing
- School of Education
- Office of the Vice President for Student Affairs

College of Arts, Humanities, & Social Sciences

Division of Behavioral and Social Sciences, Dr. Kyle L. Kreider, Chair
Department of Communication Studies, Dr. Mark D. Stine, Chair
Division of Global History, Dr. John H. Hepp and Dr. Diane Wenger, Co-Chairs
Division of Humanities, Dr. Mischelle B. Anthony, Chair
Department of Integrative Media and Art, Mr. Eric A. Ruggiero, Chair
Division of Performing Arts, Dr. Steven Thomas, Chair

College of Science & Engineering

Air and Space Studies, Lt. Col. John Baum, Chair
Division of Biology and Health Sciences, Dr. Michael A. Steele, Chair
Department of Chemistry, Dr. Donald Mencer, Chair
Department of Electrical Engineering and Physics, Dr. David R. Carey, Chair
Department of Environmental Engineering and Earth Sciences, Dr. Sid P. Halsor, Chair
Department of Mathematics and Computer Science, Dr. Barbara Bracken, Chair
Department of Mechanical Engineering and Engineering Management, Dr. Henry Castejon, Chair

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

BARBARA E. KING (1980), Associate Dean of Student Affairs
B.S. Wilkes

PHILIP RUTHKOSKY (1999), Associate Dean, Student Development
B.S., M.B.A. Scranton, Ph.D.Penn State

University College

THOMAS J. THOMAS (1982), Executive Director, University College
B.S. East Stroudsburg, M.S. Wilkes

Athletics

ADELENE MALATESTA (1989), Director of Athletics
B.S. Slippery Rock, M.Ed. East Stroudsburg

Center for Global Education and Diversity

GEORGIA COSTALAS (2008), Interim Executive Director, Center for Global Education and Diversity
B.A. Barnard, M.A. Columbia, M.A. Western Carolina

School of Education

Department of Education, Dr. Diane Polachek, Chair

The Jay S. Sidhu School of Business and Leadership

Department of Finance, Accounting and Management, Dr. Jennifer J. Edmonds, Chair
Department of Entrepreneurship, Leadership and Marketing, Dr. Anne Heineman Batory, Interim Chair

The Nesbitt College of Pharmacy

School of Pharmacy

Department of Pharmaceutical Sciences, Dr. Zbigniew Witczak, Chair
Department of Pharmacy Practice, Dr. Edward F. Foote, Chair

The School of Nursing

Dr. Susan J. Malkemes, Chair, Undergraduate Nursing
Dr. Kathleen A. Hirthler, Chair, Graduate Nursing

Administration

PATRICK F. LEAHY (2012), President
B.A. Georgetown, M.B.A., M.I.L.R. Cornell, Ed.D. Pennsylvania Graduate School of Education

ANNE A. SKLEDER (2014), Senior Vice-President/Provost
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PAUL S. ADAMS (1979), Vice President for Student Affairs
B.A., M.S. Wilkes, Ph.D. Pennsylvania

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B.A. University of Washington, LL.M. Florida College of Law, J.D. Willamette University College of Law

MICHAEL J. SPEZIALE (2004), Vice President for Strategic Initiatives
B.A. King's, M.S. Wilkes, Ed.D. Lehigh

MELANIE O. WADE (1995), Vice President for Enrollment
B.A. Wilkes, M.A. SUNY, Binghamton

MICHAEL J. WOOD (2006), Vice President for Advancement and Alumni Relations
B.A., Alderson-Broaddus College

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Date of award of emeritus status noted in parentheses.

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Vice President for Academic Affairs, Emeritus, Ph.D. Rhode Island

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PAUL O'HOP (2002)
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Faculty

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Presidents Emeriti

Date of award of emeritus status noted in parentheses.

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Course Descriptions

ACT. ACT

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.

ACC. ACCOUNTING

ACC-151. INTEGRATED MANAGEMENT EXPERIENCE I

Credits: 3
Terms Offered: Fall

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 tracking information and performance using financial accounting principles. Same as ACC-151 and ENT-151.

ACC-152. INTEGRATED MANAGEMENT EXPERIENCE II

Credits: 3
Terms Offered: Spring

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 BA-152 and ENT-152.

Pre-Requisites

ACC/BA/ENT 151.

ACC-161. FINANCIAL ACCOUNTING AND DECISION-MAKING

Credits: 3

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

Credits: 3

Managerial accounting is an internal tool used 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.

Pre-Requisites

ACC-161.

ACC-201. INTERMEDIATE ACCOUNTING

Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

ACC-161.

ACC-202. INTERMEDIATE ACCOUNTING II

Credits: 3
Terms Offered: Spring

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.

Pre-Requisites

ACC-201 with a minimum grade of 2.0.

ACC-301. ADVANCED FINANCIAL ACCOUNTING

Credits: 3

A comprehensive review and analysis for 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.

Pre-Requisites

ACC-202 with a minimum grade of 2.0.

ACC-311. ADVANCED MANAGERIAL ACCOUNTING

Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

ACC-162.

ACC-321. TAXES
Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

ACC-161.

ACC-322. ADVANCED TAXES
Credits: 3
Terms Offered: Spring

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 tax liability.

Pre-Requisites

ACC-321.

ACC-331. AUDITING
Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

ACC-202 with a minimum grade of 2.0.

ACC-341. ACCOUNTING INFORMATION SYSTEMS
Credits: 3
Terms Offered: Spring

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.

Pre-Requisites

ACC-162 and MGT-351.

ACC-362. ACCOUNTING INTERNSHIP
Credits: three or six

Pre-Requisites

ACC-202.

ACC-397. SEMINAR
Credits: 1-3

One to three credits

ABBA. ADULT BACHELOR OF BUSINESS ADMINISTRATION (ABBA)

ABBA-151. ENTREPRENEURSHIP AND INNOVATION
Credits: 3

This course takes students through the entrepreneurial process from the creative practice of developing a business concept, to planning the venture, to launching and operating the business, to harvest and closure of the firm. Students learn how businesses operate through the study of functional areas such as marketing, management, human resources, accounting, finance, and operations. Most importantly, students learn and experience how to integrate the functional areas by tracking information and performance using financial statements.

ABBA-152. THE LEADERSHIP PROCESS
Credits: 3

This course takes an interdisciplinary approach to understanding the complex process of leadership. Students will have the opportunity to explore both leadership theory and the practical application of leadership within different contexts (i.e. group, community, not-for-profit, small business and large organizational environments). The course will also focus on current issues that impact the leadership process including culture, diversity, and global perspectives. Additionally, the course will explore skills and behaviors associated with leadership including ethical decision-making, communication, influences, conflict resolution, and motivation.

ABBA-153. BUSINESS COMMUNICATIONS
Credits: 3

Three creditsThis course emphasizes written and oral communications used in business. Students practice writing major business correspondence, including letters containing persuasive requests and refusals, inquiries, orders, sales, applications, credit, collection, and goodwill. Investigative techniques of research and analytical report writing are examined. 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.

ABBA-154. BUSINESS ECONOMICS
Credits: 3

This course introduces the student to macroeconomic and microeconomic theories and principles. Core issues in both areas of Economics such as supply and demand, fiscal policy and monetary policy, employment, and pricing and output determination are explored in a business environment context.

ABBA-161. FINANCIAL ACCOUNTING
Credits: 3

This course studies the nature, function, and environment of accounting, including the accounting information system, account analysis, and decision-making. The course also provides an understanding of accounting issues and objectives for proper interpretation and analysis of financial accounting information.

ABBA-162. MANAGERIAL ACCOUNTING
Credits: 3

This course develops managerial accounting as an internal tool used to generate information for managerial planning and 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.

ABBA-235. THE LEGAL ENVIRONMENT AND BUSINESS LAW
Credits: 3

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 a study of the laws protecting consumers and employees; and the law of contracts, sales, and business organizations.

ABBA-251. PRINCIPLES OF MANAGEMENT
Credits: 3

This course introduces the theory and practice of managing organizations. Students analyze the concepts required in overseeing a company including planning, organizing, and controlling. Interdisciplinary in nature, social and ethical dimensions of managing are also examined.

ABBA-257. INFORMATION TECHNOLOGY FOR BUSINESS
Credits: 3

This course explores the assumptions, concepts and theories of information technologies for digital business in the knowledge economy. Topics will include examining critical issues of communication and connectivity of information systems for the organization from both the strategic and technical perspectives. Digital opportunities for organizational connectivity, development of standards and motivating strategic alliances will be emphasized.

ABBA-319. STATISTICS FOR BUSINESS
Credits: 3

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. Mathematical modeling in the business environment is emphasized.

ABBA-321. PRINCIPLES OF MARKETING
Credits: 3

This course provides 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. The student 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. Marketing challenges, ethical thinking and action, and global dimensions of the practice of marketing and retailing will be identified.

ABBA-340. CORPORATE FINANCE
Credits: 3

This course provides 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.

ABBA-352. PRODUCTION AND OPERATIONS IN BUSINESS
Credits: 3

This course introduces principles of decision-making, how competition is enhanced, product and process development and management, quality management, and fundamentals of supply chain and inventory management.

ABBA-353. MANAGEMENT OF HUMAN RESOURCES
Credits: 3

This course deals with acquiring skills and understanding of the planning and technologies involved with local, regional, national, and global human resources management. Topics such as selection and recruitment, and job analysis and design are explored. Also included are appraising and rewarding performance, compensation and benefits, and labor management relations.

ABBA-354. ORGANIZATIONAL STUDIES
Credits: 3

This course emphasizes organizational theory and structure enhancing the student's ability to take action in organizations. The role of the employee and manager in the organizational change process will be discussed, highlighting the complexity of change. Topics such as motivation, risk, social influence, communication, organizational structure, team dynamics, leadership, culture, and power will be presented.

ABBA-358. INTERNATIONAL BUSINESS MANAGEMENT
Credits: 3

This course is an introduction to the field of international business. It provides an overview of the world economy; trade channels; and the effects of economic, political, and the social environment on international management. It also provides an insight to problems that exist in international operations, as well as the role of government in fostering international business.

ABBA-461. BUSINESS STRATEGY AND DECISION-MAKING
Credits: 3

This first capstone course 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. ADVISOR PERMISSION REQUIRED.

ABBA-462. PROFESSIONAL BUSINESS EXPERIENCE
Credits: 3

This second capstone course is part of a three-session (15 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. ADVISOR PERMISSION REQUIRED.

AS. AEROSPACE STUDIES

AS-102. FOUNDATIONS OF THE USAF II (SPRING)
Credits: 1

Introduction to USAF professions, geopolitics, U.S. defense policy/strategy, U.S. general purpose military forces, insurgency/counter-insurgency, aerospace support forces and organization of other military services. Development of individual communications skills.

AS-202. EVOLUTION OF USAF AIR AND SPACE POWER II (SPRING)
Credits: 1

A study of traits of effective leaders and followers coupled with characteristics and values important to the U.S. Air Force. Application of oral presentation skills.

Pre-Requisites

AS-201 or permission of instructor. AFROTC Field Training

AS-240. AFROTC FIELD TRAINING (4-WEEK SUMMER SESSION)
Credits: 3

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics.

Pre-Requisites

AS-101, 102, 201, and 202; successful completion of an interview with the Professor of Aerospace Studies; other military requirements.

AS-302. AIR FORCE LEADERSHIP STUDIES II (SPRING)
Credits: 3

Quality leadership tools and theory: practical experience in influencing people, individually and in groups, to accomplish organizational missions effectively; development of communications skills. Course is Writing Intensive.

Pre-Requisites

AS-301 or permission of instructor.

AS-402. NATIONAL SECURITY AFFAIRS / PREPARATION FOR ACTIVE DUTY II (SPRING)
Credits: 3

The problems of developing defense strategy in a rapidly changing technological environment; effective deterrent posture and management of conflict; dynamics and agencies of defense policy making.

Pre-Requisites

AS-401 or permission of instructor.

ANT. ANTHROPOLOGY

ANT-101. INTRODUCTION TO ANTHROPOLOGY
Credits: 3

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.

ANT-102. CULTURAL ANTHROPOLOGY
Credits: 3

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
Credits: 3

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
Credits: 3

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-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative average, consent of academic advisor, and approval of placement by the department chairperson.

ART. ART

ART-101. EXPERIENCING ART
Credits: 3
Fees: $50

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.

ART-111. FUNDAMENTALS OF COLOR AND DESIGN
Credits: 3
Fees: $50

A basic level design course involving the elements and principles of two-dimensional design and the study of color systems.

ART-113. DRAWING AND COMPOSITION
Credits: 3
Fees: $50

An introductory course exploring the organization and potential of line, space, and texture through a variety of media and subject matter.

ART-120. PAINTING I
Credits: 3
Fees: $50

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.

ART-121. PRINTMAKING
Credits: 3
Fees: $50

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.

ART-122. SCULPTURE
Credits: 3
Fees: $50

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.

ART-123. CERAMICS
Credits: 3
Fees: $50

Exploration into the basic methods and techniques of hand building and wheel work. Experimentation in surfaces decoration, glazing, and kiln firing.

ART-134. COMPUTER GRAPHICS I
Credits: 3
Fees: $50

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.

ART-138. DIGITAL PHOTOGRAPHY
Credits: 3
Fees: $50

An introduction to the fundamentals of photography; camera usage, subject consideration, lighting, digital techniques, and the preparation of photographs for exhibit.

ART-140. HISTORY OF ART I
Credits: 3

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. ELIGIBLE FOR WOMEN'S STUDIES MINOR.

ART-141. HISTORY OF ART II
Credits: 3

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. ELIGIBLE FOR WOMEN'S STUDIES MINOR.

ART-220. PAINTING II
Credits: 3
Fees: $50

Increased emphasis on development of style and experimentation in contemporary art methods and techniques.

Pre-Requisites
ART-120 or permission of instructor.

ART-234. COMPUTER GRAPHICS II
Credits: 3
Fees: $50

A continuation of Computer Graphics 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.

Pre-Requisites
ART-134 or permission of instructor.

ART-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites
Sophomore standing, minimum 2.0 cumulative average, consent of academic advisor, and approval of placement by the department chairperson.

BIO. BIOLOGY

BIO-105. THE BIOLOGICAL WORLD
Credits: 3
Fees: $120

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, 2) Human Biology, 3) Contemporary Issues in the Life Sciences, and others. This course is intended for students who are not majoring in science, engineering, pre-pharmacy, and nursing, or pursuing 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 specimens may be required in the laboratory component. Spring semesters: Contemporary Issues in the Life Sciences—three hours of lecture each week.

BIO-113. MICROBIOLOGY
Credits: 4
Fees: $120

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 per week; laboratory, three hours per week. Offered every spring semester.

Pre-Requisites
BIO-115 or permission of the instructor.

BIO-121. PRINCIPLES OF MODERN BIOLOGY I
Credits: 4
Fees: $120

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 work per week. Offered every fall semester. Required of all Biology majors. Co-requisite: CHM-115

BIO-122. PRINCIPLES OF MODERN BIOLOGY II
Credits: 4
Fees: $120

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 and three hours of laboratory per week. Offered every spring semester. Required of all Biology majors.

BIO-225. POPULATION AND EVOLUTIONARY BIOLOGY
Credits: 4
Fees: $120

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 evolutions, 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 and three hours of laboratory per week. Offered every fall semester. Required of all Biology majors.

Pre-Requisites
BIO-121 and BIO-122.

BIO-226. CELLULAR AND MOLECULAR BIOLOGY
Credits: 4
Fees: $120

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 of lecture and three hours of laboratory per week. Offered every spring semester. Required of all Biology majors.

Pre-Requisites
BIO-121 and BIO-122.

BIO-254. SUPERLAB
Credits: 3

Superlab is a research-oriented course in which students carry out laboratory and field-based investigations into research areas such as ecotoxicology, plant physiology, molecular biology, and cancer biology. In this course, students have one hour of classroom instruction per week during the regular semester followed by ten days (over a period of two weeks) of intensive laboratory work after the end of the semester, in which students design and implement experiments and carry out research discussed during the semester with the aid of their instructors. Offered each year.

Pre-Requisites
BIO-225-226 or BIO-226 as co-requisite.

BIO-306. INVERTEBRATE BIOLOGY
Credits: 4
Fees: $120

This course is a study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology, and ecology. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-311. COMPARATIVE PHYSIOLOGY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered every spring semester. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-312. PARASITOLOGY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-314. COMPARATIVE VERTEBRATE ANATOMY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225.

BIO-321. MAMMALIAN PHYSIOLOGY
Credits: 4
Fees: $120

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; other mammalian systems, however, are discussed to demonstrate physiological adaptability to various environmental situations. Laboratory exercises include physiological experimentation in living systems and in computer simulations. Three hours of lecture and three hours of laboratory per week. Offered in alternate years. This course satisfies the requirement for a course with an emphasis in quantitative biology.

Pre-Requisites
BIO-121-122, BIO-226, or permission of the instructor.

BIO-323. FUNCTIONAL HISTOLOGY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-324. MOLECULAR BIOLOGY
Credits: 4
Fees: $120

This course will introduce students to modern concepts and techniques in molecular biology through a genuine research experience in using cell and molecular biology to learn about a fundamental problem in biology. Rather than following a set series of lectures, we will study a problem and see where it leads us. We will use the information given in lectures and reading assignments to solve research problems and, in the process, learn a lot of molecular biology. Offered in alternate years.

Pre-Requisites
BIO-225-226, CHM-231-232.

BIO-325. ENDOCRINOLOGY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of instructor.

BIO-326. IMMUNOLOGY AND IMMUNOCHEMISTRY
Credits: 4
Fees: $120

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 pathophysiologic alternations of hypersensitivity phenomena in vertebrate animals and man. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-327. MEDICAL MICROBIOLOGY
Credits: 4
Fees: $120

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 micro-organisms. Three hours of lecture and three hours of laboratory per week. Cross-listed with PHA-327.

Pre-Requisites
BIO-121-122, CHM-231-232.

BIO-328. DEVELOPMENTAL BIOLOGY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-329. VIROLOGY
Credits: 3

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.

Pre-Requisites
BIO-121-122, BIO-225-226, CHM-231-232, CHM-233-234.

BIO-330. INTRODUCTION TO BIOINFORMATICS
Credits: 3

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. This course satisfies the requirement for a course with an emphasis in quantitative biology.

Pre-Requisites
BIO-225-226, CHM-231-232, MTH-150, or permission of the instructor.

BIO-338. BIOLOGY OF CANCER
Credits: 3

This lecture course is designed to explore the various concepts and mechanisms associated with the origins, elaborations, and future developments in cellular transformation and carcinogenesis. Emphasis is placed on the molecular biology and physiology of these processes; therefore, a solid background in basic biology is required. Oncogenes, tumor suppressor genes, and the disruption of homeostasis are covered in detail, while the medical phenomena typically receive a more general level of coverage.

Pre-Requisites
BIO-121-122, BIO-226, CHEM 231-232.

BIO-340. CONSERVATION BIOLOGY
Credits: 3

This course will cover the major topics of conservation biology including an introduction to biodiversity, threats to biodiversity, and solutions to diminish extinctions and population declines. Lecture: three hours per week. Offered each year.

Pre-Requisites
BIO-225-226 or permission of the instructor.

BIO-341. FRESHWATER ECOSYSTEMS
Credits: 3
Fees: $120

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 of lecture and three hours of laboratory per week. Offered in alternate years. Cross-listed with EES-341.

Pre-Requisites
EES-211 or 240 or BIO-121-122 or consent of the instructor.

BIO-342. THE ARCHOSAURS: BIRDS, DINOSAURS, AND CROCODILIANS
Credits: 4
Fees: $120

This course will cover the biology of the Archosaurs. Major topics include evolutionary history, morphology, physiology, behavior, ecology, and conservation of archosaurs. Laboratory is largely field-based with an emphasis on identifying local fauna and population estimation methods. Laboratory also includes dissection, histology, and a field trip to a museum. Offered in alternate years.

Pre-Requisites
BIO-225 or permission of the instructor.

BIO-343. MARINE ECOLOGY
Credits: 3
Fees: $120

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. Offered in alternate years. Cross-listed with EES-343.

Pre-Requisites
EES-230 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.

BIO-344. ECOLOGY
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years. Cross-listed with EES-344. This course satisfies the requirement for a course with an emphasis in quantitative biology.

Pre-Requisites
BIO-121-122 or permission of the instructor

BIO-345. GENETICS
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of lab per week. Offered every fall semester.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-346. ANIMAL BEHAVIOR
Credits: 4
Fees: $120

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. Three hours of lecture and three hours of laboratory per week. Offered in alternate years. This course satisfies the requirement for a course with an emphasis in quantitative biology.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-347. BIOSTATISTICS AND EXPERIMENTAL DESIGN
Credits: 4
Fees: $120

This course reviews the statistical paradigms and techniques involved in analyzing biological phenomena. Frequentist and Bayesian methods are employed when appropriate with an emphasis on applied statistics and experimental design. Laboratory exercises include designing, analyzing, and communicating experiments. Computation and computer coding is employed in laboratory exercises. Offered in alternate years.

Pre-Requisites
BIO-225, MTH-150, or permission of the instructor.

BIO-348. FIELD ZOOLOGY
Credits: 3

The goals of this summer course are to introduce field methods of zoology and increase familiarity with Pennsylvania animals. Taxa covered include turtles, snakes, birds, fish, insects, and mammals. Topics covered include conservation issues, population estimation, and sampling methods. Lecture: one hour per week. Laboratory: two hours per week. Offered annually.

Pre-Requisites
BIO-225-226 or permission of the instructor.

BIO-352. PATHOPHYSIOLOGY
Credits: 4
Fees: $120

Pathophysiology provides a series of lectures, exercises, and problem-solving sessions integrating the concepts of functional anatomy with human disease. Problem-based learning is encouraged by reviewing illustrative clinical cases and using interactive audio-visual media. Offered in alternate years.

Pre-Requisites
BIO-225-226 or permission of the instructor.

BIO-361. PLANT FORM AND FUNCTION
Credits: 4
Fees: $120

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. Offered every fall semester.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-362. PLANT DIVERSITY
Credits: 4
Fees: $120

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. Offered every spring semester.

Pre-Requisites
BIO-121-122, BIO-225-226, or permission of the instructor.

BIO-366. FIELD BOTANY
Credits: 3
Fees: $120

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-366. Offered in alternate years.

Pre-Requisites
BIO-121-122 or permission of the instructor.

BIO-368. MEDICAL BOTANY
Credits: 3

A specialized summertime course that provides a scientifically based overview of the ways in which plants affect human health. Topics include cultural and historical perspectives of plants and medicine, plants that treat human ailments, and psychoactive plants. Two hours of lecture per day for five weeks. Offered in alternate years.

Pre-Requisites
BIO-121-122, BIO-225, CHM-231-232, or permission of the instructor.

