

# **Wilkes University**

**2008 – 2009**

UNDERGRADUATE BULLETIN

*BACCALAUREATE STUDIES*

**WILKES UNIVERSITY**

Wilkes-Barre, Pennsylvania 18766

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The University complies with the Ethnic Intimidation Act of 1982 of the Commonwealth of Pennsylvania which provides additional penalties for the commission of illegal acts of intimidation when such actions are motivated by hatred of the victim's race, color, religion or national origin.

# FEDERAL AND STATE ACT COMPLIANCE

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

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# INTRODUCTION

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## **A MESSAGE FROM THE PROVOST**

Wilkes University cares about individual students and their future success. That caring is reflected in many ways: opportunities for mentorship, skillful advising, excellent teaching, high academic standards, challenging internships, interactive team-projects, varied extra-curricular activities linked to goals, and various learning methods including the use of technology. Mostly that caring is reflected in the interconnected learning journey we have mapped for all students.

The Wilkes University undergraduate experience is an interconnected learning journey that guides the student's intellectual, professional, cultural, social and personal growth and infuses a commitment to and capacity for life-long learning. The journey builds connections between academic programs and extra-curricular activity and provides exposure to a variety of experiential and team-based learning. Community engagement, citizenship, ethics, leadership and communication skills are an integral part of the experience. Students receive personalized advising and guidance that encourage them to both understand and broaden their individual learning styles. A dedicated work ethic, passion for personal excellence and a desire to contribute to society are central to the student's success in the Wilkes undergraduate experience.

The professional world you enter will change drastically within six months of graduation. The best gift we can give you is the ability to learn in order to adapt to each change you face. At graduation, Wilkes students will have earned far more than a diploma: self-knowledge, appreciation for diverse perspectives, personal growth, career preparation, and an understanding of what it means to be a life-long learner are the enduring benefits of the Wilkes undergraduate experience.

Wilkes University is committed to your professional and personal success.

## **Introduction**

### **WILKES UNIVERSITY**

#### **OUR MISSION:**

To educate our students for lifelong learning and success in a constantly evolving and multicultural world through a commitment to individualized attention, exceptional teaching, and academic excellence.

#### **OUR 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.

#### **OUR VALUES:**

As a university community, we work together with understanding, respect and integrity, guided by these principles:

- Student success is our defining purpose
- Lifelong learning is our passion
- Mentorship is our guiding behavior
- Community engagement is our civic imperative

## **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, it is the go-to place for services for minority and international students, faculty and staff and for those seeking an international experience as part of the Wilkes education.

Services provided include:

- Support for students from underrepresented groups such as women, ethnic and religious minorities, gay/lesbian/transsexual, 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 ESL Program for individuals wishing to improve their English language skills.
- Multicultural programming.
- Booking of the Multicultural Lounge in the Henry Student Center.

The Center is located on the third floor of Passan Hall and can be reached at extension 2029.

## **A GUIDE TO LEARNING**

Wilkes University is a dynamic community of learners which encourages students to take an active part in their education. Within the framework of a carefully considered and ever-changing 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 creatively, invited to read and write extensively, and expected to become proficient in quantitative reasoning and the use of modern technology as they prepare to become productive and responsible citizens. Mindful of the rapidly expanding knowledge base as well as the wide variety of learning and teaching styles in this community of learners, the University remains committed to the values articulated by Dr. Eugene S. Farley, its first 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 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.*

## AN INCLUSIVE COMMUNITY

Wilkes University welcomes and supports a diverse campus community. As acknowledged in our motto, "Unity Amidst Diversity," we encourage students of all races, religions, ethnic backgrounds and other diverse backgrounds to join the Wilkes family. Creating and nurturing diversity is a key value at Wilkes University. We are dedicated to providing mentorship and support to all Wilkes students to help empower them to meet their full potential and to help assure student academic and personal success.

See sections below on financial aid, housing, food service, academic support services and student activities.

In an effort to provide a welcoming environment for students of all backgrounds, we offer a variety of services, including:

1. Multicultural student activities;
2. Individualized academic and personal advising;
3. A variety of housing options, inclusive of the Multicultural Residence Hall;
4. An accommodation for special dietary needs that includes attentiveness to religious and personal diet requirements; and
5. A variety of merit- and need-based financial aid options, including funds that acknowledge student commitments to multiculturalism.

## STUDENT SERVICES CENTER

Many of the functions or activities described in the following pages are performed by the Student Services Center (SSC) team located on the first floor of University Center on Main. SSC was created to provide an integrated and centralized nexus point for the majority of student needs. While the SSC is staffed during regular university business hours, most services provided are also available online at [www.wilkes.edu](http://www.wilkes.edu). The primary goals of the SSC include exceptional service to students, the effective use of technology and the pursuit of ever-improving services to all constituencies. Those in need of assistance may reach the SSC staff at 570-408-2000 or [onestop@wilkes.edu](mailto:onestop@wilkes.edu). Some of the functions provided at the SSC include:

- All financial aid functions
- All student account functions
- All registration functions
- All cashier functions
- Meal plans
- Work-study matters

## ADMISSION PROCEDURES

### RECOMMENDED HIGH SCHOOL PREPARATION

A student's secondary school preparation should include a college preparatory curriculum. Such a curriculum generally includes four years of progressive courses in English, mathematics, science (including at least one laboratory component) and social science. While four years of each are not required, they are recommended for college preparation and admission. Elective courses should be chosen in academic subject areas pertaining to individual interest. Examples of quality electives include computer science, foreign language, and communications and may include the fine arts and technical courses as they relate to desired college majors. Depending on the academic discipline desired, different emphases might be placed on the high school curriculum completed by the applicant. Students whose preparation does not follow the pattern described above may still qualify for admission but such students must provide other strong evidence that they are prepared for the rigors of the academic requirements of college.

## **Introduction**

### **APPLICATION FOR ADMISSION**

Applications for admission and instructions regarding secondary school transcripts and records, letters of recommendation, standardized test reports and entrance examinations may be obtained by contacting the Admissions Office. Completed applications should be given or sent directly to the Admissions Office.

### **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 entering Wilkes University directly from high school. Students should take this examination before the second semester of their 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.

### **ACCEPTANCE FOR ADMISSION AND ADVANCED DEPOSIT**

A complete application file includes a completed and signed application for admission, an official copy of the most recent high school and/or college transcript, SAT and/or ACT scores (either official copies or transcribed onto the official high school transcript), and the \$45 application fee (\$20 online).

After the application file is complete the Admissions Office will provide a decision. Notification is done on a rolling basis and is generally completed within two to four weeks from the date the file is complete. A student may be required to complete an evaluative interview prior to a decision being made. While Wilkes practices rolling admissions, the University reserves the right to close admission with a two-week notification.

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

Prepharmacy applicants must complete an additional application, submit three letters of recommendation and interview with the School of Pharmacy's Admissions Committee to gain early admission. 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 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 audition for and interview with the department faculty to gain admission into those disciplines. In all cases, invitations to interview/audition are extended by the academic department(s) at their discretion.

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

### **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 (whether credits were earned or not). In some instances, SAT or ACT scores will be required. Some transfer students may be asked to complete assessment tests prior to admission.

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

Applicants must be in good academic standing with a minimum cumulative grade point average of 2.00 (C) to be considered for admission to Wilkes. Enrollment in the life science majors (biology, chemistry, biochemistry, and those with interests in pharmacy) is limited and is normally more competitive. All courses with a grade of 2.00 (C) or better that are comparable to the curriculum at Wilkes and from recognized, accredited institutions will be accepted for transfer. Students transferring into the nursing program may only register for courses after consultation with the Chairperson of the Department of Nursing.

Transfer students also 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. The student must also sit for the PCAT examination and submit official scores from the examination. After the file is complete, the School of Pharmacy may schedule a personal interview as the School deems appropriate.

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

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

All transfer students must satisfy the University's General Education Requirements. (See section below titled General Education Requirements for an explanation of these requirements.) However, to accommodate the large number of incoming transfer students, the University makes every effort to use courses and credits that are transferred into the institution in satisfaction of these General Education Requirements or to make other accommodations to ease the transition from one institution to another. For example, students who transfer certain science courses or sequences of science courses into Wilkes may be permitted to substitute these courses or sequences for the particular courses listed in Area II of the General Education Requirements. Transfer students and potential transfer students are urged to consult with the Admissions Office on these matters.

Grades earned in courses accepted for transfer are not included in the computation of the cumulative grade point average earned at Wilkes University.

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

University policy prohibits the Admissions Office 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 for admission on a case by case basis.

### CAMPUS VISITS

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

In addition to individualized campus visits, the Admissions Office hosts a number of Open Houses. 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 Admissions Office.

### ADMISSION OF INTERNATIONAL STUDENTS

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

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

Students should complete their application file by June 15 for the fall semester and November 15 for 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 high-ability students who wish to enter the University without completing the requirements for a high school diploma. To be considered, such

## **Introduction**

students must provide all the materials listed under the Acceptance of Admission and Deposit section and at least one letter from a high school official granting approval for early admission, and they must attend an interview with the Admissions Office.

### **READMISSION TO THE UNIVERSITY**

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

### **ADMISSION OF PART-TIME STUDENTS**

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

### **FROM PART-TIME TO FULL-TIME ADMISSION**

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 Admissions Office.

## **ADVANCED PLACEMENT CREDIT**

Wilkes University encourages students to work to their full capacity and to advance as rapidly as appropriate in their academic work. A number of opportunities 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, to demonstrate competencies beyond those normally associated with graduation from high school. Academic credit may be granted for such demonstrated competencies through a variety of channels as described below.

Nursing students are referred to the Nursing section of this Bulletin for detailed information on accelerated programs for LPN and RN students.

### **ADVANCED PLACEMENT PROGRAM**

Students who have successfully passed one or more of the Advanced Placement Tests administered by the College Entrance Examination Board may request advanced placement and/or academic credits. Advanced Placement means that the student may be scheduled for a course at a more advanced level; a decision on advanced placement is made after review of the examination by the academic department concerned. Credit means that the student receives credit toward the hours required for graduation. Generally, credit will be granted for scores of 3, 4, or 5 on the Advanced Placement examination. Occasionally, a personal interview may be required before placement and/or credit is awarded. No grades are assigned to the courses for which the student receives advanced placement credit. Information on specific course examinations and credit may be obtained from the Admissions Office.

### **CREDIT FOR MILITARY EXPERIENCE**

Students who have completed the special educational programs offered by branches of the American armed services may be granted academic credit for this coursework. Such students 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, and credits granted will be applied to the degree program as appropriate. For more information on this program, contact the Admissions Office.

### **CHALLENGE EXAMINATIONS**

After admission to Wilkes University, a student may wish 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 determine approval of the student's application in writing only on the basis of a judgement that the student has adequate background in the field. If denied a challenge examination, the student may appeal to the appropriate academic dean. The student may not challenge a course that he/she previously failed.

A \$90 per credit fee will be assessed by the Financial Management Office for each approved challenge examination. The student must present a receipt from the Financial Management Office to the department chairperson at least thirty days prior to the examination date. Credit for the course is given and transcribed if the student passes the examination. No grade or credit is recorded if the student does not pass the examination.

**COLLEGE-LEVEL EXAMINATION PROGRAM (CLEP)**

Wilkes University grants 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. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek academic credit through CLEP. Inquiries about CLEP should be addressed to the Admissions Office. Official scores on CLEP Subject Examinations should be forwarded directly to the Admissions Office.

**EXPERIENTIAL LEARNING**

Credit for life experience may be granted for documented college-level learning that a student acquired through non-collegiate experiences. This credit is awarded for the learning derived from life experiences, not for the experiences themselves.

Students who plan to petition for experiential learning credit must inform their academic advisor of their intent within the first semester of enrollment at the University. All other means of securing credit for demonstrated competencies must have been exhausted before applying for experiential learning credit.

Credit awarded for experiential learning is based exclusively on Wilkes' evaluation of the demonstrated knowledge that is presented in the student's petition for experiential learning credit. Specific guidelines and procedures for the petitioning and awarding of experiential learning credits are available to interested students at the Registrar's Office. 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.

## STUDENT EXPENSES

The following chart summarizes student expenses for the 2008–09 academic year, which officially begins with the Summer Session, 2008. Students are referred to the course descriptions in this Bulletin for laboratory and other fees associated with particular courses. Inquiries about particular charges should be addressed to the Controller's Office.

## STUDENT EXPENSES FOR 2008–09

<b>Full-time Undergraduate</b>	<b>Assessment</b>	<b>Each Semester</b>	<b>Total for Year</b>
<b>* Tuition (12-18 Credits)</b>	<b>Per Semester</b>	<b>\$11,925</b>	<b>\$23,850</b>
<b>First Professional (Pharmacy School)</b>			
<b>* Tuition (12–18 credits)</b>	<b>Per Semester</b>	<b>\$12,675</b>	<b>\$25,350</b>
<b>Full-time and First Professional Student Fees</b>			
<b>General University Fee</b>	<b>Per Semester</b>	<b>\$355</b>	<b>\$ 710</b>
<b>Pharmacy Experiential Fee (Begins P-1)</b>	<b>Per Semester</b>	<b>\$420</b>	<b>\$ 840</b>
<b>Activity Fee</b>	<b>Per Semester</b>	<b>\$115</b>	<b>\$ 230</b>
<b>Technology Fee</b>	<b>Per Semester</b>	<b>\$135</b>	<b>\$ 270</b>
<b>Student Center Fee</b>	<b>Per Semester</b>	<b>\$ 25</b>	<b>\$ 50</b>
<b>Recreation Fee</b>	<b>Per Semester</b>	<b>\$ 30</b>	<b>\$ 60</b>
<i>* Credits above 18 will be assessed at the rate of \$660 per credit hour.</i>			
<b>Room and Board</b>			
<i>Room (Residence Hall):</i>			
<b>Apartment Style</b>	<b>Per Semester</b>	<b>\$ 3,590</b>	<b>\$ 7,180</b>
<b>Dormitory Style</b>	<b>Per Semester</b>	<b>\$ 3,245</b>	<b>\$ 6,490</b>
<b>Single Room</b>	<b>Per Semester</b>	<b>\$ 3,410</b>	<b>\$ 6,820</b>
<i>Meal Plans:</i>			
<b>Medallion Blue</b>	<b>Per Semester</b>	<b>\$ 1,825</b>	<b>\$ 3,650</b>
<b>Medallion Blue Plus</b>	<b>Per Semester</b>	<b>\$ 1,930</b>	<b>\$ 3,860</b>
<b>Medallion Gold</b>	<b>Per Semester</b>	<b>\$ 2,095</b>	<b>\$ 4,190</b>
<b>Medallion Gold Plus</b>	<b>Per Semester</b>	<b>\$ 2,145</b>	<b>\$ 4,290</b>
<b>Senior Plan</b>	<b>Per Semester</b>	<b>\$ 930</b>	<b>\$ 1,860</b>
<b>Part-time Undergraduate:</b>			
<b>Tuition (1-11 1/2 credits)</b>	<b>Per Credit</b>	<b>\$ 660</b>	<b>—</b>
<b>General University Fee</b>	<b>Per Credit</b>	<b>\$ 30</b>	<b>—</b>
<b>Technology Fee</b>	<b>Per Credit</b>	<b>\$ 30</b>	<b>—</b>
<b>Tuition (Senior Citizens)</b>	<b>Per Credit</b>	<b>\$ 330</b>	<b>—</b>
<b>Summer Sessions — Undergraduate:</b>			
<b>Tuition</b>	<b>Per Credit</b>	<b>\$ 660</b>	<b>—</b>
<b>General University Fee</b>	<b>Per Credit</b>	<b>\$ 30</b>	<b>—</b>
<b>Technology Fee</b>	<b>Per Credit</b>	<b>\$ 30</b>	<b>—</b>
<b>Summer Board</b>	<b>Per Week</b>	<b>\$ 190</b>	<b>—</b>
<b>Summer Room</b>	<b>Per Week</b>	<b>\$ 190</b>	<b>—</b>
<b>Other Fees:</b>			
<b>Acceptance Deposit:</b>			
<b>Tuition (includes room reservation, if applicable)</b>	<b>One Time</b>	<b>\$ 300</b>	<b>—</b>
<b>Application Fee</b>	<b>One Time</b>	<b>\$ 40</b>	<b>—</b>

<b>Applied Music Fee:</b>			
4 - 1/2 hour private lessons		\$ 330	—
14 - hour private lessons		\$ 660	—
<b>Room Reservation (returning students)</b>	<b>Annual</b>	<b>\$ 100</b>	
<b>Audit Fee (Undergraduate Courses):</b>			
<b>Full-time Undergraduate and Pharmacy Students</b>	<b>No Tuition Charge</b>	<b>—</b>	<b>—</b>
<b>Part-time Undergraduate Students</b>	<b>Per Credit</b>	<b>\$ 330</b>	<b>—</b>
<b>Senior Citizens</b>	<b>Per Credit</b>	<b>\$ 20</b>	
<b>Other Fees and Charges:</b>	<b>Assessment</b>	<b>Each Semester</b>	<b>Total for Year</b>
<b>Challenge Exam</b>	<b>Per Credit</b>	<b>\$ 90</b>	<b>—</b>
<b>English as a Second Language</b>	<b>Per Semester</b>	<b>\$5,435</b>	<b>\$16,305</b>
<b>Graduation Fee</b>	<b>One Time</b>	<b>\$ 160</b>	<b>—</b>
<b>Late Registration Fee</b>	<b>Per Semester</b>	<b>\$ 50</b>	<b>—</b>
<b>Medical Technology Fee (During Clinical Training)</b>	<b>Per Semester</b>	<b>\$1,360</b>	<b>\$ 2,720</b>
<b>Accompanist Fee</b>	<b>Per Semester</b>	<b>\$ 50</b>	<b>\$ 100</b>
<b>New Student Matriculation</b>	<b>One Time</b>	<b>\$ 135</b>	<b>—</b>
<b>Replacement of Lost ID Cards</b>	<b>Each</b>	<b>\$ 30</b>	<b>—</b>
<b>Returned Check Charge</b>	<b>Each</b>	<b>\$ 50</b>	<b>—</b>
<b>Televideo Fee</b>	<b>Per Course</b>	<b>\$ 50</b>	<b>—</b>

*Students are advised to request a refund of credit balances in their accounts should they desire a refund.*

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### **PAYMENT OF CHARGES**

Prior to the beginning of each semester, invoices listing all current semester charges and approved financial aid are mailed to all registered students. All payments can be mailed directly to Wilkes University - Student / P.O. Box 8500-54693 / Philadelphia, PA 19178-4693. Visa, Discover and Mastercard payments can be made on the Wilkes University web site ([www.wilkes.edu](http://www.wilkes.edu)) or by calling the Student Services Center at (570) 408-2000. Any question concerning charges or payments should be directed to (570) 408-2000 or [onestop@wilkes.edu](mailto:onestop@wilkes.edu). Payments can be made in person at the cashier's window located on the first floor of University Center on Main.

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

#### **FALL AND SPRING FULL-TIME TUITION**

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

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

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

#### **SUMMER, FALL, AND SPRING PART-TIME TUITION**

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

#### **INTERSESSION TUITION**

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

#### **DEFERRED PAYMENT POLICY (EMPLOYER REIMBURSED)**

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

#### **MONTHLY PAYMENTS**

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

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

Key Education Resource Group for information, call 1-800-key-lend

PNC Bank Resource Loan for information, call 1-800-762-1001

First Union Bank of Delaware for information, call 1-800-504-4097

## VISA/MASTERCARD

Wilkes University accepts VISA and MasterCard for tuition and fee payments at our web site, [www.wilkes.edu](http://www.wilkes.edu).

## TUITION EXCHANGE

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

## REFUNDS

Students who officially withdraw (see section in this Bulletin on Official Withdrawal) from courses may be eligible for a partial refund of tuition charges. 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/Registrar.

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

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

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

## REFUND SCHEDULE\*

<b>Circumstance</b>	<b>Time of Withdrawal</b>	<b>Refund</b>
<i>Academic Year:</i>		
<b>Tuition:</b>	<b>The University will cancel 100 percent of the tuition charges, less a deposit of \$300, if written notice of cancellation is received by Student Services/Registrar on or before the first day of classes. Failure to submit proper written notification will result in the assessment of full charges.</b>	
	<b>Policy guidelines for refunds processed after the first day of classes are as follows:</b>	
<b>Total Withdrawal</b>	<b>Beginning with the 2008–2009 academic year, students who withdraw from Wilkes will be entitled to an adjustment of tuition, fee, and room and board charges according to the following refund schedule:</b>	
	<b>First week</b>	<b>100%</b>
	<b>Second week</b>	<b>85%</b>
	<b>Third week</b>	<b>80%</b>
	<b>Fourth week</b>	<b>75%</b>
	<b>Fifth week</b>	<b>70%</b>
	<b>Sixth week</b>	<b>60%</b>
	<b>Seventh week</b>	<b>55%</b>
	<b>Eighth week</b>	<b>50%</b>
	<b>Ninth week</b>	<b>40%</b>
	<b>After ninth week</b>	<b>no adjustment</b>
<b>Full-time to Part-time and Reduction of Part-time Load</b>	<b>Above time-schedule applies for courses dropped</b>	<b>Charges based on the number of credits after the withdrawal</b>
Room and Board:		
<b>Room</b>	<b>The institution will refund housing rental charges, less a deposit of \$100, so long as written notification of cancellation is made to the Director, Residence Life Office, on or before the first day of classes each semester. After the first day of classes, charges will be adjusted in accordance with</b>	

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**the above schedule.**

**Board**

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

**Summer Sessions**

**First week of first or second sessions and first two weeks of evening session                      50%**

**After stated period                      No refund**

**Weekend College**

**Through second weekend                      50%**

**After second weekend                      No refund**

*\* 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 Controller's Office upon student request.*

## FINANCIAL AID

Wilkes University maintains an extensive program of financial assistance for its students in the form of scholarships, grants, loans, and part-time employment. To assist qualified students, the University receives substantial gifts each year from friends and alumni. These funds, combined with those furnished by the federal and state governments, are offered to students in financial aid packages. All students are encouraged to apply for financial assistance, both need-based and achievement-based.

Students with questions about financial aid or students seeking applications for financial aid should contact the Student Services Center or Admissions Office. More detailed information regarding the financial aid programs and requirements is included in the *Consumer's Guide to Financial Aid, Costs, and Charges at Wilkes University*, which is also available at the Financial Aid Office and on the Wilkes University Web Site ([www.wilkes.edu](http://www.wilkes.edu)).

### APPLICATION PROCEDURES

1. Complete the Free Application for Federal Student Aid.
2. Complete the appropriate state application for financial aid.
3. Students who desire to participate in the Stafford Loan and/or the PLUS Program must also complete the appropriate promissory note application.

### RENEWAL OF FINANCIAL AID

Financial aid is awarded on an annual basis; therefore, students must reapply each year. In addition to showing 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.

### 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.

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

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

**Loans:** Financial assistance for which the recipient assumes the obligation to repay the amount of the funds received. Most educational loans provide for payment of principal and interest to begin sometime after the student graduates or stops attending an approved institution on at least a half-time basis. Repayment of the PLUS Loan begins within a short time after funds are disbursed. Two emergency loan funds have been established at the University to help students meet small financial emergencies. The Florence and Joseph A. Goldman Loan Fund and the Robert W. and Carol R. Hall Student Loan Fund provide small, interest-free loans which are to be repaid at the earliest practical time, usually 30 days, so that other students may receive needed assistance from these revolving loan funds.

**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. Students should inquire about these opportunities at the Student Services Center. The Office of Career Services also operates a Job Location Development program (JLD) to help students obtain employment opportunities off-campus. Students are paid by the employer for whom they work.

### WITHDRAWAL – RETURN OF FINANCIAL AID FUNDS

In accordance with federal regulations, those students who receive federal financial aid and who withdraw from the University during the first 60% of a semester will have their federal financial aid (Pell Grants, Supplemental Educational Opportunity Grants, Perkins Loans, Nursing Loans, Stafford

## **Introduction**

Loans and PLUS Loans) adjusted based on the percent of the semester completed prior to the withdrawal. That is, students will be entitled to retain the same percent of the federal financial aid received as the percent of the semester completed. This percent is calculated by dividing the number of days in the semester (excluding breaks of five days or longer) into the number of days completed prior to the withdrawal (excluding breaks of five days or longer). The date of withdrawal will be the date the student begins the withdrawal process at the Registrar's Office unless attendance in class is documented after that date; in that case, the last date of documented attendance will be the official date of withdrawal. (See section on Withdrawals in this Bulletin.)

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

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

- Unsubsidized Stafford Loans
- Subsidized Stafford Loans
- PLUS Loans
- Perkins Loans
- Pell Grant
- Supplemental Educational Opportunity Grants
- 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.

### **VETERANS' ASSISTANCE PROGRAMS (VA)**

This special program provides a wide range of benefits to those who have served in the armed forces and in some cases to the dependent children of veterans. Interested persons should contact their local VA Office to obtain information concerning GI Education Assistance, Veterans Education Programs, Veterans Rehabilitation, Veteran Educational Loans, the Veteran Work-Study Program, and other sources of Veterans Assistance. The University also has a Veterans Affairs Office, located in Passan Hall, to assist students in obtaining benefits.

### **FINANCIAL AID FOR PART-TIME STUDENTS**

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

### **FINANCIAL AID FOR STUDENTS SEEKING A SECOND DEGREE**

Only the federal Stafford Loan and the PLUS Loan are available to students seeking a second degree. The Free Application for Federal Student Aid and the appropriate loan applications 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. Contact the Student Services Center for more information.

## FINANCIAL AID FOR PHARMACY STUDENTS IN YEARS FIVE AND SIX

Since years five and six of the pharmacy program contain coursework that is considered post-baccalaureate level, these years are professional/graduate level for financial aid purposes. Therefore, students enrolled at this level are considered independent for financial aid purposes and qualify only for financial aid available to graduate/professional students. This financial aid includes the subsidized and unsubsidized Stafford Loans with an annual loan maximum of \$18,500 and private loans. Students will not qualify for any federal, state or institutional grants or scholarships.

## SUMMARY OF FINANCIAL ASSISTANCE PROGRAMS\*

PROGRAM	APPLICATION(S) REQUIRED	FILING DEADLINE
<b>SCHOLARSHIPS</b>		
<b>University Scholarship</b>	<b>Free Application for Federal Student Aid (FAFSA)</b>	<b>Upperclass student deadline — May 1, 2008</b>
<b>Presidential Scholarship</b>		<b>Incoming student priority date — March 1, 2008</b>
<b>Dean's Scholarship</b>		<b>Contact Wilkes Admissions Office</b>
<b>Leadership Scholarship</b>		
<b>Room &amp; Board Scholarship</b>		
<b>Wilkes Named Scholarships</b>		
<b>Transfer Student Scholarship</b>		
<b>ROTC Scholarship</b>	<b>Contact the Wilkes ROTC Office</b>	<b>Contact ROTC Office</b>
<b>GRANTS</b>		
<b>Federal Pell Grant</b>	<b>Free Application for Federal Student Aid (FAFSA)</b>	<b>June 30, 2009</b>
<b>PHEAA Grant</b>		<b>May 1, 2008</b>
<b>Federal SEOG Grant</b>		<b>Upperclass student deadline — May 1, 2008</b>
<b>Wilkes Need-Based Grant</b>		<b>Incoming student priority date — March 1, 2008</b>
<b>Office of Vocational Rehabilitation Grant</b>	<b>Contact the Office of Vocational Rehabilitation</b>	<b>Contact Office of Vocational Rehabilitation</b>
<b>LOANS</b>		
<b>Federal Carl Perkins Loan</b>	<b>Free Application for Federal Student Aid (FAFSA) and Wilkes Financial Aid Application</b>	<b>Upperclass student deadline — May 1, 2008</b>
<b>Federal Nursing Student Loan</b>		<b>Incoming student priority date — March 1, 2008</b>
<b>Gulf Oil Loan</b>		
<b>Rulison Evans Loan</b>		
<b>Federal Stafford Loan</b>	<b>Free Application for Federal Student Aid (FAFSA) and initial MPN</b>	<b>Six to eight weeks prior to need for loan proceeds</b>
<b>Federal Unsub Stafford Loan</b>		

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<b>Federal PLUS Loan</b>	<b>PLUS Loan Application</b>	<b>Six to eight weeks prior to need for loan proceeds</b>
EMPLOYMENT		
<b>Federal College Work-Study</b>	<b>Free Application for Federal Student Aid (FAFSA) and Wilkes Application for Student Employment</b>	<b>Prior to beginning work on campus</b>
<b>State Work-Study Program</b>	<b>Free Application for Federal Student Aid (FAFSA) and SWSP Work-Study Application</b>	<b>Prior to beginning work on campus</b>
<b>Institutional Employment</b>	<b>Wilkes Application for Student Employment and Free Application for Federal Student Aid (FAFSA)</b>	<b>Prior to beginning work on campus</b>

## STUDENT AFFAIRS AND ATHLETICS

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 development through a variety of activities, programs, organizations and cultural opportunities. All campus organizations are open to all students, and all of them work in close cooperation with faculty advisors and the Student Affairs staff.

The information that follows gives a brief sketch of some of these activities and organizations. An on-line Student Handbook, which explains governance, outlines University regulations, and provides a directory of student activities, is available to all students.

### RESIDENCE LIFE

The Residence Life Program at Wilkes is committed to providing a living environment that is supportive of academic pursuits as well as contributing 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 who have been selected on the basis of character, leadership and their ability to interact 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 University policies are upheld.

The Residence Life Program offers students a wide variety of living situations. Each residence hall has its own unique style, whether it is a traditional residence hall such as Evans, one of the older mansions such as Weiss, or apartment-style living at University Towers. 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 take part in the University Meal Plan. Meals are served in the dining hall in the Student Center. Residents have a variety of meal-plan options.

### STUDENT ACTIVITIES

An active Student Government and numerous campus clubs and special-interest organizations provide a structure of activities for student life outside of the classroom. More than 60 clubs and organizations are recognized by Student Government and the University. The University requires that all campus organizations be open to all students; consequently, groups that are exclusive do not exist. Volunteer Action and Community Service are a cornerstone of Wilkes' mission and tradition. Eligibility for Student Government funding requires that clubs and organizations be actively involved in community service. 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 events at the University.

Student publications include the Beacon, a weekly newspaper published during the academic year; the Manuscript, an annual journal of art, poetry and fiction; and the Amnicola, the University yearbook. The University also maintains WCLH, an FM radio station that is operated by students and broadcasts daily at 90.7 MHz, and a television station. Co-curricular activities depend on the interests and energies of students.