BIO-369. PLANT PATHOLOGY
Credits: 4
Fees: $120

This course introduces students to modern concepts and techniques in plant physiology through a genuine research experience in using the techniques of plant physiology to learn about a problem in plant biology. Rather than following a set series of lectures, we will study a problem and see where it leads us. We will use the information given in lectures and reading assignments to solve research problems and, in the process, learn a lot of plant physiology. Offered in alternate years.

Pre-Requisites
BIO-225-226, CHM-231-232, or permission of the instructor.

BIO-394. BIOLOGICAL FIELD STUDY
Credits: 1-3

Pre-Requisites
BIO-121-122 or permission of the instructor.

BIO-397. PROFESSIONAL PREPARATION TECHNIQUES
Credits: 2

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. Offered every fall and every spring semester.

Pre-Requisites
Junior-level standing.

BIO-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.Requirements: Sophomore standing, 2.0 minimum cumulative GPA, consent of the academic advisor, and approval of placement by the department chairperson.

BA. BUSINESS ADMINISTRATION

BA-151. INTEGRATED MANAGEMENT EXPERIENCE I
Credits: 3
Terms Offered: Fall

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 tracking information and performance using financial accounting principles. Same as ACC-151 and ENT-151.

BA-152. INTEGRATED MANAGEMENT EXPERIENCE II
Credits: 3
Terms Offered: Spring

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.

Pre-Requisites
ACC/BA/ENT 151.

BA-153. MANAGEMENT FOUNDATIONS
Credits: 3

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 to any student who completed ACC/BA/ENT 151 and ACC/BA/ENT 152.

BA-319. BUSINESS STATISTICS
Credits: 3
Terms Offered: Fall

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 with EC-319.

BA-335. LAW AND BUSINESS
Credits: 3

This course provides a foundation for understanding how the law functions; the laws protecting consumers and employees; and the law of contracts, sales, and business organizations.

BA-336. ADVANCED TOPICS IN BUSINESS LAW
Credits: 3
Terms Offered: Spring

This course provides students with an understanding of select advanced topics in law, specifically those that have the greatest impact on business and accounting.

Pre-Requisites
BA-335

BA-337. LEGAL ASPECTS OF SPORT AND EVENT MANAGEMENT
Credits: 3

Introduces legal issues that confront contemporary organized athletics and sports management. Specific topics which are highlighted include impact of antitrust laws; personal services contracts; labor law; injury and liability; franchise and transfer rules; and tax aspects. Examines the role of legal services within sports organizations and in individual athlete representation.

Pre-Requisites
BA-335

BA-461. BUSINESS STRATEGY AND DECISION-MAKING
Credits: 3

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.

Pre-Requisites
MKT-221, EC-101, EC-102, FIN-240, and MGT-251.

BA-462. PROFESSIONAL BUSINESS EXPERIENCE
Credits: 3

Pre-Requisites
MKT-221, FIN-240, and MGT-251.

BA-463. THE BUSINESS FIELD AND RESEARCH EXPERIENCE
Credits: 3

This course allows the student to choose from a variety of professional opportunities. The student could perform research and writing in his or her major area. Such research must be approved by the instructor in advance. (The Undergraduate Thesis) The student may participate in a multidisciplinary capstone course that incorporates the application of business creation, development, and planning. It includes the application of business functions such as management, business strategy, marketing, accounting, finance, operations management, and sales. (The Business Incubator) The student could also visit several local organizations to conduct a live case comparison that spans industries and organizations as it pertains to his or her major area and faculty interests. (The Business Field Experience) Action learning gives students the opportunity to develop an understanding of the Sidhu School disciplines and business practices that are ethically and socially responsible.

Pre-Requisites
Senior class standing.

BA-464. INTERNATIONAL BUSINESS EXPERIENCE
Credits: 3

The course provides an overview of a Western European Society. A ten-day field trip in Western Europe is a major learning experience of the course. Site visits are made in a number of cities in European countries. Site visits include Cities, Regions, and Business and travel centers. Arrangements for travel are made during the fall, and travel in the spring. The purpose of the course is to create a global learning experience using Western Europe as a medium to facilitate the student's understanding of the global business environment. Presentations, discussions, travel, observations, projects, as well as written papers will provide students with the opportunity to demonstrate their understanding and knowledge.

CAR. CAREERS

CAR-101. LIFE/CAREER PLANNING
Credits: 1

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.

CHM. CHEMISTRY

CHM-105. CHEMISTRY AND MODERN SOCIETY
Credits: 3

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.

CHM-111. FUNDAMENTALS OF CHEMISTRY
Credits: 4
Fees: $125

Designed for students who do not intend to major in science or engineering, this one-semester course presents principles of chemistry. Topics include atomic structure, chemical bonding, gas laws, solutions, acid/base chemistry and an introduction to organic and biochemistry. A laboratory component closely coordinated with and designed to accompany the lecture is required as part of this course. Experiments develop basic principles of laboratory technique. Students may not receive credit for both CHM 111 and CHM 113/115. Three hours of class, one hour of problem session, and two hours of lab per week.

CHM-113. ELEMENTS AND COMPOUNDS LAB
Credits: 1
Fees: $125

Three hours per week.

Co-Requisites
CHM-115

CHM-114. THE CHEMICAL REACTION LAB
Credits: 1
Fees: $125

Three hours per week. Corequisite: CHM-116

CHM-115. ELEMENTS AND COMPOUNDS
Credits: 3

Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure. Three hours of class and a one-hour problem session per week. Corequisite: CHM-113.

CHM-116. THE CHEMICAL REACTION
Credits: 3

A detailed study of chemical equilibria in aqueous solution. Three hours of class and a one-hour problem session per week.

Pre-Requisites
CHM-113 & CHM-115

Co-Requisites
CHM-114

CHM-117. INTRODUCTORY CHEMISTRY LAB FOR ENGINEERS
Credits: 1
Fees: $125

This is a one-semester introductory chemistry laboratory course for engineering students. Experiments are performed to reinforce the concepts learned in CHM-118. Three-hour lab per week.

CHM-118. CHEMISTRY FOR ENGINEERS
Credits: 3

This course covers the foundations of chemistry, matter and measurements, periodicity, atomic and molecular structure, stoichiometry, states of matter, phase changes, kinetics, equilibrium, thermochemistry and electrochemistry. Four-hour lecture per week.

Co-Requisites
CHM-117

CHM-231. ORGANIC CHEMISTRY I
Credits: 3

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. Three hours of class and a one-hour pre-lab session per week.

Pre-Requisites
CHM-114 and CHM-116.Co-requisite CHM-233.

CHM-232. ORGANIC CHEMISTRY II
Credits: 3

A continuation of CHM-231 with emphasis on organic synthesis. Three hours of class and a one-hour pre-lab session per week.

Pre-Requisites
CHM-231 and CHM-233.Co-requisite CHM-234.

CHM-233. ORGANIC CHEMISTRY I LAB
Credits: 1
Fees: $125

After an introduction to standard organic reaction, purification, physical characterization, and spectroscopic techniques, students will investigate concepts discussed in CHM-231. Three hours per week. Co-requisite: CHM-231

CHM-234. ORGANIC CHEMISTRY II LAB
Credits: 1
Fees: $125

Weekly labs that parallel the lecture topics in CHM-232 and emphasize organic synthesis and characterization, including multistep synthesis. Three hours per week. Co-requisite: CHM-232

CHM-246. ANALYTICAL CHEMISTRY LAB
Credits: 1
Fees: $125

Laboratory for CHM-248. One three-hour laboratory per week. Co-requisite: CHM-248

CHM-248. ANALYTICAL CHEMISTRY
Credits: 3

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.

Pre-Requisites
CHM-114 and CHM-116.Co-requisite CHM-246.

CHM-322. INORGANIC CHEMISTRY
Credits: 3

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.

Pre-Requisites
CHM-114 and CHM-116.

CHM-341. INSTRUMENTAL METHODS FOR CHEMICAL ANALYSIS
Credits: 3

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.

Pre-Requisites
CHM-246 and CHM-248

Co-Requisites
CHM-343 and CHM-351

CHM-343. INSTRUMENTAL METHODS FOR CHEMICAL ANALYSIS LAB
Credits: 1
Fees: $125

Laboratory for CHM-341. One three-hour laboratory per week.

Co-Requisites
Co-requisite CHM-341

CHM-351. PHYSICAL CHEMISTRY I
Credits: 3

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.

Pre-Requisites
CHM-114 and 116; MTH-212; PHY-202.

CHM-352. PHYSICAL CHEMISTRY II
Credits: 3

Statistical mechanics is used to formulate thermodynamics in terms of atomic and molecular properties. A molecular interpretation of the laws of thermodynamics.

Pre-Requisites
CHM-351.

CHM-353. PHYSICAL CHEMISTRY I LAB
Credits: 1
Fees: $125

Laboratory experiments are performed in order to reinforce concepts in CHM-351. 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. Three hours per week. Co-requisite: CHM-351

CHM-354. PHYSICAL CHEMISTRY II LAB
Credits: 1
Fees: $125

Laboratory experiments are performed in order to reinforce concepts in CHM-352. 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. Three hours per week.

Co-Requisites
CHM-352

CHM-355. PHYSICAL CHEMISTRY FOR LIFE SCIENCES
Credits: 3

An introduction to traditional physical chemistry topics, including additional topics related to life sciences. Laws of thermodynamics, equilibria, kinetics, and spectroscopy will be discussed in terms of their application to life sciences.

Pre-Requisites
CHM-114 and CHM-116, PHY-202, MTH-212.Co-requisite CHM-357.

CHM-357. PHYSICAL CHEMISTRY FOR LIFE SCIENCES LAB
Credits: 1
Fees: $125

Laboratory experiments emphasize concepts presented in CHM-355. Course includes experimental work, analysis of a research article, and computer simulations relevant to life sciences. Three hours per week. Co-requisite: CHM-355

CHM-361. BIOCHEMISTRY: STRUCTURE AND FUNCTION
Credits: 3

This course presents 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.

Pre-Requisites

CHM-232.

CHM-362. BIOCHEMISTRY: METABOLISM
Credits: 3

This course presents 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 Kreb's cycle, electron transport, gluconeogenesis, pentose phosphate pathway, fatty acid metabolism, and amino acid metabolism.

Pre-Requisites

CHM-232.

CHM-365. MEDICAL BIOCHEMISTRY
Credits: 4

Introduction to basic biochemistry concepts, focusing on the structure and function of vitamins, proteins, and lipids as well as bioenergetics and major catabolic pathways. The catabolism of carbohydrates, fats and amino acids will be discussed including reactions and regulation. Common metabolic pathways of drugs, enzyme induction and metabolism down regulation will also be presented. Lecture: Four hours per week. Cross-listed with PHA-365; BEGR-465.

Pre-Requisites

CHM-232 or permission of the instructor.

CHM-370. ,CHM 371,CHM 372 INTEGRATED LABORATORIES I, II, III
Credits: 1-2 each
Fees: 125

Laboratory experiments related to the five major areas of chemistry. Labs will be chosen in order that students might demonstrate 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. Three hours of laboratory per week per credit hour.

Pre-Requisites

CHM-232, CHM-234, CHM-341

CHM-390. JUNIOR SEMINAR
Credits: 1

CHM-390 is a one-hour course offered during the spring semester. It is designed to prepare chemistry and biochemistry majors for their careers after graduation and for their capstone research projects, undertaken in the 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.

Pre-Requisites

45 hours of service to the Chemistry DepartmentRequirements Junior standing and declared major in Chemistry or Biochemistry

CHM-391. SENIOR RESEARCH I
Credits: 2
Fees: $125

Students will plan and execute 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. Requirements: Senior standing in a Chemistry curriculum

Pre-Requisites

CHM-352 or CHM-355.

CHM-392. SENIOR RESEARCH II
Credits: 2
Fees: $125

Students will carry out a chemistry research project under the direction of a faculty member. It is expected that 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.

Pre-Requisites

CHM-391.

CHM-395. INDEPENDENT RESEARCH
Credits: 1-3
Fees: $125

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.

Requirements: permission of the instructor.

CHM-396. INDEPENDENT RESEARCH
Credits: 1-3
Fees: $125

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.

Requirements: permission of the instructor.

CHM-398. TOPICS
Credits: 1-3

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.

Pre-Requisites

Will vary according to the specific topics course.

CHM-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the 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.

COM. COMMUNICATION STUDIES

COM-101. FUNDAMENTALS OF PUBLIC SPEAKING
Credits: 3

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
Credits: 3

A study of the theory and process of communication. Required of all department majors. Taught every spring semester.

COM-124. MASS MEDIA LITERACY
Credits: 3

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
Credits: 1-2

A-Debate and Forensics; **B**-P.R. Agency; **C**- WCHL Radio; **D**-The Beacon; **E**-Television; **F**- Department. The Department Practicum may be taken for one or two credits per semester with the total not to exceed six credits. Students may earn credit for major roles and positions of major responsibility in the above co-curricular 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 degree requirements of any concentration in Communication Studies. Written approval of credit must be by advisor and Department chairperson.

COM-201. ADVANCED PUBLIC SPEAKING
Credits: 3

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.

Pre-Requisites
COM-101 or consent of the instructor.

COM-202. INTERPERSONAL COMMUNICATION
Credits: 3

This course focuses on interpersonal communication theory and its application to improving the student's interpersonal skills in managing conflict, negotiating, interviewing, and in developing relationships. Taught fall semesters.

Pre-Requisites
COM-101 or consent of the instructor.

COM-203. SMALL GROUP & TEAM COMMUNICATION
Credits: 3

This course is designed to enable students to improve their decision-making abilities within group and team settings. Emphasis will be placed on team-building, as well as task, leadership and interpersonal skills needed for effective group communication.

Pre-Requisites
COM-102.

COM-204. ARGUMENTATION AND DEBATE
Credits: 3

Training in the fundamentals of argumentation and debate, with practice in gathering and organizing evidence and support materials. Course taught every other fall semester.

Pre-Requisites
COM-101 or consent of the instructor.

COM-206. BUSINESS AND PROFESSIONAL COMMUNICATION
Credits: 3

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 in alternate years.

COM-220. INTRODUCTION TO ELECTRONIC MEDIA
Credits: 3

An overview of the history, institutions, and message systems of the radio, television, cable, satellite, and internet industries.

COM-222. BROADCAST PRODUCTION
Credits: 3
Fees: $50

A study of the principles and techniques of audio and video production. A special emphasis is placed on the utilization of these techniques in broadcast settings.

COM-223. THE ART OF FILM
Credits: 3

An introduction to the aesthetics, 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
Credits: 3-6

A supervised program of work and study in any of the concentrations. Written permission of the department is required. Offered every semester.

COM-260. BASIC NEWSWRITING
Credits: 3

Fundamentals of newsgathering, newswriting, and news judgment for all media; study of news sources; fieldwork, research, and interview techniques.

Pre-Requisites
ENG-101.

COM-261. MULTIMEDIA COMMUNICATION
Credits: 3

This course offers a skills-focused and theoretical approach to multimedia communication. Through a variety of readings, discussions and practical workshops, students will earn basic skills for navigating through multimedia platforms, including, but not limited to social media, apps, and audio/visual modes of communication. Students will be given the tools and information to adapt their knowledge and expertise as media and software packages change. Students will also critically analyze multimedia platforms to better understand their functions and the repercussions of releasing information on (or through) them.

Pre-Requisites
ENG-101.

COM-262. DIGITAL STORYTELLING AND DESIGN
Credits: 3

This course offers a hands-on approach to exploring the visual aspects of design and storytelling. Students will be introduced to basic principles of design that are applicable to a variety of career fields. Students also will learn about visual storytelling, the power of visual messages, and the interconnectedness between verbal and visual messages. Through readings, class discussions and workshops, students will gain the knowledge to not only produce effective and quality visual messages, but they will also be challenged to critically analyze visual messages and discuss the ethics behind the messages and the message making process.

Pre-Requisites

COM-260.

COM-300. COMMUNICATION CRITICISM
Credits: 3

Theories from classical to contemporary will be applied to the analysis of written, visual, and electronic messages. Emphasis on speech writing and criticism.

Pre-Requisites

COM-101.

COM-301. PERSUASION
Credits: 3

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.

Pre-Requisites

COM-101.

COM-302. FUNDAMENTALS OF PUBLIC RELATIONS
Credits: 3

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 every fall semester.

Pre-Requisites

COM-260.

COM-303. ORGANIZATIONAL COMMUNICATION
Credits: 3

Course focuses on traditional and modern concepts of communication channels in simple and complex organizations. Considerable attention is given to interviewing and conducting communication audits.

Pre-Requisites

COM-102 or consent of the instructor.

COM-304. INTERCULTURAL COMMUNICATION
Credits: 3

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.

Pre-Requisites

COM-102 or consent of the instructor.

COM-305. STUDIES IN PUBLIC ADDRESS
Credits: 3

This class is a hybrid or comparative approach to the study of public address in the United States. We will study traditional *and* critical rhetorical theories of public address. We will also engage with speakers and texts that both challenge and reinforce the "great speeches" mold. As we pursue these objectives, we will focus our study on selected social movement rhetorics in the United States, including those of women's and feminist movements, civil rights movements, labor movements, and LGBTQ movements.

Pre-Requisites

COM-102 or consent of the instructor.

COM-320. MEDIA MANAGEMENT
Credits: 3

This course will provide a framework for understanding the functions and methods of media managers in both print and non-print media.

Pre-Requisites

COM-220 or consent of the instructor.

COM-321. ADVANCED MULTIMEDIA REPORTING
Credits: 3

This course combines advanced reporting techniques with multimedia production to create news 'packages'. Students will discuss audience analysis and determine what makes a solid news package for a pa1iicular audience and/or demographic. The class will analyze existing news packages and then split into teams to create their own multimedia news stories that relate not only to the university, but also to the Wilkcs-Barre area. Teams will be responsible for all reporting and multimedia work, including, but not limited to, video, online and photo components. Near the end of the semester, students will present their work to a panel of industry and/or academic professionals for feedback.

Pre-Requisites

COM-222

COM-322. ADVANCED VIDEO PRODUCTION
Credits: 3
Fees: $50

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.

Pre-Requisites

COM-222 or consent of the instructor.

COM-323. ADVANCED AUDIO PRODUCTION
Credits: 3

This advanced level course builds on the basic skills learned in Broadcast Production with an emphasis on radio and the radio industry. Students will learn the theory and techniques of in depth radio production, including multi-track recording, mixing, signal processing, editing, mastering, creative radio production, and sound design for media. Students will be expected to work independently and within the group to produce broadcast quality production content suitable to be aired on WCLH.

COM-324. COMMUNICATION RESEARCH METHODS
Credits: 3

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. Course taught every fall semester.

Pre-Requisites

COM-102 and COM-260

COM-352. ADVANCED PUBLIC RELATIONS CAMPAIGNS
Credits: 3

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 newswriting, interviewing, and fundamentals of public relations. Course taught in alternative spring semesters.

Pre-Requisites

COM-302.

COM-354. INTERNATIONAL FIELD EXPERIENCE IN COMMUNICATION
Credits: 1-6

One to six creditsInternational Field Experience in Communication is an international service-learning experience that focuses on social and communication issues. Students will do a service project related to an area of communication studies including, but not limited to, Broadcast and Print Media, Public Relations, or Strategic Communication. Qualifies for Study Tour Experience (STE) credit pricing.

COM-360. ADVANCED NEWSWRITING
Credits: 3
Fees: $50

A study of specialized reporting and an introduction to news editing.

Pre-Requisites

COM-260.

COM-361. FEATURE WRITING
Credits: 3

A study of feature articles for newspapers, syndicates, magazines, and specialized publications. Practice in research, interviewing, and writing.

Pre-Requisites

COM-260.

COM-362. MASS COMMUNICATION LAW
Credits: 3

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-372. MANAGING A PUBLIC RELATIONS AGENCY
Credits: 3

Focus on difference between in-house public relations and agency operators. Students work with several clients.

Pre-Requisites

COM-302.

COM-397. SENIOR SEMINAR/COMMUNICATIONS
Credits: 3

An in-depth investigation of current research and ethical issues in communication. A research paper and senior project required. Required of all majors. Course taught every spring semester.

Pre-Requisites

COM-324 and junior or senior standing.

COM-398. TOPICS
Credits: 1-3

A study of topics of special interest not extensively treated in regularly offered courses.

COM-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Completion of Sophomore year, 2.25 cumulative GPA, consent of academic advisor, and approval of placement by department chairperson.

CS. COMPUTER SCIENCE

CS-115. COMPUTERS AND APPLICATIONS
Credits: 3

Three creditsAn introduction to computers and computing, with emphasis on personal computing in both the Windows and OS X 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
Credits: 4
Fees: $40

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. Three hours of lecture and two hours of lab per week. Offered every fall, spring, and summer.

Pre-Requisites

Secondary mathematics, including geometry and algebra II.

CS-126. COMPUTER SCIENCE II
Credits: 4
Fees: $40

A study of advanced programming concepts, structures, and techniques (professional and ethical issues, testing and debugging, fundamentals of programming, basic data structures—strings, lists, multidimensional arrays, objects, hashes, inheritance, polymorphism, recursion, divide and conquer, machine representation of data, hardware components, machine instructions). Three hours of lecture and two hours of lab per week. Offered every fall and spring.

Pre-Requisites

CS-125 or equivalent programming experience.

CS-225. COMPUTER SCIENCE III
Credits: 3
Fees: $40

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. Offered every fall.

Pre-Requisites

CS-126.

CS-226. COMPUTER SCIENCE IV
Credits: 3
Fees: $40

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. Offered every spring.

Pre-Requisites

CS-225.

CS-246. C AND UNIX
Credits: 3
Fees: $40

An introduction to using Unix operating systems, including shells, file manipulation, text editors, filters, and regular expressions. Fundamentals of C programming, including loops, arrays, functions, recursion, pointers, structures, unions, input/output, and system calls.

Pre-Requisites

CS-125.

CS-265. MEDICAL INFORMATICS
Credits: 3
Fees: $40

This course will cover basic principles of computer use and information management in health care (including general medicine, dentistry, optometry, and 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
Credits: 3
Fees: $40

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. Offered in the fall semester of odd-numbered years when demand warrants.

Pre-Requisites

CS-126.

CS-285. MOBILE APPLICATIONS
Credits: 3
Fees: $40

An introduction to programming mobile application development, Fundamentals of object-oriented programming including loops, arrays, functions, recursion, pointers, structures, unions, input/output, and system calls is required.

Pre-Requisites

CS-126 and CS-246.

CS-317. SOFTWARE INTEGRATION
Credits: 3
Fees: $40

An introduction to the integration of application programs, including email clients, word processors, spreadsheets, and database systems using Microsoft Office and Visual Basic. Offered every fall.

Pre-Requisites

CS-126.

CS-319. PRINCIPLES OF PROGRAMMING LANGUAGES
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-226.