## HONOR SOCIETIES

Several chapters of national and international honor societies have been established on the Wilkes campus. They include:

ALPHA CHI (*Upper Division Students*)  
 ALPHA KAPPA DELTA (*Sociology*)  
 ALPHA SIGMA LAMBDA (*Part-time Students*)  
 BETA BETA BETA (*Biology*)  
 CHI ALPHA EPSILON (*Act 101 Students*)  
 DELTA MU DELTA (*Business and Accounting*)  
 ETA KAPPA NU (*Electrical Engineering*)  
 KAPPA DELTA PI (*Education*)  
 LAMBDA PI ETA (*Communications*)

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OMICRON DELTA EPSILON (*Economics*)

PI KAPPA DELTA (*Forensics*)

PI SIGMA ALPHA (*Political Science*)

PHI ALPHA THETA (*History*)

PSI CHI (*Psychology*)

RHO CHI (*Pharmacy*)

SIGMA PI SIGMA (*Physics*)

SIGMA TAU DELTA (*English*)

SIGMA THETA TAU (*Nursing*)

SIGMA XI (*Scientific Research*)

### **INTRAMURAL AND INTERCOLLEGIATE ATHLETICS**

Wilkes sponsors an active intramural sports program as well as intercollegiate competition in 16 varsity sports. Varsity programs 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. The University is a member of the Middle Atlantic Conference (MAC), the Metropolitan Conference for Wrestling, 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 one-day special events, using the indoor facilities of the Marts Center and the UCoM Recreation and Athletic Center as well as 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 programs. The University seeks to establish and maintain an environment in which a student-athlete's athletic activities are conducted as an integral part of the educational experience. The athletic 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 athletics competition throughout the University community.

### **CULTURAL AFFAIRS**

A variety of programs, exhibits, workshops, and performances are provided to enhance community life and to help individuals attain career goals. The Sordoni Art Gallery brings programming in the fine arts to both the campus and the Wilkes-Barre area. Throughout the year, music and theatre programs offer concerts and dramatic productions at the Dorothy Dickson Darte Center for the Performing Arts.

Continuing education courses are offered for personal educational enrichment as well as for the preparation of new entrants to the job market and the in-service training of established professionals.

### **UNIVERSITY ACTIVITIES**

In addition to the curricular and co-curricular activities of particular organizations, a number of 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 and cultural 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. A carefully selected Concert and Lecture Series is presented throughout the academic year at the Dorothy Dickson Darte Center for the Performing Arts and is open to the campus and to the community without charge, as are regular concerts and recitals.

## **STUDENT SERVICES**

Wilkes takes seriously its commitment to encourage students to discover their own abilities and potential and to assist them in making sound, independent decisions. Students are expected to consult regularly with classroom instructors, faculty advisors, the student affairs deans,

department chairpersons, or academic deans regarding academic matters. Recognizing that students sometimes need additional guidance in resolving personal, social or academic problems, the University has also institutionalized a variety of programs to assist students, individually and in groups.

**THE STUDENT AFFAIRS OFFICE**

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. Staff members seek to help students resolve personal and academic problems, coordinate emergency situations involving students, 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 a sounding board for student concerns. The Offices of Residence Life, Career Services, Student Activities, Health Services, Campus Counseling, Cooperative Education, University College, Upward Bound, Learning Center/Act 101, Multicultural Affairs, Athletics, and Campus Interfaith Volunteer Services report to the Vice President for Student Affairs.

**NEW-STUDENT ORIENTATION PROGRAM**

The transition from the directed work of the high school to the independent and more intensive work of the university is eased by introducing new students to the University and its services before classes formally begin. Two orientation periods during the summer and the days preceding the start of the term are set aside to assist new students in planning their academic programs and learning about the campus, the curriculum, and student activities. At this time, students are also introduced to their academic advisors and briefed on the advising system.

**HEALTH SERVICE**

The Office of University Health Service maintains regular hours while the University is in session for the fall and spring semesters. A Nurse Practitioner and a Registered Nurse are available while Health Service is open, and 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 Service does not provide clinic hours during the summer months.

In times of escalating health care costs it is required that students have health insurance coverage.

**CAMPUS COUNSELING**

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

**SPECIAL ADVISING AND COUNSELING SERVICES**

Due to the intricacies of certain programs or requirements imposed by professional and graduate schools or external accrediting agencies, the University has named advisors in special areas of interest. Specially trained pre-medical advisors function as special advisors to 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 relating to studying abroad and career and professional opportunities in this field. The Office of Student Development counsels and advises students interested in this program or a variety of other internship possibilities. Information on any of these special services is available at the Registrar's Office, the Office of Student Affairs, and the Student Development Office.

**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 are offered to assist students at all stages of their career development. Students are encouraged to participate in this service by registering at Conyngham Hall at 130 South River Street.

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Typical services of the Office include career counseling, assistance with resume preparation, interviewing skills, and job search strategies. In addition, the Career Services Office provides a credentials service for all registered candidates, maintains contact with professional and educational organizations through an on-campus recruiting program and a large employment fair, and shares job information on various full-time and part-time opportunities of interest to students and alumni on [wilkes.edu/careers](http://wilkes.edu/careers).

Flexibility and planning are essential for choosing a major and determining career goals. A Career Resource Library and Web-based and individual assessments are available to identify a variety of career options for students in any major, and the Office of Career Services exists to help the student effectively negotiate these and other career planning tasks. Students desiring assistance with internship and cooperative education programs may contact the Cooperative Education Coordinator in the Student Development Office at the Student Center.

## **WRITING CENTER**

The Writing Center, located in the lower level of Breiseth Hall, is available to all Wilkes students who seek personal assistance with writing problems or writing assignments. Students who experience writing difficulties in courses may be referred to the Center to hone their writing skills.

## **DAY CARE SERVICE**

The University provides partially subsidized day care service to full-time students with a certain group of approved local providers. The service offers regular day care services at a reduced fee to students. Children must attend on a regular, scheduled basis to be eligible for the reduced fee. Day care services are coordinated through University College.

## **BOOKSTORE**

Wilkes University and King's College, through Barnes & Noble College Booksellers, Inc., operate a joint bookstore facility on South Main Street, just off Public Square. The "academic superstore" is designed to meet the needs of students as well as the community at large. The store features full textbook services — both new and used; a full selection of general trade books; a local authors section, a full service Starbucks Café and lounge chairs and tables. It also houses a "spirit" shop featuring logo merchandise for Wilkes University.

## **UNIVERSITY COLLEGE**

University College, housed on the third floor of Conyngham Hall, is the point of entry and home for all undeclared students until they select their major field of study, 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, and houses disability support services.

## **STUDENT ADVISEMENT**

Specially selected faculty members and administrators have been designated freshman advisors on the basis of their knowledge of curricular matters and, more generally, the University and its services. Each freshman is assigned to a freshman advisor during the orientation period and will meet with this advisor regularly to arrange schedules, discuss academic and career plans, and deal with problems or questions as they arise. These faculty advisors add the special expertise of their disciplines to the advising process. If the student has indicated a major at admission, he or she will be advised by a freshman advisor from the relevant department or program, from the start of his or her studies. Students who have not identified a major 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 has been chosen; these students then are assigned to a departmental advisor.

## **INTERNATIONAL STUDENTS**

The Center for Global Education and Diversity provides immigration and visa information and assistance as well as advice on personal issues. The Center also provides orientation to life in the United States and the American educational system; assists students in dealings with 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.

**ENGLISH AS A SECOND LANGUAGE (ESL) PROGRAM AT WILKES UNIVERSITY**

The mission of the ESL program 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 America. To this end, the ESL program provides a curriculum, certified faculty, classroom materials, and teaching methods that are well grounded in both theory and practice, based on the latest research findings in the field of second language learning and teaching. The program aims to:

- Provide quality academic English language instruction for students whose native language is not English;
- Provide preparation for further academic study in the U.S.;
- Provide learner-centered instruction;
- Provide advising for successful attainment of academic or professional goals;
- Provide opportunities for intercultural experiences and cooperation;
- Provide services relating to admission, counseling, academic life, and the general success of international students attending Wilkes University;
- Provide English language instruction for personal growth;
- Provide 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 ESL program at Wilkes University.

**ACT 101 PROGRAM**

A 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 in an effort to acquaint students with and help them adjust to the many new experiences provided by a college education. The program provides for tutoring and counseling to enhance the students' potential for success in college. Inquiries about this program may be directed to the Admissions Office or the Act 101 Office, third floor, Conyngham Hall.

**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.

## ACADEMIC INFORMATION

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

### CALENDAR

The academic year consists of two semesters. 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. Commencement exercises are held at the close of the spring semester as well as at the close of the summer sessions.

The University also provides a broad range of courses in three different summer sessions. The first summer session begins in early June and concludes in mid-July; the second session begins in mid-July and ends in late August.

A nine-week evening session complements these two day-school summer sessions; the evening session begins in early June and ends in early August.

### COURSE NUMBERING

Courses are designated by three-digit numbers. The first digit denotes the level of the course as follows:

100-199	Introductory courses
200-299	Intermediate courses
300-399	Advanced undergraduate courses
400-499	Courses for graduate students and advanced undergraduates
500-599	Courses for graduate students only (except with special permission)

The second digit indicates subfield within a discipline, as defined by each department. The third digit may designate, when appropriate, either sequencing or time of year, at the discretion of the department.

## DEGREE PROGRAMS

Wilkes offers undergraduate programs leading to the Bachelor of Arts, Bachelor of Business Administration, and Bachelor of Science degrees. Degree programs have been carefully designed so that students may meet the entrance requirements of graduate and professional schools, but they also are structured to ensure that all Wilkes undergraduate degrees represent the broad and solid base of general education that is central to responsible participation in human affairs. Each degree program is designed to achieve particular educational objectives; however, all baccalaureate programs share a set of distinctive goals, which define the Wilkes approach to baccalaureate education.

### THE CURRICULUM

The Wilkes Curriculum has three components. The first is a set of General Education Requirements, which provides a common foundation in the arts and sciences for all bachelor's degrees awarded by the University.

The second component is the major. This component provides for in-depth study of a field of specialization. The requirements for each major offered are found under the departmental listings.

The third component, elective courses, enables students to pursue personal interests, to explore new areas of learning, or to complete a minor or a second major.

### GENERAL EDUCATION: THE FIRST CURRICULAR COMPONENT

The General Education Requirements are an affirmation of the strong belief of the Wilkes faculty in the value of study in the arts and sciences for all students. They are intended to serve as a foundation on which all degree programs are based and include a broad spectrum of courses designed to stimulate the student's intellectual, personal, and social development.

The General Education Requirements for all programs follow. Students are urged to use this outline of these Requirements as an explanation of the Recommended Course Sequence provided for each major in this Bulletin. With the exception of English 101 and First-Year Foundations 101, which are specifically designated, the designation "Distribution Requirements" in the Recommended Course Sequence for each major is a reference back to this statement of the General Education Requirements.

It is the student's responsibility to ensure that all degree requirements, including the General Education Requirements, are satisfied.

### GENERAL EDUCATION REQUIREMENTS

The faculty has approved the following set of General Education Requirements that a student must satisfy in order to be eligible for graduation.

#### SKILLS REQUIREMENTS

0-13 HOURS\*

##### *I. Computer Literacy*

Completion of CS 115 or higher

OR

2 Computer Intensive courses

minimum 3 credit hours

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

##### *II. Written Communication*

English Composition

4 credit hours

##### *III. Oral Communication*

Completion of COM 101

OR

Two Oral Presentation Option (OPO) courses

minimum 3 credit hours

## Introduction

The Registrar's Office maintains a list of OPO courses. OPO courses enable a specified number of students (or all students) in the course in a semester to complete the requirements for an OPO course. Satisfaction of the OPO requirement will not add credits to most students' programs.

### IV. Quantitative Reasoning

Completion of MTH 101 or higher minimum 3 credit hours

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

FIRST-YEAR FOUNDATIONS 0/3 CREDIT HOURS

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

Each First-Year Foundations (FYF) course will provide techniques that assist first-year students in achieving long-term academic success at Wilkes University. Specifically, each of these courses will help develop the student's critical thinking skills, provide techniques for the effective evaluation and utilization of information resources, and aid the student in making the necessary academic transition from high school to the collegiate level.

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

DISTRIBUTION REQUIREMENTS 24 CREDIT HOURS

DISTRIBUTION REQUIREMENTS

DISTRIBUTION REQUIREMENTS 24 CREDIT HOURS

*Area I. The Humanities—* *minimum 9 credit hours*

ENG 120 – Introduction to Literature 3 credit hours

HST 101 – The Historical Foundations of the Modern World 3 credit hours

FOREIGN LANGUAGE at level of competence 3 credit hours

OR

PHL 101 – Introduction to Philosophy 3 credit hours

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

*Area II. The Scientific World—* *minimum 6 credit hours*

Students must complete two (2) of the courses listed below. These courses must be within two (2) different sub-areas listed below. At least one (1) of the two (2) courses must contain a laboratory component.

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

A number of degree programs satisfy the core requirements in this Area on the basis of successful completion of the science requirements within the individual program. The following programs meet the aforementioned criteria:

Applied and Engineering Sciences, Biochemistry, Biology, Chemistry, Computer Science (B.S. degree program only), Earth and Environmental Engineering (Electrical, Environmental, and Mechanical), EngiManagement, Health Sciences, Mathematics (B.S. degree program only), Nursing, Prepharmacy, 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, contact the Office of the Dean of the College of Science and Engineering. Forms for course substitution can be obtained from the Student Services Center and must be returned to the Student Services Center when completed.

*Area III. The Social Sciences—*

*minimum 6 credit hours*

Each of the following courses is three (3) credit hours. Students must complete two (2) of the five (5) courses listed below.

- ANT 101 – Introduction to Anthropology
- EC 102 – Principles of Economics II
- PS 111 – Introduction to American Politics
- PSY 101 – General Psychology
- 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, contact the Office of the Dean of the College of Arts, Humanities, and Social Sciences. Forms for course substitution can be obtained from the Student Services Center and must be returned to the Student Services Center when completed.

*Area IV. The Visual and Performing Arts—*

*minimum 3 credit hours*

Each of the following courses is three (3) credit hours. Students must complete one (1) of the four (4) courses listed below.

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

Through successful audition and written permission of the Chairperson of the Department of Visual and Performing Arts, students may substitute three (3) hours of performance/studio experience for the above requirement. A copy of the written permission must be on file in the Registrar's Office.

**SENIOR CAPSTONE**

All students will be required to complete a senior capstone course that is determined by their academic program. For more details, see the Bulletin listing for your academic program. Satisfaction of this requirement will not add credit hours to most students' programs.

**SELECTION OF A MAJOR: THE SECOND CURRICULAR COMPONENT**

Each student must complete a major in a discipline or area of concentration in order to graduate. Specific requirements for each major are described in detail in the departmental listing in this Bulletin. The major must be declared prior to the first semester of the student's junior year.

**Bachelor of Arts Degree — Majors**

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

Biochemistry	Elementary Education	Musical Theme
Biology	English	Philosophy
Chemistry	French	Political Science
Communication Studies	History	Psychology
Computer Science	Individualized Studies	Sociology
Criminology	Integrative Media	Spanish
Earth and Environmental Sciences	International Studies	Theatre Arts
	Mathematics	

**Bachelor of Science Degrees — Majors**

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

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

## Introduction

Chemistry  
Computer Information Systems

Environmental Engineering

Nursing  
Pharmaceutical Sciences

### Bachelor of Business Administration Degree — Majors in Business Administration and Entrepreneurship

#### Teacher Education

Students who wish to prepare for a teaching career in secondary schools select an appropriate disciplinary major and use their elective credits to meet teacher certification requirements. Music Education majors must complete all components of the program and secure the approval of the faculty of the Department of Visual and Performing Arts. Students who wish to prepare for a teaching career in elementary education major in Elementary Education. A list of the courses needed for certification is provided in the departmental description of the Department of Education and in this Bulletin. Students planning a teaching career must seek counseling in the Department of Education early in their first semester.

#### ELECTIVE CREDITS: THE THIRD CURRICULAR COMPONENT

The third component of the Wilkes 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 or to pursue an interest or to meet requirements for admission to graduate or professional schools or to hone particular skills.

#### Minors

One of the common reasons students select elective courses is to complete a minor in a field other than the student's major field. Although not required for graduation, minors are formally recognized on the student's transcript and may enhance a student's credentials. (Students majoring in a discipline are ineligible for formal recognition of a minor in the same discipline.) Students should consult the departmental listing in this Bulletin to review the specific requirements for formal recognition of a minor field in particular disciplines. They must complete the appropriate form in the Student Services Center, should they decide to complete a minor. Students must complete a minimum of one-half of their minor field credits in Wilkes University courses for the minor to be formally recognized on the Wilkes transcript.

#### 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 at the Student Services Center. It is the student's responsibility to secure the approval of the chairpersons of both departments to ensure that all requirements of the two majors are fulfilled.

#### SECOND BACCALAUREATE DEGREE

Students who hold a bachelor's degree with a major in one discipline from this or another accredited institution may earn a second baccalaureate degree at Wilkes by completing a major in another discipline, provided the following conditions are met. All candidates for the second degree must earn at least thirty (30) credits at Wilkes beyond those required for the first degree and they must meet all of the Wilkes requirements for a degree. Wilkes students may graduate with two bachelor's degrees simultaneously, but they must complete thirty (30) credits beyond the requirements for the first degree to be eligible for the second degree at the time of graduation. If students choose to return to the University to earn a second degree, they must complete the requirements for an additional major beyond any majors earned during the first degree.

#### COLLEGE OF GRADUATE AND PROFESSIONAL STUDIES

**[www.wilkes.edu/graduatestudies](http://www.wilkes.edu/graduatestudies)**

**(570) 408-4235**

#### Part-time Studies

The University welcomes part-time undergraduate students into all of its regular sessions. It has also established the Evening schedule to maximize scheduling possibilities for students who cannot attend day classes. Courses in several disciplines are offered in the evening, and students may utilize this option, in addition to day-classes, as their commitments and interests change. Many students complete their degree requirements in one or the other of these special formats.

Non-degree 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 Graduate Studies and Continued Learning.

**Evening Opportunities**

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

**Summer Courses**

Wilkes offers a variety of summer courses, workshops, mini-courses, and programs with outdoor activities during the summer months. The summer schedule includes a three-week pre-session, two five-week daytime 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 information. Please request special summer discount information through 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 College of Graduate and Professional Studies to inquire about certificate and post-baccalaureate programs. The University offers doctoral degrees in educational leadership (Ed.D.) and pharmacy (PharmD.). Master's degrees are available in the fields of Business Administration (MBA), Creative Writing (MA/MFA), Education (MS Ed, with various concentrations), Electrical Engineering (MSEE), Engineering Operations and Strategy (MS), Mathematics (MS) and Nursing (MS). A separate Graduate Bulletin, which describes graduate programs in detail, is available upon request from the College of Graduate and Professional Studies.

**Advanced Placement Summer Institute**

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

**Non-Credit Continuing Education**

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

## **Introduction**

# **ACADEMIC POLICIES AND PROCEDURES**

## **REGISTRATION**

Incoming freshman and transfer students register during the orientation sessions that precede each semester. All students are expected to preregister with their advisors and to register on the dates specified on the University Calendar. Additional information on registration procedures and the exact dates of the orientation sessions can be obtained from the Admissions Office or the Student Services Center.

## **ATTENDANCE**

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

## **STUDENT LOAD**

Students may register for as many as 18 credits in a semester. No student shall be allowed to carry more than 18 credits without the written approval of his or her advisor and the Dean of Student Affairs. An overload will be permitted only for students with a grade point average of 3.00 or higher.

## **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 Registrar at the institution at which they are enrolled as degree candidates. Interested students should confer with the Registrar for further details.

## **AUDITING COURSES**

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

Students auditing courses will maintain all standards, including attendance, required by the instructor. Students who do not maintain these standards 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 advisor and the department chairperson. The student shall satisfy the curricular requirements of the Bulletin in force at the time of the change. Change-of-major forms are available in the Student Services Center.

## **TRANSFER OF CREDITS**

Wilkes students who wish to take courses at another accredited institution (except Misericordia University and King's College) must have completed the Transfer of Credit form, available at the Student Services Center. 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 in residence at Wilkes. Students should consult the section of this Bulletin called Admission of Transfer Students for policies and rules governing transfer credits and transfer students.

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

## **WITHDRAWAL FROM COURSES**

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

A student wishing to withdraw from a course should first discuss the matter with the instructor. During the first 3 weeks of the semester the student may withdraw from a course by informing the instructor and the student's advisor and returning the completed and signed form to the

Registrar's Office. After this period, withdrawal is allowed through the eighth week of the semester and requires the approval of both the instructor and the advisor.

Thereafter the student may withdraw only for medical reasons, supported by a written excuse from a physician, or other extremely serious circumstances. Poor academic progress, in and of itself, will not be considered sufficient reason for permission to withdraw from a course following the allowed withdrawal period. Withdrawals after the eighth week must obtain approval from both the course instructor and the Unit Dean in which the course is being taught. The Dean of Students will provide consultation regarding this decision as deemed appropriate by the course instructor and/or the Unit Dean in which the course is being taught.

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

Students who are considering withdrawal from a course should be reminded that state and federal regulations for financial aid mandate that a student must earn 24 credits within the period of August to August or January to January and maintain the appropriate grade point average for his/her class standing.

For a thorough description of the guidelines for implementation of this policy, refer to the Wilkes University Student Handbook.

**THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974**

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

**ACADEMIC REQUIREMENTS**

**GRADES**

The primary purpose of any grading system is to inform the student of his or her academic progress. Grade reports are sent to students at the end of each term. Mid-term reports are sent if the work completed is unsatisfactory.

Eight numerical grades are given for academic work:

<b>Grade</b>	<b>Interpretation</b>
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 credit
1.00	Academic achievement of minimum quality required for credit
0.00	Academic achievement below the minimum required for course credit
P	Passing, no credit
W	Withdrawal
N	Audit, no credit

A grade of "X" means that the student received an incomplete grade. Incompletes 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. When such a grade is given, the incomplete work must be made up by or before the end of the fourth week following the last day of the examination period or the grade becomes zero, unless a special extension has been approved by the Registrar.

## Introduction

### COURSE CREDITS AND GRADE POINT AVERAGES

Each course at the University is assigned a specific number of credits. For example, History 101 is a 3-credit course and Mathematics 111 is a 4-credit course. Usually, credits assigned to the course are determined by the number of hours that the class meets per week. Credits may also be defined by the total number of hours a class meets per semester. Over the length of a semester, a credit hour is equivalent to 15 hours of classroom contact plus appropriate outside preparation; or 30 hours of supervised laboratory plus appropriate outside preparation; or 45 hours of internship/clinical experience; or a combination of the foregoing.

Below is an example illustrating the method used to compute grade point averages.

Course	Credit Hrs.		Grade	=	Quality	Credit Hrs.
	Attempted				Points	
Art 101	3	x	4.00	=	12	3
Psy 101	3	x	0.00	=	0	0
Fr 101	3	x	2.50	=	7.5	3
Hst 101	3	x	1.50	=	4.5	3
Mus 101	3	x	3.00	=	9	3
Total credit hours attempted			15			
Total credit hours passed			12			
Total quality points earned			3			
Average 33q.p. ÷ 15 hrs. attempted =			2.20			

Notice that the student has accumulated 12 credits toward graduation. The zero grade in Psychology means that the student must repeat that course in order to earn credit for it.

Averages are cumulative; the work of each semester will be added to the total. To graduate a student must have, at the end of the senior year, at least a 2.00 average for all courses and a 2.00 average in the major field.

Transfer credits are not included in the calculation of grade averages.

### ACADEMIC HONORS

The faculty grants recognition for high quality work. To be on the Deans' List, published at the end of each term, a student must earn a semester grade point average of 3.40 or higher for all courses taken. Students taking fewer than 12 credit hours will not be eligible.

### ACADEMIC PROBATION AND INELIGIBILITY

Freshmen, defined as students who have completed 30 or fewer credits, must maintain a 1.70 cumulative grade point average. All other students must maintain a minimum 2.00 in both their major field and cumulative grade point averages. A student who falls below the minimum average required will automatically be placed on academic probation, as a warning to the student that he or she is not making satisfactory progress toward a degree, or may be declared academically ineligible.

Students placed on academic probation may be restricted in the number of credits they take the following semester, based on the recommendation of the student's academic advisor and such action by the Academic Standards Committee. The Committee may impose additional restrictions and requirements in individual cases, if it is determined that such restrictions and requirements are in the best interest of the student. Such restrictions may affect the student's participation in co-curricular activities.

Students who remain on academic probation for two consecutive semesters are subject to designation as academically ineligible to continue at the University.

Students who have been declared academically ineligible are not allowed to enroll in any coursework at Wilkes for a period of one semester. To be considered for readmission such students must apply to the Academic Standards Committee and be approved for readmission with a probationary status. Students applying for readmission must present evidence of enhanced prospects for academic success.

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 appealing.

**ACADEMIC HONESTY**

Academic honesty requires students to refrain from cheating and to provide clear citations for assertions of fact as well as for the language, ideas and interpretations of others that have contributed to their 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 University.

**GRADUATION REQUIREMENTS**

It is the student's responsibility to meet graduation requirements. 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.

The faculty has approved the following requirements that a student must satisfy in order to be eligible for graduation:

1. Complete a minimum of 120 credit hours.
2. Satisfy all requirements in the major(s). (Requirements for graduation vary from department to department. See the appropriate section in this Bulletin for the number of credit hours required by each major.)
3. Complete all subjects required for the degree as stated in the Bulletin in force at the time of admission to the program or any subsequent Bulletin.
4. Achieve a minimum cumulative average of 2.00 for all courses.
5. Achieve a minimum average of 2.00 for all subjects within the major.
6. Achieve a minimum cumulative average of 2.00 for all subjects within the chosen minor(s).
7. Demonstrate competence in written and spoken English.
8. Satisfy mathematics and computer literacy and other curricular skills and knowledge requirements by participation in assessment procedures.

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

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

**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 to be eligible to be considered for honors.

Requirements for Degree Honors are:

Summa Cum Laude	3.800
Magna Cum Laude	3.600
Cum Laude	3.400

For Degree Honors, grade point averages are not rounded.

# COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

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DIVISION OF BEHAVIORAL AND SOCIAL SCIENCES

DEPARTMENT OF COMMUNICATION STUDIES

DIVISION OF HUMANITIES

DEPARTMENT OF VISUAL AND PERFORMING ARTS

## COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

INTERIM DEAN: DR. THOMAS J. BALDINO

### MISSION STATEMENT

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

In the College of Arts, Humanities, and Social Sciences students pursue degrees that develop critical and analytical skills to become creative problem solvers and acquire the necessary attitudes, knowledge, and skills to remain life-long learners in a diverse and changing world. 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 Allan Hamilton Dickson Endowment enhance the arts and humanities on campus and in the community.

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

*The College includes the following academic departments and divisions:*

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

*Bachelor's Degrees—Majors and Minors*

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

## BACHELOR OF ARTS IN INTEGRATIVE MEDIA

DIRECTOR OF INTEGRATIVE MEDIA: ERIC A. RUGGIERO

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN INTEGRATIVE MEDIA LEADING TO THE B.A. DEGREE—122.**

Wilkes University requires 122 credit hours for a B.A. degree in Integrative Media. These include completion of 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, and Entrepreneurship.

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. The Integrative

## College of Arts, Humanities, and Social Sciences

Media major uses integrated product development as a conceptual framework. Simulating real-working environments, students will come together to work in teams, combining various skill to fill core positions: 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.

### INTEGRATIVE MEDIA MAJOR

The Integrative Media major core curriculum consists of at least 40 credits hours of study comprised of the following courses:

BA/ENT 151 Integrated Management Experience I (3)  
CS 125 Computer Science I (4)  
ART 111 Fundamentals of Color and Design (3)  
COM 102 Principles of Communication (3)  
ENG 202 Technical and Professional Writing (3)  
ENT 203 Opportunity, Identification: Creativity and Innovation (3)  
IM 101 Integrative Media Foundations I (3)  
IM 201 Integrative Media Foundations II (3)  
IM 301 Principles of Motion and Layering (3)  
IM 302 Integrative Media Principles of Interactivity (3)  
IM 320 Integrative Media Concept Development and Processes (3)  
IM 391 Integrative Media Project I (3)  
IM 392 Integrative Media Project II (3)  
IM 399 Cooperative Education (1-6)  
IM 400 Integrative Media Portfolio Capstone (3)

Students majoring in Integrative Media are required to complete a minor in a cognate discipline (Art, Business Administration, Communication Studies, Computer Science, English, or Entrepreneurship). This minor provides for each student a specialized skill concentration within the Integrative Media program experience. Students will be continually asked to use the knowledge and skills from their cognate minor discipline within the Integrative Media project team structure. As much as possible, courses in each cognate minor have been selected to augment the Integrative Media major program. Students are encouraged to pursue additional coursework and, when possible, double major in their Integrative Media cognate discipline. Students interested in pursuing a double major should consult carefully with their academic advisor. Also available for experience and credit (dependent on departmental approval) is involvement in Studio020. This student-operated production entity works with non-profit, start-up and internal Wilkes clients producing a variety of creative content in a real-world production setting.