CS-321. SIMULATION AND DATA ANALYSIS
Credits: 3
Fees: $40

Methods of handling large databases, including statistical analysis and computer simulations. The emphasis will be upon discrete simulation models with a discussion of relevant computer languages: ARENA, GPSS, and SIMSCRIPT.

Pre-Requisites

CS-125 and MTH-111.

CS-323. THEORY OF COMPUTATION
Credits: 3
Fees: $40

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 automate, Turing machines, and computability.

Pre-Requisites

CS-126 and MTH-231.

CS-324. SYSTEMS ANALYSIS
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-225.

CS-325. DATABASE MANAGEMENT
Credits: 3
Fees: $40

Practical experience involving a large-scale computer problem, including determination of data requirements, appropriate data organization, data manipulation procedures, implementation, testing, and documentation.

Pre-Requisites

CS-126.

CS-326. OPERATING SYSTEM PRINCIPLES
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-226.

CS-327. COMPILER DESIGN
Credits: 3

A study of compiler design, including language definition, syntactic analysis, lexical analysis, storage allocation, error detection and recovery, code generation, and optimization problems.

Pre-Requisites

CS-226.

CS-328. ALGORITHMS
Credits: 3
Fees: $40

Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication of real numbers, and various combinatorial algorithms.

Pre-Requisites

CS-226 and MTH-202.

CS-330. COMPUTER ARCHITECTURE
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-226.

CS-334. SOFTWARE ENGINEERING
Credits: 3
Fees: $40

A course in 'programming in the large.' Topics include software design, implementation, validation, maintenance, and documentation. There will be one or more team projects.

Pre-Requisites

CS-226.

CS-335. ADVANCED DATABASE CONCEPTS
Credits: 3
Fees: $40

A continuation of CS-325. Concentration on the design of a large scale database system, current special hardware and software, and the role of DBMS in an organization.

Pre-Requisites

CS-325.

CS-340. ARTIFICIAL INTELLIGENCE
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-126.

CS-350. OBJECT-ORIENTED PROGRAMMING
Credits: 3

Object-oriented concepts and their application to human-computer interaction. Concepts to be covered include objects, 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.

Pre-Requisites

CS-226.

CS-355. COMPUTER NETWORKS
Credits: 3
Fees: $40

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, the medium access sublayer and LAN, various routing protocols, Transmission Control Protocol (TCP), and Internet Protocol (IP) for internetworking.

Pre-Requisites

Either CS-225 or CS-126 and CS-224.

CS-360. LINEAR PROGRAMMING
Credits: 3
Fees: $40

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, and goal programming. Cross-listed with MTH-360.

Pre-Requisites

CS-125, and either MM or MTH-111.

CS-363. OPERATIONS RESEARCH
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-125, and MTH-111.

CS-364. NUMERICAL ANALYSIS
Credits: 3

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. Offered Spring odd years.

Pre-Requisites

MTH-211and CS-125 (or equivalent programming experience).

CS-366. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION
Credits: 3
Fees: $50

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.

Pre-Requisites

CS-126 or IM-201.

CS-367. COMPUTER GRAPHICS
Credits: 3
Fees: $40

Introduction to equipment and techniques used to generate graphical representation 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.

Pre-Requisites

CS-226.

CS-368. 3 DIMENSIONAL GAME DEVELOPMENT
Credits: 3
Fees: $50

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.

Pre-Requisites

CS-366/IM 350 or CS-367.

CS-370. SPECIAL PROJECTS
Credits: variable

Requirements: Senior standing and approval of the department chairperson.

CS-383. WEB DEVELOPMENT II
Credits: 3
Fees: $40

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.

Pre-Requisites

CS-283. CS-325.

CS-391. SENIOR PROJECTS I
Credits: 1
Fees: $40

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. Offered every fall.

Pre-Requisites

CS-334 or CS-324.

CS-392. SENIOR PROJECTS II
Credits: 2
Fees: $40

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. Offered every spring.

Pre-Requisites

CS-391.

CS-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or public organization related to the student's academic objectives and career goals. In addition to their work experiences, 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

DAN. DANCE

DAN-100. DANCE APPRECIATION: COMPREHENSIVE DANCE FORMS
Credits: 3

This course provides a general introduction to classical ballet, modern dance and jazz dance. It is designed to provide a structured, personal engagement in dance whose 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-120. TAP DANCE
Credits: 3

In this course, students will acquire and develop tap dance technique through drills and exercises, and will develop an appreciation of the rich history of tap dance in America through lectures, videos, demonstrations and readings.

DAN-210. MODERN DANCE I
Credits: 3

This course provides the student with the fundamentals of modern dance based on the methodology of Lester Horton. It is designed to provide an experimentation structure 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 alignment, flexibility, and movement musicality. This course also introduces fundamentals of contemporary dance allowing the student to investigate how this genre of dance has pulled elements of movement from classical, modern and jazz styles.

DAN-211. MODERN DANCE II
Credits: 3

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 and contemporary dance. It engages the student-dancer in highly individualized movements based on personalized, multi-faceted, and changing artistic standards.

Pre-Requisites
DAN-210 or permission of instructor.

DAN-220. ADVANCED TAP
Credits: 3

In this course, students will acquire and develop advanced tap dance technique through drills and exercises, and will develop an appreciation of the rich history of tap dance in America through lectures, videos, demonstrations and readings.

Pre-Requisites
DAN-120 or permission of instructor.

DAN-230. JAZZ DANCE I
Credits: 3

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 Jazz, Video Style Jazz, and Lyrical Styles of Jazz will be introduced.

DAN-231. JAZZ DANCE II
Credits: 3

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.

Pre-Requisites
DAN-230 or permission of instructor.

DAN-250. CLASSICAL BALLET I
Credits: 3

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
Credits: 3

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.

Pre-Requisites
DAN-250 or permission of instructor.

DAN-310. MODERN DANCE III
Credits: 3

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.

Pre-Requisites
DAN-211 or permission of instructor.

DAN-311. MODERN DANCE IV
Credits: 3

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.

Pre-Requisites
DAN-310 or permission of instructor.

DAN-320. DANCE COMPOSITION
Credits: 3

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.

Pre-Requisites
DAN-120 or permission of instructor.

DAN-330. JAZZ DANCE III
Credits: 3

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 and 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 more deeply into the creative process of dance.

Pre-Requisites
DAN-231 or permission of instructor.

DAN-331. JAZZ DANCE IV
Credits: 3

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.

Pre-Requisites
DAN-330 or permission of instructor.

DAN-350. CLASSICAL BALLET III
Credits: 3

This course is designed to build on the foundation laid in DAN-251. Course presentation will employ lecture, demonstration, and studio exercises designed to explore the movement dynamics that 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.

Pre-Requisites
DAN-251 or permission of instructor.

DAN-351. CLASSICAL BALLET IV
Credits: 3

This course is designed to continue to build on the foundation laid in DAN-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.

Pre-Requisites
DAN-350 or permission of instructor.

EES. EARTH AND ENVIRONMENTAL SCIENCES

EES-105. PLANET EARTH
Credits: 3
Fees: $105

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 sub-topical areas in the Planet Earth series may include geology (Forces of Geologic Change), oceanography (The Restless Ocean), astronomy (The Cosmic Perspective), geography (Global Regions and Geography), and the relationship between people and their physical surroundings (The Global Environment). Intended for students who are not majoring in science, engineering, pre-pharmacy, nursing, or B.S. programs in mathematics or computer science. Two hours of lecture and two hours of lab per week.

Pre-Requisites
No previous background in science or college-level mathematics is required.

EES-202. BIOGEOCHEMISTRY
Credits: 3
Fees: $105

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 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 that 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 of lecture and three hours of lab per week.

Pre-Requisites
CHM-115.

EES-210. GLOBAL CLIMATE CHANGE
Credits: 3

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. Three hours of lecture per week.

EES-211. PHYSICAL GEOLOGY
Credits: 4
Fees: $105

Description, analysis, and laboratory studies of earth materials, structure, and processes, including earth's surface, interior, age, and origin. Three hours of lecture and three hours of lab per week. Requirements: For CS, Engineering, Math, and Science majors only

EES-212. HISTORICAL GEOLOGY
Credits: 3
Fees: $105

A study of the geologic record of the earth's formation and evolution, including methods of dating. Two hours of lecture and three hours of lab per week.

Pre-Requisites
EES-211 or permission of the instructor.

EES-218. ENVIRONMENTAL ETHICS
Credits: 3

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. Cross-listed with PHL-218.

Pre-Requisites
PHL-101 or EES-240 or permission of the instructor.

EES-230. OCEAN SCIENCE
Credits: 4
Fees: $105

An interdisciplinary approach to the study of the fundamentals of oceanography emphasizing physical, chemical, and biological interrelationships. Three hours of lecture and three hours of lab. Requirements: For CS, Engineering, Math, and Science majors only

EES-240. PRINCIPLES OF ENVIRONMENTAL ENGINEERING & SCIENCE
Credits: 4
Fees: $105

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 of lecture and three hours of lab per week.

Pre-Requisites
MTH-111 or higher.Requirements For CS, Engineering, Math, and Science majors only.

EES-242. ENVIRONMENTAL HEALTH
Credits: 4

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 of lecture.

Pre-Requisites
Introductory physics and chemistry. Students who have taken EES-240 will be admitted only with the consent of the instructor.

EES-251. SYNOPTIC METEOROLOGY
Credits: 4
Fees: $105

Topics include surface and upper air weather systems, weather phenomena, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Three hours of lecture and three hours of lab per week. Requirements: For CS, Engineering, Math, and Science majors only

EES-261. REGIONAL GEOGRAPHY
Credits: 3

Topics covered include maps and charts and basic elements of physical, cultural, historical, and economic geography as applied to specific geographic regions. Three hours of lecture per week.

EES-271. ENVIRONMENTAL MAPPING I: THE GLOBAL POSITIONING SYSTEM
Credits: 3
Fees: $105

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 of lecture and two hours of lab per week.

EES-272. ENVIRONMENTAL MAPPING II: GEOGRAPHIC INFORMATION SYSTEMS
Credits: 3
Fees: $105

An introduction to Geographic Information Systems (GIS). Topics include history of GIS, relational database management, data input and 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 of lecture and three hours of lab per week.

EES-280. PRINCIPLES OF ASTRONOMY
Credits: 4
Fees: $105

Topics include orbital mechanics, results of planetary probes, spectra and stellar evolution, and cosmology. Three hours of lecture and three hours of lab per week. Requirements: For Science majors only

EES-302. LITERATURE METHODS
Credits: 1

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 databases, the design of personal computer information files, information search strategies, and manual search procedures are included. Literature preparation for Senior Projects (EES 391-392).

Pre-Requisites
Junior standing.

EES-304. ENVIRONMENTAL DATA ANALYSIS
Credits: 2

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). Two hours of lecture per week.

Pre-Requisites
MTH-150 and Junior standing or permission of the instructor.

EES-340. CONSERVATION BIOLOGY
Credits: 3

This course will cover the major topics of conservation biology including an introduction to biodiversity, threats to biodiversity, and solutions to diminish extinctions and population declines. Lecture: three hours per week. Cross-listed with BIO-340.

Pre-Requisites
BIO 121-122, BIO 225-226 or permission of the instructor.

EES-341. FRESHWATER ECOSYSTEMS
Credits: 3
Fees: $120

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. Cross-listed with BIO-341. Two hours of lecture and three hours of lab per week. Offered in alternate years.

Pre-Requisites
EES-211 or 240 or BIO-121-122 or permission of the instructor.

EES-343. MARINE ECOLOGY
Credits: 3
Fees: $120

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 lab per week. Cross-listed with BIO-343. Offered in alternate years.

Pre-Requisites
EES-230 and BIO-121-122 or permission of the instructor.

EES-344. ECOLOGY
Credits: 4
Fees: $120

Ecology examines contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the populations and community level are emphasized. Two hours of lecture and three hours of lab per week. Cross-listed with BIO-344. Offered in alternate years.

Pre-Requisites
BIO-121-122, 223-224, or permission of the instructor.

EES-366. FIELD BOTANY
Credits: 3
Fees: $120

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 primary prerequisite for those upperclassmen who wish to register for the course. Cross-listed with BIO-366. Offered in alternate years.

Pre-Requisites
BIO-121-122, 223-224, or permission of the instructor.

EES-370. GEOMORPHOLOGY
Credits: 3
Fees: $105

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 of lecture and three hours of lab per week.

Pre-Requisites
EES-211.

EES-381. MINERALOGY
Credits: 3
Fees: $105

The systematic study of the major classes of the mineral kingdom utilizing the department's collection. Concepts in crystal chemistry, crystal structure, mineral behavior, crystallography and optical mineralogy are studied and advanced techniques in mineral analysis are used. Two hours of lecture and three hours of lab per week.

Pre-Requisites
EES-211 and CHM-115.

EES-382. PETROLOGY
Credits: 3
Fees: $105

A study of the identification, classification, composition, genesis, and alteration of igneous, sedimentary, and metamorphic rocks and their relation to crustal processes and tectonic environments. Two hours of lecture and three hours of lab per week.

Pre-Requisites
EES-381

EES-391. SENIOR PROJECTS I
Credits: 1

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.Requirements: Senior standing in Earth and Environmental Sciences and department permission. (See the department for more details about the department permission.)

EES-392. SENIOR PROJECTS II
Credits: 2

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.

Pre-Requisites
EES-391 or department permission. (See the department for more details about the department permission.)

EES-394. FIELD STUDY
Credits: 1-3

Pre-Requisites
EES-211 and EES-240.

EES-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

EES-498. ADVANCED TOPICS IN EES
Credits: variable

Requirements: Senior or graduate standing.

EC. ECONOMICS

EC-101. PRINCIPLES OF ECONOMICS
Credits: 3

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 determination; how money and backing, 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
Credits: 3

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 resources; economic growth and development.

EC-230. MONEY AND BANKING
Credits: 3

Three creditsA 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.)

EC-320. THE ECONOMICS OF CRIME
Credits: 3

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.

Pre-Requisites
EC-102.

EC-330. PUBLIC FINANCE
Credits: 3

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.

Pre-Requisites
EC-101 and 102.

EC-340. INTERNATIONAL TRADE AND FINANCE
Credits: 3

Classical and Neo-classical theories of trade; qualifications of the pure theory; new theories of trade; the transfer of international payments and the determination of foreign exchange rates; the balance of international payments; tariffs and other trade barriers; United States commercial policy and the General Agreement on Trade and Tariffs; current issues.

Pre-Requisites

EC-101 and 102.

EC-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, approval of placement by department chairperson.

ED. EDUCATION

ED-180. EDUCATIONAL PSYCHOLOGY (FORMERLY ED 200)
Credits: 3

This course is designed to present Education Psychology as a distinct discipline concerned with understanding the processes of learning and teaching and developing ways of improving these processes. In this course, students will identify and apply knowledge derived from the behavioral sciences to the solutions of educational problems. The course focuses on the psychology and the development of learners, psychosocial principles of learning and motivation, and their applications, and research based classroom management techniques. Emphasis is placed on effective classroom communication and interpersonal relationships. Offered fall and spring semesters.

ED-190. EFFECTIVE TEACHING WITH FIELD EXPERIENCE
Credits: 3

Education 190 emphasizes concepts and skills for effective teaching. These skills include instructional techniques, research, writing, and field experiences. Students will be involved in their first 40-hour field experience. ED-190, Effective Teaching, provides a critical overview of historical, intellectual, social and political foundations of American education. Analysis of differing views on the relationship of public schools and American society is stressed. The course explores current controversies and issues that will impact schools and teachers in the years ahead. Departmental permission required. Offered fall and spring semesters.

ED-191. INTEGRATING TECHNOLOGY INTO THE CLASSROOM (FORMERLY ED 215)
Credits: 3

This course is designed to build upon a basic foundation in educational technology. Future teachers develop knowledge and skills in selection, evaluation, and utilization of various instructional technologies. The application of new technologies to teaching and learning will be emphasized, along with performance-based activities in instructional design. A major portion of the course is devoted to the integration of technology-based instructional activities in the PK-12 curriculum.

Pre-Requisites

ED-190. Offered fall and spring semesters.

ED-220. TEACHING CULTURALLY AND LINGUISTICALLY DIVERSE LEARNERS (OPO COURSE)
Credits: 3

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 and political effects that geography has had on the diverse cultural groups included in the American educational system.

Pre-Requisites

ED-190. Offered fall and spring semesters.

ED-263. CHILD DEVELOPMENT AND COGNITION
Credits: 3

This course is designed for students to understand developmental patterns of change and 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 15-hour field experience. Departmental permission is required.

Pre-Requisites

ED-190. Offered fall semesters.

ED-264. CHILD DEVELOPMENT AND COGNITION -- CLASSROOM APPLICATION
Credits: 3

Through this course, students must learn and be able to apply major concepts and theories related to the development of young children and they must be able to develop, implement, assess, and modify curriculum and lessons. Students must demonstrate understanding of the way in which classroom environments influence children's learning. Students must demonstrate proficiency with Pennsylvania's Early Childhood Learning Standards. A 30-hour field experience accompanies this course. Departmental permission is required.

Pre-Requisites

ED-190 and ED-263. Offered spring semesters.

ED-300. TEACHING OF FOREIGN LANGUAGE WITH FIELD EXPERIENCE
Credits: 3

This course is a study of instructional methodology in foreign language acquisition at the secondary education level. A 40-hour field experience is required. Departmental permission is required.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall semesters.

ED-310. HEALTH, PHYSICAL EDUCATION AND SAFETY
Credits: 3

This course is a study of the 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.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall semesters.

ED-321. LITERACY FOUNDATIONS I
Credits: 3

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.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall semesters.

ED-322. LITERACY FOUNDATIONS II
Credits: 3

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 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.

Pre-Requisites
Admission to the Teacher Education Program. Offered spring semesters.

ED-323. DIFFERENTIATED READING
Credits: 3

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.

Pre-Requisites
Admission to the Teacher Education Program and ED-321. Offered fall semesters.

ED-324. CHILDREN'S LITERATURE
Credits: 3

This course will involve students in actively reading a wide range of children's and adolescent 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 young readers.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall and spring semesters.

ED-325. APPLIED READING STRATEGIES
Credits: 3

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.

Pre-Requisites
Admission to the Teacher Education Program, ED-321, ED-323 and permission of the instructor. Offered spring and summer semesters.

ED-326. ADOLESCENT LITERATURE
Credits: 3

This course will involve students in actively reading a wide range of adolescent 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 young readers.

Pre-Requisites
Admission to the Teacher Education Program. Offered spring semesters.

ED-330. MATHEMATICS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
Credits: 3

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, and 3) the use of concrete manipulation to facilitate the learning process.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall semesters.

ED-338. TEACHING ESL: MATERIALS AND METHODOLOGY
Credits: 3

This 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 and 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 15-hour field experience in ESL is incorporated into this course.

Pre-Requisites

Admission to the Teacher Education Program. Offered fall semesters.

ED-341. LANGUAGE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION (OPO COURSE)
Credits: 3

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.

Pre-Requisites

Admission to the Teacher Education Program. Offered spring semesters.

ED-344. ASSESSMENT IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
Credits: 3

This course acquaints students with guidelines for use of developmentally appropriate formal and informal assessment for early childhood education and early intervention programs. Feature are commonly used standardized evaluation instruments, tests aligned with PA Early Learning Standards, as well as systems of authentic assessment.

Pre-Requisites

Admission to the Teacher Education Program. Offered fall semesters.

ED-345. ASSESSMENT IN EDUCATION
Credits: 3

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 of 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).

Pre-Requisites

Admission to the Teacher Education Program. Offered spring semesters.

ED-350. THE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
Credits: 3

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 related to our natural and manmade environments and learn specific teaching methodologies that foster creativity and the integration of the arts with other subject areas.

Pre-Requisites

Admission to the Teacher Education Program. Offered fall and summer semesters.

ED-360. SOCIAL STUDIES IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
Credits: 3

In this course, students will gain an understanding of 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 PA state standards, and explore a variety of teaching strategies.

Pre-Requisites

Admission to the Teacher Education Program. Offered fall semesters.

ED-363. FAMILY, SCHOOL, AND COMMUNITY
Credits: 3

This course focuses on current research and best practices in developing skills, techniques, and attitudes needed to form successful collaboration with diverse family systems and communities in an early childhood education setting.

Pre-Requisites

Admission to the Teacher Education Program. Offered fall semesters.

ED-370. SCIENCE IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION
Credits: 3

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.

Pre-Requisites

Admission to the Teacher Education Program. Offered spring semesters.

ED-371. TEACHING METHODS IN SCIENCE WITH FIELD EXPERIENCE
Credits: 4

The activities required for this course are aimed to meet the pedagogical needs of the middle level and the secondary science teacher. Emphasis is on content organization, teaching strategies, evaluation of existing curricular materials, literature research, and understanding the cognitive components of science learning, familiarity and competence with current teaching technology and current national and state standards. Additional emphasis will be placed on specific strategies for classroom management to aid the participants in becoming effective middle level and secondary classroom teachers. Department permission is required.

Pre-Requisites

Admission to the Teacher Education Program. Offered fall semesters.

ED-375. MIDDLE LEVEL AND SECONDARY EDUCATION METHODS WITH FIELD EXPERIENCE
Credits: 4

This course will address the educational perspectives that pertain to middle level (grades 4-8) and secondary (grades 7-12) instructional methodologies, curriculum, and classroom management, including strategies for transition, inclusion, and differentiation as recommended by the National Middle School Association and the Pennsylvania Department of Education. A 40-hour practicum is required. Departmental permission is required.

Pre-Requisites
Admission to the Teacher Education Program. Offered spring semesters.

ED-380. CONTENT AREA LITERACY
Credits: 3

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, evaluating 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.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall semesters.

ED-381. TEACHING METHODS IN SOCIAL STUDIES
Credits: 4

This course provides a study of instructional methodology in the concentration area of Social Studies at the middle and secondary level with a 40-hour field practicum. Departmental permission is required.

Pre-Requisites
Admission to the Teacher Education Program.

ED-385. CLASSROOM MANAGEMENT
Credits: 3

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. Researchers and theories will be identified, analyzed, evaluated, and demonstrated.

Pre-Requisites
Admission to the Teacher Education Program. Offered fall and spring semesters.

ED-390. STUDENT TEACHING WITH SEMINAR [PK-4], [4-8], [7-12], AND [K-12] (OPO COURSE)
Credits: twelve
Fees: $70

Student teaching is the capstone learning experience for prospective teachers. Student teachers are assigned to work with experienced classroom teachers. Under supervision, they assume responsibility for teaching and for managing a classroom. Conferences 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 part of the seminar experience, the student teachers receive workshop training in areas such as classroom management strategies and techniques, health and emergency guidelines, legal, ethical, and professional issues, and in career and certification procedures. In addition, the Gardner's Issues in Education Forum Series offers candidates workshops and lectures based on current topics in teaching and learning. Departmental permission is required.

Pre-Requisites
Admission to the Teacher Education Program, and completion of all ED course requirements.Co-requisite will be completed in conjunction with EDSP-388. Offered fall and spring semesters.

EE. ELECTRICAL ENGINEERING

EE-211. ELECTRICAL CIRCUITS AND DEVICES
Credits: 3

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.

Co-Requisites
MTH-112

EE-241. DIGITAL DESIGN
Credits: 3
Fees: $110

The electronics of digital devices, including Bipolar TTL and CMOS, digital logic functions (e.g., 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.

EE-247. PROGRAMMING FOR EMBEDDED APPLICATIONS
Credits: 3
Fees: $110

Microcontroller hardware structures. Basic software concepts such as constants, variables, control structures and subroutine calls, based on the 'C' language and as translated to machine language. Mapping of compiled software to the memory of a microcontroller. Embedded programming principles. Basic interactions with peripherals. Interrupts and their use. Debugging. Three hours of lecture and lab per week.

Pre-Requisites
EGR-140 or CS-125.

EE-251. ELECTRONICS I
Credits: 3

Circuit concepts involving nonideal components, particularly diodes, bipolar transistors, and MOS transistors. Bias, load line and signal amplification principles. Analysis and design of power supply and amplifier circuits, including power amplifiers. Simulation of circuits for design and analysis. Three hours of lecture per week.

Pre-Requisites

EE-211.

EE-252. ELECTRONICS II
Credits: 4
Fees: $110

Multi-transistor amplifiers, operational amplifiers. Frequency response and the design of filters and amplifiers to meet frequency specifications. Feedback in amplifier design and oscillators. Three one-hour lectures and one three-hour lab per week.

Pre-Requisites

EE-251, EE-283, MTH-112, and PHY-202.

EE-271. SEMICONDUCTOR DEVICES
Credits: 3

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. Three hours of lecture per week.

Pre-Requisites

CHM-117, PHY-202.

EE-283. ELECTRICAL MEASUREMENTS LAB
Credits: 1
Fees: $110

A laboratory for the development of measurement techniques and use of electrical instruments for the measurement of various electrical quantities. One two-hour lab per week.

Co-Requisites

EE-211

EE-298. TOPICS IN ELECTRICAL ENGINEERING
Credits: 1-3
Fees: (Optional, depending on lab component) $110

Selected topics in the field of electrical engineering. Requirements: Sophomore standing and permission of the instructor.

EE-314. CONTROL SYSTEMS
Credits: 3
Fees: $110

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 of lecture and one two-hour laboratory per week.

Pre-Requisites

EE-211 and EGR-214.

EE-325. ENERGY CONVERSION DEVICES
Credits: 3

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. Lecture and lab.

Pre-Requisites

EE-251.

EE-337. ENGINEERING ELECTROMAGNETICS I
Credits: 4
Fees: $110

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 one-hour lectures and one two-hour lab per week.

Pre-Requisites

EGR-214, PHY-202.

EE-339. ENGINEERING ELECTROMAGNETICS II
Credits: 4
Fees: $110

Maxwell's equation 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 lab per week.

Pre-Requisites

EE-337.

EE-342. MICROCONTROLLER BASED SYSTEM DESIGN
Credits: 3
Fees: $110

Microprocessor architecture, the microcontroller based system design context, and peripheral interfacing. C and machine language programming and debugging, and embedded applications. Associated laboratory exercises include topics such as stand-alone system programming, interfacing to peripherals, interrupts, timers, analog data acquisition, and intercomputer communications. Two hours of lecture and one two-hour lab per week.

Pre-Requisites

EE-241, and either EE-247 or CS-126 as corequisites.

EE-345. COMPUTER ORGANIZATION
Credits: 3
Fees: $110

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. Lecture and lab.

Pre-Requisites

EE-241.

EE-373. CAD FOR MICROFABRICATION
Credits: 1
Fees: $110

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 lab per week. Requirement: Junior engineering standing.Co-requisite: EE-381.

EE-381. MICROFABRICATION LAB
Credits: 3
Fees: $110

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 per week. Requirement: Junior engineering standing

EE-382. MODERN COMMUNICATION SYSTEMS
Credits: 4
Fees: $110

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.

Pre-Requisites
EE-252, EE-337, EGR-214.

EE-391. SENIOR PROJECTS I
Credits: 1
Fees: $110

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.Requirement: Senior standing in engineering.

EE-392. SENIOR PROJECTS II
Credits: 2
Fees: $110

Design and development of selected projects in the field 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.

Pre-Requisites
EE-391.

EE-398. TOPICS IN ELECTRICAL ENGINEERING
Credits: 3

Requirement: Junior standing in engineering.

EGR. ENGINEERING

EGR-140. COMPUTATIONAL & STATISTICAL ANALYSIS
Credits: 3
Fees: $110

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 of lecture and one two-hour lab per week.

Pre-Requisites
MTH-100 OR Corequisite MTH-111

EGR-200. INTRODUCTION TO MATERIALS SCIENCE
Credits: 3

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.

Pre-Requisites
CHM-118

EGR-201. PROFESSIONALISM AND ETHICS
Credits: 1

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.Requirement: Junior standing in engineering.

EGR-214. LINEAR SYSTEMS
Credits: 3
Fees: $110

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 of lecture and one two-hour lab per week.

Pre-Requisites
EE-211, MTH-112.

EGR-219. INTRODUCTION TO WEAPONS SYSTEMS
Credits: 3

Introduction to military weapons and warfare, with a focus on how the modern period has resulted in greater complexity and the development of weapons systems. Basic principles of explosives, internal and exterior ballistics, calculation of probabilities of hit given randomness, fire control, guidance algorithms, radar and other sensors, detection and tracking, nuclear weapons and their effects.

Co-Requisites
PHY-202

EGR-222. MECHATRONICS
Credits: 3
Fees: $110

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 lecture and one three-hour lab per week.

Pre-Requisites

EE-211, EE-283, EGR-140 and PHY-202

EGR-327. THIN FILM PROCESSING
Credits: 3
Fees: $110

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 of lecture and two hours of lab per week.

Pre-Requisites

EGR-200, PHY-203.

EGR-391. SENIOR PROJECTS I
Credits: 1

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.

Pre-Requisites

Senior standing in engineering

EGR-392. SENIOR PROJECTS II
Credits: 2

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 EGR-391. A professional paper to be presented and discussed in an open forum is required.

Pre-Requisites

EGR-391

EGR-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or public organization related to the student's academic objectives and career goals. In addition to their work experiences, 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. **Requirements:** Junior standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

EGM. ENGINEERING MANAGEMENT

EGM-320. ENGINEERING PROJECT MANAGEMENT AND ANALYSIS
Credits: 3

Economic analysis of evaluation cash flows over time. Depreciations: techniques and strategies. Replacement analysis, break even analysis, benefit-to-cost ration 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.

Pre-Requisites

Junior standing in engineering.

EGM-321. QUANTITATIVE ANALYSIS AND PROGRAMMING METHODS
Credits: 3

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.

Pre-Requisites

Junior standing in engineering or consent of the instructor.

EGM-336. ENGINEERING AND MANAGEMENT MODELS
Credits: 3

Discussion of the techniques in and the art of modeling practical problems encountered by engineers and managers.

Pre-Requisites

Junior standing in engineering or consent of the instructor.

EGM-391. SENIOR PROJECTS I
Credits: 1

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.

Pre-Requisites

Senior standing in engineering

EGM-392. SENIOR PROJECTS II
Credits: 2

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.

Pre-Requisites

EGM-391

ENG. ENGLISH

ENG-101. COMPOSITION
Credits: 4

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
Credits: 3

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 TraditionsStudy 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 WorksStudy of major works since the Renaissance, emphasizing the principal modes of literary expression (poetry, drama, fiction and film).Reading Cultural CrossroadsStudy of works emphasizing a variety of cultural values, intercultural relationships, global perspectives, and aesthetic experiences.Reading American ExperienceStudy of works from American literature, emphasizing the multicultural heritage and nature of American writers and American culture.

Pre-Requisites

ENG-101.

ENG-190. PROJECTS IN WRITING AND EDITING
Credits: 1-3

Independent projects in writing, editing, and peer consulting connected to the English program newsletter (ENG 190 A – Inkwell Quarterly), the student literary magazine (ENG 190 B – Manuscript), and the University Writing Center (ENG 190 C – Writing Methods).

ENG-201. WRITING ABOUT LITERATURE AND CULTURE
Credits: 4

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.

Pre-Requisites

ENG-101.

ENG-202. TECHNICAL AND PROFESSIONAL WRITING
Credits: 3

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.

Pre-Requisites

ENG-101.

ENG-203. INTRODUCTION TO CREATIVE WRITING
Credits: 3

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.

Pre-Requisites

ENG-101.

ENG-218. WRITING PRACTICUM AND COMPOSITION
Credits: 3

An integration of writing and composition theory and practice for particular audiences.

Pre-Requisites

ENG-101.

ENG-222. INTRODUCTION TO DIGITAL HUMANITIES
Credits: 3

An introduction to the field of Digital Humanities with an emphasis on how digital processes and products impact the development and study of literature, language, and the disciplines of the humanities.

ENG-225. COMPARATIVE GRAMMAR
Credits: 3

A comparative and critical study of traditional, structural, and transformational-generative grammar.

Pre-Requisites

ENG-101.

ENG-228. PROFESSIONAL AND WORKPLACE WRITING
Credits: 3

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.

Pre-Requisites

ENG-101.

ENG-233. SURVEY OF ENGLISH LITERATURE I
Credits: 3

A study of the major works and movements in English literature from the Anglo-Saxon period through the eighteenth century.

Pre-Requisites

ENG-101.

ENG-234. SURVEY OF ENGLISH LITERATURE II
Credits: 3

A study of the major works and movements in English literature from the Romantic movement to the present.

Pre-Requisites

ENG-101.

ENG-281. SURVEY OF AMERICAN LITERATURE I
Credits: 3

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.

Pre-Requisites

ENG-101.

ENG-282. SURVEY OF AMERICAN LITERATURE II
Credits: 3

Study of major writers, works, and movements from the Civil War to the present.

Pre-Requisites

ENG-101.

ENG-303. ADVANCED WORKSHOP IN CREATIVE WRITING
Credits: 3

Seminar experience where students write and critique poetry, fiction, nonfiction, or scripts. Specific genre designated in each course.

Pre-Requisites

ENG-203 or permission of instructor.

ENG-308. RHETORICAL ANALYSIS AND NONFICTIONAL PROSE WRITING
Credits: 3

The study and practice of strategies for producing responsibly written public information, including persuasive and argumentative propositions for particular audiences.

Pre-Requisites

ENG-101.

ENG-311. TECHNOLOGIES OF THE BOOK
Credits: 3

Studies in the production, evolution, and circulation of the book as a material form, from its inception through the digital age, with an emphasis on textual criticism and bibliographic analysis..

ENG-324. HISTORY OF THE ENGLISH LANGUAGE
Credits: 3

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.

Pre-Requisites

ENG-101.

ENG-331. STUDIES IN MEDIEVAL ENGLISH LITERATURE
Credits: 3

A study of English literature to 1500, exclusive of Chaucer.

Pre-Requisites

ENG-101.

ENG-333. STUDIES IN SEVENTEENTH-CENTURY LITERATURE
Credits: 3

The study of seventeenth-century texts, focused on literary, dramatic, and cultural works from about 1603 to 1660.

Pre-Requisites

ENG-101.

ENG-334. STUDIES IN EIGHTEENTH-CENTURY LITERATURE
Credits: 3

Study of eighteenth-century authors and culture from about 1660-1820.

Pre-Requisites

ENG-101.

ENG-335. STUDIES IN ROMANTIC LITERATURE
Credits: 3

Study of major writers, works, and topics of the British Romantic Period.

Pre-Requisites

ENG-101.

ENG-336. STUDIES IN VICTORIAN LITERATURE
Credits: 3

Study of major writers, works, and topics of the Victorian Age.

Pre-Requisites

ENG-101.

ENG-337. STUDIES IN AMERICAN ROMANTIC LITERATURE
Credits: 3

The study of nineteenth century American literature, including novels, essays, short fiction, and poetry..

Pre-Requisites

ENG-101.

ENG-340. STUDIES IN CHAUCER
Credits: 3

A study of selected major and minor works by Chaucer.

Pre-Requisites

ENG-101.

ENG-342. STUDIES IN SHAKESPEARE
Credits: 3

A study of selected plays by Shakespeare.

Pre-Requisites

ENG-101.

ENG-350. STUDIES IN THE ENGLISH NOVEL
Credits: 3

Study of the novel in English, excluding American writers.

Pre-Requisites

ENG-101.

ENG-351. STUDIES IN POSTMODERNISM
Credits: 3

A study of the major postmodern writers from THE-1960s to the present.

Pre-Requisites

ENG-101.

ENG-352. STUDIES IN THE AMERICAN NOVEL
Credits: 3

Study of the American novel from its eighteenth-century beginnings to the present.

Pre-Requisites

ENG-101.

ENG-353. STUDIES IN POSTCOLONIAL LITERATURE
Credits: 3

Study of colonial and postcolonial literature that examines the effects of British imperial pursuits and provides an overview of major issues within postcolonial studies.

Pre-Requisites

ENG-101.

ENG-357. STUDIES IN GOTHIC LITERATURE
Credits: 3

Study of major writers, works, and topics of gothic fiction.

Pre-Requisites

ENG-101.

ENG-358. STUDIES IN CONTEMPORARY FICTION
Credits: 3

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.

Pre-Requisites

ENG-101.

ENG-361. STUDIES IN EARLY ENGLISH DRAMA
Credits: 3

Study of the drama from the tenth century to 1642; reading of plays by medieval and early modern dramatists exclusive of Shakespeare.

Pre-Requisites

ENG-101.

ENG-365. STUDIES IN MODERN DRAMA
Credits: 3

Studies of major playwrights, works, and topics of modern world drama.

Pre-Requisites

ENG-101.

ENG-366. STUDIES IN AMERICAN OR BRITISH DRAMA
Credits: 3

A study of major American or British playwrights and movements, focus to be determined by the instructor.

Pre-Requisites

ENG-101.

ENG-370. STUDIES IN MODERN BRITISH POETRY
Credits: 3

Study of major British poetry of the twentieth century.

Pre-Requisites

ENG-101.

ENG-376. STUDIES IN MODERN AMERICAN POETRY
Credits: 3

Study of major movements and representative figures in modern American poetry.

Pre-Requisites

ENG-101.

ENG-390. PROJECTS IN WRITING
Credits: 1-3

Pre-Requisites

Six credits in advanced writing courses and permission of department chair.

ENG-393. THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS
Credits: 4

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 experiences.

Pre-Requisites

Junior standing in English and admission to the Teacher Education Program.

ENG-397. SEMINAR
Credits: 3

Presentations and discussions of selected topics.

ENG-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

ENT. ENTREPRENEURSHIP

ENT-151. INTEGRATED MANAGEMENT EXPERIENCE I
Credits: 3
Terms Offered: Fall

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 tracking information and performance using financial accounting principles. Same as ACC-151 and BA-151.

ENT-152. INTEGRATED MANAGEMENT EXPERIENCE II
Credits: 3
Terms Offered: Spring

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 BA-152.

Pre-Requisites

ACC/BA/ENT 151.

ENT-201. NATURE AND ESSENCE OF ENTREPRENEURSHIP
Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

ENT-152 or BA-153

ENT-203. OPPORTUNITY IDENTIFICATION: INNOVATION AND CREATIVITY
Credits: 3
Terms Offered: Fall

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
Credits: 3
Terms Offered: Spring

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
Credits: 3
Terms Offered: Fall

In-depth study of identification and assessment of markets and competition. Sources of information, key analytical techniques, and evaluation strategies are examined.

Pre-Requisites

MKT-221.

ENT-342. ENTREPRENEURIAL FINANCE
Credits: 3
Terms Offered: Spring

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.

Pre-Requisites

FIN-240.

ENT-384. SMALL BUSINESS CONSULTANCY
Credits: 3
Terms Offered: Spring

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.Requirements: Senior standing and permission of the instructor.

ENT-385. OPPORTUNITY ASSESSMENT: TECHNICAL, ECONOMIC AND MARKET FEASIBILITY
Credits: 3
Terms Offered: Spring

Theory and practice of assessing market, economic, and technical feasibility. Use of project management techniques to develop an in-depth feasibility analysis plan for expected outcomes.

ENT-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

ENT-461. PRACTICING ENTREPRENEURSHIP
Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

Senior standing, ENT-201, or permission of the instructor.

ENT-462. ENTREPRENEURIAL INTERNSHIP
Credits: 3

The course content provides an on-the-job multi-discipline experience assisting a working local entrepreneur in the development and operation of a business enterprise.

ENV. ENVIRONMENTAL ENGINEERING

ENV-201. ENVIRONMENTAL ENGINEERING SYSTEMS I: CHEMICAL KINETICS AND STATISTICAL METHODS
Credits: 1

This course focuses on understanding the factors that control species behavior in environmental systems and provides the foundation for estimating pollutant concentrations and their fate in the environment. This course also provides an introduction of central ideas of probability and statistics and their application in the analysis of environmental data and information. One hour of lecture and one hour of discussion per week.

Pre-Requisites

CHM-113, CHM-115 or instructor's permission.

ENV-202. ENVIRONMENTAL ENGINEERING SYSTEMS II: ANALYTICAL AND COMPUTATIONAL ANALYSIS
Credits: 2

This course focuses on basic methods for obtaining numerical solutions of algebraic and transcendental equations, simultaneous linear equations, and curve fitting techniques; examples provided are relevant to environmental engineering processes; will include an introduction to problem-solving using Excel and MATLAB. Two hours of lab per week.

Pre-Requisites

MTH-111, MTH-112 or instructor's permission.

ENV-205. ENVIRONMENTAL MICROBIOLOGY
Credits: 1

The foundational concepts in microbiology that are important in environmental systems will be explored in this course. This will include the function and formation of cellular components starting from basic molecules (carbohydrates, fatty acids, amino acids, and nucleotides) to the cellular structures that are formed (membranes, proteins, and the nucleic acids RNA & DNA); carbon, energy, and nutrient sources required for cellular growth; and the metabolic pathways for substrates common in environmental systems will be shown. Biodegradation and growth kinetic models will be introduced.

ENV-301. ENVIRONMENTAL ENGINEERING SYSTEMS III: ADVANCED UNIT OPERATIONS AND PROCESSES
Credits: 1

Examination of unit operations and processes encountered in the environmental engineering field that will assist in the design and operation of advanced water, wastewater, and waste management treatment systems. One hour of lecture and one hour discussion per week.

Pre-Requisites

ENV-240

Co-Requisites

ENV-305, ENV-351 or instructor's permission.

ENV-305. SOLID WASTE MANAGEMENT
Credits: 3

Assessment of the scope of the solid waste problem and engineering and management strategies. Lecture topics include the following: 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 of lecture per week.

Pre-Requisites

EES-240, CHM-116 or EES-202, or permission of the instructor.

ENV-315. SOILS
Credits: 3
Fees: $105

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, the classification, and physical properties of soils, soil chemistry, and soil moisture relationships. Two hours of lecture and three hours of lab per week.

Pre-Requisites

EES-211, CHM-116 or EES-202.

ENV-321. HYDROLOGY
Credits: 4
Fees: $105

A quantitative analysis of the physical elements and processes that 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 of lecture and three hours of lab per week.

Pre-Requisites

EES-211.

ENV-322. WATER RESOURCES ENGINEERING
Credits: 3

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. Three hours of lecture per week.

Pre-Requisites

ENV-321.

ENV-330. WATER QUALITY
Credits: 4
Fees: $105

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 of lecture and three hours of lab per week.

Pre-Requisites

CHM-116 or EES-202, EES-240.

ENV-332. AIR QUALITY
Credits: 3
Fees: $105

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, and various sampling techniques. Two hours of lecture and three hours of lab per week.

Pre-Requisites

CHM-116 or EES-202, EES-240.

ENV-351. WATER AND WASTEWATER TREATMENT
Credits: 4
Fees: $105

Design of water and wastewater treatment systems. Estimation of demands. Physical, chemical, biological, and land-based treatment processes. Sludge handling and disposal. Three hours of lecture and three hours of lab per week.

Pre-Requisites

ENV-330.

ENV-352. ENVIRONMENTAL ENGINEERING HYDRAULICS
Credits: 3

Water distribution, sewage collections, pipe network models, piping materials, pumps and pumping stations, valves and tanks. Design and operation. Three hours of lecture per week.

Pre-Requisites

ME-321.

ENV-353. AIR POLLUTION CONTROL
Credits: 3

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 of lecture per week.

Pre-Requisites

ENV-332.

ENV-354. HAZARDOUS WASTE MANAGEMENT
Credits: 3

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 of lecture per week.

Pre-Requisites

ENV-351 or permission of the instructor.

ENV-373. OCCUPATIONAL HEALTH
Credits: 3

Appraisal of environmental health hazards, sampling techniques, instrumentation and analytic methods. Principles of substitution, enclosure, and isolation for the control of hazardous operations in industry. Three hours of lecture and demonstration per week.Requirement: Junior or senior standing in engineering.

ENV-391. SENIOR PROJECTS I
Credits: 1

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. Requirement: Senior standing in Environmental Engineering and department permission. (See the department for more details about the department permission.)

ENV-392. SENIOR PROJECTS II
Credits: 2

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.

Pre-Requisites

ENV-391.

ENV-397. SEMINAR
Credits: 1-3

Presentations and discussions of selected topics and projects.Requirement: Senior standing in environmental engineering.

ENV-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or public organization related to the student's academic objectives and career goals. In addition to their work experiences, 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

FIN. FINANCE

FIN-240. INTRODUCTION TO FINANCE
Credits: 3

This course introduces basic principles of finance including cash flow, financial ratios, time value of money, stock and bond valuation, capital structure and cost of capital.

FIN-319. FINANCIAL DERIVATIVES
Credits: 3

Financial securities and markets are changing rapidly. This course gives students an understanding of financial derivative instruments and their applications to corporate strategy and risk management. Students learn how the finance derivatives are priced and used in risk management and trading or speculative strategies by individuals and companies. We cover options, forwards, futures, and swaps to help our students to be better prepared to enter a career in finance.

FIN-341. MANAGERIAL FINANCE
Credits: 3
Terms Offered: Spring

This course provides advanced study of financial theories, 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.

Pre-Requisites

FIN-240.

FIN-342. PROPERTY AND LIFE INSURANCE
Credits: 3

A study of principles of life, health, property, and liability insurance applied to the needs of individuals and organizations.

Pre-Requisites

FIN-341.

FIN-343. INVESTMENTS AND PORTFOLIO MANAGEMENT
Credits: 3

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, and modern and traditional portfolio theory and management.

Pre-Requisites

FIN-240

FIN-345. LONG-RANGE FINANCIAL PLANNING
Credits: 3

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.

Pre-Requisites

FIN-341 and FIN-343.