*The following courses are required for each cognate minor:*

#### *Art:*

ART 111 Fundamentals of Color and Design (3) fulfilled as part of IM major  
ART 113 Drawing (3)  
ART 134 Computer Graphics I (3)  
ART 234 Computer Graphics II (3)  
ART electives (6)

#### *Communication Studies:*

COM 102 Principles of Communication (3) fulfilled as part of IM major  
COM 124 Mass Media in Society (3)  
COM 203 Small Group Communication (3)  
COM 221 Audio Production (3)  
COM 222 Basic Video Production (3)  
COM 262 Visual Rhetoric (3)  
COM 322 Advanced Video Production (3)

#### *Computer Science:*

CS 125 Computer Science I (4) fulfilled as part of IM major  
CS 126 Computer Science II (4)  
CS 128 UNIX (1)  
CS 227 Computer Data Structures (4)  
CS 283 Web Development I (3)

CS 325 Database Management (3)

CS 383 Web Development II (3)

*Business Administration:*

BA 151 Integrated Management Experience I (3) fulfilled as part of IM major

BA 152 Integrated Management Experience II (3)

ENT 203, Opportunity Identification: Creativity and Innovation (3) fulfilled as part of IM major

BA 321 Marketing (3)

BA 322 Advertising (3)

BA 351 Management of Organizations and People (3)

*English:*

ENG 120 Introduction to Literature (3)

ENG 202 Technical and Professional Writing (3) fulfilled as part of IM major

ENG 203 Introduction to Creative Writing (3)

ENG 308 Rhetorical Analysis of Non Fiction Prose (3)

English writing or literature electives numbered 300 and above (6)

*Entrepreneurship:*

ENT 151 Integrated Management Experience I (3) fulfilled as part of IM major

ENT 152 Integrated Management Experience II (3)

BA 321 Marketing (3)

ENT 201 Nature and Essence of Entrepreneurship (3)

ENT 361 Practicing Entrepreneurship (3)

ENT 384 or 362 Small Business Consultancy or Entrepreneurship Internship (3)

## INTEGRATIVE MEDIA MINOR

The minor in Integrative Media offers to the student body, the foundational skill-set delivered within the art, design and technology core/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 referred to 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:*

	<i>Credit Hours</i>
<b>IM 101, 201, 301 or 302, 320, 391</b>	<b>15</b>
<b>IM Electives (2)</b>	<b>6</b>
<b>Minimum Total Required</b>	<b>21</b>

## INTEGRATIVE MEDIA MAJOR WITH A COGNATE MINOR IN ART-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

## First Semester

<b>FYF First-Year Foundations</b>	<b>3</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>
	16

## Second Semester

<b>IM 101 Integrative Media Foundations I</b>	<b>3</b>
<b>ART 111 Fundamentals of Color &amp; Design<sup>3</sup></b>	
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>
	16

College of Arts, Humanities, and Social Sciences

Third Semester

<b>IM 201 Integrative Media Foundations II</b>	<b>3</b>
<b>ENT 203 Opp. Id.: Innovation and Creativity</b>	<b>3</b>
<b>ART 113 Drawing</b>	<b>3</b>
<b>ART 134 Computer Graphics I</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<u>15</u>

Fourth Semester

<b>IM 301 Principles of Motion and Layering</b>	<b>3</b>
<b>COM 102 Principles of Communication</b>	<b>3</b>
<b>ENG 202 Technical and Professional Writing</b>	<b>3</b>
<b>ART 234 Computer Graphics II</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<u>15</u>

Fifth Semester

<b>IM 302 Principles of Interactivity</b>	<b>3</b>
<b>IM 320 Concept Development and Processes</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Elective</b>	<b>6</b>
	<u>15</u>

Sixth Semester

<b>IM 391 IM Project I</b>	<b>3</b>
<b>Art Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Elective</b>	<b>6</b>
	<u>15</u>

Seventh Semester

<b>IM 392 IM Project II</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Art Elective</b>	<b>3</b>
<b>Elective</b>	<b>6-9</b>
	<u>12-18</u>

Eighth Semester

<b>IM 400 IM Portfolio Capstone</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b>9-12</b>
	<u>12-18</u>

INTEGRATIVE MEDIA MAJOR WITH A COGNATE MINOR IN BUSINESS ADMINISTRATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>FYF First-Year Foundations</b>	<b>3</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>Eng 101 Composition</b>	<b>4</b>

<b>Distribution Requirements</b>	<b>6</b>
	16
Second Semester	
<b>IM 101 Integrative Media Foundations I</b>	<b>3</b>
<b>ART 111 Fundamentals of Color &amp; Design</b>	<b>3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>BA 152 Integrated Management Experience II</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	16
Third Semester	
<b>IM 201 Integrative Media Foundations II</b>	<b>3</b>
<b>ENT 203 Opp. Id.: Innovation and Creativity</b>	<b>3</b>
<b>Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	15
Fourth Semester	
<b>IM 301 Principles of Motion and Layering</b>	<b>3</b>
<b>COM 102 Principles of Communication</b>	<b>3</b>
<b>ENG 202 Technical and Professional Writing</b>	<b>3</b>
<b>Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	15
Fifth Semester	
<b>IM 302 Principles of Interactivity</b>	<b>3</b>
<b>IM 320 Concept Development and Processes</b>	<b>3</b>
<b>BA 321 Marketing</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	15
Sixth Semester	
<b>IM 391 IM Project I</b>	<b>3</b>
<b>BA 322 Advertising</b>	<b>3</b>
<b>Elective</b>	<b>9</b>
	15
Seventh Semester	
<b>IM 392 IM Project II</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>BA 351 Mgmt of Organizations and People</b>	<b>3</b>
<b>Elective</b>	<b>9</b>
	15-18
Eighth Semester	

College of Arts, Humanities, and Social Sciences

<b>IM 400 IM Portfolio Capstone</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b>9-12</b>
	<hr/>
	12-18

INTEGRATIVE MEDIA MAJOR WITH A COGNATE MINOR IN COMMUNICATION STUDIES REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>FYF First-Year Foundations</b>	<b>3</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<hr/>
	16

Second Semester

<b>IM 101 Integrative Media Foundations I</b>	<b>3</b>
<b>ART 111 Fundamentals of Color &amp; Design</b>	<b>3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>COM 101 Fundamentals of Public Speaking</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<hr/>
	16

Third Semester

<b>IM 201 Integrative Media Foundations II</b>	<b>3</b>
<b>ENT 203 Opp. Id.: Innovation and Creativity</b>	<b>3</b>
<b>COM 221 Audio Production</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15

Fourth Semester

<b>IM 301 Principles of Motion and Layering</b>	<b>3</b>
<b>COM 102 Principles of Communication</b>	<b>3</b>
<b>COM 124 Mass Media in Society</b>	<b>3</b>
<b>COM 203 Small Group Communication</b>	<b>3</b>
<b>ENG 202 Technical and Professional Writing</b>	<b>3</b>
	<hr/>
	15

Fifth Semester

<b>IM 302 Principles of Interactivity</b>	<b>3</b>
<b>IM 320 Concept Development and Processes</b>	<b>3</b>
<b>COM 222 Basic Video Production</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15

## Sixth Semester

<b>IM 391 IM Project I</b>	<b>3</b>
<b>COM 262 Copyediting, Headwriting and Layout</b>	<b>3</b>
<b>COM 322 Advanced Video Production</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/> 15

## Seventh Semester

<b>IM 392 IM Project II</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b>12</b>
	<hr/> 15-18

## Eighth Semester

<b>IM 400 IM Portfolio Capstone</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b>9</b>
	<hr/> 12-15

INTEGRATIVE MEDIA MAJOR WITH A COGNATE MINOR IN COMPUTER SCIENCE- REQUIRED COURSES  
AND RECOMMENDED COURSE SEQUENCE

## First Semester

<b>FYF First-Year Foundations</b>	<b>3</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/> 16

## Second Semester

<b>IM 101 Integrative Media Foundations I</b>	<b>3</b>
<b>ART 111 Fundamentals of Color &amp; Design</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>CS 126 Computer Science II</b>	<b>4</b>
<b>CS 128 Unix</b>	<b>1</b>
	<hr/> 15

## Third Semester

<b>IM 201 Integrative Media Foundations II</b>	<b>3</b>
<b>ENT 203 Opp. Id.: Innovation and Creativity</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
	<hr/> 15

## Fourth Semester

<b>IM 301 Principles of Motion and Layering</b>	<b>3</b>
<b>CS 227 Computer Data Structure</b>	<b>4</b>
<b>CS 283 Web Development I</b>	<b>3</b>
<b>ENG 202 Technical and Professional Writing</b>	<b>3</b>

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<b>Distribution Requirements</b>	<b>3</b>
	<u>15</u>
Fifth Semester	
<b>IM 302 Principles of Interactivity</b>	<b>3</b>
<b>IM 320 Concept Development and Processes</b>	<b>3</b>
<b>CS 325 Database Management</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<u>15</u>
Sixth Semester	
<b>IM 391 IM Project I</b>	<b>3</b>
<b>CS 383 Web Development II</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
	<u>15</u>
Seventh Semester	
<b>IM 392 IM Project II</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b>12</b>
	<u>15-18</u>
Eighth Semester	
<b>IM 400 IM Portfolio Capstone</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b>9-12</b>
	<u>12-18</u>

INTEGRATIVE MEDIA MAJOR WITH A COGNATE MINOR IN ENGLISH- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>FYF First-Year Foundations</b>	<b>3</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>
	<u>16</u>
Second Semester	
<b>IM 101 Integrative Media Foundations I</b>	<b>3</b>
<b>ART 111 Fundamentals of Color &amp; Design</b>	<b>3</b>
<b>ENG 120 Intro. to Literature and Culture</b>	<b>3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<u>16</u>
Third Semester	
<b>IM 201 Integrative Media Foundations II</b>	<b>3</b>
<b>ENT 203 Opp. Id.: Innovation and Creativity</b>	<b>3</b>
<b>Elective</b>	<b>3</b>

<b>Distribution Requirements</b>	<b>6</b>
	15
Fourth Semester	
<b>IM 301 Principles of Motion and Layering</b>	<b>3</b>
<b>ENG 203 Intro. to Creative Writing</b>	<b>3</b>
<b>ENG 202 Technical and Professional Writing</b>	<b>3</b>
<b>COM 102 Principles of Communication</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>15</b>
Fifth Semester	
<b>IM 302 Principles of Interactivity</b>	<b>3</b>
<b>IM 320 Concept Development and Processes</b>	<b>3</b>
<b>Elective</b>	<b>6</b>
<b>Distribution Requirements</b>	<b>3</b>
	15
Sixth Semester	
<b>IM 391 IM Project I</b>	<b>3</b>
<b>ENG 308 Rhet. Anal. &amp; Nonfict. Prose Writing</b>	<b>3</b>
<b>Elective</b>	<b>6</b>
<b>Distribution Requirements</b>	<b>3</b>
	15
Seventh Semester	
<b>IM 392 IM Project II</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>ENG Elective</b>	<b>3</b>
<b>Elective</b>	<b>9</b>
	15-18
Eighth Semester	
<b>IM 400 IM Portfolio Capstone</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>ENG Elective</b>	<b>3</b>
<b>Elective</b>	<b>6-9</b>
	12-18
INTEGRATIVE MEDIA MAJOR WITH A COGNATE MINOR IN ENTREPRENEURSHIP- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE	
First Semester	
<b>FYF First-Year Foundations</b>	<b>3</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>
	16

College of Arts, Humanities, and Social Sciences

Second Semester

<b>IM 101 Integrative Media Foundations I</b>	<b>3</b>
<b>ART 111 Fundamentals of Color &amp; Design</b>	<b>3</b>
<b>ENT 152 Integrated Management Experience II</b>	<b>3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<hr/>
	16

Third Semester

<b>IM 201 Integrative Media Foundations II</b>	<b>3</b>
<b>ENT 203 Opp. Id.: Innovation and Creativity</b>	<b>3</b>
<b>Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15

Fourth Semester

<b>IM 301 Principles of Motion and Layering</b>	<b>3</b>
<b>ENG 202 Technical and Professional Writing</b>	<b>3</b>
<b>COM 102 Principles of Communication</b>	<b>3</b>
<b>ENT 201 Nature and Essence of Entrepreneurship</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<hr/>
	15

Fifth Semester

<b>IM 302 Principles of Interactivity</b>	<b>3</b>
<b>IM 320 Concept Development and Processes</b>	<b>3</b>
<b>ENT 361 Practicing Entrepreneurship</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15

Sixth Semester

<b>IM 391 IM Project I</b>	<b>3</b>
<b>BA 321 Marketing</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Elective</b>	<b>6</b>
	<hr/>
	15

Seventh Semester

<b>IM 392 IM Project II</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>ENT 384 or 362 Sm. Bus. Consultancy or Intern.</b>	<b>3</b>
<b>Elective</b>	<b>9</b>
	<hr/>
	15-18

Eighth Semester

<b>IM 400 IM Portfolio Capstone</b>	<b>3</b>
<b>IM 399 Cooperative Education</b>	<b>0-3</b>
<b>Elective</b>	<b><u>9-12</u></b>
	12-18

DIVISION OF BEHAVIORAL & SOCIAL SCIENCES

CHAIRPERSON: DR. ROBERT C. TUTTLE

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

Associate Professors: Schicatano, Seeley, Tindell, Tuttle

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

Adjunct Professor: Kintz

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

CRIMINOLOGY MAJOR

COORDINATOR: DR. TUTTLE

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

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

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

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

CRIMINOLOGY MAJOR

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

<i>Introductory Courses (12 hours)</i>	<i>credits</i>
<b>PS 233 Law &amp; Society</b>	<b>3</b>
<b>EC 102 Microeconomics</b>	<b>3</b>
<b>PSY 101 Introduction to Psychology</b>	<b>3</b>
<b>SOC Introduction to</b>	<b>3</b>

**101 Sociology**

*Criminology Core Courses (21 hours)*

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

*Major Electives (9 hours)*

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

*Capstone (3 hours)*

<b>SOC 390 Senior Capstone in Sociology</b>	<b>3</b>
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CRIMINOLOGY MINOR

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

*Content area I: Economics — 3 Hours*

<b>EC 320 Economics of Crime*</b>	<b>3</b>
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*Content area II: Political Science — 3 Hours*

<b>PS 232 Criminal Law</b>	<b>3</b>
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<b>PS 233</b>	<b>Law &amp; Society</b>	
<b>PS 332</b>	<b>Civil Rights &amp; Liberty*</b>	
<i>Content area III: Psychology — 3 Hours</i>		
<b>PSY 352</b>	<b>Psychopathology*</b>	
<b>PSY 355</b>	<b>Forensic Psychology*</b>	
<i>Content area IV: Sociology — 3 Hours</i>		
<b>SOC 215</b>	<b>Family Violence*</b>	
<b>SOC 223</b>	<b>Drugs &amp; Alcohol in American Society*</b>	
<b>SOC 224</b>	<b>Corrections, Probation, and Parole</b>	
<b>SOC 225</b>	<b>Juvenile Delinquency</b>	
<b>SOC 228</b>	<b>Deviance &amp; Social Control</b>	
<b>SOC 235</b>	<b>Corrections Counseling</b>	

\* Students must complete all course prerequisites.

CRIMINOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester		
<b>Eng 101 Composition or</b>	<b>4</b>	
<b>Distribution Requirement</b>	<b>3</b>	
<b>Soc 101 Introduction to Sociology</b>	<b>3</b>	
<b>Psy 101 Introduction to Psychology</b>	<b>3</b>	
<b>Distribution Requirement</b>	<b>3</b>	
<b>FYF 101 First-Year Foundations</b>	<b>3</b>	
	<hr/>	15-16
Second Semester		
<b>Eng 101 Composition or</b>	<b>4</b>	
<b>Distribution Requirement</b>	<b>3</b>	
<b>Major Elective</b>	<b>3</b>	
<b>Distribution Requirements</b>	<b>6</b>	
<b>Free Elective</b>	<b>3</b>	
	<hr/>	15-16
Third Semester		
<b>Soc 222 Criminology</b>	<b>3</b>	
<b>Psy 242 Personality</b>	<b>3</b>	
<b>Distribution Requirement</b>	<b>3</b>	
<b>Free Elective</b>	<b>6</b>	
	<hr/>	15
Fourth Semester		
<b>Major Elective</b>	<b>3</b>	

<b>Free Electives</b>	<b>3</b>
<b>EC 102 Microeconomics</b>	<b>3</b>
<b>PS 233 Law and Society</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	15
Fifth Semester	
<b>EC 320 Economics of Crime</b>	<b>3</b>
<b>PS 232 Criminal Law</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15
Sixth Semester	
<b>Major Electives</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Free Electives</b>	<b>3</b>
<b>Psy 352 Psychopathology or</b>	<b>3</b>
<b>Psy 355 Forensic Psychology</b>	
<b>SOC 371 Methods of Social Research or</b>	<b>3</b>
<b>PS 261 Concepts &amp; Methods in PS</b>	
	<hr/>
	15
Seventh Semester	
<b>SOC 373/PS 265 Quantitative Reasoning for the Social Sciences</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	15
Eighth Semester	
<b>Soc/PS 390 Senior Projects</b>	<b>3</b>
<b>Free Electives</b>	<b>11</b>
	<hr/>
	14

ECONOMICS MINOR

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

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

INTERNATIONAL STUDIES MAJOR

COORDINATOR: DR. ANDREW MILLER

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

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

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

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

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

**CONTENT AREAS AND MAJOR ELECTIVES:**

*Content Area I: Political Science*

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

*Content Area II: History*

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

*Content Area III: International Business and Economics*

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

*Content Area IV: Anthropology*

- ANT 212 Peoples and Cultures of the World**

*Content Area V: Languages*

**Foreign Language above 204 level.**

*Content Area VI: Global Environmental Policy*

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

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

**INTERNATIONAL STUDIES MINOR**

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

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

*Content Area I: Political Science*

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

*Content Area II: History*

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

*Content Area III: International Business and Economics*

- BA 358 International Business**
- BA 398 International Business Experience**
- EC 102 Principles of Economics II**

**EC 340 International Trade and Finance***Content Area IV: Anthropology***ANT 212 Peoples and Cultures of the World***Content Area V: Languages***Foreign Language at or above the 101-102 level.***Content Area VI: Global Environmental Policy***EES 105 Planet Earth****EES 210 Global Climatic Change****EES 261 Regional Geography**

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

## INTERNATIONAL STUDIES MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

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

15-16

Second Semester

**Eng 101 Composition or** 4**Distribution Requirement** 3**Hst 101 Modern World** 3**Ec 102 Principles of Economics II** 3**PS 141 Introduction to International Politics** 3**COM 101 Public Speaking** 3

15-16

Third Semester

**EES 105 Planet Earth** 3**Ant 102 Cultural Anthropology** 3**CS 115 Computers and Applications** 3**Foreign Language\*** 3**Distribution Requirement** 3

15

Fourth Semester

**Foreign Language\*** 3**ENG 120 Literature** 3**Distribution Requirements** 6**Content Hours** 3

15

Fifth Semester

**Study Abroad or Free Electives\*\*** 15

15

Sixth Semester

**Study Abroad or Free Electives\*\*** 15

15

Seventh Semester

**PS 261 Concepts and Methods** 3**Content Hours** 9**MTH 101 Solving Problems** 3

15

Eighth Semester

**IS 380 Senior Capstone** 3**Content Hours** 3**Free Electives** 8

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\*These courses are required for all International Studies Majors.

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

## POLITICAL SCIENCE MAJOR

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

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

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

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

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

**College of Arts, Humanities, and Social Sciences**

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 220, ED 215, ED 380, ED 381, and ED 390. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

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

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

**POLITICAL SCIENCE MINOR**

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

**POLICY STUDIES MINOR**

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

*Policy Studies Minor requirements:*

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

**POLITICAL SCIENCE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

First Semester	
<b>Eng 101 Composition or</b>	<b>4</b>

<b>Distribution Requirement</b>	<b>3</b>	
<b>PS 111 Intro. to American Politics</b>	<b>3</b>	
<b>Distribution Requirements</b>	<b>6</b>	
<b>FYF 101 First-Year Foundations</b>	<b>3</b>	
		<hr/> 15-16
Second Semester		
<b>Eng 101 Composition or</b>	<b>4</b>	
<b>Distribution Requirement</b>	<b>3</b>	
<b>PS 141 Intro. to International Politics</b>	<b>3</b>	
<b>Distribution Requirements</b>	<b>9</b>	
		<hr/> 15-16
Third Semester		
<b>PS 151 Governments of the World</b>	<b>3</b>	
<b>PS 261 Concepts and Methods in PS</b>	<b>3</b>	
<b>Distribution Requirements</b>	<b>9</b>	
		<hr/> 15
Fourth Semester		
<b>PS 260 Intro. to Political Thinking</b>	<b>3</b>	
<b>PS 265 Quantitative Reasoning</b>	<b>3</b>	
<b>PS 200-Level Elective</b>	<b>3</b>	
<b>Distribution Requirements</b>	<b>3</b>	
<b>Free Elective</b>	<b>3</b>	
		<hr/> 15
Fifth Semester		
<b>PS 200-Level Elective</b>	<b>3</b>	
<b>PS 200- or 300-Level Elective</b>	<b>3</b>	
<b>PS 300-Level Elective</b>	<b>3</b>	
<b>Free Electives</b>	<b>6</b>	
		<hr/> 15
Sixth Semester		
<b>PS 200-Level Elective</b>	<b>3</b>	
<b>PS 200- or 300-Level Elective</b>	<b>3</b>	
<b>PS 300-Level Elective</b>	<b>3</b>	
<b>Free Electives</b>	<b>6</b>	
		<hr/> 15
Seventh Semester		
<b>PS 380 Senior Research/Capstone*</b>	<b>3</b>	
<b>Free Electives</b>	<b>12 or 15</b>	
		<hr/> 15
Eighth Semester		
<b>PS 380 Senior Research/Capstone*</b>	<b>3</b>	
<b>Free Electives</b>	<b>11 or</b>	
		<hr/>

\* Seniors must complete only one PS 380 course.

#### PSYCHOLOGY MAJOR

COORDINATOR: DR. TINDELL

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

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

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

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

The Psychology major must complete a minimum of 120 credit hours. In addition to satisfying the University's General Education Requirements, the student majoring in Psychology completes a minimum of 37 credits in psychology. All students must take PSY 101 (General Psychology), PSY 200 (Statistics in Psychology), PSY 300 (Experimental Psychology), and PSY 400 (Senior Capstone). PSY 101 is a prerequisite to all other psychology courses. PSY 200 should be completed prior to the junior year, PSY 300 prior to the senior year, and PSY 400 during the senior year. Students in PSY 400 will run projects proposed in PSY 300. Departmental approval of the project is required prior to enrollment in PSY 400. The student majoring in Psychology must take at least one course each from Content Areas I, II, III, and IV, and at least two courses from Content Area V. The Psychology major must either take BIO 105 (Human Biology) or another biology course approved by the department. It is strongly recommended that the student take a foreign language. Students are strongly urged to take CAR 198 during their junior year. Taking this course will waive a career component of the capstone courses.

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

numerous free elective credits many Psychology majors choose to major or minor in a second discipline.

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

*The Content Areas with their corresponding courses are as follows:*

#### *Content Area I — Biological Foundations*

**Psy 311 Behavioral Neuroscience (4 credits)**

**Psy 312 Sensory and Perceptual Processes (4 credits)**

#### *Content Area II — Human Development*

**Psy 221 Developmental Psychology (3 credits)**

**Psy 222 Adolescent Psychology (3 credits)**

#### *Content Area III — Cognition/Critical Thinking*

**Psy 331 Cognition (3 credits)**

**Psy 333 Critical Thinking in Psychological Science (3 credits)**

#### *Content Area IV — Social/Personality*

**Psy 242 Personality (3 credits)**

**Psy 341 Social Psychology (3 credits)**

#### *Content Area V — Applied*

**Psy 351 Behavioral Medicine (3 credits)**

**Psy 352 Psychopathology (3 credits)**

**Psy 353 Clinical Methods in Psychology (3 credits)**

**Psy 354 The Exceptional Individual (3 credits)**

**Psy 355 Forensic Psychology (3 credits)**

**Psy 356 Industrial/Organizational (3 credits)**

**Psy Neuropsychology (3 credits)**

357

**Psy 358 Psychological Tests and Measurements (3 credits)**

**Psy 359 Psychopharmacology (3 credits)**

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

These courses are as follows:

Course number	Course title	Credits
<b>Psy 101</b>	<b>General Psychology</b>	<b>3</b>
<b>Psy 200</b>	<b>Statistics in Psychology</b>	<b>3</b>
<b>Psy 300</b>	<b>Experimental Psychology</b>	<b>3</b>
<b>Psy 400</b>	<b>Senior Capstone</b>	<b>3</b>

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

<i>I. Liberal Arts Track</i>	<i>II. Professional Track</i>
<b>At least one course from each of the following Areas: I, II, III, IV</b>	<b>At least one course from each of the following Areas: I, II, III, IV</b>
<b>At least two courses from Area V</b>	<b>At least two courses from Area V</b>
<b>Any two psychology elective courses</b>	<b>PSY 395-396 Independent Research (3 cr.)</b> <b>PSY 399 Cooperative Education (3 cr.)</b>

*III. Educational Psychology Track*

Course number	Course title	Credits	Area
<b>PSY 312</b>	<b>Sensory &amp; Perceptual Processes</b>	<b>4</b>	<b>I</b>
<b>PSY 221</b>	<b>Developmental Psychology</b>	<b>3</b>	<b>II</b>
<b>PSY 222</b>	<b>Adolescent Psychology</b>	<b>3</b>	<b>II</b>
<b>PSY 242</b>	<b>Personality</b>	<b>3</b>	<b>IV</b>
<b>PSY 331</b>	<b>Cognition</b>	<b>3</b>	<b>III</b>
<b>PSY 352</b>	<b>Psychopathology</b>	<b>3</b>	<b>V</b>

<b>PSY 354</b>	<b>The Exceptional Individual</b>	<b>3</b>	<b>V</b>
<b>PSY 358</b>	<b>Psych Tests &amp; Measurements</b>	<b>3</b>	<b>V</b>
<b>PSY 399</b>	<b>Cooperative Education**</b>	<b>3</b>	

\*\*Waived through student teaching

*IV. Neuroscience/Behavioral Medicine Track*

Course number	Course title	Credits	Area
<b>PSY 311</b>	<b>Behavioral Neuroscience</b>	<b>4</b>	<b>I</b>
<b>PSY 312</b>	<b>Sensory &amp; Perceptual Processes</b>	<b>4</b>	<b>I</b>
<b>PSY 221</b>	<b>Developmental Psychology</b>	<b>3</b>	<b>II</b>
<b>PSY 242</b>	<b>Personality</b>	<b>3</b>	<b>IV</b>
<b>PSY 331</b>	<b>Cognition</b>	<b>3</b>	<b>III</b>
<b>PSY 351</b>	<b>Behavioral Medicine</b>	<b>3</b>	<b>V</b>
<b>PSY 352</b>	<b>Psychopathology</b>	<b>3</b>	<b>V</b>
<b>PSY 353</b>	<b>Clinical Methods in Psychology</b>	<b>3</b>	<b>V</b>
<b>PSY 354</b>	<b>The Exceptional Individual</b>	<b>3</b>	<b>V</b>
<b>PSY 357</b>	<b>Neuropsychology</b>	<b>3</b>	<b>V</b>
<b>PSY 359</b>	<b>Psychopharmacology</b>	<b>3</b>	<b>V</b>
<b>PSY 395-396</b>	<b>Independent Research</b>	<b>3</b>	
<b>or</b>			
<b>PSY 399</b>	<b>Cooperative Education</b>	<b>3</b>	

PSYCHOLOGY MINOR

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

NEUROSCIENCE MINOR

COORDINATOR: DR. SCHICATANO

The Departments of Psychology and Biology offer an interdisciplinary minor in Neuroscience. The Neuroscience minor provides students with a basic science background, emphasizing a broadly-based, yet integrated approach to understanding the

neural mechanisms controlling human or animal behavior. The program is designed to prepare students who are interested in studying neuroscience, pharmacology, and/or medicine. To earn a minor, students must complete 28 credits in the courses listed below:

*List of required courses for the minor*

**Psy 101 General Psychology**

**Psy 200 Psychology Statistics (3 credits) or Mth 150 Elementary Statistics (3 credits)**

**Psy 311 Behavioral Neuroscience (4 credits)**

**Psy 357 Neuropsychology (3 credits)**

**Psy 359 Psychopharmacology (3 credits) or Pha 450 Neuropharmacology of Drugs of Abuse (3 credits)**

**Bio 121 Principles of Modern Biology I (4 credits)**

**Bio 226 Molecular and Cellular Biology (4 credits)**

**Bio 116 Human Anatomy & Physiology or Bio 321 Mammalian Physiology (4 credits) or**

**Pha 331 and 332 Medical Anatomy & Physiology I & II**

PSYCHOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>Psy 101 General Psychology</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Bio 105 Human Biology</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
	15-16

Second Semester

<b>Major Elective</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	9
	15-16

Third Semester

<b>Major Elective or Psy 200 Statistics in Psychology</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>Free Electives</b>	<b>6</b>
	15

Fourth Semester

<b>Major Elective or Psy 200</b>	<b>3</b>
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**Statistics in Psychology**

<b>Major Electives</b>	<b>9</b>
<b>Free Elective</b>	<b>3</b>
	15

Fifth Semester

<b>Psy 300 Experimental Psychology</b>	<b>3</b>
<b>Major Electives</b>	<b>6</b>
<b>Free Electives</b>	<b>6</b>
	15

Sixth Semester

<b>Major Electives</b>	<b>6</b>
<b>Free Electives</b>	<b>9</b>
	15

Seventh Semester

<b>Psy 400 Senior Capstone*</b>	<b>3</b>
<b>Major Electives</b>	<b>6</b>
<b>Free Electives</b>	<b>8</b>
	14-17

Eighth Semester

<b>Psy 400 Senior Capstone*</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	12-15

\*Majors must complete only one PSY 400 course.

SOCIOLOGY MAJOR

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

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

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

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

SOCIOLOGY MAJOR

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

## College of Arts, Humanities, and Social Sciences

anthropology courses may be taken for credit toward the major or minor in Sociology. Also Phl 230 and/or Phl 250 may be taken for credit toward the major. Courses required in the major such as Soc 101 and Ant 101 may also be used to fulfill distribution requirements. The department emphasizes internships in professional settings which integrate academic studies with work experiences such as Soc 393 Practicum and Soc 399 Cooperative Education. The credit hours earned in Soc 393 and Soc 399 may not be applied toward the 36 hours required for the major.

### SOCIAL WORK/HUMAN SERVICES

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

### CERTIFICATION IN EDUCATION

The Elementary Education program at Wilkes requires students to minor in a discipline other than Education. Sociology is one of several options for individuals who seek teacher certification in elementary education. Please see the requirements listed in the Education section of this Bulletin.

### PRE-LAW

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

### ANTHROPOLOGY

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

### SOCIOLOGY MINOR

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

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

toward the eighteen hours required for the minor.

### SOCIOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

<b>First Semester</b>	
<b>Soc 101 Intro. to Sociology</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>6</b>
	<b>3</b>
	<hr/>
	15-16
<b>Second Semester</b>	
<b>Ant 101 Intro. to Anthropology</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>9</b>
	<hr/>
	15-16
<b>Third Semester</b>	
<b>Major Elective</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	15
<b>Fourth Semester</b>	
<b>Major Elective</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	15
<b>Fifth Semester</b>	
<b>Soc 381 Social Theory</b>	<b>3</b>
<b>Major Elective</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
<b>Sixth Semester</b>	
<b>Soc 371 Methods of Research</b>	<b>3</b>
<b>Major Electives</b>	<b>6</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
<b>Seventh Semester</b>	
<b>Soc 373 Quantitative Reasoning</b>	<b>3</b>
<b>Major Elective</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
<b>Eighth Semester</b>	
<b>Soc 390 Senior Capstone</b>	<b>3</b>
<b>Free Electives</b>	<b>11</b>
	<hr/>
	14

## DEPARTMENT OF COMMUNICATION STUDIES

CHAIRPERSON: DR. MARK D. STINE

*Faculty: Professors: Elmes-Crahall, Kinney*

*Assistant Professors: A. Frantz, Stine*

*Assistant Professor: Estwick*

*Visiting Instructor: Mellon*

*Director of Shelburne Center: Brigido*

*Radio Station Manager: R. Loftus*

COMMUNICATION STUDIES MAJOR

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

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

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

### *Departmental Requirements:*

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

<b>COM 101</b>	<b>Fundamentals of Public Speaking</b>
<b>COM 102</b>	<b>Principles of Communication</b>
<b>COM 124</b>	<b>Mass Media in Society</b>
<b>COM 202</b>	<b>Interpersonal Communication</b>
<b>COM 324</b>	<b>Communication Research Methods</b>
<b>COM 397</b>	<b>Senior Seminar</b>

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

### *Concentration Requirements:*

Each concentration is described and outlined on the following pages.