FIN-358. INTERNATIONAL FINANCE
Credits: 3

This course will provide the conceptual framework necessary for financial decision-making in a multinational corporation (mnc). We focus on implementing analytical tools and theory through problems and analysis of real-world global decision-making. Students explore the following traditional areas of corporate finance: investments, capital budgeting, cost of capital, capital structure, evaluation and control of operations, merger and acquisition, and risk management from a global perspective.

FIN-397. SEMINAR
Credits: 1-3

One to three credits

FYF. FIRST-YEAR FOUNDATIONS

FYF-101. FIRST-YEAR FOUNDATIONS
Credits: 3

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 in content 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 specific topic, share a common core of objectives that facilitate significant learning experiences (inside and beyond the classroom) by which first-year students develop self-knowledge as learners and members of an academic community, intellectual curiosity, openness to diversity, and a capacity for 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 courses.In addition, the FYF Program connects students to a wide variety of University resources, including the advising and tutoring services of University College, the extensive holdings and services of the Farley Library, and the rich array of cultural events sponsored by the University.

HST. HISTORY

HST-341-342. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH
Credits: 3 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-101. THE HISTORICAL FOUNDATIONS OF THE MODERN WORLD
Credits: 3

A thematic survey of the forces shaping the modern world. Topics studied include the following: world religions; science; rationalism; industrial capitalism; liberalism; socialism; global discovery; imperialism; nationalism; and totalitarianism.

HST-102. EUROPE BEFORE 1600
Credits: 3

A survey of European history from Ancient times through the Reformation.

HST-125. AMERICAN HISTORY I
Credits: 3

A survey of North American and U.S. history from European-Native American contact to the Civil War.

HST-126. AMERICAN HISTORY II
Credits: 3

A survey of U.S. history from the Civil War to the present

HST-211. INTRODUCTION TO PUBLIC HISTORY
Credits: 3

An introduction to the debates, issues and practice of public history. Students will explore specific careers in public history, learn the research tools and methods used by public historians, and apply public history methodology to larger historical questions.

HST-297. HISTORICAL RESEARCH AND METHODS SEMINAR
Credits: 3

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 the instructor.

HST-311. ORAL HISTORY (A)
Credits: 3

This is a 'hands on' course in which we will examine the use of structured interviews by both professional and amateur historians. Students will both conduct oral history interviews and plan oral history projects. This course is ideal for teachers, church and other local historians, as everyone should end the semester with the ability to design and execute their own oral history project. No prior historical or technical knowledge is assumed or needed.

HST-312. AMERICAN MATERIAL CULTURE (A)
Credits: 3

An introduction to the theories and methods of material culture. By studying objects and employing interdisciplinary approaches, students will investigate American material life and attempt to uncover attitudes and beliefs of the individuals and culture that produced those objects.

HST-321. AMERICAN CULTURAL AND SOCIAL HISTORY (A)
Credits: 3

An examination of differences and divisions within American society through such topics as social movements, demographic trends, gender, ethnicity, and class, the effect of industrialization and immigration, cultural expressions, religion, and the family.

HST-324. AMERICAN ECONOMIC HISTORY (A)
Credits: 3

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)
Credits: 3

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)
Credits: 3

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)
Credits: 3

A study of the role, status, and culture of women in America beginning with the First Americans and European contact to the present time.

HST-331. COLONIAL AMERICA (A)
Credits: 3

Discovery, exploration, and settlement; development of social, political, religious, and intellectual institutions; independence and political reorganization.

HST-332. THE NEW NATION (A)
Credits: 3

A study of America's social, cultural, economic and political development in the first generations of nationhood, 1783-1840.

HST-333. VICTORIAN AMERICA (A)
Credits: 3

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)
Credits: 3

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)
Credits: 3

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-345. HISTORY OF NORTHEASTERN EUROPE (N)
Credits: 3

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 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)
Credits: 3

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)
Credits: 3

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)
Credits: 3

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)
Credits: 3

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)
Credits: 3

A study of the structure of the Ancient 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)
Credits: 3

A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

HST-356. WORLD WAR I AND VERSAILLES EUROPE (N)
Credits: 3

Examination of the international causes of World War I, the Treaties of Versailles, and the new Europe that resulted, leading to the outbreak of World War II in 1939.

HST-357. THE WORLD SINCE 1945 (N)
Credits: 3

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-376. WORLD WAR II (C)
Credits: 3

Consideration of the causes of the war, military strategy and tactics, diplomatic interests of the participants, and resulting cold war problems.

HST-397. SEMINAR
Credits: 3

Presentations and discussions of selected topics.

Pre-Requisites

Approval of instructor is required.

HST-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

IM. INTEGRATIVE MEDIA

IM-101. INTEGRATIVE MEDIA FOUNDATIONS I
Credits: 3
Fees: $30

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
Credits: 3
Fees: $50

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.

Pre-Requisites

IM-101.

IM-255. INTEGRATIVE MEDIA PRACTICUM
Credits: 1-2

One to Two creditsThe 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 co-curricular activities in the Creative Production Studio, Studio 020. 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
Credits: 3
Fees: $50

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 media.

Pre-Requisites

IM-201.

IM-302. INTEGRATIVE MEDIA PRINCIPLES OF INTERACTIVITY
Credits: 3
Fees: $50

Technical and aesthetic principles of interactivity will be conveyed and practiced to produce a range of interactive media. Addressing issues of human static and dynamic interactive ergonomics as they apply to contemporary commercial and artistic applications.

Pre-Requisites

IM-201.

IM-320. INTEGRATIVE MEDIA CONCEPT DEVELOPMENT AND PRACTICES
Credits: 3
Fees: $50

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.

Pre-Requisites

IM-201.

IM-350. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION
Credits: 3
Fees: $50

This course will explore the foundations of 3-dimensional animation processes as they apply to multiple media. Students will build computer-based models and environments, texture, light, animate, and render content for Integrative Media projects, stand-along projects of 3-D foundations used within the CS gaming track. (Cross-listed with CS-350.)

Pre-Requisites

IM students—IM 301; CS students—CS 125.

IM-355. DIGITAL AUDIO PRINCIPLES AND EDITING
Credits: 3
Fees: $50

The foundational concepts behind music theory, sound design, and digital studio 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.

Pre-Requisites

IM-201.

IM-368. 3 DIMENSIONAL GAME DEVELOPMENT
Credits: 3
Fees: $50

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.

Pre-Requisites

IM-350 (CS 366) or CS-367.

IM-391. INTEGRATIVE MEDIA PROJECT I
Credits: 3
Fees: $50

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. Note: This course must be completed with a minimum final grade of 25 in order to meet degree requirements

Pre-Requisites

IM-320.

IM-392. INTEGRATIVE MEDIA PROJECT II
Credits: 3
Fees: $50

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. Note: This course must be completed with a minimum final grade of 25 in order to meet degree requirements

Pre-Requisites

IM-391.

IM-399. COOPERATIVE EDUCATION
Credits: 1-6

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

IM-400. INTEGRATIVE MEDIA PORTFOLIO CAPSTONE
Credits: 3
Fees: $50

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. Note: This course must be completed with a minimum final grade of 25 in order to meet degree requirements

Pre-Requisites

IM-391.

IA. INTERCOLLEGIATE ATHLETICS

IA-101. INTERCOLLEGIATE ATHLETICS
Credits: no

This course is limited to students participating in intercollegiate athletics during their sport season. This course may be repeated.

IS. INTERNATIONAL STUDIES

IS-380. INTERNATIONAL STUDIES SENIOR PROJECT
Credits: 3

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.

Pre-Requisites

Senior standing, permission of the instructor.

LDR. LEADERSHIP

LDR-201. INTRODUCTION TO LEADERSHIP
Credits: 3

The introductory course in the Leadership Studies major provides a general overview of the field of leadership, various definitions, models and theories of leadership, as well as an opportunity for students to understand, reflect, and practice leadership in the their environment. In addition, the Introduction to Leadership course will provide students with a basic introduction to leadership skills, provide opportunities to apply the leadership learning, and encourage students to learn more about the field by taking upper level courses.

LDR-202. ADVANCED LEADERSHIP THEORY AND PRACTICE
Credits: 3

This course is designed to build upon fundamental leadership theory and further explore historical, classic, and contemporary leadership theories, models and perspectives within a variety of contexts. 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.

LDR-361. CAPSTONE IN LEADERSHIP
Credits: 3

This course is designed to provide a capstone experience in which students apply their accumulated knowledge, skills and abilities in leadership. The course will include both an in-class component and a cooperative education (see Cooperative Education section of this Bulletin for placement procedures), independent study, and/or an experiential component.

MGT. MANAGEMENT

MGT-209. BUSINESS CORRESPONDENCE AND REPORTS
Credits: 3

Three creditsAn emphasis on written communications: practice in writing major classification of business letters; persuasive requests and refusals; and inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing.

MGT-251. MANAGEMENT OF ORGANIZATIONS AND PEOPLE
Credits: 3

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.

MGT-257. MANAGEMENT INFORMATION SYSTEMS
Credits: 3

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.

MGT-352. PRODUCTION AND OPERATIONS MANAGEMENT
Credits: 3
Terms Offered: Spring

Principles of decision-making, systems design, introduction to quantitative tools of analysis, and fundamentals of production, inventory, financial, and distribution management.

Pre-Requisites

BA-319 and MGT-251.

MGT-353. HUMAN RESOURCE MANAGEMENT
Credits: 3
Terms Offered: Fall

This course focuses on introducing the student to the theories, practices, problems, and legislation relevant to attracting, selecting, developing, compensating, and effectively using human resources in organizations.

Pre-Requisites

MGT-251.

MGT-354. ORGANIZATIONAL BEHAVIOR
Credits: 3

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, and communication, with emphasis on behavioral science applications in developing organizational effectiveness.

Pre-Requisites

MGT-251.

MGT-356. THE SOCIAL RESPONSIBILITY OF BUSINESS
Credits: 3

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.

Pre-Requisites

MGT-251 and junior standing.

MGT-358. INTERNATIONAL BUSINESS
Credits: 3

An introduction to the field of international business. Topics include 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, and the role of government in fostering international business. A substantial amount of writing is required.

Pre-Requisites

MGT-251 and senior standing.

MGT-397. SEMINAR
Credits: 1-3

One to three credits

MKT. MARKETING

MKT-221. MARKETING
Credits: 3

An introduction to the planning and activities of marketing. Emphasis on budgeting, product conception and development, pricing, distribution channels, and promotion.

MKT-322. ADVERTISING
Credits: 3
Terms Offered: Spring

A managerial analysis of the decisions involved in advertising. Topics include research, ethics, campaign design, copy, art, media, budgeting, and effectiveness.

Pre-Requisites

MKT-221.

MKT-324. RETAILING
Credits: 3

A basic course that discusses opportunities in retailing, types of retail institutions, problems of store policy and store location, study of organizational structure of department stores, and organization and functions of all store divisions.

Pre-Requisites

MKT-221.

MKT-326. THE SELLING PROCESS
Credits: 3

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.

Pre-Requisites

MKT-221.

MKT-327. MARKETING SEMINAR
Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

MKT-221.

MKT-328. CONSUMER BEHAVIOR
Credits: 3
Terms Offered: Fall

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.

Pre-Requisites

MKT-221.

MTH. MATHEMATICS

MTH-84. COLLEGE PREPARATORY MATHEMATICS
Credits: 3

Three creditsDesigned 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 gives. Credits in this course will not be counted toward the graduation requirement in any degree program at Wilkes.

MTH-94. COLLEGE ALGEBRA
Credits: 3

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
Credits: 3

A course in advanced algebra and trigonometry designed to prepare students for calculus. Topics include functions, inverse functions, logarithms, exponentials, and trigonometry.

Pre-Requisites

MTH 94 or meet Department of Mathematics and Computer Science placement criteria.

MTH-101. SOLVING PROBLEMS USING MATHEMATICS
Credits: 3

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 non-specialist 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
Credits: 3

A study of the theory of arithmetic, structure of the number systems, and other topics relevant to the teaching of mathematics in elementary schools. Offered every fall.

Pre-Requisites
Admission to the Teacher Education Program or consent of the instructor.

MTH-104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS II
Credits: 3

A continuation of MTH-103. Topics include elementary probability, statistics, and geometry. Offered every spring.

Pre-Requisites
Admission to the Teacher Education Program or consent of the instructor.

MTH-106. CALCULUS FOR LIFE SCIENCES II
Credits: 4

Four creditsA 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.

Pre-Requisites
MTH-105.

MTH-107. BUSINESS MATHEMATICS
Credits: 3

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, and average and instantaneous rates of change.

Pre-Requisites
MTH 94 or meet the Department of Mathematics and Computer Science placement criteria.

MTH-111. CALCULUS I
Credits: 4

Calculus of functions of one variable. Topics include functions, limits and continuity, derivatives and integrals. Course will focus on applying conceptual aspects of calculus to modeling and solving problems from across the sciences and engineering.

Pre-Requisites
Student must have completed MTH-100 or meet Department of Mathematics and Computer Science placement criteria.

MTH-112. CALCULUS II
Credits: 4

A continuation of MTH-111. Topics include inverse functions, techniques of integration, applications of the integral, and infinite sequences and series.

Pre-Requisites
MTH-111.

MTH-114. CALCULUS AND MODELING FOR THE BIOLOGICAL AND HEALTH SCIENCES
Credits: 4

A continuation of MTH 111 for students in the biological and environmental sciences. Topics include integrals, differential equations and continuous dynamical systems, stochastic models and Markov chains, and discrete and continuous probability models. Course will focus on applying ideas from calculus to modeling and solving problems drawn from the biological and environmental sciences. Major credits cannot be granted for both MTH 112 and MTH 114.

Pre-Requisites
MTH-111.

MTH-150. ELEMENTARY STATISTICS
Credits: 3

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.

Pre-Requisites
MTH 94 or meet Department of Mathematics and Computer Science placement criteria.

MTH-202. SET THEORY AND LOGIC
Credits: 4

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. Offered every fall

Pre-Requisites
MTH-112 or consent of the instructor.

MTH-211. INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS
Credits: 4
Fees: $40

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. Offered every fall.

Pre-Requisites
MTH-112.

MTH-212. MULTIVARIABLE CALCULUS
Credits: 4

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. Offered every spring.

Pre-Requisites
MTH-112.

MTH-214. LINEAR ALGEBRA
Credits: 3

An axiomatic approach to vector spaces, linear transformations, systems of linear equations, Eigen values, and Eigen vectors. Offered every spring.

Pre-Requisites
MTH-112 or consent of the instructor.

MTH-231. DISCRETE MATHEMATICS
Credits: 3

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. Offered every spring.

Pre-Requisites

MTH-202 and CS-125 or consent of the instructor.

MTH-303. THE TEACHING OF MATHEMATICS IN MIDDLE LEVEL AND SECONDARY SCHOOLS
Credits: 4

This course deals with educational perspectives that 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 for Teachers of Mathematics (NCTM) regarding instructional methods, assessment, techniques, and curricular issues. The course includes a 40-hour practicum. Offered in the fall semester of odd-numbered years.

Pre-Requisites

Junior/Senior in Mathematics or Middle-Level Education plus admission to the Teacher Education Program.

MTH-311. REAL ANALYSIS
Credits: 4

A rigorous study of the topology of the real line, limits, continuity, differentiation, integration, and series of functions. Offered in the fall semester of even-numbered years.

Pre-Requisites

MTH-202 or consent of the instructor.

MTH-314. COMPLEX ANALYSIS
Credits: 3

Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities, and residues. Offered when demands warrants.

Pre-Requisites

MTH-212 or consent of the instructor.

MTH-331. ABSTRACT ALGEBRA I
Credits: 4

A rigorous study of elementary number theory, groups, rings, and fields. Offered in the fall semester of odd-numbered years.

Pre-Requisites

MTH-202 or consent of the instructor.

MTH-343. GEOMETRY
Credits: 3

A study of selected topics from Euclidean and non-Euclidean geometry. Offered in the fall semester of even-number years.

Pre-Requisites

MTH-202 or consent of the instructor.

MTH-351. PROBABILITY AND MATHEMATICAL STATISTICS I
Credits: 3

Random variables, probability distributions, expectation and limit theorems, introduction to confidence intervals and hypotheses testing. Offered every fall.

Pre-Requisites

MTH-112 or consent of the instructor.

MTH-352. PROBABILITY AND MATHEMATICAL STATISTICS II
Credits: 3

Hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models. Offered in the spring semester of odd-numbered years when demand warrants.

Pre-Requisites

MTH-351 or consent of the instructor.

MTH-354. STATISTICAL METHODOLOGY
Credits: 3

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, include logistic regression. Offered in the spring semester of even-numbered years when demand warrants.

Pre-Requisites

MTH-150 or MTH-351 or consent of the instructor.

MTH-360. LINEAR PROGRAMMING
Credits: 3
Fees: $40

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, and goal programming. Cross-listed with CS-360.

Pre-Requisites

CS-125 and MTH-111.

MTH-361. PARTIAL DIFFERENTIAL EQUATIONS
Credits: 3
Fees: $40

Partial differential equations and boundary value problems, inner product spaces, orthogonal functions, eigenvalue problems, Sturm-Liouville equations, Fourier series, Fourier transforms, Green's functions, and classical equations of engineering and physics. Offered fall of odd years.

Pre-Requisites

MTH-211

MTH-362. ADVANCED CALCULUS
Credits: 3
Fees: $40

Topics from advanced calculus including matrix representation of differentials and the multivariable chain rule, vector calculus, curvilinear coordinates, tensors, change of variables in higher dimensions, improper multiple integrals, applications of line and surface integrals, differential forms and the general Stokes theorem, potential theory, and Taylor's formula for functions of several variables. Offered Fall of even years.

Pre-Requisites
MTH-212

MTH-363. OPERATIONS RESEARCH
Credits: 3
Fees: $40

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. Offered in the spring semester of odd-numbered years when demand warrants.

Pre-Requisites
MTH-112 and CS-125.

MTH-364. NUMERICAL ANALYSIS
Credits: 3

Numerical techniques for solving equations, interpolation and function approximation, numerical integration, and differentiation, and solution of differential equations. Error analysis and applications. Cross-listed with CS-364. Offered spring of odd-numbered years.

Pre-Requisites
MTH-211and CS-125 (or equivalent programming experience).

MTH-365. NUMERICAL LINEAR ALGEBRA
Credits: 3

Direct and iterative methods for the solution of systems of linear equations, matrix decompositions, computation of eigenvalues and eigenvectors, and relaxation techniques. The theoretical basis for error analysis, including vector and matrix norms. Applications such as least squares and finite difference methods. Offered spring semester of even-numbered years.

Pre-Requisites
MTH-214 and CS-125 (or equivalent programming experience)

MTH-397. SEMINAR
Credits: 1-3

Presentations and discussions of selected topics.

Pre-Requisites
Approval of the department chairperson.

MTH-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or public organization related to the student's academic objectives and career goals. In addition to their work experiences, 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

MTH-413. FUNCTIONS OF SEVERAL VARIABLES
Credits: 3

A modern treatment of the calculus of functions of several real variables. Topics include Euclidean spaces, differentiation, integration of manifolds leading to the classical theorems of Green and Stokes. Offered when demand warrants.

Pre-Requisites
MTH-214 and MTH-311.

MTH-432. ABSTRACT ALGEBRA II
Credits: 3

A continuation of MTH-331. Polynomial rings, ideals, field extensions, and Galois Theory. Offered when demand warrants.

Pre-Requisites
MTH-331.

MTH-442. TOPOLOGY
Credits: 3

Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces. Offered when demand warrants.

Pre-Requisites
MTH-311 or consent of the instructor.

MTH-470. READING COURSE
Credits: 1-3

Requirements: Senior standing in mathematics and approval of the department chairperson.

ME. MECHANICAL ENGINEERING

ME-395-396. INDEPENDENT RESEARCH
Credits: 1 - 3

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.

Pre-Requisites
Senior standing in mechanical engineering and approval of the department chairperson is required.

ME-175. INTRODUCTION TO MANUFACTURING & MACHINING
Credits: 1
Fees: $110

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. Two-hour lab each week.

ME-180. CADD LAB
Credits: 1
Fees: $110

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 of lecture and lab per week.

ME-215. INTRODUCTION TO MANUFACTURING PROCESSES
Credits: 3

An introduction to manufacturing which 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.

Pre-Requisites

EGR-200, ME-180, ME-232

ME-231. STATICS
Credits: 3

Statics of particles, including resolution of forces into components, vector sums, and 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.

Pre-Requisites

PHY-201

Co-Requisites

MTH-112

ME-232. STRENGTH OF MATERIALS
Credits: 3

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.

Pre-Requisites

ME-231

ME-234. DYNAMICS
Credits: 3

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.

Pre-Requisites

ME-231

ME-298. TOPICS IN MECHANICAL ENGINEERING
Credits: 1-3

Selected topics in the field of mechanical engineering.

Pre-Requisites

Sophomore standing and permission of the instructor.

ME-312. MANUFACTURING SYSTEM ENGINEERING
Credits: 3

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.

Pre-Requisites

Junior standing in mechanical engineering.

ME-314. INVERSE PROBLEMS IN MECHANICS
Credits: 3

Inverse problems are very common in engineering where the outputs are known but the inputs are unknown. This course will show how to properly setup a well-posed inverse problem, how to solve matrix inverses, and conduct hands on experiments by creating strain gage based force transducers.

Pre-Requisites

ME-333

ME-317. ROBOTICS
Credits: 3

The analysis and design of robots. Class covers the mechanical principles governing 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.

Pre-Requisites

EGR-222 and ME-234

ME-321. FLUID MECHANICS
Credits: 3

Thermodynamics and dynamic principles applied to fluid behavior and to ideal, viscous and compressible fluids under internal and external flow conditions.

Pre-Requisites

ME-231

Co-Requisites

Concurrent or after ME-322

ME-322. ENGINEERING THERMODYNAMICS
Credits: 3

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 of physics. Reversibility and irreversibility.

Pre-Requisites

MTH-112

ME-323. FLUID MECHANICS LABORATORY
Credits: 1
Fees: $110

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 per week.

Co-Requisites

ME-321

ME-324. HEAT TRANSFER
Credits: 3

Fundamental principles of heat transmission by conduction, convection, and radiation; application of the laws of thermodynamics; application of these principles to the solution of engineering problems.

Pre-Requisites

ME-321 and MTH-211

ME-325. ENERGY SYSTEMS
Credits: 3

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.

Pre-Requisites

ME-322.

ME-326. HEAT TRANSFER LABORATORY
Credits: 1
Fees: $110

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 per week.

Pre-Requisites

ME-321

Co-Requisites

Concurrent or after ME-324

ME-328. COMBUSTION ENGINES
Credits: 3

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.

Pre-Requisites

ME-322

ME-332. VIBRATION OF DYNAMIC SYSTEMS
Credits: 3
Fees: $110

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 of lecture and two hours of lab per week.

Pre-Requisites

ME-234, MTH-211

ME-333. MACHINE DESIGN I
Credits: 3

The first 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, balled roller bearings, belts, chains, clutches, and brakes.

Pre-Requisites

ME-232

ME-335. ENGINEERING MODELING AND ANALYSIS
Credits: 3
Fees: $110

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 of lecture and two hours of lab per week.

Pre-Requisites

ME-232

ME-337. MICRO-ELECTRO-MECHANICAL SYSTEMS ENGINEERING
Credits: 3
Fees: $110

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 of lecture and three hours of lab per week.

Pre-Requisites

Junior standing in engineering

ME-338. MACHINE DESIGN II
Credits: 3

An advanced course in machine design topics that expands upon the concepts of Machine Design I. This course goes into more detail of the basic machine fundamentals introduced previously such as levers, belts, pulleys, gears, cams and power screws. Emphasis is also placed on 3D printing and the future of additive manufacturing.

Pre-Requisites

ME-333

ME-340. HEATING, VENTILATION AND AIR CONDITIONING
Credits: 3

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.

Pre-Requisites

ME-322.

ME-384. MECHANICAL DESIGN LABORATORY
Credits: 3
Fees: $110

A laboratory for the development of hands-on experience dealing with open-ended problems in mechanical systems. Emphasis on experimental performance, data collection, evaluations, analysis and design. Two hours of lecture and four hours of lab per week.

Pre-Requisites
Senior standing in mechanical engineering or instructor permission

ME-391. SENIOR PROJECTS I
Credits: 1

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.

Pre-Requisites
Senior standing in mechanical engineering.

ME-392. SENIOR PROJECTS II
Credits: 2

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 are required.

Pre-Requisites
ME-391

ME-397. SEMINAR
Credits: 1-3

Presentations and discussions of selected topics.

Pre-Requisites
Junior or Senior standing in mechanical engineering or special departmental permission.

ME-398. TOPICS IN MECHANICAL ENGINEERING
Credits: 1-3

Pre-Requisites
Junior or senior standing in mechanical engineering.

ME-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or public organization related to the student's academic objectives and career goals. In addition to their work experiences, 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.Requirements: Junior standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson.

MIL. MILITARY SCIENCE (ARMY ROTC)

MIL-100. PHYSICAL FITNESS TRAINING
Credits: 1

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 in duration.

MUS. MUSIC

MUS-100. - 400 APPLIED PERFORMANCE
Credits: 1 or 2
Fees: $395 (1 credit - weekly half-hour lesson); $790 (2 credits - weekly hour lesson)

Individual instruction offered in all keyboard, band, and orchestral instruments, guitar, and voice.
MUS 100 - Freshman level
MUS 200 - Sophomore level
MUS 300 - Junior level
MUS 400 - Senior level

Pre-Requisites
Permission of the instructor.

MUS-101. INTRODUCTION TO MUSIC I
Credits: 3

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 – 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-102. MUSIC FUNDAMENTALS
Credits: 3

This course gives students a solid grounding in the fundamentals of reading and performing music. No previous experience with music is required. Offered every fall.

MUS-103. MUSIC THEORY I
Credits: 3

This course presents fundamental materials and structures of music theory. Theoretical, aural, and keyboard skills are developed through practice and study of music examples. Offered every spring.

Pre-Requisites
Familiarity with music notation or MUS-102.

MUS-104. MUSIC THEORY II
Credits: 3

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.

Pre-Requisites
MUS-103 or placement by a diagnostic exam.

MUS-119. - 419. VOICE STUDIO CLASS
Credits: 0

Voice Studio Class provides students a structured environment in which to present live performances of vocal repertoire in collaboration with an accompanist. Students receive feedback on their presentations by the instructor, who delivers coachings in a masterclass format. Required for MUT majors.
MUS 119 - Freshman level
MUS 219 - Sophomore level
MUS 319 - Junior level
MUS 419 - Senior level

Co-Requisites
MUS 100/100/300/400

MUS-121. WILKES CIVIC BAND
Credits: 0 or 3

The Wilkes University Civic Band provides a large symphonic band experience, and is open to the University student community and qualified local community members, by audition. Literature is chosen from the standard band repertoire, and the ensemble performs a minimum of two formal concerts per year. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-122. CHAMBER WINDS
Credits: 1

Students will study, rehearse and perform a variety of large and small ensemble works for chamber wind ensemble. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-123. MARCHING COLONELS
Credits: 2

The Wilkes University Marching Colonels Marching Band provides an opportunity for rehearsal, study, and performance of a marching band field show presented at home football games and select on and off-campus performances. Members must commit to a one week band camp before classes commence, perform at all home football games, and attend all rehearsals. May be repeated for credit. Offered every fall.

MUS-125. UNIVERSITY CHORUS
Credits: 0-3

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 open to all members of the University and surrounding community, by audition. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-126. CHAMBER SINGERS
Credits: 0.5

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 capella choral repertoire. Membership is open to any student member of the University Chorus. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-127. JAZZ ENSEMBLE
Credits: 0 or 3

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. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-128. CHAMBER PERFORMANCE
Credits: 1

Students will study and publicly perform chamber literature appropriate to their instruments. Coaching and supervision by faculty members, as assigned. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-132. CHAMBER ORCHESTRA
Credits: 0 or 3

Students will study, rehearse and perform a variety of large and small ensemble works for chamber orchestra. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-135. FLUTE ENSEMBLE
Credits: 1

Students will study, rehearse and perform a variety of large and small ensemble works for flute ensemble. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-138. PERCUSSION ENSEMBLE
Credits: 1

Students will study, rehearse and perform a variety of large and small ensemble works for percussion ensemble. May be repeated for credit.

Pre-Requisites
Permission of the instructor.

MUS-198. TOPICS
Credits: 3

A study in topics of special interest not extensively treated in regularly offered courses.

MUS-210. MUSIC HISTORY I: ANCIENT THROUGH BAROQUE
Credits: 3

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. Offered in alternate years, in the fall.

Pre-Requisites

MUS-103 or permission of the instructor.

MUS-211. MUSIC HISTORY II: CLASSICAL THROUGH TWENTIETH CENTURY
Credits: 3

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. Offered in alternate years, in the fall.

Pre-Requisites

MUS-103 or permission of the instructor.

MUS-395. - 396 INDEPENDENT RESEARCH
Credits: 1-3

Independent study and research for advanced students in music under the direction of a faculty member. A research paper at a more substantial level beyond a term paper is required.

Pre-Requisites

Approval of the department chairperson.

MUS-400. SENIOR LEVEL

NSG. NURSING

NSG-117. BASIC LIFE SUPPORT
Credits: 1
Fees: $100

This hybrid course combines online learning and cognitive evaluation with hands-on skills practice and psychomotor evaluation in accordance with the standards of the American Heart Association's (AHA) Core Curriculum. Students who successfully complete this course will receive AHA course completion cards for both Basic Cardiac Life Support for the Health Care Provider and Heartsaver First Aid.

NSG-171. HEALTH CARE TERMINOLOGY
Credits: 1

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
Credits: 3

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 local, national, and international nutrition problems.Co-requisites: NSG-210, NSG-211, PHY-170.

NSG-210. PRINCIPLES OF NURSING: INDIVIDUAL, FAMILY, AND COMMUNITY
Credits: 6
Fees: $500 (Nursing Professional Fees)

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 of class and 6 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115-116, CHM-111, ENG-101, NSG-171, and PSY-101 and SOC-101 or ANT-101.Co-requisites NSG-200, NSG-211, PHY-170.

NSG-211. PHYSICAL ASSESSMENT
Credits: 3

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 function of a client to the more specific functions of each body system.Requirement: Sophomore standing in the Nursing program and Accelerated Baccalaureate Program for Second Degree Students.

NSG-212. NURSING CARE OF THE ADULT CLIENT I: INDIVIDUAL, FAMILY, AND COMMUNITY
Credits: 4
Fees: $500 (Nursing Professional Fees)

The nursing process is utilized in assisting adults and their families within their communities to achieve optimum health and to resolve common health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours of class, 6 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, ANT-212, SOC-251, or SOC-263.Co-requisites EES-242, NSG-213, NSG-214.

NSG-213. NURSING CARE OF THE PSYCHIATRIC MENTAL HEALTH CLIENT: INDIVIDUAL, FAMILY, AND COMMUNITY
Credits: 4
Fees: $135

The nursing process is utilized in assisting adults and their families within their communities to achieve optimum health and to resolve selected problems in mental health. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours of class, 6 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, ANT-212, SOC-251, or SOC-263.Co-requisites EES-242, NSG-212, NSG-214.

NSG-214. PATHOPHYSIOLOGY FOR THE PROFESSIONAL NURSE
Credits: 3

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.Requirement: Sophomore standing in the Nursing program.

NSG-217. BASIC LIFE SUPPORT RENEWAL
Credits: 1
Fees: $100

This hybrid course combines online learning and cognitive evaluation with hands-on skills practice and psychomotor evaluation in accordance with the standards of the American Heart Association's (AHA) Core Curriculum for renewal. Students who successfully complete this course will receive renewal of AHA course completion cards for both Basic Cardiac Life Support for the Heath Care Provider and Heartsaver First Aid.

NSG-221. NURSING CARE OF THE ADULT CLIENT II: INDIVIDUAL, FAMILY AND COMMUNITY
Credits: 4
Fees: $500 (Nursing Professional Fee)

The nursing process is utilized in assisting adults and their families within their communities to achieve optimum health and to resolve medical-surgical problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours of class, 6 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, ANT-212, SOC-251, or SOC-263.Co-requisites MTH-150, NSG-223, NSG-224.

NSG-223. NURSING CARE OF THE OLDER ADULT CLIENT: INDIVIDUAL, FAMILY, AND COMMUNITY
Credits: 4
Fees: $135

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 of class, 12 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, ANT-212, SOC-251, or SOC-263.Co-requisites NSG-221, NSG-224.

NSG-224. PHARMACOTHERAPEUTICS AND CLINICAL DECISION-MAKING IN NURSING
Credits: 3

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.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263.Co-requisites NSG-221, NSG-223.

NSG-226. NURSING CARE OF THE DEVELOPING FAMILY
Credits: 6
Fees: $135

The nursing process is utilized in providing care to the childbearing and childrearing family in a variety of settings. Emphasis is placed on adapting the nursing process and applying theory when integrating the principles of family-centered care through health promotion, growth and development, disease prevention, and treatment. Hours weekly: 4 hours of class and 6 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, EES-242, NSG-221, NSG-223, NSG-224, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263.Corequisite NSG-227.

NSG-227. NURSING CARE OF THE ADULT CLIENT III
Credits: 4
Fees: $500 (Nursing Professional Fee)

The nursing process is utilized in assisting adults and their families within their communities to achieve optimum health and resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, EES-242, NSG-221, NSG-223, NSG-224, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263.Corequisite NSG-226.

NSG-270. RECENT TRENDS IN CLINICAL NUTRITION
Credits: 3

This elective course is an introduction to diet therapy, with a discussion of the contemporary issues in clinical nutrition. The course deals with popular myths about nutrition and health and substantiates or refutes these claims with research evidence.

Pre-Requisites

NSG-200 or RN status.

NSG-274. DIMENSIONS IN HEALTH AND WELLNESS
Credits: 3

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 or 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 student at any level. Lecture, discussion, class participation.No prerequisites. No co-requisites. No fees.

NSG-290. TRANSITION TO BACCALAUREATE NURSING
Credits: 7

This course is designed to facilitate the transition of RN students from other educational routes to baccalaureate education and professional nursing practice. The course focuses on the integration of knowledge, skills, and attitudes in the development of the professional role to enhance quality outcomes for individuals, families, and populations across all healthcare settings and in complex healthcare environments.

NSG-299. NURSING FORUM
Credits: 7

Pre-Requisites

RN status or NCLEX eligibility, ENG-101.Co-requisite NSG-200 or fulfillment of course requirements by means of a challenge exam.

NSG-317. ADVANCED LIFE SUPPORT
Credits: 3
Fees: $50

This course covers the essential material for Advanced Cardiac Life Support and Pediatric Advanced Life Support in accordance with the standards of the American Heart Association. Enrolled students are eligible for American Heart Association ACLS and PALS Course Completion Cards at the end of the course.

NSG-330. NURSING PRACTICE I
Credits: 12
Fees: $500 (Nursing Professional Fee)

(Accelerated Baccalaureate Program for Second Degree Students)This course introduces the student to the profession of nursing. Use of the nursing process is emphasized in meeting the human needs of clients identified as individuals, families, and communities. Nursing theory is correlated with clinical practice in the Clinical Nursing Simulation Center and selected clinical agencies. 12 hours of clinical practice. Co-requisite: NSG-211

NSG-331. NURSING PRACTICE II
Credits: 12
Fees: $500 (Nursing Professional Fee)

(Accelerated Baccalaureate Program for Second Degree Students)Building on the foundation of Nursing, the nursing process is used to assist individuals, families, and communities to achieve optimum health and to resolve selected medical, surgical, and mental health problems. Nursing theory is correlated with clinical practice, and clinical skills will be learned in the Clinical Nursing Simulation Center (CNSC) and mastered in a variety of settings. Hours weekly: 7 hours of class; 15 hours of clinical practice.

Pre-Requisites

NSG-211, NSG-330.Co-requisite NSG-224, NSG-346.

NSG-332. NURSING PRACTICE III
Credits: 12
Fees: $500 (Nursing Professional Fee)

(Accelerated Baccalaureate Program for Second Degree Students)This course prepares the student for professional role development in emerging health care delivery systems. The nursing process is utilized in assisting individuals, families, and communities to meet their health needs. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 6 hours of class; 18 hours of clinical practice.

Pre-Requisites

NSG-211, NSG-224, NSG-330, NSG-331, NSG-346.Co-requisite NSG-342.

NSG-340. ADVANCED CARE CONCEPTS
Credits: 6
Fees: $500 (Nursing Professional Fees)

The nursing process is used in assisting adults and their families, within their communities, to achieve optimum health and to resolve complex health problems. Hours weekly: 2 hours of class, 12 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, NSG-221, NSG-223, NSG-224, NSG-226, NSG-227, EES-242, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263.Co-requisite NSG-342.

NSG-341. NURSING INFORMATICS
Credits: 3

This course provides information about technology used to communicate, manage information, and support decision making to facilitate the achievement of client healthcare outcomes. The course integrates information related to the areas of nursing science, information management science, and computer science.

NSG-342. INTRODUCTION TO NURSING RESEARCH
Credits: 3

The research process is examined in this course. Emphasis is placed on studies in nursing that provide a foundation for critical reflection on research reports and application of findings to practice. Designated oral presentation option (OPO). Offered in the fall semester only.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, MTH-150, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, NSG-221, NSG-223, NSG-224, NSG-226, NSG-227, EES-242, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263.Co-requisite NSG-340.

NSG-343. CULTURAL COMPETENCY AND DIVERSITY IN NURSING
Credits: 3

This course will focus on the provision of culturally competent care for diverse and vulnerable populations in order to achieve safe, quality outcomes.

NSG-344. CONCEPTS OF GENETICS AND GENOMICS IN NURSING
Credits: 3

This course will focus on the relationship of genetics and genomics on health and illness and their influence on health outcomes.

NSG-345. SENIOR PRACTICUM
Credits: 8
Fees: $500 (Nursing Professional Fee)

This course prepares the student for professional role development in emerging health care delivery systems. 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: 2 hours of class, 19 hours of clinical practice.

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, NSG-221, NSG-223, NSG-224, NSG-226, NSG-227, NSG-340, NSG-342, EES-242, PHY-170, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263; or NSG-299 for RN students.Co-requisites NSG-346.

NSG-346. CONTEMPORARY ISSUES AND TRENDS IN NURSING
Credits: 3

This seminar course explores current issues and trends in nursing and health care. Designated oral presentation option (OPO).

Pre-Requisites

BIO-113, BIO-115, BIO-116, CHM-111, ENG-101, NSG-171, NSG-200, NSG-210, NSG-211, NSG-212, NSG-213, NSG-214, NSG-221, NSG-223, NSG-224, NSG-226, NSG-227, NSG-340, NSG-342, EES-242, PSY-101, and SOC-101 or ANT-101, and ANT-102, 212, SOC-251, or SOC-263; or NSG-299 for RN students.Co-requisites NSG-345.

NSG-347. LEADERSHIP AND MANAGEMENT PRACTICUM
Credits: 3

This course prepares the RN to BS or RN to MS student for professional role development in emerging health care delivery systems. The student synthesizes knowledge from previous nursing and supportive courses to manage care in an area of clinical practice consistent with career goals.

NSG-348. BACCALAUREATE CAPSTONE
Credits: 3

This course is intended to integrate learning in the RN to BS curriculum through the identification of a clinical problem and the review of evidence-based solutions.

NSG-394. NURSING ELECTIVE OR CORE REQUIREMENT
Credits: 3

This elective course focuses on the implementation of the nursing process in the care of vulnerable populations within the community setting through a service learning approach.

NSG-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.Requirements: Sophomore standing; minimum 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the School dean.

PHA. PHA

PHA-301. & PHA 304 FOUNDATIONS OF PHARMACY PRACTICE
Credits: 2

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.Requirement: P-1 standing.

PHA-302. , 401, 402, 501 & 502 PHARMACY CARE LAB I - V
Credits: 1 each

This five-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. Requirement: P-1, P-2, or P-3 standing, as appropriate for each laboratory.

PHA-308. PHARMACEUTICAL AND HEALTH CARE DELIVERY
Credits: 3

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.Requirement: P-1 standing or consent of the instructor.

PHA-310. CLINICAL RESEARCH AND DESIGN
Credits: 3

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.

Pre-Requisites

MTH-150 or equivalent and P-1 standing or consent of the instructor.

PHA-311. & PHA 312 PHARMACEUTICS I & II
Credits: 4

The study and application of physical-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 and Recitation: three hours per week. Requirement: P-1 standing or consent of the instructor. NOTE: PHA-311 is a prerequisite for PHA-312.

PHA-313. PHARMACY CALCULATIONS
Credits: 1

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.Requirement: P-1 standing or permission of the instructor.

PHA-327. MEDICAL MICROBIOLOGY
Credits: 4

An overview of microbiology with special emphasis on pathogenic microbiology. Lecture: three hours per week. Lab: three hours per week. Cross-listed with BIO-327.Requirement: P-1 standing or consent of the instructor.

PHA-331. & PHA 332 MEDICAL ANATOMY AND PHYSIOLOGY I & II
Credits: 4

In-depth principles of human anatomy and physiology as well as an introduction to pathophysiology will be presented. Lecture: Two hours per week. Recitation and Lab: two hours per week. Requirement: P-1 standing or consent of the instructor. This course is restricted to enrolled Pharmacy students. Consideration may be given to non-pharmacy students with overall GPAs of 3.0 or greater, if there is room in the lecture and lab sessions, and with instructor approval. NOTE: PHA 331 is a prerequisite for PHA 332.

PHA-335. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE I
Credits: 2

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.

Pre-Requisites
Successful completion of the P-1 year.

PHA-365. MEDICAL BIOCHEMISTRY
Credits: 4

Introduction to basic biochemistry concepts, focusing on the structure and function of vitamins, proteins, and lipids as well as bioenergetics and major catabolic pathways. The catabolism of carbohydrates, fats and amino acids will be discussed including reactions and regulation. Common metabolic pathways of drugs, enzyme induction and metabolism down regulation will also be presented. Lecture: Four hours per week. Cross-listed with CHM-365.

Pre-Requisites
P-1 standing or consent of the instructor.

PHA-405. PHARMACEUTICAL CARE SYSTEMS: DESIGN AND CONTROL
Credits: 2

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 AND BIOTECHNOLOGY
Credits: 3

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.

Pre-Requisites
PHA-331, 332, 365, or consent of the instructor.

PHA-411. BIOPHARMACEUTICS AND CLINICAL PHARMACOKINETICS
Credits: 3

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 hours per week.

Pre-Requisites
PHA-311, PHA-312, or consent of the instructor.

PHA-412. MANAGEMENT OF PHARMACY OPERATIONS
Credits: 3

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.

Pre-Requisites
PHA-308 or consent of the instructor.

PHA-421. PHARMACOTHERAPEUTICS I: PRINCIPLES OF PHARMACOLOGY & MEDICINAL CHEMISTRY
Credits: 2

Pre-Requisites
PHA-310, PHA-327, PHA-331 PHA-332 and PHA-365

PHA-423. PHARMACOTHERAPEUTICS II: PRINCIPLES OF PHARMACOTHERAPEUTICS
Credits: 2

Pre-Requisites
PHA-421.

PHA-425. PHARMACOTHERAPEUTICS III: SELF-CARE AND DERMATOLOGY*
Credits: 3

Three credits

PHA-426. PHARMACOTHERAPEUTICS IV: GASTROINTESTINAL DISORDERS*
Credits: 2

Two credits

PHA-428. PHARMACOTHERAPEUTICS V: INFECTIOUS DISEASES*
Credits: 4

Four credits

PHA-430. PHARMACOTHERAPEUTICS VI: HEMATOLOGY, JOINT DISORDERS, SURGERY*
Credits: 2

Two credits

PHA-440. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE II
Credits: 1

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.Requirement: P-2 standing.

PHA-445. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE III
Credits: 2

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 community pharmacist. The course is two full-time weeks (80 hours) of experience.Requirement: Successful completion of the P-2 year.

PHA-450. NEUROPHARMACOLOGY OF DRUGS OF ABUSE
Credits: 3

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.

Pre-Requisites

PHA-421 or consent of the instructor.

PHA-452. EXTEMPORANEOUS COMPOUNDING
Credits: 3

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 per week. Lab: six hours per week.

Pre-Requisites

PHA-311 and PHA-312 and consent of the instructor.

PHA-498. PHARMACY INFORMATICS
Credits: 2

Pharmacy Informatics is concerned with the use of technology to improve patient care as well as increasing patient safety. Informatics deals with data generated by software used in patient care, not only the storage of data but also the retrieval of data as meaningful clinical reports. Lecture: two hours per week. Requirement: P-2 standing or consent of the instructor.

PHA-503. AND PHA 504 LONGITUDINAL CARE LAB I & II
Credits: 1

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 or 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.

Pre-Requisites

PHA-503 is the prerequisite for PHA-504.

PHA-505. PHARMACY LAW
Credits: 2

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
Credits: 3

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.

Pre-Requisites

PHA-308 and PHA-310 or consent of the instructor.

PHA-510. GENERAL MEDICINE ADVANCED PHARMACY PRACTICE EXPERIENCE
Credits: 5-6

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in general medicine practice. Clinical practice: 40 hours per week for five to six weeks.

Pre-Requisites

P-4 standing.

PHA-511. AMBULATORY CARE ADVANCED PHARMACY PRACTICE EXPERIENCE
Credits: 5-6

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in ambulatory care settings. Clinical practice: 40 hours per week for five to six weeks.