#### *Organizational Communication*

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

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

<b>COM</b>	<b>Business and Professional</b>
------------	----------------------------------

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

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

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

*Writing Requirement (6 credits):*

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

**PUBLIC RELATIONS TRACK:**

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

*Rhetoric and Public Communication*

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

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

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

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

- COM 201 Advanced Public Speaking**
- COM 203 Small Group Communication**
- COM 206 Business and Professional Communication**
- COM 302 Fundamentals of Public Relations**

**COM 398 Topics in Presidential Campaign Rhetoric**  
**COM 399 or**  
**CPE 399 Internship (Only three credits of Internship may count in the concentration.)**

*Writing Requirement (6 credits):*

**COM 260 Basic Newswriting**  
**Eng 202 Technical Writing**

**POLITICAL COMMUNICATION TRACK:**

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

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

**First Semester**

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

**Second Semester**

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

**Third Semester**

<b>COM 202 Interpersonal Communication</b>	<b>3</b>
<b>COM 260 Basic Newswriting</b>	<b>3</b>
<b>Writing Requirement</b>	<b>3</b>
<b>Free Elective</b>	<b>6</b>
	15

**Fourth Semester**

<b>Concentration Selections</b>	<b>3</b>
<b>Writing Requirement</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
	15

**Fifth Semester**

<b>Concentration Selection</b>	<b>6</b>
<b>COM 302 Public Relations</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>

College of Arts, Humanities, and Social Sciences

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

BROADCAST MEDIA

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

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

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

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

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

*Writing Requirement (6 credits):*

- COM 260 Basic Newswriting and**
- Eng 202 Technical Writing**

## BROADCAST MEDIA CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

## First Semester

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

## Second Semester

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

## Third Semester

<b>COM 202 Interpersonal Communication</b>	<b>3</b>
<b>COM 220 Intro. To Telecommunications</b>	<b>3</b>
<b>COM 260 Basic Newswriting</b>	<b>3</b>
<b>COM 221 Digital Audio Production or</b>	
<b>COM 222 Basic Video Production</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
	15

## Fourth Semester

<b>Concentration Selection</b>	<b>3</b>
<b>ENG 201 Advanced Composition</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
	15

## Fifth Semester

<b>Concentration Selection</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	15

## Sixth Semester

<b>COM 322 Advanced Video Production</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	15

## Seventh Semester

<b>COM 324 Research Methods</b>	<b>3</b>
<b>Concentration Selection</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	15

## Eighth Semester

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<b>COM 397 Senior Seminar</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	15

*Journalism*

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

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

<b>COM 262</b>	<b>Visual Rhetoric</b>
<b>COM 360</b>	<b>Advanced Newswriting</b>
<b>COM 362</b>	<b>Mass Communication Law</b>

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

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

*Writing Requirement (6 credits):*

<b>COM 260</b>	<b>Basic Newswriting and</b>
<b>Eng 202</b>	<b>Technical Writing</b>

JOURNALISM CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

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

Second Semester

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

Third Semester

<b>COM 202 Interpersonal Communication</b>	<b>3</b>
<b>COM 260 Basic Newswriting</b>	<b>3</b>
<b>Concentration Selection</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Fourth Semester	
<b>COM 262 Visual Rhetoric</b>	<b>3</b>
<b>Concentration Selection</b>	<b>3</b>
<b>Eng 201 Advanced Composition</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15
Fifth Semester	
<b>COM 362 Mass Communication Law</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Concentration Selections</b>	<b>6</b>
<b>Free Electives</b>	<b>3</b>
	<hr/>
	15
Sixth Semester	
<b>COM 360 Advanced Newswriting</b>	<b>3</b>
<b>Free Elective</b>	<b>12</b>
	<hr/>
	15
Seventh Semester	
<b>COM 324 Research Methods</b>	<b>3</b>
<b>Concentration Selection</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
Eighth Semester	
<b>COM 397 Senior Seminar</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	15

## COMMUNICATION STUDIES MINOR

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

*Organizational Communication Minor*

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

*Electives:* Five of the following:

<b>COM 202</b>	<b>Interpersonal Communication</b>
<b>COM 203</b>	<b>Small Group Communication</b>
<b>COM 206</b>	<b>Business and Professional Communication</b>
<b>COM 301</b>	<b>Persuasion</b>
<b>COM 302</b>	<b>Fundamentals of Public Relations</b>
<b>COM</b>	<b>Organizational</b>

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**303      Communication**

**COM      Intercultural**  
**304      Communication**

*Rhetoric and Public Communication Minor*

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

*Electives:* Five of the following:

**COM      Advanced Public Speaking**  
**201**

**COM      Small Group Communication**  
**203**

**COM      Argumentation and Debate**  
**204**

**COM      Business and Professional**  
**206      Communication**

**COM      Communication Criticism**  
**300**

**COM      Persuasion**  
**301**

**COM      Fundamentals of Public**  
**302      Relations**

*Broadcast Media Minor*

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

**COM      Mass Media Literacy**  
**124**

**COM      Digital Audio Production**  
**221**

**COM      Basic Video Production**  
**222**

**COM      The Art of Film**  
**223**

**COM      Broadcast Journalism**  
**321**

**COM      Advanced Video Production**  
**322**

**COM      Mass Communication Law**  
**362**

*Journalism Minor*

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

**COM      Mass Media Literacy**  
**124**

**COM      Fundamentals of Public**  
**302      Relations**

**COM      Advanced Newswriting**  
**360**

**COM      Feature Writing**  
**361**

**COM      Mass Communication Law**  
**362**

## DIVISION OF HUMANITIES

CHAIRPERSON: DR. LAWRENCE T. KUHAR

*Faculty: Professors: Hupchick**Associate Professors: Bianco, Culver, Fields, Hepp, Kuhar, Paul, Starner**Assistant Professors: Anthony, Davidson, Davis, Farrell, Hamill, Kelly, Stanley, Wenger**Instructor: Grier**Visiting Assistant Professor: Reid**Visiting Instructor: Harris**Adjunct Professors: Borkowski-Gunn, Kovacs, Lepore, Petraski, Thackara**Faculty Emeriti: Berg, Berlatsky, Cox, Fiester, Gutin, P. Heaman, R. Heaman, Kaska, Karpinich, Kay, Lennon, Meyers, Rizzo, Rodechko*

## ENGLISH MAJOR

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENGLISH LEADING TO THE B.A. DEGREE — 120.****TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18 (BEYOND ENG 101).**

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

The English major offers students an opportunity to develop skills in language, rhetoric, and writing; to practice critical and creative thinking; and to establish a foundation of liberal learning through the study of literature. The skills, values, and habits of thought acquired through the study of language and literature prepare students for careers in teaching, graduate school, law, communications, journalism, business, government service, and other professional areas. The department strongly recommends that students who major in English take a foreign language.

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

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

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

**Concentrations**

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

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

**Certification**

Students seeking certification as secondary public school teachers of English and a minor in Secondary Education must take English 120, 201, 225, 324, 393, and three of four survey courses: English 233, 234, 281, 282. The department strongly recommends that students seeking certification take all four survey courses. In addition, students must complete twelve hours in English courses numbered above 300, including one course in major author studies, one course in genre studies (fiction, drama, poetry), one course in a period or movement, and English 397. Education courses required are 190, 200, 210, 215, 220, 390, and EDSP 225. Students seeking certification as elementary public school teachers should consult carefully with their advisors and the education department in planning their program.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 215, ED 220, ED 380, ED XXX (specific Secondary Methods Course), ED 390, and EDSP 225. All Teacher Education

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students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

### ENGLISH MINOR

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

### Honors

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

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

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

### ENGLISH MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>Eng 101 Composition</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>9</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
	<hr/>
	16
Second Semester	
<b>Eng 120 Literature and Culture</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
<b>Free Elective</b>	<b>3</b>
	<hr/>
	15
Third Semester	
<b>Eng 201 Writing about Lit. and Culture</b>	<b>4</b>
<b>Eng Survey Electives (233, 282)</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	16
Fourth Semester	
<b>Eng Survey Electives (234, 281)</b>	<b>6</b>

<b>Free Elective</b>	<b>9</b>
	<hr/>
	15
Fifth Semester	
<b>Major Electives*</b>	<b>6</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
Sixth Semester	
<b>Major Electives*</b>	<b>9</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Seventh Semester	
<b>Eng 397</b>	<b>3</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	15
Eighth Semester	
<b>Major Capstone</b>	<b>1</b>
<b>Free Electives</b>	<b>12</b>
	<hr/>
	13

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

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

First Semester	
<b>Eng 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
	<hr/>
	16
Second Semester	
<b>Eng 120 Literature and Culture</b>	<b>3</b>
<b>Psy 101 General Psychology</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>Free Electives</b>	<b>3</b>
	<hr/>
	15
Third Semester	
<b>Eng 201 Writing about Lit. and Culture</b>	<b>4</b>
<b>Eng Survey Electives (233, 282)</b>	<b>3</b>
<b>ED 190 Effective Teaching</b>	<b>3</b>
<b>Free Elective</b>	<b>6</b>
	<hr/>
	16
Fourth Semester	
<b>Eng Survey Electives (234, 281)</b>	<b>6</b>
<b>Ed 200 Educational Psychology</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Fifth Semester	
<b>Eng 225 Comparative Grammar</b>	<b>3</b>

<b>Eng Survey Electives (233, 282)</b>	<b>3</b>
<b>Major Elective*</b>	<b>3</b>
<b>Free Elective</b>	<b>6</b>
	<hr/>
	15
Sixth Semester	
<b>Eng 324 History of English</b>	<b>3</b>
<b>Major Elective*</b>	<b>6</b>
<b>Free Electives</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	15
Seventh Semester	
<b>Eng 393 The Teaching of English</b>	<b>4</b>
<b>Eng 397 Seminar</b>	<b>3</b>
<b>ED 210 Special Needs</b>	<b>2</b>
<b>Free Elective</b>	<b>6</b>
	<hr/>
	15
Eighth Semester	
<b>Major Capstone</b>	<b>1</b>
<b>EDSP 388 Inclusionary Practices</b>	<b>3</b>
<b>ED 390A Intern Teaching</b>	<b>12</b>
	<hr/>
	16

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

**SPANISH MAJOR**

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

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

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

**MAJOR**

Spanish is offered as a major field of study. A major in Spanish consists of twenty-four credit hours in advanced language and literature courses beyond SP 204. Students seeking public school certification in Spanish and a minor in Secondary Education must take SP 205, 206, 207, 208, 301 (Introduction to Literature), and another literature course in a major writer, or genre, or period, and SP 397.

Students pursuing Spanish certification are required to complete PSY 221 Developmental Psychology.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 215, ED 220, ED 380, ED XXX (specific Secondary Methods Course), ED 390, and EDSP 225. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

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

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

**FOREIGN LANGUAGE MINOR**

Students may elect to minor in Spanish. A minor in Spanish consists of eighteen credit hours beyond FL 102.

*Certificate Program*

The Spanish Language Certificate Program is designed for students, adult learners, and working professionals who wish to develop proficiency in Spanish to enhance their academic and career opportunities. Students enrolled in the Certificate Program are required to complete fifteen (15) credits in the study of Spanish beginning at the intermediate level; students can receive up to six (6) credits towards the Certificate Program through study abroad. The Certificate Program provides students with the flexibility to pursue Spanish at the advanced level without completing the requirements of an academic major or minor.

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

College of Arts, Humanities, and Social Sciences

SPANISH MAJOR - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>SP 101 Elementary I</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>6</b>
	<b>3</b>
	<hr/>
	15-16
Second Semester	
<b>SP 102 Elementary II</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>9</b>
	<hr/>
	15-16
Third Semester	
<b>SP 203 Intermediate I</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Free electives</b>	<b>9</b>
	<hr/>
	15
Fourth Semester	
<b>SP 204 Intermediate II</b>	<b>3</b>
<b>SP 205 Conversation</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
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	15
Fifth Semester*	
<b>SP 206 Adv. Grammar, Stylistics &amp; Comp.</b>	<b>3</b>
<b>SP 207 Applied Linguistics</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
Sixth Semester	
<b>SP 208 Culture and Civilization</b>	<b>3</b>
<b>SP 301 Introduction to Literature</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
Seventh Semester	
<b>SP 301 or 307 or 308</b>	<b>3</b>
<b>SP 298 Topics</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>
	<hr/>
	15
Eighth Semester	
<b>SP 397 Seminar</b>	<b>3</b>
<b>Free Electives</b>	<b>11</b>
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\*Study Abroad is strongly encouraged and is recommended during the junior year.

SPANISH WITH TEACHER CERTIFICATION - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>SP 101 Elementary I</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>6</b>
	<b>3</b>
	<hr/>
	15-16
Second Semester	
<b>SP 102 Elementary II</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>9</b>
	<hr/>
	15-16
Third Semester	
<b>SP 203 Intermediate I</b>	<b>3</b>
<b>Ed 190 Effective Teaching</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Fourth Semester	
<b>SP 204 Intermediate II</b>	<b>3</b>
<b>SP 205 Conversation</b>	<b>3</b>
<b>Ed 200 Educational Psychology</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Fifth Semester	
<b>SP 206 Adv. Grammar, Stylistics &amp; Comp.</b>	<b>3</b>
<b>SP 207 Applied Linguistics</b>	<b>3</b>
<b>Psy 221 Developmental Psychology</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Sixth Semester	
<b>SP 208 Culture and Civilization</b>	<b>3</b>
<b>SP 301 Introduction to Literature</b>	<b>3</b>
<b>Ant 102 Cultural Anthropology</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>
	<hr/>
	15
Seventh Semester	
<b>SP 301 or 307 or 308</b>	<b>3</b>
<b>SP 298 Topics</b>	<b>3</b>
<b>SP 397 Seminar</b>	<b>3</b>
<b>Ed 300 Methods in Education</b>	<b>3</b>
<b>Free Electives</b>	<b>2</b>
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	14
<b>Eighth Semester</b>	
<b>Ed 390A Intern Teaching</b>	<b>12</b>
<b>EDSP 388 Inclusionary Practices</b>	<b>3</b>
	15

## HISTORY MAJOR

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN HISTORY LEADING TO THE B.A. DEGREE — 120.****TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 18.**

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

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

Students minoring in History may receive a Pennsylvania Teaching Certificate for teaching elementary school. Students majoring in history may receive a Pennsylvania Teaching Certificate in social studies and a minor in Secondary Education.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students

will declare a MINOR in Secondary Education. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. The requirements for the minor in Secondary Education and certification are contained in the Education section of the Wilkes Bulletin.

## HISTORY MINOR

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

## HISTORY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

## First Semester

<b>Hst 101 Modern World</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>6</b>
	<b>3</b>
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	15-16

## Second Semester

<b>Hst 102 Europe Before 1600</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>9</b>
	<hr/>
	15-16

## Third Semester

<b>Hst 125 American History I</b>	<b>3</b>
<b>Hst 297 Research &amp; Methods Seminar</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>Free Electives*</b>	<b>3</b>
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	15

## Fourth Semester

<b>Hst 126 American History II</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>9</b>
<b>Free Elective*</b>	<b>3</b>
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	15

## Fifth Semester

<b>Major Electives</b>	<b>6</b>
<b>Free Electives*</b>	<b>9</b>
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	15

## Sixth Semester

<b>Major Elective</b>	<b>3</b>
<b>Free Electives*</b>	<b>12</b>
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	15

**College of Arts, Humanities, and Social Sciences**

Seventh Semester	
<b>Major Electives**</b>	<b>6</b>
<b>Free Electives*</b>	<b>9</b>
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	15
Eighth Semester	
<b>Hst 397 Seminar**</b>	<b>3</b>
<b>Free Electives*</b>	<b>11</b>
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\*Sufficient elective credits are available to allow students to complete a minor in most fields. See Wilkes Bulletin for minor requirements.

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

**PHILOSOPHY MAJOR**

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

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

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

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

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

**PHILOSOPHY MINOR**

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

**PHILOSOPHY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

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

CHAIRPERSON: JOSEPH C. DAWSON

*Faculty: Associate Professors: Bowar, Dawson, Flint, Thomas*

*Assistant Professor: Baker*

*Instructor: Simon*

*Adjunct Professors: Adams, Cross, DePolo, Driscoll, Glennon, Harris, C. Helmacy, R. Helmacy, Insalaco, Lanning, Lish, Mariani, Miller-Lanning, Minsavage, Rasmus, Schulte, Sedor, Smallcomb, Steinberg, Unice, Zipay*

*Faculty Emeriti: Fuller, Groh*

*Director of Dance: Kristin Degnan*

*Director of Theatre: Teresa Fallon*

*Coordinator of Art: Sharon Bowar*

*Coordinator of Music: Steven L. Thomas*

### ART MINOR

**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.**

The minor in Art History requires that students complete ART 140, 141, 240 and 6 credits of art history topics courses.

The minor in Studio Art accepts any courses above the 101 level, with no more than 6 credits in art history.

### DANCE MINOR

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

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

### MUSIC MINOR

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

The music minor program at Wilkes University offers a range of experiences within the sub-disciplines of music, including studies in theory, music reading and dictation, music history and participation in major performing ensembles. Music faculty members will both advise and mentor music

minors. The 18 credit hour requirement may be sequenced over eight semesters or less.

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

#### *Performance, 6 credits to choose from:*

MUS 121 Civic Band 0/3 credits

(repeatable)

MUS 125 University Chorus 0/3 credits

(repeatable)

MUS 127 Jazz Ensemble 0/3 credits

(repeatable)

MUS 131 University Orchestra 0/3

credits (repeatable)

#### *Lower Level Theory and History, 6 credits*

*Theory, 3 credits*

MUS 103 Music Theory I, 3 credits

(or MUS 104 Music Theory II, 3 credits, by placement)

*History/Style, 3 credits*

MUS 110 Music, The Arts, Society and Ideas

#### *Upper Level Theory and/or History, 6 credits*

*Theory Electives*

MUS 104 Music Theory II, 3 credits

MUS 107 Historical Analysis of Music, 3 credits

MUS 298 Topics in Music Theory, 1–3 credits

MUS 395 Independent Research, Music Theory, 1–3 credits

*History Electives*

MUS 210 Music History I, 3 credits

MUS 211 Music History II, 3 credits

MUS 298 Topics in Music History, 1–3 credits

MUS 395 Independent Research, Music History, 1–3 credits

#### *Music 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 and those participating in ensembles or taking private music instruction from university or conservatory faculty. Because of the heavy enrollment in these courses, the university is unable to make these rooms available to students who are not enrolled in these curricular offerings.

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

of the official transcript of the work done at the university.

## MUSICAL THEATRE MAJOR

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

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

**MUSICAL THEATRE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

## First Semester

<b>ENG 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 131 Acting I</b>	<b>3</b>
<b>MUS 100 Voice</b>	<b>1</b>
<b>MUS 125 Chorus</b>	<b>1</b>
<b>MUS 103 Basic Musicianship or higher</b>	<b>3</b>
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## Second Semester

<b>ENG 120 Intro to Lit./Culture</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 132 Speech for the Stage (OPO)</b>	<b>3</b>
<b>MUS 100 Voice</b>	<b>1</b>
<b>MUS 125 Chorus</b>	<b>1</b>
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	15

## Third Semester

<b>Distribution Requirements</b>	<b>6</b>
<b>THE 232 Acting II</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 121 Stagecraft</b>	<b>3</b>
<b>MUS 200 Voice</b>	<b>1</b>
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## Fourth Semester

<b>Distribution Requirements</b>	<b>9</b>
<b>THE 112 Script Analysis</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>MUS 200 Voice</b>	<b>1</b>
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	14

## Fifth Semester

<b>Distribution Requirements</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>

<b>THE 211 Theatre History I</b>	<b>3</b>
<b>THE Elective</b>	<b>3</b>
<b>MUS 300 Voice</b>	<b>1</b>
<b>Electives</b>	<b>6</b>
	<hr/>
	17

## Sixth Semester

<b>Distribution Requirements</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 312 Theatre History II</b>	<b>3</b>
<b>THE Elective</b>	<b>3</b>
<b>MUS 300 Voice</b>	<b>1</b>
<b>Electives</b>	<b>6</b>
	<hr/>
	17

## Seventh Semester

<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE Design Elective</b>	<b>3</b>
<b>THE 393 Senior Seminar</b>	<b>1</b>
<b>MUS 400 Voice</b>	<b>1</b>
<b>Electives</b>	<b>9</b>
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## Eighth Semester

<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>DAN Dance Elective</b>	<b>3</b>
<b>MUS 400 Voice</b>	<b>1</b>
<b>THE or MUS Musical Theatre Elective</b>	<b>3</b>
<b>Electives</b>	<b>6</b>
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## THEATRE ARTS MAJOR

**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 — 18.**

The Theatre Arts major is a diverse and balanced program that encourages many kinds of theatre artists: dancers who act, directors who design, actors who play music, and stage technicians who sing. The program combines the liberal arts core curriculum with the required 39 credits of Theatre Arts classes and 45 credits of electives. Theatre Arts majors may opt to use their electives to double major in another field or follow a course sequence in the following concentrations:

College of Arts, Humanities, and Social Sciences

*Acting/Directing*

*Dance*

*Theatre Design*

THEATRE ARTS MINOR

*Required course:*

<b>THE 121</b>	<b>Stagecraft</b>	
<i>Electives: Five of the following:</i>		
<b>THE 111</b>	<b>Fundamentals of Play Structure and Criticism</b>	
<b>THE 131</b>	<b>Acting I</b>	
<b>THE 132</b>	<b>Speech for the Stage</b>	
<b>THE 211</b>	<b>Theatre History I</b>	
<b>THE 312</b>	<b>Theatre History II</b>	
<b>THE 221</b>	<b>Scene Design</b>	
<b>THE 232</b>	<b>Acting II</b>	
<b>THE 234</b>	<b>Directing I</b>	
<b>THE 335</b>	<b>Directing II</b>	

THEATRE ARTS MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>ENG 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>THE 121 Stagecraft</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 131 Acting I</b>	<b>3</b>
	<b>14</b>

Second Semester

<b>ENG 120 Intro to Lit. /Culture</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>THE 132 Speech for the Stage (OPO)</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>Electives</b>	<b>3</b>
	<b>16</b>

Third Semester

<b>Distribution Requirements</b>	<b>6</b>
<b>THE 232 Acting II</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>Electives</b>	<b>3</b>
	<b>13</b>

Fourth Semester

<b>Distribution Requirements</b>	<b>9</b>
<b>THE 212 Script Analysis</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>Electives</b>	<b>3</b>
	<b>16</b>

Fifth Semester

<b>Distribution Requirements</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 211 Theatre History I</b>	<b>3</b>
<b>THE Theatre Design Elective</b>	<b>3</b>
<b>Electives</b>	<b>6</b>
	<b>16</b>

Sixth Semester

<b>Distribution Requirements</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 312 Theatre History II</b>	<b>3</b>
<b>THE Elective</b>	<b>3</b>
<b>Electives</b>	<b>6</b>
	<b>16</b>

Seventh Semester

<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 393 Senior Seminar</b>	<b>1</b>
<b>Electives</b>	<b>12</b>
	<b>14</b>

Eighth Semester

<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE Elective</b>	<b>3</b>
<b>Electives</b>	<b>12</b>
	<b>16</b>

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

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

First Semester

<b>ENG 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 131 Acting I</b>	<b>3</b>
<b>THE 121 Stagecraft</b>	<b>3</b>
	<b>14</b>

Second Semester

<b>ENG 120 Intro to Lit./Culture</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>

<b>THE 132 Speech for the Stage (OPO)</b>	<b>3</b>	THEATRE ARTS MAJOR WITH A DANCE CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE	
<b>Elective</b>	<b>3</b>		
	<hr/>	First Semester	
	16	<b>ENG 101 Composition</b>	<b>4</b>
Third Semester		<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 232 Acting II</b>	<b>3</b>	<b>THE 131 Acting I</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>THE 121 Stagecraft</b>	<b>3</b>
<b>THE 234 Directing I</b>	<b>3</b>		<hr/>
<b>Electives</b>	<b>3</b>		14
	<hr/>	Second Semester	
	16	<b>ENG 120 Intro to Lit./Culture</b>	<b>3</b>
Fourth Semester		<b>Distribution Requirements</b>	<b>6</b>
<b>Distribution Requirements</b>	<b>9</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 112 Script Analysis</b>	<b>3</b>	<b>THE 132 Speech for the Stage (OPO)</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>DAN 250 Classical Ballet</b>	<b>3</b>
<b>ENG Dramatic Literature Elective</b>	<b>3</b>		<hr/>
	<hr/>		16
	16	Third Semester	
Fifth Semester		<b>Distribution Requirements</b>	<b>6</b>
<b>Distribution Requirements</b>	<b>3</b>	<b>THE 232 Acting II</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 211 Theatre History I</b>	<b>3</b>	<b>DAN 130 Intro to Jazz Dance</b>	<b>3</b>
<b>THE 331 Acting III</b>	<b>3</b>	<b>Elective</b>	<b>3</b>
<b>THE 335 Directing II</b>	<b>3</b>		<hr/>
<b>Elective</b>	<b>3</b>		16
	<hr/>	Fourth Semester	
	16	<b>Distribution Requirements</b>	<b>9</b>
Sixth Semester		<b>THE 112 Script Analysis</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>DAN 110 Intro to Modern Dance</b>	<b>3</b>
<b>THE 312 Theatre History II</b>	<b>3</b>		<hr/>
<b>THE Elective</b>	<b>3</b>		16
<b>ENG Dramatic Literature Elective</b>	<b>3</b>	Fifth Semester	
<b>Elective</b>	<b>3</b>	<b>Distribution Requirements</b>	<b>3</b>
	<hr/>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
	16	<b>THE 211 Theatre History I</b>	<b>3</b>
Seventh Semester		<b>DAN 120 Tap Dance</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>Elective</b>	<b>6</b>
<b>THE 393 Senior Seminar</b>	<b>1</b>		<hr/>
<b>THE 431 Acting IV</b>	<b>3</b>		16
<b>THE Theatre Design Elective</b>	<b>3</b>	Sixth Semester	
<b>Elective</b>	<b>6</b>	<b>Distribution Requirements</b>	<b>3</b>
	<hr/>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
	14	<b>THE 312 Theatre History II</b>	<b>3</b>
Eighth Semester		<b>THE Elective</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>DAN 320 Dance Composition</b>	<b>3</b>
<b>THE Elective</b>	<b>3</b>	<b>Elective</b>	<b>3</b>
<b>Electives</b>	<b>9</b>		<hr/>
	<hr/>		16
	13	Seventh Semester	
		<b>THE 190 Theatre Laboratory</b>	<b>1</b>

College of Arts, Humanities, and Social Sciences

<b>THE 393 Senior Seminar</b>	<b>1</b>		
<b>THE Theatre Design Elective</b>	<b>3</b>	Sixth Semester	<b>16</b>
<b>DAN Elective</b>	<b>3</b>	<b>Distribution Requirements</b>	<b>3</b>
<b>Elective</b>	<b>6</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
	<b>14</b>	<b>THE 312 Theatre History II</b>	<b>3</b>
Eighth Semester		<b>THE Theatre Design Elective</b>	<b>3</b>
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>Electives</b>	<b>6</b>
<b>THE Elective</b>	<b>3</b>		<b>16</b>
<b>Electives</b>	<b>9</b>	Seventh Semester	
	<b>13</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
		<b>THE 393 Senior Seminar</b>	<b>1</b>
THEATRE ARTS MAJOR WITH A THEATRE DESIGN CONCENTRATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE		<b>THE 191 Design Practicum</b>	<b>3</b>
First Semester		<b>Electives</b>	<b>9</b>
<b>ENG 101 Composition</b>	<b>4</b>		<b>14</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>	Eighth Semester	
<b>THE 190 Theatre Laboratory</b>	<b>1</b>	<b>THE 190 Theatre Laboratory</b>	<b>1</b>
<b>THE 131 Acting I</b>	<b>3</b>	<b>Electives</b>	<b>12</b>
<b>THE 121 Stagecraft</b>	<b>3</b>		<b>13</b>
	<b>14</b>		
Second Semester			
<b>ENG 120 Intro to Lit./Culture</b>	<b>3</b>		
<b>Distribution Requirements</b>	<b>6</b>		
<b>THE 190 Theatre Laboratory</b>	<b>1</b>		
<b>THE 132 Speech for the Stage (OPO)</b>	<b>3</b>		
<b>ART 113 Drawing</b>	<b>3</b>		
	<b>16</b>		
Third Semester			
<b>Distribution Requirements</b>	<b>6</b>		
<b>THE 232 Acting II</b>	<b>3</b>		
<b>THE 190 Theatre Laboratory</b>	<b>1</b>		
<b>THE Theatre Design Elective</b>	<b>3</b>		
<b>Elective</b>	<b>3</b>		
	<b>16</b>		
Fourth Semester			
<b>Distribution Requirements</b>	<b>9</b>		
<b>THE 112 Script Analysis</b>	<b>3</b>		
<b>THE 190 Theatre Laboratory</b>	<b>1</b>		
<b>Art Elective</b>	<b>3</b>		
	<b>16</b>		
Fifth Semester			
<b>Distribution Requirements</b>	<b>3</b>		
<b>THE 190 Theatre Laboratory</b>	<b>1</b>		
<b>THE 221 Theatre History I</b>	<b>3</b>		
<b>THE Theatre Design Elective</b>	<b>3</b>		
<b>Electives</b>	<b>6</b>		

# SCHOOL OF EDUCATION

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DEPARTMENT OF EDUCATION

## SCHOOL OF EDUCATION

DEAN: DR. MICHAEL SPEZIALE

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

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

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

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

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

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

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

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

The Mission of the Undergraduate Teacher Education Program 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 students to meet the diverse needs of all students within the learning community.

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

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

The School of Education is also committed to engaging in partnerships to provide unique opportunities to all of our students, including:

Learning Sciences International, which has partnered with Wilkes to develop and offer programs in 21st Century Teaching and Learning, Early Childhood Literacy and a letter of endorsement in Teacher Leadership and Instructional Coaching;

Performance Learning Systems, which has partnered with Wilkes to develop and offer a program in Educational Development and Strategies; and

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

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

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

## DEPARTMENT OF EDUCATION

INTERIM CHAIRPERSON: DR. KRISTIN C. BEWICK

Faculty: Associate Professors: Bewick,  
Kropiewnicki, Morrison, Polachek

Assistant Professors: B. Bellucci, Camoni,  
Gardner, Mao

Instructor: Murray-Galella

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

### ELEMENTARY EDUCATION MAJOR

#### **TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ELEMENTARY EDUCATION LEADING TO THE B.A. DEGREE — 120.**

#### *Mission of the Teacher Education Program*

The mission of the Teacher Education Program (TEP) 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 graduates to meet the diverse needs of all students within the learning community.

#### *B.A. Degree and Certification Programs*

The Department of Education offers a B.A. in Elementary Education and programs leading to Pennsylvania Department of Education (PDE) certification in the following areas: biology, chemistry, early childhood education, earth and space science, English, general science, mathematics, social studies, Spanish, and special education. The Teacher Education Program also offers the English as a Second Language specialist designation.

#### *General Guidelines of the Teacher Education Program*

Admission to Wilkes University does not guarantee admission into the Teacher Education Program (TEP). Requirements for admission to the TEP are in compliance with the mandates of the Pennsylvania Department of Education (PDE). Students formally apply for admission to the Teacher Education Program when the requirements for TEP Admission are completed. All teacher education candidates must complete six credits of English and six credits of Mathematics within the first 48 credit hours, as required by the Pennsylvania Department of Education.

The Wilkes University requirements for TEP admission, courses leading to certification, student teaching, recommendation for certification, and graduation are subject to change based on requirements mandated by the Pennsylvania Department of Education.

#### *Elementary Education Certification*

Elementary Education is a major leading to K-6 elementary certification with a minor required in an academic discipline. Minors include: biology, chemistry, communications, computer science, computer information systems, geo-environmental sciences, English, history, mathematics, music, physics, political science, psychology, reading, sociology, Spanish or theatre arts.