Pre-Requisites

P-4 standing.

PHA-512. COMMUNITY ADVANCED PHARMACY PRACTICE EXPERIENCE
Credits: 5-6

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in community practice settings. Clinical practice: 40 hours per week for five to six weeks.

Pre-Requisites

P-4 standing.

PHA-513. HEALTH SYSTEM ADVANCED PHARMACY PRACTICE EXPERIENCE
Credits: 5-6

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in the health system settings. Clinical practice: 40 hours per week for five to six weeks.

Pre-Requisites
P-4 standing.

PHA-521. PHARMACOTHERAPEUTICS VII: PULMONARY DISORDERS*
Credits: 2

Two credits

PHA-523. PHARMACOTHERAPEUTICS VIII: CARDIOVASCULAR DISORDERS*
Credits: 4

Four credits

PHA-525. PHARMACOTHERAPEUTICS IX: RENAL DISORDERS*
Credits: 2

Two credits

PHA-526. PHARMACOTHERAPEUTICS X: ENDOCRINE DISORDERS & WOMEN'S HEALTH ISSUES*
Credits: 2

Two credits

PHA-528. PHARMACOTHERAPEUTICS XI: NEOPLASTIC DISEASES*
Credits: 2

Two credits

PHA-530. PHARMACOTHERAPEUTICS XII: CENTRAL NERVOUS SYSTEM DISORDERS*
Credits: 4

*PHA 423 is prerequisite to PHA-425 - 530.

PHA-532. ALTERNATIVE MEDICINE AND NUTRITION
Credits: 3

This course gives a brief overview of several alternative/contemporary medicine practices but focuses on dietary supplements with an emphasis on the top herbal products. This course will also give an overview on the concept and practice of obesity and nutrition including parenteral and enteral nutrition. Lecture: three hours per week.

Pre-Requisites
PHA-331, 332, 365 or consent of the instructor.

PHA-534. INTRODUCTION TO HOSPITAL PHARMACY PRACTICE
Credits: 2

Two creditsThis course introduces students to the practice of pharmacy within a hospital setting. Topics discussed include the accreditation process for hospitals, career options and residency or fellowship training, medication formulary management, automation and technology in hospital pharmacies, medication calculations, medication safety, clinical pharmacy practice, and sterile product preparation.

PHA-536. PRINCIPLES OF ADVANCED COMMUNITY PHARMACY MANAGEMENT
Credits: 2

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
Credits: 2

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. Requirement: P-3 standing.

PHA-540. COMPREHENSIVE DIABETES MANAGEMENT
Credits: 3

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 and exams.Requirement: P-3 standing or permission of the instructor.

PHA-542. ADVANCED INFORMATION MASTERY
Credits: 2

This course is offered each year in the Spring Semester. The course's primary goal is to instruct students on Evidence Based Medicine (EBM) and develop skills to practice EBM efficiently in most clinical settings.

Pre-Requisites
P3 standing.

PHA-544. MANAGED CARE PHARMACY
Credits: 2

This elective is intended to help future pharmacists interested in any area of practice better understand the clinical and business decision-making processes of the health care system. The elective will introduce and reinforce the concepts of population health and value, explore tools available to limit healthcare spending, and discuss unique ways pharmacists can be involved in improving patient care. This course will be offered during the spring semester each year.

Pre-Requisites
P2 or P3 standing.

PHA-550. PRINCIPLES OF EXPERIMENTAL PHARMACOLOGY
Credits: 3

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.

PHA-551. VETERINARY PRODUCTS
Credits: 3

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.

Pre-Requisites
PHA-424 and PHA-426.

PHA-552. PRINCIPLES OF BIOORGANIC AND MEDICINAL CHEMISTRY
Credits: 3

This will be an introductory course, the aims of which 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.

Pre-Requisites
CHM-231-232, PHA-327, 365.

PHA-555. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE IV
Credits: 1-half

This course will provide introductory practice experience to students in the home health and hospice setting. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play.Requirement: P-3 standing.

PHA-556. ROLE OF PHYTOCHEMICALS ON HEALTH AND DISEASE
Credits: 2

Students will learn the basic concepts and classification of phytochemicals present in our daily diet, followed by the study of specific phytochemicals and their relation to human health and disease. Basic mechanisms and pathways through which phytochemicals act and alter will be discussed. Students will have an opportunity to gain an in-depth understanding of a specific phytochemical of their choice or any other phytochemical designated by the instructor through a research review paper and an in-class presentation.

PHA-560. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE V
Credits: 1-half

The Self-Directed Introductory Pharmacy Practice Experience (SD-IPPE) course is designed to expose students to various service-learning opportunities throughout their P1 through P3 years. This experience consists of three components: participation in and development of service-learning projects, reflection, and self-directed learning. Students may develop their own experiences or participate in opportunities offered by the School or professional organizations.
Requirements for service learning hours will increase as the student progresses through the curriculum. Each student must complete a minimum of 2, 8, and 10 hours during the P1, P2, and P3 years, respectively (total 20 hours). Additional details are provided in the SDIPPE syllabus conveniently posted in E*Value.

PHA-599. A, B AND C ELECTIVE ADVANCED PHARMACY PRACTICE EXPERIENCE ROTATIONS
Credits: 5-6

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.

Pre-Requisites
P-4 standing.

PPD. PERSONAL AND PROFESSIONAL DEVELOPMENT

PPD-101. PERSONAL AND PROFESSIONAL DEVELOPMENT I
Credits: 1

The PPD Series begins with Personal and Professional Development 101, which adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice and evaluation with a strong emphasis on self-awareness, working in teams, and an introduction to emotional intelligence competencies.

PPD-201. PERSONAL AND PROFESSIONAL DEVELOPMENT III
Credits: 1

One creditSpecial studies and experiences in career focused areas of personal and professional development. The one-credit courses vary each semester and are taught by subject matter experts.

PPD-301. PERSONAL AND PROFESSIONAL DEVELOPMENT V
Credits: 1

One creditSpecial studies and experiences in leadership focused areas of personal and professional development. The topics will be relevant to leadership issues, leadership skills, or leadership in context. The one-credit courses vary each semester and are taught by subject matter experts.

PPD-401. PERSONAL AND PROFESSIONAL DEVELOPMENT VII
Credits: 1

The PPD Series adds value and depth to your learning program by targeting personal and professional competency assessment, development, practice, and evaluation. PPD-401 continues the Life Plan and prepares students for development of a Personal Learning Plan. Emphasis will be on continuous portfolio and résumé development, interview skills, and job search strategies.

Pre-Requisites

PPD-101, PPD-201, & PPD-301

PHL. PHILOSOPHY

PHL-101. INTRODUCTION TO PHILOSOPHY
Credits: 3

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
Credits: 3

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
Credits: 3

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-198. TOPICS
Credits: 3

The study of a topic of special interest not extensively treated in other courses. Topics chosen according to interest of the instructor. Because of its variable content, this course may be repeated for credit.

Pre-Requisites

PHL-101 or permission of the instructor.

PHL-214. MEDICAL ETHICS
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of instructor.

PHL-216. VIOLENCE AND NONVIOLENCE
Credits: 3

An examination of the concepts and practices of violence and nonviolence. Historical and modern theories and applications will be explored including questions such as why and how nonviolence has been advocated, how civil defense might be structured without violence, whether nuclear weapon use can be justified, and whether torture is ever morally permissible. Students will be expected to consider the importance and relevance of the ideas for their own lives.

Pre-Requisites

PHL-101, 110 or permission of instructor.

PHL-217. THE QUESTION OF ANIMAL RIGHTS
Credits: 3

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.

Pre-Requisites

PHL-101, PHL-110, or permission of the instructor.

PHL-218. ENVIRONMENTAL ETHICS
Credits: 3

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. (Cross-listed with EES-218.)

Pre-Requisites

PHL-101 or EES-240 or permission of the instructor.

PHL-236. AMERICAN POLITICAL PHILOSOPHY
Credits: 3

The study of the political ideas, ideals, and ideologies that contributed to and developed from the American experience. An analysis of the ideas that underlie America's political institutions and practices. (Same as PS-262)

PHL-242. THE MEANING OF LIFE
Credits: 3

A selection of culturally diverse classic and contemporary answers to the question of the meaning of life will be examined and the implications of our lives will be explored. Perspectives to be addressed include those of Epicurus, Epictetus, Aristotle, Lao-Tzu, the Buddha, Viktor Frankl, Albert Camus, A.J. Ayer, Peter Singer, and more.

Pre-Requisites

PHL-101, PHL-110, or permission of the instructor.

PHL-244. BUDDHIST THOUGHT
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of the instructor.

PHL-272. PHILOSOPHY OF RELIGION
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of the instructor.

PHL-298. TOPICS
Credits: 3

The study of a topic of special interest not extensively treated in other courses. Topics chosen according to interest of the instructor. Because of its variable content, this course may be repeated for credit.

Pre-Requisites

PHL-101 or permission of the instructor.

PHL-301. ORIGINS OF WESTERN THOUGHT
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of instructor.

PHL-310. ETHICAL THEORY
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of instructor.

PHL-314. ADVANCED TOPICS IN BIOETHICS
Credits: 3

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.

Pre-Requisites

PHL-214 or permission of instructor.

PHL-316. MORAL PSYCHOLOGY
Credits: 3

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.

Pre-Requisites

PHL-310 or permission of instructor.

PHL-332. SOCIAL AND POLITICAL PHILOSOPHY
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of instructor.

PHL-334. PHILOSOPHY OF LAW
Credits: 3

This course serves as an introduction to the central topics in the Philosophy of Law, including the nature and justification of the law, the relation between law and morality, the principles of legal interpretation, and the justification and limits of criminal sanctions. The work of both classical and contemporary legal and political theorists will be explored, as well as a selection of legal cases that have shaped American law, including recent cases, and an investigation of some implications for legal cases arising from new developments in neuroscience. .

Pre-Requisites

PHL-101 or permission of instructor.

PHL-344. ADVANCED TOPICS IN BUDDHIST THOUGHT
Credits: 3

An examination of the history of Buddhist philosophy and the issues it raises with particular emphasis on *shunyata*.

Pre-Requisites

PHL-244 or permission of instructor.

PHL-350. PHILOSOPHY OF SCIENCE
Credits: 3

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.

Pre-Requisites

PHL-101 or permission of instructor.

PHL-372. ADVANCED TOPICS IN PHILOSOPHY OF RELIGION
Credits: 3

Pre-Requisites

PHL-272 or permission of instructor.

PHL-390. SENIOR PROJECTS: CAPSTONE
Credits: 1

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-397. SEMINAR
Credits: 1-3

Presentations and discussions of selected topics.

Pre-Requisites

Approval of course instructor is required.

PHL-398. TOPICS
Credits: 3

The study of a topic of special interest not extensively treated in other courses. Topics chosen according to interest of the instructor. Because of its variable content, this course may be repeated for credit.

Pre-Requisites

PHL-101 or permission of instructor.

PHL-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

PHY. PHYSICS

PHY-198-298-398. TOPICS IN PHYSICS
Credits: variable

Selected topics in the field of physics. These may include one or more of the following: astronomy; geophysics; biophysics; nuclear power and waster; relativity; quantum mechanics; semi-conductors; cryogenics; health physics. May be repeated for credit.

Pre-Requisites

Varies with topic studied.

PHY-395-396. INDEPENDENT RESEARCH
Credits: 1 - 3

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.

Pre-Requisites

Senior standing and approval of the department chairperson.

PHY-105. CONCEPTS IN PHYSICS
Credits: 3
Fees: $110

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 for four hours per week: two hours of lecture and one two-hour lab each week.

Pre-Requisites

No previous background in either science or college-level mathematics is required.

PHY-170. CONCEPTS IN PHYSICS AND CHEMISTRY
Credits: 4
Fees: $110

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 demonstration and lecture, one hour of recitation, and two hours of lab per week.

Pre-Requisites

Previous courses in chemistry, algebra, and geometry.

PHY-171. PRINCIPLES OF CLASSICAL AND MODERN PHYSICS
Credits: 4
Fees: $110

An introductory course designed to promote and 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. Three hours of demonstration and lecture, one hour of recitation, and two hours of lab per week. Co-requisite: MTH-111

PHY-174. APPLICATION OF CLASSICAL AND MODERN PHYSICS
Credits: 4
Fees: $110

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. Three hours of demonstration and lecture, one hour of recitation, and two hours of lab per week. Co-requisite: MTH-111

PHY-201. GENERAL PHYSICS I
Credits: 4
Fees: $110

A thorough grounding in the concepts, principles, and laws of mechanics, thermodynamics, and wave motion. Instruction by demonstration and lecture, recitation, problem solving, and experimental work. Three hours of demonstration and lecture, one hour of recitation, and two hours of lab per week. Co-requisite: MTH-111

PHY-202. GENERAL PHYSICS II
Credits: 4
Fees: $110

Electricity and magnetism, optics and light. Three hours of demonstration and lecture, one hour of recitation, and two hours of lab per week.

Pre-Requisites
PHY-201.Co-requisite MTH-112.

PHY-203. GENERAL PHYSICS III
Credits: 3

Modern physics including the experimental basis, concepts, and principles of atomic and nuclear physics. Three hours of demonstration and lecture per week.

Pre-Requisites
PHY-202.

PHY-311. THERMODYNAMICS & STATISTICAL MECHANICS
Credits: 3

This course focuses on the laws of thermodynamics and other thermodynamic concepts including entropy, free energy, equilibrium, and fluctuations as well as their pivotal role in physics and other scientific disciplines. Topics in statistical mechanics will be covered including partition functions, ensembles, kinetic theory, and phase transitions. Three hours of lecture per week.

Pre-Requisites
PHY-203 and MTH-211.

PHY-312. ANALYTICAL MECHANICS
Credits: 3

Employs advanced mathematical tools to study applications in complex mechanical systems. It offers an advanced differential reformulation of Newton's laws to study dynamical systems in multiple dimensions, conservative force fields, damped and driven oscillations, two-body problem, central forces and planetary motion, and the rotational dynamics of rigid bodies. Additionally, the course delivers a thorough grounding on the calculus of variations, Lagrange's formalism and Hamiltonian mechanics, all being the essential foundations for the development of modern physics (relativity, quantum mechanics, and quantum field theory). Three hours of lecture per week.

Pre-Requisites
PHY-202 and MTH-211.

PHY-314. QUANTUM MECHANICS
Credits: 3

This course presents an intermediate level of Quantum Mechanics using the abstract formulation of linear vector spaces in the Dirac formalism. Topics covered include: spin, addition of angular momentum, scattering and bound particles, the harmonic oscillator, two-body problem and central potential wells in 3D, H-atom and H-like atoms, time-independent perturbation theory, identical particles and the He-atom. In addition to the foundations of Quantum Mechanics, the course offers a selection of advanced and modern topics like entanglement and quantum teleportation. Three hours of lecture per week.

Pre-Requisites
PHY-203, CHM-115, MTH-211, and MTH-212.

PHY-374. IMAGING IN BIOMEDICINE
Credits: 3
Fees: $110

This course will cover different aspects of imaging important to medicine and biomedicine including optical microscopy, scanning probe microscopy, scanning electron microscopy, magnetic resonance, ultrasound X-ray, nuclear radiation, microwave and electro-/magneto-encephalographic techniques as well as image processing. Three hours of lecture and three hours of lab per week.

Pre-Requisites
PHY-201 & PHY-202 or PHY-171 & PHY-174, MTH-112.

PHY-377. BIOPHYSICS
Credits: 3
Fees: $110

This course presents an overview of the important physical principles governing the behavior of cells and macromolecules. Upper-level mathematics that are useful to understand these phenomena are introduced in a way that is comprehensible to biology majors lacking background beyond basic calculus. In addition to the physical models governing the most ubiquitous molecular and cellular processes, the physics behind the most common experimental techniques used in biology, bioengineering, and biophysics are covered. Three hours of lecture and two hours of lab per week.

Pre-Requisites
PHY-201 & PHY-202 or PHY-171 & PHY-174, MTH-112.

PHY-391. SENIOR PROJECT I
Credits: 1
Fees: $110

Students will plan and execute a research project in the field of physics or at the intersection of physics and another related discipline. Projects can be theoretical, experimental or both and can include the design of unique experiments and simulations. A detailed progress report and presentation are required. Students pursuing a dual degree or double major may be eligible to combine this project with the capstone project of another program (subject to the approval of their advisors in both programs).

Pre-Requisites
Senior standing in Physics

PHY-392. SENIOR PROJECT II
Credits: 2
Fees: $110

Students will plan and execute a research project in the field of physics or at the intersection of physics and another related discipline. This is a continuation of PHY 391. A professional paper and progress report are required. Students will present the results of their work in an open-forum. Students pursuing a dual degree or double major may be eligible to combine this project with the capstone project of another program (subject to the approval of their advisors in both programs).

Pre-Requisites

[[PHY 391]]

PS. POLITICAL SCIENCE

PS-111. INTRODUCTION TO AMERICAN GOVERNMENT
Credits: 3

How and why does the American federal system work? This course introduces students to the constitutional foundations of the American governmental system and explains how and why the system changed over time to function as it does today. Many examples are employed to illustrate the challenges facing those who occupy elected office and the voters who placed them in office. Students are also introduced to basic social science research methods and how they are applied to the study of American politics. Offered every semester.

PS-141. INTRODUCTION TO INTERNATIONAL RELATIONS
Credits: 3

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. INTRODUCTION TO COMPARATIVE POLITICS
Credits: 3

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 examines several countries in detail providing a specific introduction to the political structures of a number of countries.

PS-212. URBAN GOVERNMENT AND POLITICS
Credits: 3

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 and the political dynamics that complicate solving the problems. (Same as SOC-263.) Counts as a Criminology elective.

PS-213. PARTIES AND ELECTIONS
Credits: 3

Though America's Founding Fathers may have had no love for or willingness to incorporate political parties into the Constitution of 1787, parties emerged anyway over the next twenty years. This course explores the origins and developments of political parties and their essential role in our democratic, representative political system. The ideas on which the parties were founded are examined and the evolution to their current positions is analyzed. Many examples of parties and elections at the federal, state and local levels of government are used. Offered every fall semester even years.

PS-221. INTRODUCTION TO PUBLIC ADMINISTRATION
Credits: 3

An introduction to the principles and problems of public administration in an increasingly complex society. Topic such as leadership, informal organizational processes, the relationship of administration to its cultural context, and the question of administrative responsibilities are examined as well as public finance, human resources, ethics, management and administrative law.

PS-224. PUBLIC POLICY ANALYSIS
Credits: 3

This course is an introduction to the study of public policy at the national level. It examines approaches to public policy and the operation of the 'policy process.' A range of public policy examples is employed, from social welfare to energy and environment to foreign and defense issues.

PS-232. CRIMINAL LAW
Credits: 3

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.

Pre-Requisites

PS-111.

PS-233. LAW AND SOCIETY
Credits: 3

An introduction to the study of law and its role in social and political systems. Attention is given to theories of law and to the structure of the legal system. Students are given the opportunity to engage in hypothetical dispute resolutions using common law methods. Offered every spring.

Pre-Requisites

PS-111.

PS-242. INTERNATIONAL LAW AND ORGANIZATION
Credits: 3

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.

Pre-Requisites

PS-141 or consent of instructor.

PS-251. EUROPEAN POLITICS
Credits: 3

Comparison of the development, institutions, problems and prospects of democratic systems is 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
Credits: 3

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 spring.

PS-261. RESEARCH METHODS IN POLITICAL SCIENCE
Credits: 3

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
Credits: 3

The study of the political ideas, ideals, and ideologies that contributed to and developed from the American experience. An analysis of the ideas that underlie America's political institutions and practices. (Same as PHL-236.) May not be used to meet Area I requirements of the General Education Curriculum.

PS-265. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES
Credits: 3

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 SOC-373.)

Pre-Requisites

PS-111 or 141, PS-261 or SOC-371, or approval of instructor.

PS-309. CAREER MENTORING FOR THE SOCIAL SCIENCES
Credits: 2

This course will offer career guidance for students in the Behavioral and Social Sciences. The course will include topics such as mentoring, networking, résumés and interviewing skills. Course credits will not count towards minor credits. Open only to majors in the social and behavioral sciences.

Pre-Requisites

PS-111, junior standing. Course will be cross-listed with PSY and SOC-309

PS-311. THE AMERICAN PRESIDENCY
Credits: 3

An exploration and analysis of the development of the American President as political leader, chief executive, and world leader as well as the origins and growth of the institutional presidency. Special attention is given to the selection process and its effect on the Presidency. Offered in the fall semester in odd years.

Pre-Requisites

PS-111 or consent of the instructor.

PS-312. THE US CONGRESS
Credits: 3

Congress is often referred to as "the People's Branch" of government because voters now directly elect members of both houses, which is different than the other two branches. Yet Congress regularly is held in low esteem by the public. This course explores the constitutional basis of Congress: how it is elected, its powers and its role in a system of separate branches with checks and balances. It also traces Congress's historical development and explains how and why it functions today. Multiple case studies are used to illustrate important points, and a congressional simulation is conducted at the semester's end in which students assume the role of a newly elected member of the House. Offered every spring semester in even years.

Pre-Requisites

PS-111 or consent of the instructor.

PS-331. THE CONSTITUTION AND THE FEDERAL SYSTEM
Credits: 3

The study of the meaning of the Constitution as interpreted by the Supreme Court. Analysis of the powers of the three branches of government and of the relations between the states and the federal government. Offered in the spring semester in even years.

Pre-Requisites

PS-111, PS-233, or consent of the instructor.

PS-332. CIVIL RIGHTS AND LIBERTIES
Credits: 3

The study of the growth and change of the American Constitution through analyses 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. Offered in the fall semester in even years.

Pre-Requisites

PS-111, PS-233, or consent of the instructor.

PS-345. AMERICAN NATIONAL SECURITY POLICY
Credits: 3

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.

Pre-Requisites

PS-141 or permission of the instructor.

PS-350. COMPARATIVE POLITICS: THEORY AND ANALYSIS
Credits: 3

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. The course examines the ways that ethnicity and cultural ideas affect governments and regime transition.

Pre-Requisites
Sophomore standing.

PS-354. ECOTOURISM DEVELOPMENT IN COSTA RICA
Credits: 3

As an international service-learning course, this class will work with a selected community in Costa Rica on their ecotourism development plan. Students will assist this community with a variety of tasks including an ecotourism business plan, sustainability projects and other tasks determined by our community partner. The course will begin with an examination of the public policy and economic aspects of the development of ecotourism in Costa Rica and how it can benefit our community partner. The second portion of the course will provide an intensive in-country experience with ecotourism stakeholders from both the public and private sector. Students will design and implement a number of projects in Costa Rica to assist the community in the development of its ecotourism industry. The final segment of the course will examine the effects of the service projects completed in Costa Rica on campus.