Elementary education majors take methods of teaching courses in math, science, social studies, the arts, physical education and health, reading, and language arts as well as courses in educational theory and practice. Students planning to major in and be certified in Elementary Education must complete the following requirements:

1. Complete an academic major and content area minor
2. Complete the following Core courses:
  - Communications  
Fulfilled by OPO courses
  - Computer Literacy - 3 credits  
CS 115
  - English - 7 credits (within the first 48 credit hours as required by the PDE);
    - ENG 101—Composition
    - ENG 120—Introduction to Literature and Culture
  - Foreign Language or Philosophy - 3 credits (Foreign Language highly recommended)
  - First-Year Foundations - 3 credits  
FYF 101
  - History - 6 credits  
HST 101  
HST 125—American History I (highly recommended)  
OR HST 126—American History II
  - Math - 6 credits (within first 48 credit hours as required by PDE)
    - MTH 103—Mathematics for Elementary School Teachers I
    - MTH 104—Mathematics for Elementary School Teachers II
  - OR two higher numbered courses in mathematics
  - Psychology - 6 credits  
PSY 101—General Psychology  
PSY 221—Developmental Psychology
  - Science - 6 credits (with 1 Lab)  
Biology —BIO 105 or BIO 121

- Geo-environmental —EES 105, EES 211, EES 230, EES 240, or Sciences —EES 251
  - Chemistry —CHM 105 or CHM 115
  - Physics —PHY 105, PHY 174, or PHY 201
  - Social Science - 3 credits  
ANT 101, EC 102, PS 111, OR SOC 101
  - Visual and Performing Arts - 3 credits  
ART 101, DAN 100, MUS 101 OR THE 100
3. Complete the following Education courses (All courses are 3 credits unless otherwise noted):
- ED 190 - Effective Teaching with Field Experience (30 hours)
- Note: Departmental permission is required to register for this course.

Students must have a minimum GPA of 2.8 to register, Field Experience Placement Form completed, and current Act 34, 151, and FBI clearances submitted to Coordinator of Field Placements.

- ED 200 - Educational Psychology
  - ED 210 - Teaching Students with Special Needs
  - ED 215 - Integrating Technology into the Classroom
  - ED 220 - Multicultural Education
  - ED 310 - Health, Physical Education and Safety in Early Childhood and Elementary Education
  - ED 321 - Foundation of Reading with Field Experience (30 hours)
- Note: Must have departmental permission to register.
- ED 322 - Teaching of Reading
- Note: Prerequisite is ED 321.
- ED 330 - Mathematics in Early Childhood and Elementary Education
  - ED 341 - Language Arts in Early Childhood and Elementary Education(OPO course)
  - ED 345 - Assessment in Education
  - ED 350 - Arts in Early Childhood and Elementary Education
  - ED 360 - Social Studies in Early Childhood and Elementary Education
  - ED 370 - Science in Early Childhood and Elementary Education
  - ED 385 - Classroom Management
  - EDSP 388 - Inclusionary Practices
  - ED 390 - Student Teaching with Seminar (12 credits) (OPO course)
- Note: Must have departmental permission to register

## Reading Minor

### *Reading Minor*

Students have the option of declaring a minor in Reading. The Reading Minor is appropriate for Elementary Education majors who have a strong interest in the teaching of reading and wish to learn more about reading pedagogy at the undergraduate level prior to student teaching. The Reading Minor provides students who plan to pursue a graduate program in reading or a related area with additional knowledge about reading pedagogy prior to advanced coursework. It also offers an additional field experience to increase skills important to the teaching of reading. Students selecting this minor would participate in tutoring and reading camps that serve children from regional schools.

The Reading Minor is comprised of six three-credit courses. The current sequence of courses offered by the Education Department related to reading pedagogy are included in the requirements for the 18-credit minor. These courses are:

- ED 321 Foundations of Reading with Field Experience
- ED 322 Teaching of Reading
- ED 341 Language Arts in Elementary and Early Childhood Education (OPO course)

Three additional three-credit courses are required for the Reading Minor. These courses include:

- ED 323 Diagnostic Reading Methods
- ED 324 Children and Adolescent Literature
- ED 325 Applied Reading Strategies with Field Experience.

## Special Education

### *Special Education*

Special Education certification prepares teachers to work with special needs populations in grades N-12. Special Education is a concentration that Elementary or Secondary Education students may ADD to their program in order to qualify for dual certification. If majoring in Elementary Education with a concentration in Special Education, a student must also select from the following academic minors: biology, chemistry, communications, computer science, computer information systems, geo-environmental sciences, English, history, mathematics, music, physics, political science, psychology, reading, sociology, Spanish or theatre arts. Secondary majors pursuing the concentration in Special Education must register for: ED 321-

## School of Education

Foundations of Reading, ED 330-Mathematics in Elementary Education, and PSY 221-Developmental Psychology.

All education students must apply for Admission to the Teacher Education Program in their sophomore or junior year.

Special Education certification candidates must complete the Elementary Education major and minor program requirements or the Secondary Education program requirements in addition to the following five specialized (EDSP) 3 credit courses:

- EDSP 225 - Special Education Methodology I with Field Experience (15 hours)(OPO course)
- EDSP 226 - Special Education Methodology II with Field Experience (15 hours)
- EDSP 227 - Behavior Management with Field Experience (15 hours)
- EDSP 300 - Assessment in Special Education
- EDSP 389 - Issues and Topics in Special Education

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

Students are eligible to register for the first Special Education course, EDSP 225, when they have completed the following education course prerequisites with passing grades:

- ED 190 - Effective Teaching with Field Experience
- ED 200 - Educational Psychology
- ED 210 - Teaching Students with Special Needs
- ED 220 - Multicultural Education

A course highly recommended for Special Education certification students is PSY 354 - The Exceptional Individual.

*NOTE: Students in the Special Education Concentration will complete a ten-part Competency Binder throughout the EDSP courses. The Competency Binder represents PDE-recommended guidelines for teacher preparation.*

### Early Childhood Education

#### *Early Childhood Education*

Early Childhood Education prepares teachers to work in nursery (N) or preschool settings with young children, as well as to teach students in grades K-3. Early Childhood certification may be added to the Elementary Education major to qualify candidates for dual certification.

All education students must apply for Admission to the Teacher Education

Program in their sophomore or junior year. To earn dual certification, candidates must complete all requirements for Elementary Education, complete an academic minor, and take the following three courses:

- ED 263\* - Child Development (2 credits)
- ED 361\* - Early Childhood Education with Field Experience (15 hours) (3 credits)
- ED 362\*\* - Instruction in Early Childhood Education with Field Experience (30 hours) (3 credits)

\*Typically offered during fall semesters

\*\*Typically offered during spring semesters

### English as a Second Language

#### *English as a Second Language*

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

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

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

ESL Specialist Program Requirements:

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

- ED 190 - Effective Teaching with Field Experience (30 hours)
- ED 200 - Educational Psychology
- ED 210 - Teaching Students with Special Needs

3 credit hours in intensive English language courses:

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

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

- ED 220 - Multicultural Education
- ED 338 - Teaching ESL: Materials & Methodologies (15 hour field experience in ESL)
- ED 341 - Language Arts (OPO course)

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

- ED 321 - Foundations of Reading with Field Experience (30 hours)
- ED 322 - Teaching of Reading
- ED 380 - Content Area Reading (2 credits)
- ENG 393 - The Teaching of English (30 hour field) (4 credits)

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

SECONDARY EDUCATION PROGRAMS OF STUDY AND CERTIFICATION REQUIREMENTS:

*Secondary Education*

The Wilkes University Department of Education offers programs leading to Pennsylvania Department of Education (PDE) secondary (grades 7 – 12) certification in the following areas: **biology, chemistry, earth and space sciences, English, general science, mathematics, social studies, and also Spanish (a K-12 certification)**. Admission to Wilkes University is only the first step in gaining acceptance into the Teacher Education Program (TEP). Requirements for admission to the TEP are in compliance with the mandates of PDE. Students should also refer to the University Bulletin, the TEP Handbook, and PDE's site: <http://www.pde.state.pa.us> for specific requirements.

Students interested in secondary education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. Students interested in secondary education will declare a Minor in Secondary Education. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 215, ED 220, ED 380\*, ED 3XX (specific Secondary Methods course). EDSP 388, ED 390. \*not required for English majors.

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. Students planning

to become certified in Secondary Education must complete the following requirements:

Secondary Education Requirements

1. Complete an academic major.
2. Complete the following courses:  
English - 7 credits (within the first 48 credit hours as required by the PDE);  
ENG 101 – Composition  
ENG 120 - Introduction to Literature and Culture  
Math - 6 credits (within the first 48 credit hours as required by the PDE).
3. Complete the following Education courses (all 3 credits each unless otherwise noted):  
ED 190 - Effective Teaching with Field Experience (30 hours)

*Note: Departmental permission is required to register for this course. Students must have a minimum GPA of 2.8 to register, complete a Field Experience Placement Form completed, and submit current Act 34, 114 & 151 clearances submitted to Coordinator of Field Placements.*

- ED 200 - Educational Psychology
- ED 210 - Teaching Students with Special Needs
- ED 215 - Integrating Technology into the Classroom
- ED 220 - Multicultural Education
- ED 380 - Content Area Reading (2 credits)
- ED 3XX - Methods in Certification Area (4 credits)
- EDSP 388 - Inclusionary Practices
- ED 390 - Student Teaching (OPO) (12 credits)

*Note: In all Education courses students must earn grades of 2.0 or higher. Education courses in which a grade is lower than a 2.0 can be retaken once.*

4. Apply for Admission to the Teacher Education Program during ED 190.
5. Complete one 4-credit Special Methods course below corresponding to the certification content area. This course includes a 30-hour Field Experience in a secondary classroom. Departmental permission is required to register for this course. Students must have the required GPA, complete the Field Experience Placement form completed, and submit current Act 34, 114 & 151 clearances to Coordinator of Field Placements. These courses are offered in the fall semester, *except* MTH 303, which is offered every *other* fall semester.  
ED 300 - Special Methods Foreign Languages 7-12 (30 hours)

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ED 371 - Special Methods Sciences 7-12 (30 hours)

ED 381 - Special Methods Social Studies 7-12 (30 hours)

ENG 393 - The Teaching of English in Secondary Schools (30 hours)

MTH 303 - The Teaching of Mathematics in Secondary Schools (30 hours)

6. **Complete the Student Teaching Application Checklist. The semester prior to student teaching, students are required to attend a mandatory Student Teaching Placement meeting to review and receive the required paperwork to register for student teaching.**

7. **Complete EDSP 388 - Inclusionary Practices**  
**Complete ED 390 - Student Teaching with Seminar (OPO course) (12 credits)**

*Note: Must have departmental permission to register*

Other recommended courses for secondary education are: ED 345 - Assessment in Education, ED 385 - Classroom Management, PSY 222 - Adolescent Psychology and a foreign language.

### *Biology Certification*

Students seeking biology certification should follow the Bachelor of Arts (B.A.) curriculum. 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.

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

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 & Evolutionary Biology  
BIO 226 Cellular & Molecular Biology  
BIO 391 Senior Research Project  
BIO 392 Senior Research Project  
BIO 397 Professional Preparation Techniques  
CHM 113 Elements & Compounds Lab  
CHM 115 Elements & Compounds  
CHM 114 The Chemical Reaction Lab  
CHM 116 The Chemical Reaction  
CHM 231 Organic Chemistry I  
CHM 233 Organic Chemistry I Lab  
CHM 232 Organic Chemistry II

CHM 234 Organic Chemistry II Lab

CS elective

MTH 105 or MTH 111

MTH 106 or MTH 112

PHY 171

PHY 174

Major Electives (12 - 16)

### *Chemistry Certification*

Students seeking chemistry certification should follow the Bachelor of Arts (B.A.) curriculum. 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.

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

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

courses:

CHM 115 Elements & Compounds  
CHM 113 Elements & Compounds Lab  
CHM 116 The Chemical Reaction  
CHM 114 The Chemical Reaction Lab  
CHM 231 Organic Chemistry I  
CHM 233 Organic Chemistry I Lab  
CHM 232 Organic Chemistry II  
CHM 234 Organic Chemistry II Lab  
CHM 248 Instrumental Analysis  
CHM 246 Instrumental Analysis Lab  
CHM 322 Advanced Inorganic Chemistry  
CHM 351 Physical Chemistry I  
CHM 353 Physical Chemistry I Lab  
CHM 352 Physical Chemistry II  
CHM 354 Physical Chemistry II Lab  
CHM 341 Principles of Instrumental Analysis  
CHM 343 Principles of Instrumental Analysis Lab  
CHM 361 or CHM 362 Biochemistry  
CHM 370\* or 371\* or 372\* (four credits total)

\*can be taken for one or two credits; need to take at least two semesters to accumulate four credits

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

### *Earth and Space Science Certification / General Science Certification*

Students seeking Earth and Space Science certification should follow the Bachelor of Arts

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

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

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

- CS Elective
- EES 211 - Physical Geology
- EES 210 - Global Climatic Change
- EES 212 - Historical Geology
- EES 230 - Ocean Science
- EES 240 - Principles of Environmental Science
- EES 251 - Synoptic Meteorology
- EES 280 - Principles of Astronomy
- EES 302 & 304 - Literature Methods & Environmental Data Analysis
- EES 394 - Field Study
- EES 391 & 392 - Senior Projects I and II
- MTH 105 - Elementary Statistics
- PHY 171 & 174 - Classical and Modern Physics (Principles & Application of)
- PSY 101 - General Psychology
- CHM 113 & 115 - Elements and Compounds with Lab

Optional for General Science Certification:

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

#### *English Certification*

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

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

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

- ENG 101 - Composition
- ENG 120 - Literature and Culture

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

Three of four survey courses

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

It is recommended that students seeking certification take all four survey courses. 12 credit hours in English courses above 300, including

- ENG 397 Seminar

In addition, students must take PSY 101 - General Psychology.

#### *Spanish Certification*

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

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

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

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

#### *Mathematics Certification*

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

In addition, students must take the required Education courses and special methods course (MTH 303, offered every other fall semester)

## School of Education

followed by student teaching as listed under Secondary Education Requirements.

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

Students seeking certification in Mathematics must take the following courses:

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

### *Social Studies Certification*

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

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

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

HST 102 – Europe Before 1600  
HST 125 & 126 – American History I & II  
HST 297 Historical Research & Methods  
HST 397 Seminar  
History electives 15 credits (two American; two non-American topics)

ANT 102 Cultural Anthropology  
EC 102 Principles of Economics II  
PS 111 Introduction to American Politics  
PS 141 Introduction to International Politics  
PSY 101 General Psychology  
PSY 222 Adolescent Psychology  
SOC 101 Introduction to Sociology  
Soc 211 The Family (optional)

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 Concepts & Methods in PS  
PS 265 Quantitative Reasoning for Social Sciences  
PS 380 PS Senior Project  
Major electives: 21 credits

ANT 102 Cultural Anthropology  
EC 102 Principles of Economics II  
HST 101 Historical Foundations  
HST 125 & 126 American History I & II  
MTH 150 Elementary Statistics  
PSY 101 General Psychology  
PSY 222 Adolescent Psychology  
SOC 101 Introduction to Sociology  
Soc 211 The Family (optional)

### TEACHER EDUCATION PROGRAM ADMISSION REQUIREMENTS:

Students interested in preparing for teacher certification must be formally admitted to the Teacher Education Program at Wilkes University. All students are expected to review the Teacher Education Program handbook available in the Education Department and on line at [www.wilkes.edu](http://www.wilkes.edu). Students may also review information on the Education web site at [www.wilkes.edu/pages/404.asp](http://www.wilkes.edu/pages/404.asp). The criteria for admission to the Teacher Education Program are:

1. Completed 48 semester hour credits (including 6 credits of Mathematics and 6 credits of English as required by PDE).
2. A minimum GPA of 2.8 to register for the first education course, ED 190 – Effective Teaching with Field Experience.
3. Completed Teacher Education Program Application, essay, and signed Code of Professionalism and Academic Honesty (during ED 190).
4. Completion of ED 190 with a grade of at least 3.0.
5. An overall GPA of 3.0 is needed to be admitted into the Teacher Education Program. A cumulative 3.0 GPA must be maintained in order to be retained in the program (as required by PDE).
6. A GPA of 2.0 in courses which fulfill the Minor.
7. A GPA of 2.0 in secondary major courses.
8. **Passing the three PRAXIS I PPST tests in Reading, Writing, and Math (administered by Educational Testing Services), taken during ED 190. Students may not register for 300**

**level Education courses until all PPST tests have been passed.**

9. Submitted current / valid Act 34 State Police Criminal Record Check.
10. Submitted current / valid Act 151 Child Abuse History Clearance.
11. Submitted Act 114 FBI Fingerprint Check.

**TEACHER EDUCATION PROGRAM RETENTION REQUIREMENTS:**

Once a student is formally admitted into the Teacher Education Program, the following criteria must be maintained for retention in the program:

1. Cumulative GPA of 3.0.
2. Minor course GPA of 2.0.
3. Major course GPA of 2.0.
4. Earned grades of 2.0 or higher in all Education courses.
5. Updated valid Act 34 and Act 151 clearances (to be submitted every year) and submitted Act 114 FBI Fingerprint check.
6. Maintained professionalism and academic honesty as prescribed by the TEP Code of Professionalism and Academic Honesty, and the Pennsylvania Code of Professional Practice and Conduct for Educators.

**TEACHER EDUCATION PROGRAM STUDENT TEACHING REQUIREMENTS:**

1. **Successful completion of requirements for TEP Admission and Retention, including passing scores on 3 PPST tests (Reading, Writing, Math)**
2. Achievement of the GPA major and minor requirements
3. Attendance at the Student Teaching Placement Meeting the semester prior to student teaching
4. Completion of all required paperwork obtained at Student Teaching Placement Meeting the semester prior to student teaching
5. Submission of updated Act 34 clearance and with no offenses to the Education Department
6. Submission of updated Act 151 Clearances and with no offenses to the Education Department and submission of Act 114 FBI Fingerprint check
7. Completion of all required coursework and fieldwork, with the exception of Student Teaching

8. Registration form with Advisor's signature and special permission to register form attached
9. Approval of student teaching eligibility by major department, Education Department, and Teacher Education Committee
10. Students are assigned to schools in Wyoming, Luzerne or Lackawanna counties for student teaching.

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

**TEACHER EDUCATION PROGRAM REQUIREMENTS FOR GRADUATION AND CERTIFICATION:**

1. Achievement of the GPA major and minor requirements.
2. Completed all Wilkes University and TEP requirements.
3. Successfully completed Student Teaching, including satisfactory scores on each category of the Pennsylvania Statewide Evaluation Form for Student Professional Knowledge and Practice (PDE 430).
4. Provided evidence of passing scores on all relevant PRAXIS tests. Note: A student can graduate without passing all PRAXIS tests, but cannot obtain PDE certification.
5. Completed the Wilkes University application for graduation (provided by the Registrar's office).
6. Reviewed graduation audit (provided by the Registrar's office) with academic advisor.
7. Completed PDE Application Form PDE 338G (General Application) for Pennsylvania Teacher Certification.
8. Completed PDE application form PDE 338C (University Verification Form – Part A) for Pennsylvania Teacher Certification.
9. Paid PDE Certification fees with a money order made out to Commonwealth of PA Dept of Education.

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

**ELEMENTARY EDUCATION MAJOR/CERTIFICATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

**First Semester**

**FYF 101 First-Year Foundations 3**

School of Education

<b>HST 125 or 126 American History</b>	<b>3</b>
<b>MTH 103 Math for Elementary Teachers</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>PSY 101 General Psychology</b>	<b>3</b>
	<hr/>
	16
Second Semester	
<b>CS 115 Computers &amp; Applications</b>	<b>3</b>
<b>Science Elective</b>	<b>3</b>
<b>MTH 104 Math for Elementary Teachers</b>	<b>3</b>
<b>HST 101 Modern World</b>	<b>3</b>
<b>ENG 120 Intro to Literature</b>	<b>3</b>
	<hr/>
	15
Third Semester	
<b>ED 190 Effective Teaching w/Field Exp.</b>	<b>3</b>
<b>Visual &amp; Performing Arts Elective</b>	<b>3</b>
<b>Minor Elective</b>	<b>3</b>
<b>Social Science Elective</b>	<b>3</b>
<b>Science Elective</b>	<b>3</b>
	<hr/>
	15
Fourth Semester	
<b>ED 200 Educational Psychology</b>	<b>3</b>
<b>ED 210 Teaching Students Spec. Needs</b>	<b>3</b>
<b>ED 220 Multicultural Education</b>	<b>3</b>
<b>FL 101 or PHL 101</b>	<b>3</b>
<b>Minor Elective</b>	<b>3</b>
<b>PSY 221 Developmental Psychology</b>	<b>3</b>
	<hr/>
	18
Fifth Semester	
<b>ED 321 Found/Reading-Field Experience</b>	<b>3</b>
<b>ED 310 Health, PE, &amp; Safety in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>ED 215 Integrating Technology</b>	<b>3</b>
<b>ED 341 Lang. Arts in ECE &amp; Elem. Ed</b>	<b>3</b>
<b>Minor Elective</b>	<b>3</b>
	<hr/>
	15
Sixth Semester	
<b>ED 322 Teaching of Reading</b>	<b>3</b>
<b>ED 330 Mathematics in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>ED 345 Assessment in Education</b>	<b>3</b>
<b>Minor Electives</b>	<b>6</b>
	<hr/>
	15

Seventh Semester	
<b>ED 350 The Arts in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>ED 360 Soc. Studies in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>ED 370 Science in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>ED 385 Classroom Management</b>	<b>3</b>
<b>Minor Elective</b>	<b>3</b>
	<hr/>
	15
Eighth Semester	
<b>ED 390 Student Teaching with Seminar</b>	<b>12</b>
<b>EDSP 388 Inclusionary Practices</b>	<b>3</b>
	<hr/>
	15

SECONDARY EDUCATION CERTIFICATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>MTH 101 Quantitative Reasoning</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>PSY 101 General Psychology</b>	<b>3</b>
<b>Major Elective</b>	<b>3</b>
	<hr/>
	16
Second Semester	
<b>CS 115 Computers &amp; Applications</b>	<b>3</b>
<b>Social Science Elective</b>	<b>3</b>
<b>Science Elective</b>	<b>3</b>
<b>Math Elective</b>	<b>3</b>
<b>Major Elective</b>	<b>3</b>
	<hr/>
	15
Third Semester	
<b>ED 190 Effective Teaching w/Field Exp.</b>	<b>3</b>
<b>HST 101 Modern World</b>	<b>3</b>
<b>ENG 120 Intro to Literature</b>	<b>3</b>
<b>FL 101 or PHL 101</b>	<b>3</b>
<b>Major Electives</b>	<b>6</b>
	<hr/>
	18
Fourth Semester	
<b>ED 200 Educational Psychology</b>	<b>3</b>
<b>ED 210 Teaching Students with Special Needs</b>	<b>3</b>
<b>ED 220 Multicultural Education</b>	<b>3</b>
<b>Science Electives</b>	<b>3</b>
<b>Visual and Performing Arts Elective</b>	<b>3</b>
	<hr/>
	15
Fifth Semester	

<b>Major Electives</b>	<b>12</b>	<b>ED 220 Multicultural Education</b>	<b>3</b>
<b>ED 215 Integrating Technology</b>	<b>3</b>	<b>FL 101 or PHL 101</b>	<b>3</b>
	15	<b>PSY 221 Developmental Psychology</b>	<b>3</b>
Sixth Semester		<b>Minor Elective</b>	<b>3</b>
<b>Major Electives</b>	<b>15</b>		18
<b>ED 380 Content Area Reading</b>	<b>2</b>	Fifth Semester	
	17	<b>ED 330 Mathematics in ECE &amp; Elem. Ed.</b>	<b>3</b>
Seventh Semester		<b>ED 310 Health, PE, &amp; Safety in ECE/Elem.</b>	<b>3</b>
<b>ED XXX Special Methods w/Field Exp.</b>	<b>4</b>	<b>EDSP 225 Spec. Ed. Methodology I</b>	<b>3</b>
<b>Major Electives</b>	<b>9-12</b>	<b>EDSP 226 Spec. Ed. Methodology II</b>	<b>3</b>
	13-16	<b>Minor Elective</b>	<b>3</b>
Eighth Semester		<b>FL 101 or PHL 101</b>	<b>3</b>
<b>ED 390 Student Teaching with Seminar</b>	<b>12</b>		18
<b>EDSP 388 Inclusionary Practices</b>	<b>3</b>	Sixth Semester	
	15	<b>ED 321 Foundations of Reading w/Field Exp.</b>	<b>3</b>
ELEMENTARY EDUCATION MAJOR AND CERTIFICATION IN SPECIAL EDUCATION-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE		<b>ED 345 Assessment in Education</b>	<b>3</b>
First Semester		<b>ED 215 Integrating Technology</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>	<b>ED 360 Soc. Studies in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>MTH 103 Math for Elementary Teachers</b>	<b>3</b>	<b>EDSP 227 Behavioral Management</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>	<b>EDSP 300 Assessment in Spec. Ed.</b>	<b>3</b>
<b>PSY 101 General Psychology</b>	<b>3</b>		18
	13	Seventh Semester	
Second Semester		<b>ED 322 Teaching of Reading</b>	<b>3</b>
<b>CS 115 Computers &amp; Applications</b>	<b>3</b>	<b>ED 341 Lang. Arts in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>Science Elective</b>	<b>3</b>	<b>ED 350 The Arts in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>MTH 104 Math for Elementary Teachers</b>	<b>3</b>	<b>ED 370 Science in ECE &amp; Elem. Ed.</b>	<b>3</b>
<b>HST 101 Modern World</b>	<b>3</b>	<b>ED 389 Issues/Topics in Spec. Ed.</b>	<b>3</b>
<b>ENG 120 Intro to Literature</b>	<b>3</b>	<b>ED 385 Classroom Management</b>	<b>3</b>
	15		18
Third Semester		Eighth Semester	
<b>ED 190 Effective Teaching w/Field Exp.</b>	<b>3</b>	<b>ED 390B Student Teaching with Seminar</b>	<b>12</b>
<b>Minor Elective</b>	<b>3</b>	<b>EDSP 388 Inclusionary Practices</b>	<b>3</b>
<b>Social Science Elective</b>	<b>3</b>		15
<b>Visual and Performing Arts Elective</b>	<b>3</b>	SECONDARY EDUCATION AND SPECIAL EDUCATION CERTIFICATION- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE	
<b>PSY 221 Developmental Psychology</b>	<b>3</b>	First Semester	
	15	<b>FYF 101 First-Year Foundations</b>	<b>3</b>
Fourth Semester		<b>MTH 101 Quantitative Reasoning</b>	<b>3</b>
<b>ED 200 Educational Psychology</b>	<b>3</b>	<b>ENG 101 Composition</b>	<b>4</b>
<b>ED 210 Teaching Students Spec. Needs</b>	<b>3</b>		

School of Education

<b>PSY 101 General Psychology</b>	<b>3</b>	<b>Ed</b>	
<b>Major Elective</b>	<b>3</b>		<u>18</u>
	16	Eighth Semester	
Second Semester		<b>ED 390 Student Teaching w/Seminar</b>	<b>12</b>
<b>CS 115 Computers &amp; Applications</b>	<b>3</b>	<b>ED 388 Inclusionary Practices</b>	<u><b>3</b></u>
<b>Social Science Elective</b>	<b>3</b>		15
<b>Science Elective</b>	<b>3</b>		
<b>Math Elective</b>	<b>3</b>		
<b>Major Elective</b>	<b>3</b>		
	15		
Third Semester			
<b>ED 190 Effective Teaching w/Field Exp.</b>	<b>3</b>		
<b>HST 101 Modern World</b>	<b>3</b>		
<b>FL 101 or PHL 101</b>	<b>3</b>		
<b>Major Elective</b>	<b>3</b>		
<b>Science Elective</b>	<b>3</b>		
<b>Visual and Performing Arts Elective</b>	<b>3</b>		
	18		
Fourth Semester			
<b>ED 200 Educational Psychology</b>	<b>3</b>		
<b>ENG 120 Intro to Literature &amp; Culture</b>	<b>3</b>		
<b>ED 210 Teaching Student w/Special Needs</b>	<b>3</b>		
<b>ED 220 Multicultural Education</b>	<b>3</b>		
<b>Major Electives</b>	<b>6</b>		
	18		
Fifth Semester			
<b>Major Electives</b>	<b>6</b>		
<b>EDSP 225 Spec. Ed. Methodology I</b>	<b>3</b>		
<b>EDSP 226 Spec. Ed Methodology II</b>	<b>3</b>		
<b>ED 215 Integrating Technology</b>	<b>3</b>		
<b>PSY 221 Developmental Psych</b>	<b>3</b>		
	18		
Sixth Semester			
<b>EDSP 227 Behavioral Management</b>	<b>3</b>		
<b>EDSP 300 Assessment in Spec. Ed</b>	<b>3</b>		
<b>Major Electives</b>	<b>6</b>		
<b>ED 330 Math in ECE/Elem.</b>	<b>3</b>		
<b>ED 321 Foundations of Reading</b>	<b>3</b>		
	18		
Seventh Semester			
<b>ED xxx Special Methods w/Field Exp</b>	<b>4</b>		
<b>Major Electives</b>	<b>9</b>		
<b>ED 380 Content Area Reading</b>	<b>2</b>		
<b>EDSP 389 Issues/Topics in Spec.</b>	<b>3</b>		

# COLLEGE OF SCIENCE AND ENGINEERING

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DEPARTMENT OF AIR AND SPACE STUDIES

DIVISION OF BIOLOGY AND HEALTH SCIENCES

DEPARTMENT OF CHEMISTRY

DIVISION OF ENGINEERING AND PHYSICS

DEPARTMENT OF ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

## COLLEGE OF SCIENCE AND ENGINEERING

DEAN: DR. DALE A. BRUNS

### OUR MISSION

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

### OUR VISION

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

### PROGRAMS

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

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

*The College includes the following academic departments and divisions:*

Aerospace Studies  
Biology and Health Sciences  
Chemistry  
Engineering and Physics  
Geoenvironmental Sciences and  
Engineering  
Mathematics and Computer Science

### *Bachelor's Degrees—Majors*

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

### AIR AND SPACE STUDIES MINOR (AIR FORCE ROTC)

CHAIRPERSON: LIEUTENANT COLONEL MARK KASTER

*Faculty: Professor: Lt. Col. Kaster*

*Assistant Professors: Capts. Marsh, Sanfilippo*

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

The Air Force Reserve Officer Training Corps (AFROTC) program at Wilkes University permits students to earn commissions as officers in the U.S. Air Force while pursuing a university degree. Students

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

***Additional courses required in the minor, by concentration:***

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

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

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

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

***General Military Course (4-Year Program Only)***

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

***Field Training***

Field training consists of a four-week, 3-credit Air and Space Studies course or a 5-week, 3-credit Air and Space Studies course conducted at selected Air Force bases. It provides students an opportunity to observe Air Force units and people at work; to participate in marksmanship, survival, athletics, and leadership training activities; to experience aircraft orientation flights; and to work with contemporaries from other colleges and

universities. Transportation from the legal residence of the cadet to the field training base and return, food, lodging, and medical and dental care are provided by the Air Force.