PS-380. POLITICAL SCIENCE SENIOR PROJECT
Credits: 3

This course is the capstone experience for Political Science majors. During the semester, the student completes the research project begun during PS-261 (that is, data and information are gathered and analyzed), and the results written in a formal paper. Students present their findings in a public forum where the department's faculty and students are present. Offered every semester.

Pre-Requisites
Senior standing, PS-261 and PS-265

PS-394. PRACTICUM
Credits: 1-3

Pre-Requisites
No course prerequisites, but the permission of the instructor or faculty member is required in advance.

PS-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites
Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

PSY. PSYCHOLOGY

PSY-101. GENERAL PSYCHOLOGY
Credits: 3

An introduction to the field of psychology with emphasis on objective and systematic methods of inquiry. Extensive survey of major psychological topics including: biological basis of behavior, sensory systems, learning, cognition, emotions, consciousness, development, stress, personality, social factors and mental health.

PSY-200. STATISTICS
Credits: 4

An introduction to the use of statistical procedures (by hand and with SPSS) in the analysis of psychological data. Topics include descriptive statistics and inferential statistics. Techniques such as t-tests, ANOVA, correlation and regression will be used for hypothesis testing.

Pre-Requisites
PSY-101 and Math competency (MTH 101 or higher).

PSY-201. APPLIED STATISTICS AND RESEARCH
Credits: 4

An introduction to how psychological research methods and statistics are used in academic journals and the popular media. The following topics will be discussed: scientific method, research methods used to gather evidence, descriptive statistics and hypothesis testing. Students will be asked to critically review and evaluate research findings.

Pre-Requisites
PSY-101 and Math competency (MTH 101 or higher).

PSY-221. DEVELOPMENTAL PSYCHOLOGY
Credits: 3

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 how these issues can be studied using various developmental research techniques.

Pre-Requisites
PSY-101.

PSY-222. ADOLESCENT PSYCHOLOGY
Credits: 3

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.

Pre-Requisites
PSY-101.

PSY-242. PERSONALITY
Credits: 3

An examination of the major theoretical perspectives on personality development and functioning, with additional emphasis on the assessment of personality and research in personality.

Pre-Requisites
PSY-101.

PSY-250. APPLIED BEHAVIOR ANALYSIS
Credits: 3

This course will explore the dynamics and management of human behavior. As such, the course will involve exercises with empirical research, statistics, literature searches and analysis with emphasis on the principles emanating from Operant and Pavlovian conditioning phenomena.

Pre-Requisites

PSY-101.

PSY-257. NEUROPSYCHOLOGY
Credits: 3

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.

Pre-Requisites

PSY-101.

PSY-300. RESEARCH METHODS
Credits: 4
Fees: $40

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.

Pre-Requisites

PSY-101 and PSY-200. To be taken by Psychology majors only, during the junior or senior year.

PSY-301. PSYCHOLOGICAL RESEARCH
Credits: 3

An introduction to how psychological research methods and statistics are used in academic journals and the popular media. The following topics will be discussed: scientific method, research methods used to gather evidence, descriptive statistics and hypothesis testing. Students will be asked to critically review and evaluate research findings.

Pre-Requisites

PSY-101 and PSY-200. To be taken by Psychology majors only, during the junior or senior year.

PSY-309. CAREER MENTORING FOR THE SOCIAL SCIENCES
Credits: 2

This course will offer career guidance for students in the Behavioral and Social Sciences. The course will include topics such as mentoring, networking, résumés and interviewing skills.

Pre-Requisites

PSY-101, junior standing. Course will be cross-listed with PS and SOC-309 Course credits will not count towards minor credits. Open only to majors in the Social and Behavioral Sciences.

PSY-311. BEHAVIORAL NEUROSCIENCE
Credits: 4
Fees: $30

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.

Pre-Requisites

PSY-101; junior or senior standing.

PSY-331. COGNITION
Credits: 3

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.

Pre-Requisites

PSY-101.

PSY-333. CRITICAL THINKING IN PSYCHOLOGICAL SCIENCE
Credits: 3

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.

Pre-Requisites

PSY-101.

PSY-341. INTRODUCTION TO SOCIAL PSYCHOLOGY
Credits: 3

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. (Same as SOC-341.)

Pre-Requisites

ANT-101, PSY-101, or SOC-101.

PSY-351. BEHAVIORAL MEDICINE
Credits: 3

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 following: 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.

Pre-Requisites

PSY-101.

PSY-352. ABNORMAL BEHAVIOR
Credits: 3

A general survey of psychological disorders in children and adults with emphasis on symptomatology, etiology, and assessment. Forensic and classification issues are also examined.

Pre-Requisites

PSY-101, PSY-242.

PSY-353. CLINICAL METHODS IN PSYCHOLOGY
Credits: 3

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.

Pre-Requisites

PSY-101; PSY-242; PSY-352; junior or senior standing.

PSY-354. THE EXCEPTIONAL INDIVIDUAL
Credits: 3

A study of the psychological, physical, and social challenges and needs of exceptional individuals with an emphasis on etiology, assessment, impact, and educational interventions.

Pre-Requisites

PSY-101, PSY-221.

PSY-355. FORENSIC PSYCHOLOGY
Credits: 3

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.

Pre-Requisites

PSY-101; junior or senior standing.

PSY-356. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY
Credits: 3

A survey of the applied areas of personnel, organizational, human factors, and consumer psychology.

Pre-Requisites

PSY-101.

PSY-358. PSYCHOLOGICAL TESTS AND MEASURES
Credits: 3

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.

Pre-Requisites

PSY-101, PSY-200.

PSY-359. PSYCHOPHARMACOLOGY
Credits: 3

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 or stimulants, depressants, antipsychotics, antidepressants, psychedelics, and legal drugs, such as caffeine, nicotine, and alcohol.

Pre-Requisites

PSY-101.

PSY-362. HISTORY OF PSYCHOLOGY
Credits: 3

A study of the philosophic and scientific roots of contemporary psychology, with emphasis on the applicability of past questions and knowledge to current psychological thought.

Pre-Requisites

PSY-101.

PSY-399. COOPERATIVE EDUCATION
Credits: 1-3

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

PSY-400. RESEARCH CAPSTONE
Credits: 3
Fees: $60

This course is designed to provide a research-based 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.

Pre-Requisites

PSY-101; PSY-200; PSY-300; Senior status and departmental permission.

PSY-401. APPLIED CAPSTONE
Credits: 4
Fees: $30

This course will offer a professional capstone experience, including a required internship experience. Students will prepare client case presentations based upon their observations during their internship. An internship is required prior to taking PSY 401 (PSY 399) and a second internship is required for this course, which is counted with the four credit requirement.

Pre-Requisites

PSY-101; PSY-201 or PSY-301; PSY-399; Senior status.

SEM. SEM

SM-201. INTRODUCTION TO SPORTS MANAGEMENT
Credits: 3

This Sport and Recreation Management course provides an overview of the sport and recreation industry. The course examines the principles of entertainment management in high school, professional, collegiate, and Olympic sport. A primary focus of the course will be on the business of collegiate and professional sport. The course will also focus on the application of business topics discussed in class and business content from assigned readings, along with perspectives from sport and entertainment business professionals.

Pre-Requisites

BA-152 or BA-153.

SM-325. SPECIAL EVENTS MARKETING
Credits: 3

Marketing is an introduction to the principles and practices of the marketing profession. You will study the dynamic role marketing plays in our global and national economies. You have the opportunity to build a knowledge base about the following areas: strategic marketing, research, consumer behavior, segmentation and targeting, marketing mix planning, implementation, and evaluation. We will identify marketing challenges, ethical thinking and action, and global dimensions within the profession and practice of marketing.

Pre-Requisites

MGT-251.

SM-355. SPORTS FACILITY & EVENT MANAGEMENT
Credits: 3
Terms Offered: Fall

This course provides students with an understanding of the complexity involved in sport facility and event management. Sport facility management includes a variety of activities such as planning and designing a sports facility, staff management, facility marketing, developing revenue streams, and facility scheduling and operating. Sport event management consists of identifying goals of the event and coordinating people in the organizations involved to achieve those goals with the resources available.

Pre-Requisites

MKT-221

SM-465. WILKES' SPORTS MANAGEMENT EXPERIENCE
Credits: 3

This is a Wilkes business experience course where students apply their accumulated knowledge, skills, and abilities to a Wilkes University Sports or Event related department. The course will include cooperative education (see the Cooperative Education section of this bulletin for placement procedures), independent study, and an experiential component. Credits in excess of 3 may be applied toward the degree's Free Elective requirement.

Pre-Requisites

SM-201, SM-355.

SM-466. PROFESSIONAL SPORTS MANAGEMENT EXPERIENCE
Credits: 3

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 sport or event management. The course will include cooperative education (see the Cooperative Education section of this bulletin for placement procedures), independent study, and an experiential component. Credits in excess of 3 may be applied toward the degree's Free Elective requirement.

Pre-Requisites

BA-461.

SOC. SOCIOLOGY

SOC-101. INTRODUCTION TO SOCIOLOGY
Credits: 3

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
Credits: 3

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.

Pre-Requisites

ANT-101 or 102, SOC-101, or approval of the instructor.

SOC-212. HUMAN SEXUALITY
Credits: 3

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.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-214. SEX ROLES
Credits: 3

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.

Pre-Requisites

ANT-101 or 102, SOC-101, or approval of the instructor.

SOC-215. FAMILY VIOLENCE
Credits: 3

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.

Pre-Requisites

ANT-101 or 102, SOC-101, or approval of the instructor.

SOC-222. CRIMINOLOGY
Credits: 3

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, theories of criminal behavior, and current issues surrounding crime in the U.S. today.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-223. DRUGS AND ALCOHOL IN AMERICAN SOCIETY
Credits: 3

An examination of drugs and alcohol in American society as a major social problem.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-225. JUVENILE DELINQUENCY
Credits: 3

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.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-226. CORRECTIONS, PROBATION AND PAROLE
Credits: 3

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.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-228. DEVIANCE AND SOCIAL CONTROL
Credits: 3

This course examines the nature of deviant behavior and the social responses to it. Topics covered include the following: what constitutes deviance; theories of deviance; varieties of deviant behavior; and the types of societal responses to deviant behavior.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-231. FIELDS OF SOCIAL WORK
Credits: 3

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.

Pre-Requisites

ANT-101 or 102, PSY-101, SOC-101, or approval of the instructor.

SOC-234. GROUP COUNSELING
Credits: 3

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 or facilitator.

Pre-Requisites

SOC-101.

SOC-235. CORRECTIONS COUNSELING
Credits: 3

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.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-236. INDIVIDUAL COUNSELING
Credits: 3

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.

Pre-Requisites

SOC-101.

SOC-251. SOCIOLOGY OF MINORITIES
Credits: 3

A theoretical analysis of inter-group tensions and processes of adjustment with special reference to modern racial, national, and religious conflicts, both domestic and abroad.

Pre-Requisites

ANT-101 or 102, SOC-101, or approval of the instructor.

SOC-261. SOCIOLOGY OF SPORT
Credits: 3

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.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-263. THE URBAN ENVIRONMENT
Credits: 3

Cross-listed with PS-212. See description under the Political Science course listings. (Same as PS-212).

SOC-309. CAREER MENTORING IN THE SOCIAL SCIENCES
Credits: 2

This course will offer career guidance for students in the Behavioral and Social Sciences. The course will include topics such as mentoring, networking, résumés and interviewing skills.

Pre-Requisites

SOC-101, junior standing. Course will be cross-listed with PS and PSY-309

SOC-341. INTRODUCTION TO SOCIAL PSYCHOLOGY
Credits: 3

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, and social pathology. (Same as PSY-341.)

Pre-Requisites

ANT-101 or 102, PSY-101, SOC-101, or approval of the instructor.

SOC-352. SOCIAL STRATIFICATION
Credits: 3

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.

Pre-Requisites

ANT-101 or 102, SOC-101, or approval of the instructor.

SOC-371. METHODS OF RESEARCH IN SOCIOLOGY
Credits: 3

Introduction to sociological research; selected problems of research in social relations; interviewing techniques; questionnaire design and case studies.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-373. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES
Credits: 3

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.)

Pre-Requisites

PS-261, SOC-101, SOC-371, or approval of the instructor.

SOC-381. SOCIOLOGICAL THEORY
Credits: 3

The aim of the course is provide the student majoring in sociology, or in one of the related fields, with an historical background necessary for understanding of the current trends in sociology as well as for clarification of its distinct subject matter, problems, and methods.

Pre-Requisites

SOC-101 or approval of the instructor.

SOC-390. SENIOR CAPSTONE
Credits: 3

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.

Pre-Requisites

SOC-371, SOC-381.

SOC-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

SP. SPANISH

SP-101-102. ELEMENTARY SPANISH
Credits: 3 each

Fundamentals of spoken and written Spanish, and introduction to Spanish culture. Emphasis is placed on communicative proficiency.

SP-203-204. INTERMEDIATE SPANISH
Credits: 3 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.

Pre-Requisites

SP 102 or permission of the instructor.

SP-205. CONVERSATION
Credits: 3

Practice in spoken Spanish, including discussions, oral presentation, and role-playing. Includes written exercises.

Pre-Requisites

SP-204 or permission of the instructor.

SP-206. ADVANCED GRAMMAR, STYLISTICS, AND COMPOSITION
Credits: 3

Practice in written and oral skills, with an emphasis on the refinement of grammatical and stylistic abilities.

Pre-Requisites

SP-204 or permission of the instructor.

SP-208. CULTURE AND CIVILIZATION
Credits: 3

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.

Pre-Requisites

SP-204 or permission of the instructor.

SP-209. LATIN AMERICAN CULTURE AND CIVILIZATION
Credits: 3

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.

Pre-Requisites

SP-204 or permission of the instructor.

SP-210. SPANISH FOR BUSINESS
Credits: 3

Introduction to language use in the contemporary Spanish business world, including practice in reading, understanding, and writing business communications.

Pre-Requisites

SP-204 or permission of the instructor.

SP-211. CONVERSATIONAL SPANISH FOR HEALTH AND SOCIAL SERVICES
Credits: 3

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.

Pre-Requisites

SP-204 or permission of the instructor.

SP-212. NON-LITERARY TRANSLATION
Credits: 3

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.

Pre-Requisites

SP-203-204 or equivalent.

SP-220. SPANISH LISTENING AND COMPREHENSION
Credits: 3

'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. (Intended for non-native speakers only)

Pre-Requisites

SP-205, 206 or permission of the instructor.

SP-301. INTRODUCTION TO LATIN AMERICAN LITERATURE
Credits: 3

An examination of literary language, genre conventions, and critical approaches, as well as an introduction to Spanish literary history.

Pre-Requisites

SP-205, 206 or permission of the instructor.

SP-307. SURVEY OF SPANISH LITERATURE I
Credits: 3

SP-307 is a systematic survey of peninsular (Spanish) literature from the Middle Ages through the 'Illustración' or Neoclassicism literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history.

Pre-Requisites

SP-205, 206 or permission of the instructor.

SP-308. SURVEY OF SPANISH LITERATURE II
Credits: 3

SP-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.

Pre-Requisites

SP-205, 206 or permission of the instructor.

SP-397. SEMINAR
Credits: 1-3

One to three creditsPresentations and discussions of selected topics. Maximum of three credits per student.

SP-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

EDSP. SPECIAL EDUCATION

EDSP-210. TEACHING STUDENTS WITH SPECIAL NEEDS (FORMERLY ED 210)

Terms Offered: Fall,Spring

This course is designed to enable pre-service teachers to develop the knowledge base and instructional skills necessary to meet the educational needs of students with special needs in the classroom. This course is designed to familiarize pre-service teachers with varied exceptionalities, including behavioral disorders, learning disabilities, mental retardation, Attention-Deficit-Hyperactivity-Disorder, and physical and sensory disabilities. The course will incorporate useful pedagogical information that addresses the learning abilities of exceptional students and enhances instruction across all subject areas.

Pre-Requisites

ED-190.

EDSP-225. SPECIAL EDUCATION METHODOLOGY I WITH FIELD EXPERIENCE (OPO COURSE)

Credits: 3

Terms Offered: Fall,Spring

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. Departmental permission is required.

Pre-Requisites

ED-190, EDSP-210.

EDSP-226. SPECIAL EDUCATION METHODOLOGY II WITH FIELD EXPERIENCE

Credits: 3

Terms Offered: Fall,Summer

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, 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. Departmental permission is required.

Pre-Requisites

ED-190 and EDSP-210.

EDSP-227. BEHAVIORAL MANAGEMENT IN SPECIAL EDUCATION WITH FIELD EXPERIENCE

Credits: 3

Terms Offered: Spring

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 assessment. A field experience component facilitates direct interaction with learners with special needs, supplemented by cooperative discussions of experiential applications to course content. Departmental permission is required.

Pre-Requisites

ED-190, EDSP-210.

EDSP-300. SPECIAL EDUCATION ASSESSMENT AND EVALUATION

Credits: 3

Terms Offered: Spring,Summer

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/transition-related evaluations. Cooperative discussions and use of case studies will focus on instructional decision-making based upon student learning profiles. Departmental permission is required.

Pre-Requisites

Admission to the Teacher Education Program.

EDSP-302. SPECIAL EDUCATION METHODS

Credits: 3

Terms Offered: Fall

This three-credit course is designed for pre-service special education teachers to learn and apply knowledge of language arts, math, science, and social studies content as well as differentiation, accommodations, and adaptations for students with disabilities in self-contained and inclusive academic settings. Emphasis will be placed on literacy development for students with various exceptionalities. Departmental permission is required.

Pre-Requisites

Admission to the Teacher Education Program.

EDSP-388. INCLUSIONARY PRACTICES

Credits: 3

Terms Offered: Fall,Spring

This course is designed 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.

Pre-Requisites

Admission to the Teacher Education Program.Co-requisite will be completed in conjunction with ED-390.

STE. STUDY TOUR EXPERIENCE

STE-300. STUDY TOUR EXPERIENCE
Credits: 3

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 fieldwork)

THE. THEATRE ARTS

THE-100. APPROACH TO THEATRE
Credits: 3

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-121. STAGECRAFT I
Credits: 3

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
Credits: 3

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. VOICE AND DICTION I
Credits: 3

Applied course introducing voice and speech training that combines practical vocal exercises with a method of analyzing and correcting speech problems. The expectation of the course is improvement in the voice and speech work of the individual student, as well as increased body awareness.

THE-190. THEATRE LABORATORY
Credits: 1-3

The production aspect of theatre including rehearsals, performances, scene shop, costume shop, lighting shop, propshop, stage management and box office. Required of Theatre Arts and Musical Theatre majors every semester.

THE-191. -291-391-491 DEPARTMENT PRACTICUM IN THEATRE PRODUCTION
Credits: 1-3

Credits can be awarded for a major contribution to Theatre Program productions. Approval required from the Director of Theatre.

THE-198. -298-398-498 TOPICS
Credits: 1-3

A study of topics of special interest not extensively treated in regularly offered courses.

THE-211. THEATRE HISTORY I
Credits: 3

A survey of the historical development and background of theatrical art from ancient times through the seventeenth century.

THE-214. SCRIPT ANALYSIS
Credits: 3

An approach to dramatic literature for the theatre artist to read, interpret, and analyze dramatic texts for production and performance values.

THE-216. DESIGN FOR THE THEATRE
Credits: 3

This class will explore through lecture and practical exercises the skills and concepts needed to produce scenic, lighting, and costume designs for the theatre.

THE-220. STAGECRAFT II
Credits: 3

Advanced exploration of the many physical facets of theatrical production in order to refine 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-224. RENDERING FOR THE THEATRE
Credits: 3

An introduction to drawing skills, rendering and visual communication for theatre.

THE-225. HISTORIC SCENIC STYLES
Credits: 3

A survey of art through design projects for the theatre.

THE-226. SCENIC PAINTING
Credits: 3

An introduction to scene painting techniques, methods, approaches and applications used by the scenic artist.

THE-232. ACTING II
Credits: 3

An introduction to the major theories, aims, and styles of acting through performing various roles and monologues in selected dramatic scenes.

Pre-Requisites

THE-131.

THE-233. VOICE AND DICTION II
Credits: 3

Applied course that continues the refinement of vocal expressiveness and interpretation exploring colloquial and complex texts for purposes of oral communication of the written texts.

THE-234. DIRECTING I
Credits: 3

An introduction to the principles of directing, including play selection, composition, casting, blocking, and rehearsing. Class and workshop.

Pre-Requisites

THE-131 or departmental permission.

THE-311. THEATRE HISTORY II
Credits: 3

A survey of the historical development and background of theatrical art from the eighteenth century to the present.

THE-321. SCENIC DESIGN
Credits: 3

Introduces through practical exercises concept development and skills needed to produce scenic designs for the theatre.

THE-322. LIGHTING DESIGN
Credits: 3

An introduction to designing lighting for theatre. Emphasis on the development of visual skills, idea development (script and image), and notation. Production work is required.

THE-331. ACTING III
Credits: 3

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.

Pre-Requisites

THE-131, THE-132, THE-232, or permission of the instructor.

THE-334. DIRECTING II
Credits: 3

A study of special problems in directing. Students will prepare a prompt book, critique productions, and direct a one-act play.

Pre-Requisites

THE-234.

THE-394. THE BUSINESS OF THEATRE/AUDITIONS
Credits: 1-3

Discussion of information and preparation to navigate the theatrical and entertainment industries.

THE-395. -396 INDEPENDENT RESEARCH
Credits: 1-3

Independent study and research for advanced students in theatre under the direction of a faculty member. A research paper at a more substantial level beyond a term paper is required.

Pre-Requisites

Approval of the department chairperson.

THE-399. COOPERATIVE EDUCATION
Credits: 1-6

Professional cooperative education placement in a private or 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.)

Pre-Requisites

Sophomore standing, minimum 2.0 cumulative GPA, consent of academic advisor, and approval of placement by the department chairperson.

THE-431. ACTING IV
Credits: 3

Scene study, analysis, and development of acting theories for a sophisticated preparation of audition material and rehearsal technique for the working actor.

Pre-Requisites

THE-131, 132, 232, 331, or permission of the instructor.

THE-493. SENIOR CAPSTONE
Credits: 1-3

Individual performance project intended to inspire students to take on responsibility for self-governance and, through effort, create a meaningful expression of their aesthetic.

WS. WOMEN'S AND GENDER STUDIES

WS-301. INTRODUCTION TO WOMEN'S AND GENDER STUDIES
Credits: 3

This course introduces students to theoretical assumptions that underlie the social construction of gender and the historical development of feminist thought. Students are also exposed to a variety of contemporary issues related to gender, sexuality, race, culture, class, the family, reproduction, and language in light of these theoretical assumptions. Students are expected to complete a senior capstone project that addresses gender as a category of analysis to be presented at the annual Women's and Gender Studies conference. Offered every spring semester.

Pre-Requisites

Junior or senior status.

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