***Professional Development Program (PD) (Optional)***

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

***Uniforms***

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

***Scholarships***

AFROTC also offers 2-to 5-year, full and partial tuition scholarships for which qualified students may compete, if they enroll in AFROTC. All scholarship awards are based on individual merit, regardless of financial need, with most scholarship recipients determined by central selection boards. Since scholarship applicants must meet certain academic, physical fitness and medical requirements to be considered by the scholarship boards, contact the Air and Space Studies Department early in the fall semester. High school students wishing to compete for AFROTC college scholarships must complete and submit an application early in the fall term of their senior year. ALL AFROTC SCHOLARSHIP RECIPIENTS ENTERING (OR TRANSFERRING TO) WILKES UNIVERSITY RECEIVE FREE ROOM AND BOARD. (To receive free room and board, the scholarship recipient must live in a Wilkes University-owned and operated residence hall.) Contracted cadets also receive a monthly stipend (300-\$500, depending on AS-level) and \$900/year for a book allowance.

***Commissioning***

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

**College of Science and Engineering**

security forces or any of a number of other career fields.

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

The General Military Course (GMC) consists of four one-credit courses which are introductory in nature and open to freshmen or sophomores. Students enrolling in these courses do not incur any military service obligation (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) Course credit values are shown with each course.

**First Semester**

<b>AS 101 Foundations of the USAF I</b>	<b>1</b>
<b>AS 103 Leadership Laboratory</b>	<b>0</b>
	<u>1</u>

**Second Semester**

<b>AS 102 Foundations of the USAF II</b>	<b>1</b>
<b>AS 104 Leadership Laboratory</b>	<b>0</b>
	<u>1</u>

**Third Semester**

<b>AS 201 Evolution of USAF Air &amp; Space Power I</b>	<b>1</b>
<b>AS 203 Leadership Laboratory</b>	<b>0</b>
	<u>1</u>

**Fourth Semester**

<b>AS 202 Evolution of USAF Air &amp; Space Power II</b>	<b>1</b>
<b>AS 204 Leadership Laboratory</b>	<b>0</b>
	<u>1</u>

Variations in the above schedule are possible. Sophomores with no AFROTC experience can enroll in both the one-credit freshman and sophomore courses (our "dual-enrollee" program).

**Summer Field Training**

**Only one Field Training class is required. Students attending the 5-week class are students that have not completed the first four semesters of Air and Space Study classes**

**4-Week AFROTC Field Training**

<b>AS 240 4-week AFROTC Field Training</b>	<b>3</b>
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**5-Week AFROTC Field Training**

<b>AS 250 5-week AFROTC Field Training</b>	<b>3</b>
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The Profession Officer Course (POC) consists of four three-credit courses which focus on leadership, management, national security studies and preparation for active

duty. Students enrolled in the POC desiring to commission in the Air Force upon graduation must attend these courses. POC students may incur a military service obligation upon graduation even if they do not successfully complete these courses and fail to commission in the Air Force. (Exception: Air Force scholarship recipients incur a commitment at the beginning of their sophomore year.) Course credit values are shown with each course. These courses are open to all college students as electives with the permission of the chairperson of the department.

**Fifth Semester**

<b>AS 301 Air Force Leadership Studies I</b>	<b>3</b>
<b>AS 303 Leadership Laboratory</b>	<b>0</b>
	<u>3</u>

**Sixth Semester**

<b>AS 302 Air Force Leadership Studies II</b>	<b>3</b>
<b>AS 304 Leadership Laboratory</b>	<b>0</b>
	<u>3</u>

**Seventh Semester**

<b>AS 401 National Security Affairs/Active Duty Preparation I</b>	<b>3</b>
<b>AS 403 Leadership Laboratory</b>	<b>0</b>
	<u>3</u>

**Eighth Semester**

<b>AS 402 National Security Affairs/Active Duty Preparation II</b>	<b>3</b>
<b>AS 404 Leadership Laboratory</b>	<b>0</b>
	<u>3</u>

## DIVISION OF BIOLOGY AND HEALTH SCIENCES

CHAIRPERSON: DR. MICHAEL A. STEELE

*Faculty: Professors: Klemow, Steele, Terzaghi*

*Associate Professors: Kalter, Pidcock*

*Assistant Professors: Biggers, Gutierrez, Kadlec,  
Straiford*

*Adjunct Faculty: Mullen, Ruotolo, Serfass*

*Faculty Emeriti: Hayes, Rozelle, Turoczi*

*Coordinator of Health Sciences: Sharp*

*Lab. Preparation Specialists: Ellias*

*Biology Instructor and Education Specialist:  
Chapman*

### BIOLOGY MAJOR

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED  
FOR A MAJOR IN BIOLOGY LEADING TO THE B.A.  
DEGREE - 122.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED  
FOR A MAJOR IN BIOLOGY LEADING TO THE B.S.  
DEGREE - 122.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED  
FOR A MINOR - 22.**

The Biology program is a generalized program covering basic areas of biology. Specific pre-professional training is minimized in favor of the broadest possible background in the liberal arts as well as the biological sciences.

The B.A. curriculum offers flexibility so that those students in secondary education who are preparing to teach can include the professional semester of student-teaching in the eighth semester. Biology is an approved minor for elementary education majors. Students majoring in biology may opt to earn a Pennsylvania Teaching Certificate for teaching biology in grades 7-12 by completing a minor in secondary education.

Students interested in Secondary Education declare the minor in secondary education with their advisor. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 215, ED 220, ED 380, ED XXX (specific Secondary Methods Course), ED 390, and EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and an overall 3.0 grade point average and pass the appropriate PRAXIS tests in order to be certified.

The B.S. curriculum meets all of the liberal arts requirements for the Bachelor of Arts degree. In addition, it provides a greater concentration of advanced biology courses. This program is recommended for those students planning to enter industry, professional schools, or continue with graduate study in biology.

In order to emphasize the broadening aspects of biological knowledge, the department has established categories of specific biological fields from which the student must achieve reasonable diversity in the selection of upper-level courses. The four categories are (1) Molecular/Cellular Biology, (2) Structural and Functional Biology, (3) Diversity and Populational Biology, and (4) Botanical Biology. The B.A. major is required to take a total of four electives with one upper-level course from each of the four categories. The B.S. major must take a total of five electives with one upper-level course from each of the four categories and additionally select any one course from those same categories.

*Courses within the four categories are constituted as follows:*

(1) Molecular/Cellular — Bio 326, 327, 328, 338, 345, 398

(2) Structural/Functional — Bio 311, 314, 321, 323, 325, 398

(3) Diversity/Populational — Bio 306, 312, 341, 343, 344, 346, 398

(4) Botanical — Bio 361, 362, 366, 368, 398

### BIOLOGY MINOR

Students in majors other than Biology may wish to elect a minor in Biology. The minor in Biology shall consist of a minimum of 22 credits. Required courses are Bio 121-122, 225-226 plus two 300-level, biology electives. These upper-level electives (exclusive of Independent Research, Bio 395-396) will be selected after consultation with the department chairperson.

#### *Honors Program in Biology*

Honor students in Biology will be recognized upon completion of the following requirements: achieving a graduating grade point average of 3.25 or better, receiving grades of 3.00 or better in all biology courses, pursuing independent research in biology and presenting their project results either at a national or regional scientific conference or through publication of a research paper. The distinction "Honors in Biology" will be

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recorded on the student's transcript upon graduation.

BIOLOGY MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCES

First Semester

	B.A.	B.S.
<b>Bio 121 - Principles of Modern Biology I</b>	<b>4</b>	<b>4</b>
<b>Chm 113 - Elem. &amp; Compunds Lab</b>	<b>1</b>	<b>1</b>
<b>Chm 115 - Elements &amp; Compounds</b>	<b>3</b>	<b>3</b>
<b>FYF 101 - First-Year Foundations</b>	<b>3</b>	<b>3</b>
<b>Mth 105 - Calculus for Life, Managerial, and Social Sciences I</b>	<b>4</b>	<b>4</b>
<b>or</b>		
<b>Mth 111 - Calculus I</b>		

15 15

Second Semester

	B.A.	B.S.
<b>Bio 122 - Principles of Modern Biology II</b>	<b>4</b>	<b>4</b>
<b>Chm 114 - The Chem. Reaction Lab</b>	<b>1</b>	<b>1</b>
<b>Chm 116 - The Chemical Reaction</b>	<b>3</b>	<b>3</b>
<b>Eng 101 - Composition</b>	<b>4</b>	<b>4</b>
<b>Mth 106 Calculus for Life, Managerial, and Social Sciences II</b>	<b>4</b>	<b>4</b>
<b>or</b>		
<b>Mth 112 - Calculus II</b>		

16 16

Third Semester

	B.A.	B.S.
<b>Bio 225 - Population and Evolutionary Bio.</b>	<b>4</b>	<b>4</b>
<b>Chm 231 - Organic Chemistry I</b>	<b>3</b>	<b>3</b>
<b>Chm 233 - Organic Chem. I Lab</b>	<b>1</b>	<b>1</b>
<b>Distribution Requirements</b>	<b>6</b>	<b>6</b>

14 14

Fourth Semester

	B.A.	B.S.
<b>Bio 226 Cellular and Molecular Biology</b>	<b>4</b>	<b>4</b>
<b>Chm 232 - Organic Chemistry II</b>	<b>3</b>	<b>3</b>

<b>Chm 234 - Organic Chem. II Lab</b>	<b>1</b>	<b>1</b>
<b>Distribution Requirements</b>	<b>6</b>	<b>6</b>

14 14

Fifth Semester

	B.A.	B.S.
<b>Bio 397 - Professional Prep. Techniques*</b>	<b>2</b>	<b>2</b>
<b>Bio Elective/Research</b>	<b>3</b>	<b>3</b>
<b>Phy 171 - Classical and Modern Physics</b>	<b>4</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>0</b>	<b>3</b>
<b>Free Elective**</b>	<b>9</b>	<b>3</b>
<b>Mth 150 Elementary Statistics</b>		<b>3</b>

16-18 16-18

Sixth Semester

	B.A.	B.S.
<b>Bio 397 - Professional Prep. Techniques*</b>	<b>2</b>	<b>2</b>
<b>Bio Elective/Research</b>	<b>3</b>	<b>3</b>
<b>Phy 174 - Classical and Modern Physics</b>	<b>4</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>	<b>3</b>
<b>Computer Science Elective</b>	<b>3</b>	<b>3</b>

13-15 13-15

Seventh Semester

	B.A.	B.S.
<b>Bio 391 - Senior Research Projects</b>	<b>1</b>	<b>1</b>
<b>Bio Electives</b>	<b>3-4</b>	<b>6-8</b>
<b>Free Electives**</b>	<b>12</b>	<b>9</b>

16-17 16-18

Eighth Semester

	B.A.	B.S.
<b>Bio 392 - Senior Research Projects</b>	<b>2</b>	<b>2</b>
<b>Bio Electives</b>	<b>3-4</b>	<b>6-7</b>
<b>Distribution Requirement</b>	<b>3</b>	<b>0</b>
<b>Free Electives**</b>	<b>7</b>	<b>7</b>

15-16 15-16

*No more than four credits of Bio 395/396 can count toward the major.*

\*Only one semester of Bio 397 is required but it must be taken in either the fifth or sixth semester.

\*\*Any course other than a biology course.

#### MARINE SCIENCE OPTION WITH A MAJOR IN BIOLOGY AND A MINOR IN EARTH AND ENVIRONMENTAL SCIENCES

Wilkes University is a member of the Wallops Island Marine Science Consortium, an association of both state and private institutions that oversee the operation of a marine field station located in southeastern Virginia. Through its membership in the Consortium, Wilkes offers to its students the full range of courses in marine sciences and oceanography regularly taught at the Station each summer. Interested students in Biology may formally pursue a Marine Science Option concentration in a four-year program that is fully integrated into their major and a minor in Earth and Environmental Sciences. On a less formal basis, students who meet course prerequisites may complement regular coursework with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island Marine Science Station typically carry three credits and involve three weeks of intensive field and laboratory study at the Marine Station and related field sites (e.g. Florida Keys and Honduras). Facilities at the Station include dormitory space, cafeteria, labs, lecture halls, a variety of field and laboratory equipment (e.g. one large oceanographic vessel and three inshore vessels) and a range of inshore, offshore, and estuarine field sites. To enroll, students must first contact the coordinators of the Wallops Island Program at Wilkes University (prior to the spring semester) and then register for the appropriate course through the Wilkes University Registrar.

#### *Courses regularly offered at the Station include:*

MS 110 - Introduction to Oceanography  
 MS 211 - Field Methods in Oceanography  
 MS 221 - Marine Invertebrates  
 MS 241 - Marine Biology  
 MS 250 - Wetland Ecology  
 MS 260 - Marine Ecology  
 MS 300 - Behavior of Marine Organisms  
 MS 330 - Tropical Invertebrates  
 MS 331 - Chemical Oceanography  
 MS 342 - Marine Biology  
 MS 343 - Marine Ichthyology  
 MS 345 - Ornithology  
 MS 352 - Modeling in Environmental Biological Sciences  
 MS 362 - Marine Geology  
 MS 390 - Undergraduate Research in Marine Science  
 MS 394 - Physiology of Marine Organisms

MS 431 - Ecology of Marine Plankton  
 MS 432 - Marine Evolutionary Ecology  
 MS 433 - Advanced Methods in Coastal Ecology  
 MS 450 - Coastal Geomorphology  
 MS 451 - Coastal Environmental Oceanography  
 MS 464 - Biological Oceanography  
 MS 470 - Research Diver Methods  
 MS 471 - Scanning Electron Microscopy: Marine Applications  
 MS 490 - Marine Aquaculture  
 MS 491 - Coral Reef Ecology and MS 492 - Marine Mammals  
 MS 493 - Behavioral Ecology  
 MS 500 - Problems in Marine Science

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

#### MARINE SCIENCE OPTION CONCENTRATION WITH A MAJOR IN BIOLOGY- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

##### First Semester

<b>Bio 121 - Modern Biology I</b>	<b>4</b>
<b>FYF 101 - First-Year Foundations</b>	<b>3</b>
<b>Mth 111 - Calculus I or</b>	<b>4</b>
<b>Mth 105 - Calculus for LMSS</b>	
<b>Chm 113 - Elements and Compounds Lab</b>	<b>1</b>
<b>Chm 115 - Elements and Compounds</b>	<b>3</b>
	<hr/>
	15

##### Second Semester

<b>Bio 122 - Modern Biology II</b>	<b>4</b>
<b>Eng 101 - Composition</b>	<b>4</b>
<b>Mth 112 - Calculus II or</b>	<b>4</b>
<b>Mth 106 - Calculus for LMSS</b>	
<b>Chm 114 - The Chemical Reaction Lab</b>	<b>1</b>
<b>Chm 116 - The Chemical Reaction</b>	<b>3</b>
	<hr/>
	16

##### Third Semester

<b>Bio 225 - Population and Evolutionary Biology</b>	<b>4</b>
<b>Chm 231 - Organic Chemistry I</b>	<b>3</b>
<b>Chm 233 - Organic Chemistry I Lab</b>	<b>1</b>
<b>EES 230 - Ocean Science</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
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	15

##### Fourth Semester

<b>Bio 226 Cellular and Molecular</b>	<b>4</b>
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<b>Biology</b>	
<b>Chm 232 - Organic Chemistry II</b>	<b>3</b>
<b>Chm 234 - Organic Chemistry II Lab</b>	<b>1</b>
<b>Computer Science Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Mth 150 Statistics</b>	<b>3</b>
	<b><u>17</u></b>
<b>MS__ Summer College MCS<sup>2</sup></b>	<b>3</b>
Fifth Semester	
<b>Phy 171 - Classical and Modern Physics</b>	<b>4</b>
<b>Bio 397 - Professional Preparation Techniques</b>	<b>2</b>
<b>Bio Electives/Research</b>	<b>6</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b><u>15</u></b>
Sixth Semester	
<b>Phy 174 - Classical and Modern Physics</b>	<b>4</b>
<b>EES Elective</b>	<b>3</b>
<b>Bio Elective/Research</b>	<b>3</b>
<b>Bio/EES 343 - Marine Ecology 1, 3</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b><u>16</u></b>
<b>MS__ Summer College MCS<sup>2</sup></b>	<b>3</b>
Seventh Semester	
<b>Bio 391 - Senior Projects I</b>	<b>2</b>
<b>Bio Electives</b>	<b>3-4</b>
<b>Free Electives</b>	<b>6</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b><u>14-15</u></b>
Eighth Semester	
<b>Bio 392 - Senior Projects II</b>	<b>2</b>
<b>Bio Electives</b>	<b>6-7</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>EES Elective</b>	<b>2-3</b>
	<b><u>13-15</u></b>

<sup>1</sup> GES/BIO 343 counts toward both BIO degree and EES minor.

<sup>2</sup> EES minor credits includes 2 MS courses at MSC Wallops Island, but not MS 110 or MS 260.

<sup>3</sup> 18 minimum credits for EES minor includes BIO/EES 343.

**Summary of Requirements:**

Biology Course Credits (BIO 121, 122, 225, 226, 343, 397, 391, 392 & Wilkes BIO electives (18-20 credits) = 42-44  
 EES Minor Credits (EES 230, 343, 2 Wilkes EES electives, and 2MS) = 18-19

Other Science, Math and Free Elective Credit = 48; Core and Distribution Credits = 25; Minimum Program Credits = 127

**HEALTH SCIENCES**

EILEEN M. SHARP, M.S., COORDINATOR FOR HEALTH SCIENCES PROFESSIONAL PROGRAMS

DEBRA I. CHAPMAN, M.S., PREMEDICAL AND PRE-PROFESSIONAL PROGRAMS ADVISOR

**Adjunct Faculty:**

*Ms. Nikki Black, Coordinator, Medical Education, Guthrie Health System, Sayer, PA; and Richard English, M.D., Program Director, Family Practice Residency Program, Wyoming Valley Health Care System, Wilkes-Barre, PA in the premedical programs. Brian D. Spezialetti, Program Director, Medical Technology Program, Robert Packer Hospital, and Joseph King, M.D., Medical Director, Medical Technology Program, Robert Packer Hospital for the medical technology programs.*

**Health Sciences Committee**

*(reports to Dale Bruns, Ph.D., Dean of the College of Science and Engineering) Michael A. Steele, Ph.D., Committee Chair, Associate Professor of Biology and Chair, Division of Biology and Health Sciences; Amy Bradley, Ph.D., Associate Professor of Chemistry; Dale Bruns, Ph.D., Dean of the College of Science and Engineering; Debra I. Chapman, M.S., Instructor in Biology; Michael Frantz, M.A., Vice President of Enrollment Services; Linda Gutierrez, M.D., Associate Research Professor in Biology; Dan F. Kopen, M.D., Physician and Member of the Wilkes University Board of Trustees; Donald Mencer, Ph.D., Associate Professor of Chemistry; Kenneth A. Pidcock, Ph.D., Associate Professor of Biology; Edward J. Schicatanio, Ph.D., Assistant Professor of Psychology; Eileen M. Sharp, M.S., Coordinator for Health Sciences Professional Programs; and William J. Biggers, Ph.D., Assistant Professor of Biology.*

Wilkes University has a long-standing tradition of educating students who become health care professionals in a variety of community settings—large and small, rural and urban. The Health Sciences Programs at Wilkes provide a particularly broad and rich range of choices for entry into the medical and allied health professions.

The University's medical pre-professional programs prepare students for careers in allopathic and osteopathic medicine, dentistry, optometry, podiatric medicine, and veterinary medicine. Pre-professional programs in allied health provide preparation for students to enter the health care professions of physical therapy, occupational therapy, and clinical laboratory sciences.

*Advisement, Guidelines and Procedures for all Health Sciences Students*

All Health Sciences students must declare a specific academic major and also complete a core of courses for their chosen health profession. Many pre-doctoral students major in Biology, Chemistry or Biochemistry. However, students who have majored in the traditional liberal arts, Math or Engineering have also been successful in gaining admission to health professions schools. Health professions schools are generally interested in students who have in-depth training in the sciences along with a broad background in the humanities and social sciences. Many students pursuing one of the allied health areas major in Biology, Psychology or one of the other traditional science or social science programs.

An important component of the University's Health Sciences Programs is its counseling and advising system. The Wilkes tradition of close student advising permits thorough understanding of the student's aspirations and goals. A faculty advisor is assigned to the student in his or her academic major. This academic advisor is the first point of contact regarding course planning and registration for the student. In addition, the student is counseled on the particulars of pre-doctoral and allied health education by the advisors in the Health Sciences Office.

The Health Sciences Office specifically provides information about standards for admission to the various health professions. In addition, time lines for individual programs, admission services for health professions schools, test dates and study guides for professional school admission exams, admission deadlines, and catalogues from a variety of professional schools in the health sciences are available.

All students planning to pursue careers in the health sciences must declare their specific interest with the Wilkes Health Sciences Office. Students must complete a Health Sciences Declaration Form as soon as they determine their interest and submit a schedule of their classes each semester to that office. The Declaration Form enables the Health Sciences Office to track the student and monitor his or her academic progress.

**HEALTH SCIENCES PRE-PROFESSIONAL PROGRAMS**

These programs prepare students for health professional programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine and Veterinary Medicine.

*Overview*

Wilkes University offers premedical programs that share a fundamental and formative premise— that unprecedented technological and scientific dynamism will characterize the context of medical careers conducted in the next thirty to fifty years. This perspective has important implications for the future health professionals' baccalaureate studies, including the need to master computer-based information access systems, to reach a level of mastery in the sciences permitting independent judgement and research, and to grow in ethical sensitivity and sophistication. Drawing on the University's strengths in science, information systems, and the humanities, Wilkes has defined an approach to health sciences pre-professional education that produces exceptionally competent and competitive candidates for admission to the nation's leading health professions institutions.

The Wilkes Health Sciences pre-professional graduate stands out first of all because he or she is not only broadly trained but also has mastered the rapidly evolving medical information technologies. Throughout the science curriculum at Wilkes, students are exposed to and use databases that relate up-to-date information at the cutting edge of research in science fields. Interviews with professional school professors and admissions officers indicate that such information access skills are increasingly relevant and are essential for the health practitioner. As a comprehensive University, with a full range of bachelor's and master's degree programs in natural sciences, computer science, and engineering, Wilkes provides a sophisticated, research-capable science environment in which students learn how to negotiate the information-rich, highly complex, world of scientific database communications.

The future health practitioner will also be called upon to assess and implement promising information emerging in the fields of molecular biology, biochemistry, cell biology, and organic chemistry. A general exposure to science at the undergraduate level, typical of liberal arts college health sciences pre-professional studies, will no longer be sufficient to prepare medical students and practitioners to be fully competent as professionals. The Wilkes science-intensive pre-professional program involves students in research projects and applications activities during their undergraduate years and helps them to gain real mastery as scientists, able to make independent judgments and to conceptualize

and conduct independent research. Health care now makes obsolete the former dichotomous categorization of science and pre-professional studies, in that the superior physician will increasingly have to be a research-capable scientist. Pre-professional studies at Wilkes have adapted to this trend well in advance of programs at most other institutions.

Database information and scientific dynamism make it necessary to focus attention on the moral and ethical dimensions of pre-professional studies. Through its General Education Requirements, Wilkes provides the future health practitioner with a highly meaningful learning experience in philosophy, ethics, and social problems. These learning experiences are augmented by the robust atmosphere of intellectual discussion and debate, which has long been one of Wilkes' distinguishing institutional characteristics, as a nondenominational, non-sectarian university at which issues of morality and ethics are taken seriously. In this way Wilkes prepares its Health Sciences students for the real world in which they will function as broadly educated, competent professionals.

The descriptions of courses and curricula that follow put into practice what we at Wilkes believe to be a progressive program of pre-professional studies in health care careers.

#### *The Wilkes Health Sciences Pre-professional Core*

(Required of all students aspiring to enter programs in Allopathic Medicine, Osteopathic Medicine, Dentistry, Optometry, Podiatric Medicine and Veterinary Medicine.)

A unique feature of the University's pre-professional education is the pre-professional core, a sequence of courses designed to prepare students for the challenges and rigors of a health care doctoral education. The core was developed after consulting admissions personnel from health professions schools regarding undergraduate courses required for admission. The pre-professional core not only includes the traditional requirements expected by health professions schools, but also capitalizes on the University's strengths in science and technology.

The pre-professional core includes a meaningful research or project experience, a practicum and observation experience provided by local health professionals, knowledge and utilization of computers in healthcare, meaningful laboratory background with emphasis on the

understanding and use of modern instrumentation, and participation in a variety of seminars and programs offered through the Health Sciences Office.

#### *The Wilkes Pre-professional Core requires the following courses as a minimum:\**

2 courses in Modern Biology (BIO 121-122)

(A third course in Comparative Anatomy, BIO 314, is recommended)

4 courses in Chemistry (CHM 115-116, 231-232)

1 course in Biochemistry (CHM 361 or 362)

1 course in Medical Informatics (CS 265)

2 courses in Physics (PHY 171-174 or 201-202)

2 courses in Mathematics (MTH 105-106 or 111-112)

1 course in Psychology (PSY 101)

1-2 courses in English\*\* (emphasizing writing skills)

Research course or a Special Project \*\*\*

A shadowing experience (20–25 hrs) in each of the undergraduate years

Attendance at Health Science Office-sponsored events on campus

\*Pre-optometry students are also required to complete statistics (MTH 150), Cellular and Molecular Biology (BIO 226) and Medical Microbiology (BIO 327).

\*Pre-dentistry students are also required to complete a course in sculpture (ART 122).

\*\*English course requirements (as well as other prerequisite course requirements) vary from one health professions school to another. It is the student's responsibility to meet the requirements of a particular health professions school.

\*\*\*Students enrolled in one of the accelerated seven-year programs may elect to be waived from the senior year research course or special project.

All students intending to enter doctoral programs in health care must complete these pre-professional core courses. Students should work with their academic advisors to integrate this core into the recommended course sequence for their academic major as outlined in this Bulletin.

#### *The goals of the Pre-professional Core are to:*

- a. Help the student develop a useful scientific foundation.
- b. Serve as a unique signature, which Wilkes graduates can carry forward as successful professionals.

- c. Facilitate the preparation for standardized admissions tests such as the MCAT, OAT, and DAT.

#### *Letter of Evaluation*

Students applying to a health professions school may request a Letter of Evaluation from the Wilkes Health Sciences Committee. In order to receive the Letter of Evaluation from the Committee, students must have a Declaration Form on file, successfully complete the Pre-professional Core, develop knowledge of and experience in the field they wish to enter through shadowing and gain experience in the social service field by volunteering their time with community agencies. These types of experiences are required by most health-professions schools. The application for the committee letter must be submitted to the Health Sciences Committee by May 1st of a student's junior year.

#### *Placement of Pre-doctoral Students*

Wilkes enjoys an enviable record of placement of students in health professions schools with acceptance rates of almost 90%. Allopathic medical schools accepting Wilkes students include George Washington, Georgetown, Harvard, Johns Hopkins, Drexel University, Pennsylvania State University-Hershey, Stanford, SUNY Upstate, Temple University, Thomas Jefferson University, Tulane, the University of Pennsylvania, the University of Pittsburgh and Yale. A number of Wilkes students also enter osteopathic medical schools such as Lake Erie College of Osteopathic Medicine, the Philadelphia College of Osteopathic Medicine, Ohio University College of Osteopathic Medicine, and University of Health Sciences College of Osteopathic Medicine in Kansas City.

Wilkes students have attended dental school at the University of Connecticut, Tufts University, the University of Pittsburgh, the University of Buffalo School of Dental Medicine, and Temple University. Preoptometry students have gained admission to institutions such as Illinois College of Optometry, New England College of Optometry, Ohio State University College of Optometry, and Pennsylvania College of Optometry. Podiatric medical schools accepting Wilkes students include California College of Podiatric Medicine, New York College of Podiatric Medicine, Ohio College of Podiatric Medicine, and Temple University School of Podiatric Medicine. Wilkes students have also gained admission to veterinary schools such as the Oklahoma State University School of Veterinary

Medicine, the University of Illinois School of Veterinary Medicine, University of Pennsylvania School of Veterinary Medicine, the University of Wisconsin-Madison Veterinary School and the Virginia-Maryland Regional College of Veterinary Medicine.

#### AFFILIATED DEGREE PROGRAMS IN MEDICINE

##### *I. Early Assurance B.S./M.D. Programs in Allopathic Medicine*

Wilkes has developed special early assurance joint B.S./M.D. degree programs and established agreements with three major medical schools, which lead to a baccalaureate degree from Wilkes University and the professional degree in medicine upon completion of medical school. Once students have been granted acceptance to Wilkes University, and identified as qualified to be considered for selection to one of the early assurance programs, they will be required to submit essays and letters of recommendation from two high school science teachers and one humanities/English teacher to the Health Sciences Committee and successfully complete three interviews. If ultimately selected for any of the three programs, students must satisfy all requirements as articulated in each specific affiliation agreement. All students in these early assurance programs will spend their 7th or 8th semester in a clinical setting. Wilkes University has established special affiliations with Guthrie Health Systems (GHS), which includes the Robert Packer Medical Center in Sayre, Pennsylvania (Guthrie Scholars) and the Wyoming Valley Health Care System (WVHCS), which includes the General Hospital in Wilkes-Barre, PA (Wyoming Valley Scholars) for students to participate in this clinical experience.

#### A. PREMEDICAL SCHOLARS PROGRAMS WITH DREXEL (FORMERLY MCP-HAHNEMANN) UNIVERSITY SCHOOL OF MEDICINE

Drexel University School of Medicine (Drexel) in Philadelphia and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from northeastern Pennsylvania and the southern tier of New York State (from Binghamton to Corning) who are interested in a career in medicine. Students from northeastern Pennsylvania may choose either the Guthrie Scholars or the Wyoming Valley Scholars clinical site. Southern tier New York students will spend their semester at the Guthrie clinical site.

This program allows high school seniors to

## College of Science and Engineering

be assured admission to Drexel University School of Medicine as they enter Wilkes University to do their undergraduate work. Details of this program are as follows:

### 1. Program Admission

- a. To be considered for selection to the Drexel Premedical Scholars Program, applicants must meet the following conditions:
  - Be accepted into the entering freshman class at Wilkes University by November 15th of their senior year in high school.
  - Have a minimum combined SAT score of 1270 (with no subset less than 560) (The new SAT writing sample will be considered, but no official minimum score has yet been determined.)
  - Have a high GPA
  - Rank in the top 10% of their high school graduating class
  - Have satisfactorily passed the following high school prerequisite courses or equivalents: four (4) years of mathematics, four (4) years of English, three (3) years of science (at least one semester each of biology, chemistry and physics)
  - Have had at least one shadowing experience (preferably with a primary care or general practice physician)
- b. Up to six (6) Premedical Scholars may be selected to the program each year.
- c. Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office will notify students who meet minimal qualification criteria for selection to this early assurance program. To be selected, students are required to successfully complete interviews at Wilkes, at either the Robert Packer Medical Center of the Guthrie Health System or the General Hospital of the Wyoming Valley Health Care System, and at Drexel University School of Medicine.
- d. Only students from northeastern Pennsylvania and the lower tier of New York (from Binghamton to Corning) for the Guthrie Scholars Program and northeastern Pennsylvania for the WVHCS Scholars Program will be considered.

- e. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- f. Final selection for this program is at the discretion of the medical school at which a student interviews.

### 2. Program Format

- a. Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core. Students must maintain a minimum overall GPA of 3.45 and a cumulative GPA of 3.25 in the prerequisite sciences during their four (4) years at Wilkes, without repeating a course. Students who receive a grade below a 2.0 in any course will be automatically disqualified from the program. Students must score, in a single test, "9" or better on each sub-section or a minimum score of 30 (with no sub-section less than "7") and a letter score of "M" or higher on the writing sub-section on the MCAT by the end of their junior year at Wilkes to complete the medical school admission requirements. Additional requirements are specified in the acceptance letter from the medical school and Wilkes University.
- b. The off-campus clinical semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions on Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department. Students in the Guthrie Program will spend the 7th or 8th semester of undergraduate study at the Robert Packer Medical Center in Sayre, Pennsylvania, doing clinical research, and studying the rural and semi-rural Health Care Delivery System of northeastern Pennsylvania and the lower tier of New York. In return for Guthrie's investment in them, students in the Guthrie Scholars Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Robert Packer Medical Center. Students in the WVHCS Program will spend the 7th or 8th semester of undergraduate study at the Wyoming

Valley Health Care System in Kingston, Pennsylvania, doing clinical research and studying the semi-rural Health Care Delivery System of northeastern Pennsylvania. In return for Wyoming Valley's investment in them, students in the WVHCS Scholars Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Wyoming Valley Health Care System.

- c. Four (4) years of medical school study at Drexel University.

**B. THE PREMEDICAL SCHOLARS PROGRAM WITH THE PENNSYLVANIA STATE UNIVERSITY COLLEGE OF MEDICINE AT HERSHEY**

The Pennsylvania State University College of Medicine at Hershey (Penn State Hershey) and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from rural and/or medically underserved areas of Pennsylvania who must be interested in a career in primary health medicine. This program allows students to select either the Guthrie Scholars clinical site or the Wyoming Valley Scholars clinical site for their senior year clinical experience.

The program allows high school seniors to be assured admission to the Pennsylvania State University College of Medicine at Hershey as they enter Wilkes University to do their undergraduate work. Details of this program are as follows:

**1. Program Admission**

- a. To be considered for selection to the Penn State Hershey Premedical Scholars Program, applicants must meet the following conditions:
  - Be accepted into the entering freshman class at Wilkes University by November 15th of their senior year in high school
  - Have a minimum combined SAT score of 1250 (The new SAT writing sample will be considered, but no official minimum score has yet been determined.)
  - Have a high GPA
  - Rank in the top 10% of their high school graduating class
  - Have satisfactorily completed three (3) years of natural sciences, including biology, chemistry and physics, and mathematics through trigonometry (calculus is recommended)

- Have had at least one shadowing experience (preferably with a primary care or general practice physician)
- b. Two Premedical Scholars may be selected to the program each year.
- c. Once students have been accepted to Wilkes University, the Wilkes Health Sciences Office will notify students who meet minimum qualification criteria for selection to this early assurance program. To be selected, students are required to successfully complete interviews at Wilkes, at either the Robert Packer Medical Center of the Guthrie Health Care System or the Wyoming Valley Health Care System, and at the Pennsylvania State University College of Medicine.
- d. Emphasis in recruiting will be placed on students from rural and/or medically underserved areas of Pennsylvania who wish to pursue a career in primary care medicine.
- e. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- f. Final selection for this program is at the discretion of the medical school at which a student interviews.

**2. Program Format**

- a. Four years of successful undergraduate premedical study at Wilkes University. Student must maintain a minimum GPA of 3.5 in biology, chemistry and physics and an overall GPA of at least 3.5 by the end of their junior year at Wilkes. Specific criteria by year are as follows.

**Freshman Year**

- Minimum GPA of 3.3

**Sophomore Year**

- Minimum GPA of 3.4
- Shadowing experience with a primary care physician
- Meet with the Associate Dean for Admissions and Student Affairs of the Penn State College of Medicine

**Junior Year**

- Minimum GPA in biology, chemistry and physics of 3.5 and a minimum overall GPA of 3.5
- A second shadowing experience with a primary care physician

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- A Letter of Evaluation from the Health Sciences Committee at Wilkes University
- Completion of the MCAT
- Completion of the AMCAS application

### Senior Year

- Maintain a high level of academic achievement and complete the Wilkes University premedical core of courses
  - Participate in the clinical site experience during the 7th or 8th semester
  - Meet with the Associate Dean for Admissions and Student Affairs of the Penn State College of Medicine
- a. The off-campus semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions on Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each academic department.
  - b. Students must complete their 7th or 8th semester in college at either the Robert Packer Hospital or the General Hospital. In return for Guthrie's or Wyoming Valley's investment in them, students must spend parts of the 3rd and 4th years in medical school doing required and elective clinical rotations at either Robert Packer Medical Center or General Hospital (dependent on which location they spent their 7th or 8th semester at Wilkes).
  - c. Completion of the MCAT examination is required for admission to the Pennsylvania State University College of Medicine. The exam must be taken by April of the junior year at Wilkes. Students are expected to perform at or above the mean score in each section when compared with the previous College of Medicine entering class. Additional requirements are specified in the acceptance letter from the medical school and Wilkes University.
  - d. Four (4) years of medical school study at the Pennsylvania State University College of Medicine at Hershey.

### C. THE PREMEDICAL SCHOLARS PROGRAM WITH THE STATE UNIVERSITY OF NEW YORK UPSTATE MEDICAL UNIVERSITY AT SYRACUSE, NEW YORK (SUNY UPSTATE)

The State University of New York Upstate

Medical University at Syracuse, New York (SUNY Upstate) and Wilkes University offer a special Premedical Scholars Program for outstanding high school seniors from the southern tier of New York State, from Binghamton to Corning. Students will spend their clinical semester at the Guthrie Scholars clinical site in Sayre, Pennsylvania.

This program allows high school seniors to be assured admission to SUNY Upstate Medical University as they enter Wilkes University to do their undergraduate work. The program is as follows:

#### 1. Program Admission

- a. High school applicants must have a minimum combined SAT score of 1200 to be considered for admission to the SUNY Upstate Premedical Scholars Program. The new SAT writing sample will be considered, but no official minimum score has yet been determined.
- b. Students admitted to the program, after successful interviews at Wilkes, Robert Packer Medical Center, and SUNY Upstate, will be simultaneously assured admission to medical school at SUNY Upstate Medical University and to Wilkes University.
- c. Students must maintain a minimum GPA of 3.5 in biology, chemistry, mathematics and physics (BCMP) during their first three (3) years at Wilkes to complete the medical school admission requirements. [No Medical College Admission Test (MCAT) is required] Additional requirements will be specified in the acceptance letter from the medical school and Wilkes University.
- d. Emphasis in recruiting for this program will be placed on students from the southern tier of New York State, from Binghamton to Corning.
- e. The deadline for application and acceptance to Wilkes University is November 15th of their senior year in high school.
- f. Successful applicants should expect to be interviewed at Wilkes prior to December 20th of their senior year in high school. Finalists from this interview will be called to subsequent interviews in early January of their senior year in high school.
- g. Final selection for this program is at the discretion of the medical school at which a student interviews.

2. Program Format

- a. Four (4) years of successful undergraduate study at Wilkes University, which includes completion of an academic major and the Pre-professional Core.
- b. The off-campus semester requires a total of 15 credits of coursework, including Cooperative Education in Clinical Observation (6), Senior and/or Independent Research (3), Lectures in Biomedicine (3), and Discussions of Medical Ethics and Alternative Therapies (3). Faculty advisors can elaborate on how this impacts on course requirements in each department.  
Students in the program will spend the 7th or 8th semester of undergraduate study at the Guthrie Scholars clinical site in Sayre, Pennsylvania, doing clinical and basic science research, and studying the rural and semi-rural Health Care Delivery System of New York. In return for Guthrie's investment in them, students in the SUNY Upstate Program must spend part of the 3rd and 4th years in medical school doing required and elective clinical rotations at the Robert Packer Medical Center.
- c. Four (4) years of medical school study at SUNY Upstate Medical University. Third and fourth year medical students in the program will be assigned to the SUNY Upstate Clinical campus at Binghamton to complete their required and elective clinical rotations.

II. Seven-Year Affiliated Health Professions Programs

In addition to the traditional four-year premedical undergraduate programs, Wilkes University has developed affiliations with health professions schools in osteopathic medicine, dentistry, optometry, and podiatric medicine. These programs permit students to spend three years at Wilkes in the basic sciences and liberal arts and four years at the affiliated health professions school. The University has developed these seven-year health professions programs with the following institutions:

- Philadelphia College of Osteopathic Medicine (PCOM)
- Temple University School of Dentistry (TUSD)
- Pennsylvania College of Optometry (PCO)
- Temple University School of Podiatric Medicine (TUSPM)
- State University of New York College of

Optometry (SUNY-Optometry)

**These programs offer a unique opportunity for outstanding high school students, who are** fairly certain of the career path they wish to pursue, to complete their pre-professional and professional education in seven years. Students should have a high GPA and high rank in their high school graduating class, a combined SAT score of 1200 or better (with no score less than 550) and have completed Honors or AP coursework, especially in the sciences. The new SAT writing sample will be considered, but no official minimum score has yet been determined.

In order to qualify for any of these seven-year programs, students must apply and be accepted to Wilkes University by January 1st of their senior year in high school. If minimum prerequisites are met and students are accepted to the University, they will be interviewed by representatives of the Wilkes University Health Sciences Committee prior to April 1st of their senior year in high school for final selection. Once students are selected for one of these affiliated programs and begin their undergraduate education, they will receive assistance from the Health Sciences Office in advising them through their accelerated program of study and in the application process to the health profession school. Students will be expected to maintain a high GPA and are required to participate in shadowing experiences, volunteer activities and seminars and programs sponsored by the Health Sciences Office during their three years at Wilkes in addition to meeting the requirements listed below by each individual health professional institution.

SEVEN-YEAR PROGRAMS WITH A MAJOR IN BIOLOGY- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>BIO 121 Principals of Modern Biology I</b>	<b>4</b>
<b>CHM 113 Elements and Compounds Lab</b>	<b>1</b>
<b>CHM 115 Elements and Compounds</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>MTH 105 Calculus for Life, Managerial and Social Sciences I</b>	<b>4</b>
	<b>15</b>

Second Semester

<b>BIO 122 Principals of Modern Biology II</b>	<b>4</b>
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<b>CHM 114 The Chemical Reaction Lab</b>	<b>1</b>
<b>CHM 116 The Chemical Reaction</b>	<b>3</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>MTH 106 Calculus for Life, Managerial and Social Sciences II</b>	<b>4</b>
	<hr/>
	16
Third Semester	
<b>BIO 225 Population and Evolutionary Biology</b>	<b>4</b>
<b>CHM 231 Organic Chemistry I</b>	<b>4</b>
<b>COM 101 Fundamentals of Public Speaking</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	17
Fourth Semester	
<b>BIO 226 Cellular and molecular Biology</b>	<b>4</b>
<b>CHM 232 Organic Chemistry II</b>	<b>4</b>
<b>PSY 101 General Psychology</b>	<b>3</b>
<b>CS 265 Medical Informatics</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	17
Fifth Semester	
<b>BIO 397 Professional Preparation Techniques</b>	<b>2</b>
<b>BIO Elective</b>	<b>4</b>
<b>PHY 171 Princ. of Classical and Modern Physics</b>	<b>4</b>
<b>MTH 150 Elementary Statistics</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	16
Sixth Semester	
<b>BIO Elective</b>	<b>4</b>
<b>CHM 362 Biochemistry: Metabolism</b>	<b>4</b>
<b>PHY 174 App. of Classical and Modern Physics</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
	<hr/>
	17

Select one course from Structural/Functional category.  
 Select one course from Diversity/Populational category.

Pre-optometry students must complete BIO 327 (Medical Microbiology).

Following successful completion of their first year of basic science education in professional school, a student is responsible for transferring the credits earned at the

professional school to Wilkes and Wilkes will confer upon each student the Wilkes University baccalaureate degree.

Wilkes University students must apply for and receive a Health Sciences Committee Letter of Evaluation after their sophomore year in order to apply to any of the affiliated institutions. Only students who have earned a high grade point average by the end of their sophomore year and who have fulfilled appropriate requirements of the Pre-professional Core and the General Education Requirements will be endorsed and receive a Letter of Evaluation for the seven-year programs. Students whose academic credentials fall beneath the standards set by the Committee will be advised to complete a third year of study at Wilkes before reapplying for a Letter of Evaluation. Decisions for admission to these health professions schools are made by a Joint Admissions Committee from Wilkes University and the affiliated institution. Students must meet all admission requirements as outlined by the health professions schools with the final admission decision determined by the health professions institution.

• *Philadelphia College of Osteopathic Medicine (PCOM)*

PCOM holds up to fifteen (15) seats each year for Wilkes University students who are recommended by the Health Sciences Committee for admission and who meet all of PCOM's admission requirements. Students should consult the Wilkes Health Sciences Office for information regarding PCOM's requirements for a minimum grade point average and MCAT score.

• *Temple University School of Dentistry (TUSD)*

TUSD reserves a minimum of four (4) seats each year for Wilkes students who meet all of Temple University's admission requirements. Wilkes students will be granted an automatic invitation for an interview if they submit their application no later than December 1 of the year prior to matriculation to TUSD and they meet the following minimum requirements as specified by Temple Dentistry:

- Track as a science major in the Wilkes pre dental program.
- Submit application letter to TUSD prior to December 1 of the junior year at Wilkes.
- Receive a Letter of Evaluation from the Wilkes University Health Sciences Committee.

- d. Earn a minimum grade point average of 3.5 by the end of the 5th semester in the Basic Sciences, 3.4 in the Sciences, and 3.3 overall.
- e. Earn a minimum score of 18 in the Science section and 18 as the academic average on the Dental Admission Test (DAT).

Students who are interviewed will then be evaluated for admission by the Temple University Admission Committee.

Pennsylvania College of Optometry (PCO)

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

Temple University School of Podiatric Medicine (TUSPM)

PCO holds up to four (4) seats, SUNY-Optometry holds up to six (6) seats, and TUSPM holds up to six (6) seats each year for Wilkes University students who are endorsed for admission by the Wilkes Health Sciences Committee and who meet all of the appropriate institution's admission requirements. Students should consult the Wilkes Health Sciences Office for information regarding requirements for a minimum grade point average (GPA) and a minimum score on the appropriate health professions school admission test.

Wilkes University takes pride in having developed these affiliated seven-year medical programs, which have been ongoing since the late 1970s. Currently, large numbers of alumni who have graduated from these programs are in successful professional practice. We especially encourage highly motivated and academically gifted students to take advantage of these abbreviated specialized programs and join those already enrolled in this pursuit.

### *III. State University of New York, State College of Optometry Affiliation Programs*

#### **A. OPTOMETRY SCHOLARS PROGRAM**

Wilkes University and the State University of New York, State College of Optometry offer a special academic affiliation in optometric education, the Optometry Scholars Program. Up to six (6) students per year may be selected into a seven-year Bachelor of Arts or Science (B.A. or B.S.) and Doctor of Optometry (O.D.) program. Students chosen for this joint degree program are admitted to a designated, prescribed major at Wilkes University and simultaneously admitted to candidacy to

the SUNY College of Optometry's professional program of study.

#### **1. Program Admission**

- a. High school applicants must have a minimum combined SAT of 1200 (at least 600 math and 550 verbal), a minimum of 93 for their high school grade point average, and place in the top 10% of their graduating class. The new SAT writing sample will be considered, but no official minimum score has yet been determined.
- b. Students selected for the SUNY Optometry Scholars Program, after successful interviews at Wilkes and SUNY College of Optometry, will be simultaneously admitted to candidacy in the Optometry School at State University of New York, College of Optometry and to Wilkes University.
- c. Students in this program must maintain a GPA of 3.3 overall and a 3.3 in the required science and math portion of the joint degree track curriculum, with no grade lower than a 2.0 in each individual science and math prerequisite course. Students must also attain a total science score above 330 on the Optometry Admissions Test (OAT) with no score in any one area below 310.
- d. Students must receive a positive Letter of Evaluation from the Wilkes Health Sciences Committee, pass reasonable personal interview standards and submit all required application materials during their junior year at Wilkes.

#### **2. Program format**

- a. Three (3) years of successful undergraduate study at Wilkes University, which includes coursework in an academic major and in the Pre-professional Core.
- b. Students in this program must also visit and shadow three different professional optometric offices in order to become more fully acquainted with the profession of optometry during their undergraduate study at Wilkes University.
- c. Four (4) years of Optometry School study at SUNY College of Optometry. At the successful completion of their first year of Optometry school, students may transfer their credits to Wilkes and Wilkes will grant the baccalaureate degree.

**B. EARLY ASSURANCE PROGRAM**

Wilkes University and SUNY Optometry also offer an Early Assurance program to which Wilkes sophomores who are interested in a career in optometry may apply.

*To be considered, each applicant must:*

- Have completed two (2) years of undergraduate study (approximately 60 hours) and at least 70% of SUNY's prerequisite courses.
- Maintain throughout the four years a total GPA of 3.3 and a 3.3 GPA in the SUNY prerequisite science and math courses, with no grade lower than a 2.0 (C) in any of the SUNY prerequisite courses.
- Demonstrate a basic knowledge of and a motivation for a career in optometry.
- Take the Optometry Admission Test (OAT) in their junior or senior year and attain a total science score above 330 with no score below 310.
- Provide high school and college transcripts and SAT scores to SUNY Optometry.
- Receive a positive Letter of Evaluation from the Wilkes University Health Sciences Committee.
- During their senior year at Wilkes University, be interviewed at SUNY Optometry.
- Applications are due at SUNY by June 1 following the sophomore year. After the submission and review of all written materials, each applicant receiving serious consideration for admission to the Early Assurance Program will be offered an opportunity to interview at the SUNY College of Optometry. Candidates will be notified of committee action in writing prior to August 31st.

**C. TRADITIONAL ADMISSION PROGRAM**

SUNY Optometry also welcomes applications from Wilkes University juniors interested in a career in optometry who wish to apply to the professional program by the traditional method.

**IV. Transfer Doctoral Degree Program**

The transfer program is similar to our Seven-Year Affiliated Degree programs. However, instead of choosing this 3+4 track before entering Wilkes University as a freshman (as in the 3+4 programs), a student may elect this

path during their tenure as an undergraduate student.

Typically, four (4) years of undergraduate study are required to qualify for the bachelor's degree. Wilkes University makes an exception to this requirement in special circumstances for doctoral students in allopathic and osteopathic medicine, dentistry, optometry, podiatric medicine, veterinary medicine, and doctoral-level physical therapy (DTP).

These students may, with the approval of the Wilkes Academic Standards Committee, satisfy the requirements for the bachelor's degree by completing three years of an academic major, at least the last two of which must be at Wilkes, and by requesting credit toward the degree for their first two years of work in professional school. Students in these programs must, however, satisfy the General Education Requirements at Wilkes University to be considered for a bachelor's degree from the University.

Such students must also petition the Academic Standards Committee for permission to graduate, submit official transcripts from the professional school, and pay the usual graduation fees. In all cases, the final approval for the granting of the baccalaureate degree rests with the Academic Standards Committee of Wilkes University.

**ALLIED HEALTH PROGRAMS**

Wilkes University has developed programs that prepare students for admission to physical therapy and occupational therapy schools as well as programs in clinical laboratory sciences.

*Overview*

With career opportunities expanding in the allied health fields known as physical therapy, occupational therapy, clinical laboratory sciences, physician assistant and chiropractic medicine, admission to programs in these areas has become increasingly competitive. Wilkes University has defined an approach to pre-allied health education to produce competitive, noteworthy candidates for admission.

The University has structured a program of study emphasizing the basic sciences and social sciences to provide students with the appropriate background knowledge to enter occupational and physical therapy programs. The curriculum is complemented by an advising system that closely monitors the student's academic progress and their application process to a professional program.

Students interested in allied health fields must meet with their academic advisors and

advisors from the Health Sciences Office early in their freshman year to work out an individualized course of study. Students may plan to apply to a preprofessional undergraduate program in physical therapy, occupational therapy physician assistant and chiropractic medicine after two or three years of coursework at Wilkes. Students may also plan to complete an undergraduate degree at Wilkes and apply to an entry-level allied health master's or doctoral degree program. Career plans affect course selection and must be reviewed with academic and health sciences advisors.

### *I. Physical Therapy*

Physical Therapy is a profession concerned with restoration of physical function and the prevention of disability following disease, injury, or loss of body parts. The goal of physical therapy is to help the patient reach maximum potential and to assume a place in society while learning to live within the limits of his/her capabilities.

Physical therapists are qualified to utilize such physical agents as therapeutic heat, light, electricity, water, exercise, or massage in treating patients. Treatment may consist of teaching the patient an exercise regimen to increase muscle power or improve coordination, or teaching the patient to walk with prostheses, braces, or other ambulatory aids. Appropriate psychological and sociological principles are applied in motivating and instructing the patient, his or her family, and others. Physical therapists may delegate selected forms of treatment to supportive personnel with assumption of the responsibilities for the care of the patient and the continuing supervision of the supportive personnel.

Career opportunities exist for physical therapists in hospitals, rehabilitation centers, pediatric facilities, private practice, research, industry, sports medicine, school systems, nursing homes and other health care settings.

#### *The Wilkes Pre-Physical Therapy Core*

In addition to completing an academic major, each student must also complete the Wilkes University Pre-Physical Therapy Core, which provides a base from which students can structure their classes. The Pre-Physical Therapy Core includes a sequence of courses that are common prerequisites at most physical therapy schools. It must be emphasized that there are no universal prerequisite courses for all physical therapy programs. Therefore, students must consult with each school to

which they seek to apply to ascertain that particular school's prerequisites.

*The Wilkes Pre-Physical Therapy Core (Minimum Requirements per the Drexel University and Widener University Doctor of Physical Therapy Degree Programs)*

#### A. THE PRE-PHYSICAL THERAPY CORE

- Five (5) courses in Biology for a total of 19-20 credits to include the following:

Principles of Modern Biology I & II (BIO 121 & 122)

Medical Anatomy and Physiology I & II (BIO 314 & 321)\*

One of the following upper-level Biology courses:

Functional Histology (BIO 323)

Molecular Biology (BIO 324)

Immunology and Immunochemistry (BIO 326)

Medical Microbiology (BIO 327)

Genetics (BIO 345) or

Senior Research Projects (BIO 391, 392)

OR Independent Research (BIO 395, 396) OR Independent Research (PSY 395, 396)

\* Please note that *Cellular and Molecular Biology (BIO 226)* is required as a course to precede the 300-level biology courses.

- Two courses in General Chemistry with laboratory for a total of 8 credits (For example: CHM 115 & 116 with labs CHM 113 & CHM 114)
- Two courses in Physics with laboratory for a total of 8 credits (For example: PHY 171 & 174)
- Two courses in Psychology for a total of 6 credits: General Psychology (PSY 101 and Developmental Psychology (PSY 221)
- One course in Statistics for a total of 3 credits (For example: PSY 200 or MTH 150)
- Mathematics (as per the requirements of professional school(s))
- Five courses in the Humanities and Social Sciences for a total of 15 credits. For example: courses that satisfy Areas I and III of the Distribution Requirements of the Wilkes University Core.

#### B. VOLUNTEER EXPERIENCE IN PHYSICAL THERAPY

Each institution has varied prerequisites and all professional schools generally require a certain number of volunteer hours in physical therapy. Some or all of

## College of Science and Engineering

those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Cooperative Education Office or through the Health Sciences Office.

### C. LETTERS OF EVALUATION

One composite letter from the Wilkes University Health Sciences Committee and one letter from a physical therapist.

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

#### *Affiliated Programs in Physical Therapy*

### A. AFFILIATED PROGRAM WITH DREXEL UNIVERSITY DEPARTMENT OF REHABILITATION SCIENCES: DOCTOR OF PHYSICAL THERAPY DEGREE PROGRAM

The affiliated physical therapy program requires four (4) years of study at Wilkes University leading to the Bachelor's Degree and three (3) years of study at Drexel University leading to the Doctoral Degree in Physical Therapy. Early admission to the Drexel University graduate program is granted to up to five (5) Wilkes students, who have satisfied all requirements for admission, per year.

Students should consult the previous section of the Bulletin for the prerequisite courses required for admission to Drexel University's Affiliated Physical Therapy Program.

*Wilkes students applying to Drexel University must meet the criteria for admission outlined here:*

- A cumulative grade point average at the end of six full semesters of 3.25 or above, as noted in the curricular outline.
- Completion of all science courses with a cumulative grade point average of 3.00 or above.
- Minimum Graduate Record Examination (GRE) score of 1600.
- Volunteer experience in physical therapy for at least 75 hours.
- Petition to the Wilkes University Health Sciences Committee for a Letter of Evaluation to accompany their application. This request must be made in writing to the Committee by May 15th of the student's junior year.

- Obtain a Letter of Evaluation/Recommendation from a licensed physical therapist.

Students who meet the guidelines of this program will be automatically granted an interview with the Drexel Physical Therapy Committee on Admissions. The decision to offer acceptance to students into this program shall be made by the Program in Physical Therapy Committee on Admissions of Drexel University. In addition, students must also complete all requirements for a bachelor's degree from Wilkes University prior to matriculation at Drexel University.

### B. AFFILIATED PROGRAM WITH WIDENER UNIVERSITY: DOCTOR OF PHYSICAL THERAPY DEGREE PROGRAM

The Affiliated Physical Therapy Program provides students the opportunity to transfer from Wilkes University to the Doctor of Physical Therapy Program at Widener University to earn a joint 3+3 B.S./D.P.T. degree. Selected students able to meet or exceed established criteria will be eligible for a GUARANTEED place in the Widener Physical Therapy Program. Widener guarantees five (5) seats each year for this D.P.T. Program. Students will also be given the opportunity to earn a joint 4+3 B.S./D.P.T. degree.

Students should consult the previous section of the Bulletin for prerequisite courses required by Widener University's Doctor of Physical Therapy Program.

1. High school students applying for admission to this guaranteed-seat program must meet the following criteria:
  - Apply and be accepted to Wilkes University by January 1 of their senior year in high school.
  - Have a minimum SAT score of 1200 (with no sub-section less than 550). The new SAT writing sample will be considered, but no official minimum score has yet been determined.
  - Have a high school GPA of 3.45 or higher
  - Rank in the top 25% of their high school graduating class
2. Wilkes University freshmen or sophomores who wish to be considered for admission must meet the following criteria:
  - Be a student in good standing at Wilkes
  - Have a cumulative GPA of 3.0 with no grade in the Pre-Physical Therapy Core curriculum of less than a 3.0

3. The selection process will include interviews with the Wilkes University Health Sciences Committee and the Widener University Department of Physical Therapy.
4. Undergraduate program requirements are as follows:
  - Completion of prerequisite courses with a cumulative GPA of 3.0
  - Computer literacy, either by demonstration or successful completion of a computer course or a challenge examination.
  - Graduate Record Exam (GRE) general test scores of 1000 or better on the combined verbal and quantitative sections
  - Evidence of volunteer service in physical therapy (usually 50 hours or more)
  - Three favorable letters of recommendation: one from the Wilkes University Health Sciences Committee, one from a physical therapist, and one from an individual chosen by the student.
  - Participation in Health Sciences Office-sponsored events on campus.
5. Students who have completed their baccalaureate degree at Wilkes will be subject to the same admission guidelines as the 3+3 students.

**C. AFFILIATED PROGRAM WITH TEMPLE UNIVERSITY COLLEGE OF ALLIED HEALTH PROFESSIONS: DOCTOR OF PHYSICAL THERAPY PROGRAM**

This Affiliated Physical Therapy Program requires four (4) years of study at Wilkes University and three (3) years of professional study at Temple University, leading to the Doctor of Physical Therapy degree following successful completion of the three years at Temple.

The Affiliated Physical Therapy Program with Temple University requires students to complete a series of prerequisite courses as part of their four years of study at Wilkes. A listing of these courses is available in the Wilkes Health Sciences Office or through the Temple University Department of Physical Therapy.

Candidates must also complete the Graduate Record Exam (GRE) in the fall semester of their fourth year of study at Wilkes. To qualify for admission at Temple, students must earn a minimum of a 3.0 GPA while at Wilkes and score above the fiftieth percentile on the GRE.

Wilkes students who meet the standards of this affiliated program will be given special consideration for admission by Temple.

**II. Occupational Therapy**

Occupational therapists work with members of the community who encounter difficulties with tasks of living. These difficulties may be from developmental deficits, the aging process, physical illness or injury, economic stress, cultural differences, or psychological problems which present barriers for an individual to function in life. The occupational therapist bases service on a rapidly growing field of knowledge to enhance the individual's abilities to function and prevent areas of dysfunction. The therapist uses selected, goal-directed activities to encourage learning, re-education, growth and strength, and to promote general health. Occupational therapists provide services along with other health professionals in a number of different settings ranging from hospitals and clinics to schools to reach a wide population of all ages.

*The Wilkes Pre-Occupational Therapy Core*

In addition to completing an academic major, each student must also complete the Wilkes University Pre-Occupational Therapy Core. The Pre-Occupational Therapy Core provides a base from which students can structure their classes. The Pre-Occupational Therapy Core includes a sequence of courses identified by the American Association of Occupational Therapy Schools as common prerequisites at most occupational therapy schools. It must be emphasized that there are no universal prerequisite courses for all existing occupational therapy programs.

*The Wilkes Pre-Occupational Therapy Core requires as a minimum:*

Two Courses in Modern Biology (BIO 121-122)

Two Courses in Anatomy and Physiology (BIO 115-116 or BIO 331-332)

One Course in Chemistry (CHM 115 with CHM 113 lab)

One Course in Mathematics (MTH 100, 101 or 105)

Four Courses in Psychology (PSY 101, 200, 221 and 222)

One Course in Sociology (SOC 101)

(An additional course, SOC 251, is also recommended)

Cooperative Education or Internship

In addition to completing the Core, students must consult prerequisite guidelines published by the particular institutions from

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which they wish to gain admission. Institutions have varied prerequisites and generally require a certain number of volunteer hours in occupational therapy. Some or all of those hours may be fulfilled by the cooperative education or internship experience available through the Wilkes Cooperative Education Office.

### **Affiliated Program in Occupational Therapy at Temple University College of Allied Health Professions: Master's in Occupational Therapy**

Wilkes University offers a specialized, affiliated program in Occupational Therapy with Temple University that requires four (4) years of study at Wilkes and two (2) years of study at Temple University, leading to a master's degree in Occupational Therapy.

*The Affiliated Occupational Therapy Program with Temple University requires students to complete a series of prerequisite courses as part of their four years of study at Wilkes. A list of these courses is available in the Wilkes Health Sciences Office or through the Temple University Department of Occupational Therapy.*

### **Placement of Pre-Physical Therapy and Pre-Occupational Therapy Students**

Wilkes University graduates have been accepted to a number of physical therapy and occupational therapy schools including: Columbia University College of Physicians and Surgeons, Duke University and Drexel (formerly MCP-Hahnemann) University School of the Health Sciences, Tufts Graduate School of Arts and Sciences, Thomas Jefferson University Program in Occupational Therapy, Temple University Health Sciences Center, Allegheny University, and University of Pittsburgh School of Health and Rehabilitation Sciences.

### *III. Clinical Laboratory Sciences (Medical Technology)*

The National Accrediting Agency for Clinical Laboratory Science recommends certain requirements for a program of training leading to a B.S. degree. The curriculum offered at Wilkes University follows these recommendations and is presented below.

At the completion of three years, the student may be accepted by an affiliated program of medical technology for a period of twelve months of clinical training. Following graduation from the programs, the students

will receive the B.S. degree in Medical Technology from Wilkes University and will be eligible for certification as a Medical Technologist by the Board of Registry of Medical Technology or as a Clinical Laboratory Scientist by the National Certification Agency for Medical Laboratory Personnel.

Wilkes University has established a formal affiliation with the Robert Packer Hospital in Sayre, PA. Fulfillment of the fourth-year requirement at non-affiliated hospitals requires special permission of the division chairperson and the Wilkes Academic Standards Committee.

### **CLINICAL LABORATORY SCIENCE MAJOR (MEDICAL TECHNOLOGY)- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

#### **First Semester**

<b>Bio 121 Principles of Modern Biology I</b>	<b>4</b>
<b>Chm 115 Elements and Compounds/CHM 113</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>Mth 105 or 111 Calculus I</b>	<b>4</b>
	<b>15</b>

#### **Second Semester**

<b>Bio 122 Principles of Modern Bio II</b>	<b>4</b>
<b>Chm 116 The Chemical Reaction/CHM 114</b>	<b>4</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>15</b>

#### **Third Semester**

<b>Bio 225 Population and Evolutionary Biology I</b>	<b>4</b>
<b>Chm 231 Organic Chemistry I/Chm 233</b>	<b>4</b>
<b>Computer Science Elective</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>14</b>

#### **Fourth Semester**

<b>Bio 226 Cellular and Molecular Biology</b>	<b>4</b>
<b>Chm 232 Organic Chemistry II/Chm 234</b>	<b>4</b>
<b>Mth 150 Elementary Statistics</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>14</b>

#### **Fifth Semester**

<b>Bio 327 Medical Microbiology</b>	<b>4</b>
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<b>Chm 361 Biochemistry I</b>	<b>3</b>
<b>Distribution Requirements/Free Electives</b>	<b>9</b>
	16

Sixth Semester

<b>Bio 326 Immunology and Immunochemistry</b>	<b>4</b>
<b>Bio 397 Professional Prep. Techniques</b>	<b>2</b>
<b>Phy 174 Classical and Modern Physics</b>	<b>4</b>
<b>Distribution Requirements/Free Electives</b>	<b>6</b>
	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:**

<b>Bio 371 Clinical Microbiology</b>	<b>7</b>
<b>Bio 372 Clinical Chemistry</b>	<b>8</b>
<b>Bio 373 Clinical Hematology/Coagulation</b>	<b>5</b>
<b>Bio 374 Clinical Immunochemistry</b>	<b>4</b>
<b>Bio 375 Clinical Immunology/Serology</b>	<b>3</b>
<b>Bio 376 Clinical Seminar</b>	<b>3</b>
	30

*The total minimum number of credits required for a major in Clinical Laboratory Science (Medical Technology) leading to the B.S. degree is 120.**Other Professions*

Information on academic programs in related health fields, such as Nursing, Prepharmacy and Pharmacy at Wilkes (Pharm.D. Degree), may be found in the appropriately labeled sections of this Bulletin. Wilkes University has a number of affiliations with other health professions institutes whereby students receive some special consideration for interview and admission. Consult the Health Sciences Office for the information on these affiliations.

## DEPARTMENT OF CHEMISTRY

CHAIRPERSON: DR. TERESE M. WIGNOT

*Faculty: Professor: Verret**Associate Professors: Castejon, Mencer, Wignot**Assistant Professors: Bradley, Peters, Trujillo**Adjunct Faculty: Carr, St. Martin**Faculty Emeriti: Bohning, Faut, Rozelle, Stine, Swain**Laboratory Manager: Bianco**Lab Preparation Specialist: Tambasco*

## BIOCHEMISTRY MAJOR

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN BIOCHEMISTRY LEADING TO THE B.S. DEGREE - 122.**

The Biochemistry curriculum is designed to provide comprehensive background education and training for those students interested in this interdisciplinary area.

The B.S. curriculum meets the liberal arts requirements of the University with a concentration in advanced courses. It was developed for those students who wish to prepare for Biochemistry as a professional option. Holders of this degree seek employment directly in the field or they can pursue advanced degrees in graduate school.

The biochemistry degree was developed for those students interested in Biochemistry as a means of preparation for entrance into health science professional schools such as allopathic, osteopathic, and podiatric medicine; dental medicine; optometry, etc. Two specific features of the program are that students (1) may pursue the first three years of the Biochemistry degree curriculum in the three-year option under one of the Wilkes University combined seven-year medical and baccalaureate degree programs or (2) use the seventh or eighth semesters in cooperative research programs. The latter option is particularly useful for those students selected to The Premedical Scholars Program (see Affiliated Degree Programs in Medicine).

## BIOCHEMISTRY BACHELOR OF SCIENCE DEGREE- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

## First Semester

<b>Chm 113 - Elem. and Compounds Lab</b>	<b>1</b>
<b>Chm 115 - Elements and Compounds</b>	<b>3</b>
<b>Bio 121 - Princ. of Modern Biology I</b>	<b>4</b>

<b>Mth 111 - Calculus I</b>	<b>4</b>
<b>FYF 101 - First-Year Foundations</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	18

## Second Semester

<b>Chm 114 - The Chem. Reaction Lab</b>	<b>1</b>
<b>Chm 116 - The Chemical Reaction</b>	<b>3</b>
<b>Bio 122 - Princ. of Modern Biology II</b>	<b>4</b>
<b>Mth 112 - Calculus II</b>	<b>4</b>
<b>Eng 101 - Composition</b>	<b>4</b>
	<hr/>
	16

## Third Semester

<b>Chm 231 - Organic Chemistry I</b>	<b>3</b>
<b>Chm 233 Organic Chem. I Lab</b>	<b>1</b>
<b>Phy 201 - General Physics I</b>	<b>4</b>
<b>CS 125 Computer Science I</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>6</b>
	<hr/>
	18

## Fourth Semester

<b>Chm 232 - Organic Chemistry II</b>	<b>3</b>
<b>Chm 234 Organic Chem. II Lab</b>	<b>1</b>
<b>Phy 202 - General Physics II</b>	<b>4</b>
<b>Mth 212 Multivariable Calculus</b>	<b>4</b>
<b>Chm 248 Analytical Chemistry</b>	<b>3</b>
<b>Chm 246 Analytical Chemistry Lab</b>	<b>1</b>
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	16

## Fifth Semester

<b>Chm 351 - Physical Chemistry I</b>	<b>3</b>
<b>Chm 353 - Physical Chemistry I Lab</b>	<b>1</b>
<b>Chm 361 - Biochemistry I</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Chm 341 Instrumental Analysis</b>	<b>3</b>
<b>Chm 343 Instrumental Analysis Lab</b>	<b>1</b>
	<hr/>
	14

## Sixth Semester

<b>Chm 352 - Physical Chemistry II</b>	<b>3</b>
<b>Chm 354 - Physical Chemistry II Lab</b>	<b>1</b>
<b>Chm 362 - Biochemistry II</b>	<b>3</b>
<b>Chm 370 Integrated Laboratory</b>	<b>1</b>
<b>Chm 390 Junior Seminar</b>	<b>1</b>
<b>Bio 226 Cellular and Molecular Biology</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	16
Seventh Semester	
<b>Chm 391 - Senior Research I</b>	<b>2</b>
<b>Chm 371 Integrated Laboratory</b>	<b>1</b>
<b>Biology Elective</b>	<b>3-4</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Free Elective</b>	<b>8</b>
	<hr/>
	12-13
Eighth Semester	
<b>Chm 322 Advanced Inorganic Chemistry</b>	<b>3</b>
<b>Chm 372 Integrated Laboratory</b>	<b>1</b>
<b>Chm 392 - Senior Research II</b>	<b>2</b>
<b>Biology Elective</b>	<b>3-4</b>
<b>Free Elective</b>	<b>3</b>
	<hr/>
	12-13

All biochemistry majors (B.S.) are required to take a total of three (3) credits of Integrated Laboratory (Chm 370, 371, 372).

#### CHEMISTRY MAJOR

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

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN CHEMISTRY LEADING TO THE B.A. DEGREE — 121.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR — 22.**

The Chemistry curriculum is designed to provide a comprehensive background in the fundamentals of the science and to contribute to the general education of the student. Graduates with a B.S. degree may find industrial or government employment or continue advanced studies in a graduate or professional school. The B.A. degree is available for students who need additional flexibility to prepare for a career in secondary

education, the health professions (such as medicine, dentistry, etc.), law, business, engineering, computer science, or other related areas. In all cases students will choose electives for the various career options after consultation with departmental advisors.

The B.A. program in Chemistry will include specific concentrations which will allow students to have a solid, fundamental background in chemistry in combination with other disciplines such as art, business, mathematics, computer science, secondary education, environmental sciences, etc. The ultimate goal is to create a curriculum that is easily adapted to the ever-changing challenges of multidisciplinary academic endeavors. The B.A. program in Chemistry may be accredited, dependent on the student's choice of chemistry courses.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 215, ED 220, ED 380, ED XXX (specific Secondary Methods Course), ED 390, and EDSP 388. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

Wilkes is approved by the American Chemical Society for the professional training of chemists. Students who complete the B.S. program are certified for membership eligibility in the Society at graduation. The B.S. programs in Chemistry and Biochemistry will maintain ACS accreditation.

Required courses are indicated in the following suggested curricular outlines which are based on an extensive prerequisite structure. The order of the courses presented in this sequential arrangement is a suggested one and changes in the order may be made after faculty advisement.

#### CHEMISTRY MINOR

A minor in Chemistry consists of the completion of 22 credits in chemistry, including Chm 115 and Chm 116. Selection of other courses must be in keeping with the

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existing prerequisites as specified in this Bulletin.

CHEMISTRY BACHELOR OF SCIENCE DEGREE-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>Chm 113 - Elem. and Compounds Lab</b>	<b>1</b>
<b>Chm 115 - Elements and Compounds</b>	<b>3</b>
<b>Eng 101 - Composition or</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Mth 111 - Calculus I</b>	<b>4</b>
<b>FYF 101 - First-Year Foundations</b>	<b>3</b>

14-15

Second Semester

<b>Chm 114 - The Chem. Reaction Lab</b>	<b>1</b>
<b>Chm 116 - The Chemical Reaction</b>	<b>3</b>
<b>Eng 101 - Composition or</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Mth 112 - Calculus II</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>

17-18

Third Semester

<b>Chm 231 - Organic Chemistry I</b>	<b>3</b>
<b>Chm 233 - Organic Chem. I Lab</b>	<b>1</b>
<b>Phy 201 - General Physics I</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>

14

Fourth Semester

<b>Chm 246 Analytical Chemistry Lab</b>	<b>1</b>
<b>CHM 248 Analytical Chemistry</b>	<b>3</b>
<b>Chm 232 - Organic Chemistry II</b>	<b>3</b>
<b>Chm 234 - Organic Chem. II Lab</b>	<b>1</b>
<b>Mth 212 Multivariable Calculus</b>	<b>4</b>

<b>Phy 202 - General Physics II</b>	<b>4</b>
	<b>16</b>
Fifth Semester	
<b>Chm 341 - Instrumental Analysis</b>	<b>3</b>
<b>Chm 343 - Instrumental Analysis Lab</b>	<b>1</b>
<b>Chm 351 - Physical Chemistry I</b>	<b>3</b>
<b>Chm 353 - Physical Chemistry I Lab</b>	<b>1</b>
<b>Chm 361 - Biochemistry I</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>14</b>

Sixth Semester

<b>Chm 370 - Integrated Laboratory</b>	<b>1-2</b>
<b>Chm 390 - Junior Seminar</b>	<b>1</b>
<b>Chm 352 - Physical Chemistry II</b>	<b>3</b>
<b>Chm 354 - Physical Chemistry II Lab</b>	<b>1</b>
<b>Chm 322 - Inorganic Chemistry</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>

12-13

Seventh Semester

<b>Chm 371 Integrated Laboratory</b>	<b>1-2</b>
<b>Chm 391 Senior Research</b>	<b>2</b>
<b>Major Elective</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>

15-16

Eighth Semester

<b>Chm 372 Integrated Laboratory</b>	<b>1-2</b>
<b>Chm 392 Senior Research</b>	<b>2</b>
<b>Major Electives</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>

15-16

*All chemistry majors (B.S.) are required to take a total of three (3) credits of Integrated Laboratory (Chm 370, 371, 372).*

CHEMISTRY BACHELOR OF ARTS DEGREE-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>Chm 113 - General Chemistry Lab</b>	<b>1</b>
<b>Chm 115 - General Chemistry I</b>	<b>3</b>

<b>Eng 101 - Composition or</b>	<b>4</b>	<b>Chm 343 - Analytical Chemistry Lab</b>	<b>1</b>
<b>Distribution Requirement</b>	<b>3</b>	<b>Combination program Elective</b>	<b>3</b>
<b>Mth 111 - Calculus I</b>	<b>4</b>	<b>Distribution Requirements</b>	<b>3</b>
<b>FYF 101 - First-Year Foundations</b>	<b>3</b>		<hr/>
			<b>14</b>
	<hr/>		
Second Semester	14-15	Sixth Semester	
<b>Chm 114 - General Chemistry Lab II</b>	<b>1</b>	<b>Chm 352 - Physical Chemistry II</b>	<b>3</b>
<b>Chm 116 - General Chemistry II</b>	<b>3</b>	<b>Chm 354 - Physical Chemistry II Lab</b>	<b>1</b>
<b>Eng 101 - Composition or</b>	<b>4</b>	<b>Combination Program Elective</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>	<b>Chm 390 Junior Seminar</b>	<b>1</b>
<b>CS 125 Computer Science I</b>	<b>4</b>	<b>Distribution Requirements</b>	<b>9</b>
<b>Mth 112 - Calculus II</b>	<b>4</b>		<hr/>
			<b>17</b>
	<hr/>	Seventh Semester	
	15-16	<b>Combination Program Electives</b>	<b>6</b>
Third Semester		<b>Chm 391 Senior Research</b>	<b>2</b>
<b>Chm 231 - Organic Chemistry I</b>	<b>3</b>	<b>Chm 371 Integrated Laboratory</b>	<b>2</b>
<b>Chm 233 - Organic Chem. I Lab</b>	<b>1</b>	<b>Free Electives</b>	<b>3</b>
<b>Phy 201 - General Physics I</b>	<b>4</b>		<hr/>
<b>Combination Program Elective</b>	<b>3</b>		<b>13</b>
<b>Distribution Requirement</b>	<b>3</b>	Eighth Semester	
<b>Free Electives</b>	<b>3</b>	<b>Chm 392 Senior Research II</b>	<b>2</b>
	<hr/>	<b>Combination Program Elective</b>	<b>3</b>
	17	<b>Free Electives</b>	<b>9</b>
			<hr/>
			<b>14</b>
Fourth Semester		<i>Students in the B.A. program are required to take a total of two (2) credits of Integrated Laboratory (Chm 370, 371, 372).</i>	
<b>Chm 232 - Organic Chemistry II</b>	<b>3</b>		
<b>Chm 234 - Organic Chem. II Lab</b>	<b>1</b>		
<b>MTH 212 - Multivariable Calculus</b>	<b>4</b>		
<b>Chm 248 - Analytical Chemistry</b>	<b>3</b>		
<b>Chm 246 - Analytical Chemistry Lab</b>	<b>1</b>		
<b>Phy 202 - General Physics II</b>	<b>4</b>		
	<hr/>		
	16		
Fifth Semester			
<b>Chm 351 - Physical Chemistry I</b>	<b>3</b>		
<b>Chm 353 - Physical Chemistry I Lab</b>	<b>1</b>		
<b>Chm 341 - Analytical Chemistry</b>	<b>3</b>		

## DIVISION OF ENGINEERING AND PHYSICS

ACTING DIRECTOR: DR. THYAGARAJAN SRINIVASAN

*Faculty: Professors: Arora, Ghorieshi, Gilmer, Kalim, Orehotsky, Razavi, Srinivasan*

*Assistant Professor: Janecek*

*Instructor: Nabaa*

*Faculty Emeriti: Bailey, Donahoe, Hostler, Maxwell, Placek*

*Technical Support Staff: Adams*

### MISSION

The mission for engineering students is to enable the professional development of their abilities for analysis and design within the context of environment. The Wilkes view emphasizes engineering as a creative, hands-on profession with leadership responsibilities. Teamwork, ethics, and professional communications permeate the educational experience to enhance the graduate's technical problem solving ability. Wilkes Engineering graduates will possess the vision, confidence, and will to pursue and assume increasing responsibilities in engineering and leadership throughout their careers.

### ENGINEERING

Engineering is a creative profession in which technological problems are met within the framework of scientific possibilities, economic constraint, and cultural preference. The Wilkes University engineering programs provide the knowledge and investigative skills, both theoretical and experimental, to responsibly address professional and societal needs through modern curricula, hands-on experience, and a personalized academic environment. Students intending to major in Engineering are encouraged to be well prepared in the sciences and mathematics. Engineering students may also elect to complete a minor in Physics.

Wilkes University offers five engineering programs. Three programs maintain professional accreditation (Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, ABET, III Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: 410 347-7700): Electrical Engineering and Mechanical Engineering are housed in the Division of Engineering and Physics, and Environmental Engineering is housed within the Department of Geoenvironmental Sciences on page 128. Two additional engineering programs are configured to provide greater flexibility to

pursue depth and breadth in specific areas of interest to the student: Applied and Engineering Sciences and Engineering Management, both housed in the Division of Engineering and Physics.

### HONORS IN ENGINEERING

Upon the recommendation and approval of the Engineering faculty, honor students in Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of 3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through the publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

### STUDENT ACTIVITIES

Professional societies in which students participate include the American Society of Mechanical Engineers (ASME), the Institute of Electrical and Electronic Engineers (IEEE), the Society of Women Engineers (SWE), the Pennsylvania Society of Professional Engineers (PSPE), the Society of Automotive Engineers (SAE), and Engineering Student Council. Students also participate in various on-campus activities and design competitions such as the Mini-Baja Off-Road Design Competition

### COOPERATIVE EDUCATION

An important characteristic of all engineering programs at Wilkes University is the Cooperative Education experience, a valuable option usually scheduled during the junior year. The co-op option may be continued into the summer preceding the senior year. Participants derive three advantages from a co-op experience: a determination of how they wish to fill their elective courses during the senior year, an enhanced ability to conduct a job search, and a greater recognition that career opportunities may be stimulating and fulfilling as well as financially rewarding. The Cooperative Education opportunity provides a natural extension of the college experience.

### APPLIED AND ENGINEERING SCIENCES

#### **TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN APPLIED AND ENGINEERING SCIENCES LEADING TO THE B.S. DEGREE - 120.**

The four-year Bachelor of Science degree program in Applied and Engineering Science (A&ES) blends a core of engineering preparation with flexibility for students to focus on areas of specific interest. It is ideal

for students with specific engineering interests outside the configuration of traditional engineering programs. Successful examples include medicine, performing arts engineering (sound, lighting, staging, recording), computer science, safety and reliability, information technology, and patent law. To this end, faculty and facilities center on the individual, incorporating the adoption of new technological developments with an emphasis on analysis, design and application; on student-faculty-industry cooperative projects; on the concept of teamwork; and on the hands-on student utilization of modern laboratories and computer systems. Wilkes University does not maintain professional accreditation for the A&ES program.

The A&ES program demands careful planning by the student with her/his faculty advisor to assure a clear and well-planned program configured realistically to the students' interests and needs.

APPLIED & ENGINEERING SCIENCES B.S.  
DEGREE- REQUIRED COURSES AND  
RECOMMENDED COURSE SEQUENCE

First Semester

<b>Eng 101 Composition</b>	<b>4</b>
<b>ME 180 CADD Lab</b>	<b>1</b>
<b>Mth 111 Calculus I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>PHY 201 General Physics I</b>	<b>4</b>
	<b>16</b>

Second Semester

<b>Mth 112 Calculus II</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>6</b>
<b>EGR 140 Computer Utilization</b>	<b>3</b>
<b>PHY 202 General Physics II</b>	<b>4</b>
	<b>17</b>

Third Semester

<b>Chm 113 Elements and Compounds Lab</b>	<b>1</b>
<b>Chm 115 Elements and Compounds</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>6</b>
	<b>13</b>

Fourth Semester

<b>EES 202 Biogeochemistry or</b>	<b>3</b>
<b>EGR 200 Intro. to Materials Science</b>	
<b>Free Elective</b>	<b>9</b>

<b>Distribution Requirement</b>	<b>3</b>
	<b>15</b>

Fifth Semester

<b>EE 283 Electrical Measurements Lab.</b>	<b>1</b>
<b>ME 231 Statics &amp; Dynamics I</b>	<b>3</b>
<b>EE 211 Electrical Circuits and Devices</b>	<b>3</b>
<b>Free Elective</b>	<b>6</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>16</b>

Sixth Semester

<b>EGR 399 Cooperative Ed. or Tech. Electives</b>	<b>6</b>
<b>Technical Elective</b>	<b>3</b>
<b>EGR 201 Professionalism and Ethics</b>	<b>1</b>
<b>EGM 320 Engineering Project Analysis</b>	<b>3</b>
	<b>13</b>

Seventh Semester

<b>EGR 391 Senior Project I*</b>	<b>1</b>
<b>Technical Electives</b>	<b>6</b>
<b>Free Elective</b>	<b>9</b>
	<b>16</b>

Eighth Semester

<b>EGR 392 Senior Project II*</b>	<b>2</b>
<b>Electives</b>	<b>6</b>
<b>Technical Electives</b>	<b>6</b>
	<b>14</b>

\*EGR 391 and 392 can be replaced by EGM/ENV/ME 391 and 392 depending on the student's concentration. Technical Electives may be selected from advisor-approved science, math or engineering courses numbered 200 or above. Consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

ELECTRICAL ENGINEERING

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ELECTRICAL ENGINEERING LEADING TO THE B.S. DEGREE — 130.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER ENGINEERING — 22.**

The four-year Bachelor of Science degree program in Electrical Engineering (EE) is dedicated to the principle of preparing its students for industry and graduate study with the expectation of eventual leadership responsibilities. To that end, its faculty and facilities focus on an emphasis of design and industrial experience; student-faculty-industry cooperative projects; teamwork; the adoption of new technologies; and on the

**College of Science and Engineering**

hands-on student utilization of laboratories and computing systems. The Electrical Engineering Program maintains ABET accreditation as noted above under the heading of Engineering.

The EE program is designed to achieve a balance among the major areas of Communication Systems, Microelectronics and Computer Systems. The student may choose to specialize within the EE program in any of the following areas: Communication & Information Systems; Computer Hardware & Software Engineering and Design & Fabrication of Microelectronic Devices & Circuits. A description of program objectives and outcomes is available in the Division office and is posted on the Division of Engineering and Physics Bulletin Board.

**MINOR**

A 22-credit Computer Engineering (CE) minor is a special and highly focused option for students majoring in Electrical Engineering and other related disciplines. The CE minor consists of: CS 125 Computer Science I, CS 126 Computer Science II, CS 128 Unix, EE 241 Digital Design, EE 345 Computer Organization, EE 342 Microcomputer Operation & Design, plus one elective course from an Application Area (e.g. EE 314 Control Systems or CS 355 Computer Networks or ME 317 Robotics or CS 367 Computer Graphics).

ETA KAPPA NU, the International Electrical Engineering Honor Society, established the Kappa Beta chapter at Wilkes in 1991. The Society recognizes Electrical Engineering students and professionals who display exemplary academic achievement and service. It provides a forum to encourage continued achievement and service among its members, the University and the community.

A Master of Science degree in Electrical Engineering (MSEE) is also available; it is described in a separate Bulletin.

**ELECTRICAL ENGINEERING B.S. DEGREE - REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

**First Semester**

<b>PHY 201 General Physics I</b>	<b>4</b>
<b>Mth 111 Calculus I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>ME 180 CADD Lab</b>	<b>1</b>
<b>Eng 101 Composition</b>	<b>4</b>
	<hr/>
	16

**Second Semester**

<b>EGR 200 Intro. to Materials Science or</b>	<b>3</b>
<b>EES 202 Biogeochemistry</b>	
<b>Mth 112 Calculus II</b>	<b>4</b>
<b>EGR 140 Computer Utilization</b>	<b>3</b>
<b>PHY 202 General Physics II</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	17

**Third Semester**

<b>CHM 113 Elements and Compounds Lab</b>	<b>1</b>
<b>CHM 115 Elements and Compounds</b>	<b>3</b>
<b>EE 211 Electrical Circuits and Devices</b>	<b>3</b>
<b>EE 283 Electrical Measurements Lab</b>	<b>1</b>
<b>Mth 211 Intro. to Differential Equations</b>	<b>4</b>
<b>ME 231 Statics &amp; Dynamics</b>	<b>3</b>
	<hr/>
	15

**Fourth Semester**

<b>EGR 214 Linear Systems</b>	<b>3</b>
<b>EE 251 Electronics I</b>	<b>3</b>
<b>EGR 222 Mechatronics</b>	<b>3</b>
<b>EE 241 Digital Design</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	16

**Fifth Semester**

<b>EE 252 Electronics II</b>	<b>4</b>
<b>EE 271 Semiconductor Devices</b>	<b>3</b>
<b>EE 373 CAD for Microfab</b>	<b>1</b>
<b>EE 381 Microfabrication Lab</b>	<b>3</b>
<b>Technical Elective</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	17

**Sixth Semester**

<b>EGR 399 Cooperative Education or</b>	<b>6</b>
<b>Technical Electives</b>	
<b>EGR 201 Professionalism and Ethics</b>	<b>1</b>
<b>Distribution Requirement</b>	<b>6</b>
<b>EGM 320 Engr. Project Analysis</b>	<b>3</b>
	<hr/>
	16

**Seventh Semester**

<b>EE 314 Control Systems</b>	<b>3</b>
<b>EE 337 Engineering Electromagnetics I</b>	<b>4</b>
<b>EE 391 Senior Projects I</b>	<b>1</b>

<b>Technical Electives</b>	<b>6</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>17</b>
Eighth Semester	
<b>EE 325 Energy Conversion Devices</b>	<b>3</b>
<b>EE 339 Engineering Electromagnetics II</b>	<b>4</b>
<b>EE 382 Modern Communication Systems</b>	<b>4</b>
<b>EE 392 Senior Projects II</b>	<b>2</b>
<b>Free Elective</b>	<b>3</b>
	<b>16</b>

Technical electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above, to satisfy a concentration requirement. Students consult with Co-op Advisor for availability and proper scheduling of Cooperative Education.

## ENGINEERING MANAGEMENT

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENGINEERING MANAGEMENT LEADING TO THE B.S. DEGREE — 130.**

The four-year Bachelor of Science degree program in Engineering Management (EgM) prepares students for eventual leadership responsibilities in technological environments. Traditional paths for EgM graduates include project management, project engineering, process management, new product development, manufacturing management, new product development processes, quality control, and reliability analysis.

The EgM program integrates the engineering disciplines of electrical and mechanical engineering with business. Flexibility exists for the student to develop concentrations in Information Systems or Entrepreneurship, for example. This program is attractive to companies seeking graduates who are well-rooted in engineering fundamentals yet are broadly interested in technology, competitive markets, and business development. Wilkes University does not maintain professional accreditation for the Engineering Management degree.

The EgM program demands careful academic program planning by the student with her/his faculty advisor to assure a clear and well-planned program configured realistically to the student's interests and needs.

## ENGINEERING MANAGEMENT B.S. DEGREE-REQUIRED COURSES AND RECOMMENDED FOUR-YEAR COURSE SEQUENCE

First Semester	
<b>Mth 111 Calculus I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>ME 180 CADD Lab</b>	<b>1</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>PHY 201 General Physics I</b>	<b>4</b>
	<b>16</b>
Second Semester	
<b>EGR 200 Intro. to Materials Science or</b>	<b>3</b>
<b>EES 202 Biogeochemistry</b>	
<b>Mth 112 Calculus II</b>	<b>4</b>
<b>EGR 140 Computer Utilization</b>	<b>3</b>
<b>PHY 202 General Physics II</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>17</b>
Third Semester	
<b>Chm 113 Elements and Compounds Lab</b>	<b>1</b>
<b>Chm 115 Elements and Compounds</b>	<b>3</b>
<b>EE 211 Electrical Circuits and Devices</b>	<b>3</b>
<b>EE 283 Electrical Measurements Lab</b>	<b>1</b>
<b>ME 231 Statics &amp; Dynamics</b>	<b>3</b>
<b>Mth 211 Intro. to Differential Equations</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>18</b>
Fourth Semester	
<b>Ec 102 Economics II</b>	<b>3</b>
<b>ME 232 Strength of Materials</b>	<b>3</b>
<b>EGR 214 Linear Systems</b>	<b>3</b>
<b>Mth 150 Statistics or BA/EC 319 Economic Statistics</b>	<b>3</b>
<b>Acc 161 Intro. to Financial Accounting</b>	<b>3</b>
<b>EGR 222 Mechatronics</b>	<b>3</b>
	<b>18</b>
Fifth Semester	
<b>EgM 321 Quant. Anal. &amp; Prog. Methods</b>	<b>3</b>
<b>BA 321 Marketing or Ec 101 Economics I</b>	<b>3</b>
<b>BA 351 Management of Organizations</b>	<b>3</b>
<b>ME 335 Egr. Modeling &amp; Analysis</b>	<b>3</b>

College of Science and Engineering

<b>BA 234 Business Law or Acc 162 Managerial Accounting</b>	<b>3</b>
	<hr/>
	15
Sixth Semester	
<b>EGR 399 Cooperative Education or</b>	<b>6</b>
<b>Technical Electives</b>	<b>6</b>
<b>EGR 201 Professionalism and Ethics</b>	<b>1</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>EgM 320 Engr. Project Analysis</b>	<b>3</b>
	<hr/>
	16
Seventh Semester	
<b>EgM 391 Senior Projects I</b>	<b>1</b>
<b>BA 341 Managerial Finance</b>	<b>3</b>
<b>Technical Electives</b>	<b>6</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
	<hr/>
	16
Eighth Semester	
<b>EgM 392 Senior Projects II</b>	<b>2</b>
<b>EgM 336 Engr. &amp; Manag. Models</b>	<b>3</b>
<b>Technical Electives</b>	<b>6</b>
<b>Free Elective</b>	<b>3</b>
	<hr/>
	14

Technical Electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above to satisfy a concentration requirement. Consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

MECHANICAL ENGINEERING

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN MECHANICAL ENGINEERING LEADING TO THE B.S. DEGREE — 130.**

The Division of Engineering offers a four-year Bachelor of Science degree program in Mechanical Engineering. The four-year Bachelor of Science degree program in Mechanical Engineering (ME) is dedicated to the principle of preparing its students for industry and graduate study with the expectation of eventual leadership responsibilities. To that end, its faculty and facilities focus on an emphasis of design and industrial experience; student-faculty-industry cooperative projects; teamwork; the adoption of new technologies; and on the hands-on student utilization of laboratories and computing systems. The Mechanical Engineering program maintains ABET

accreditation as noted above under the heading of Engineering.

The ME program is designed to achieve a balance among the major areas of Machine Design, Electro-Mechanical Systems, and Thermal Systems. The student may choose to specialize within the ME program in any of the following areas: Thermal, Design, and Micro-Electro-Mechanical Systems. A description of program objectives and outcomes is available in the Division office and is posted on the Division of Engineering and Physics Bulletin Board.

MECHANICAL ENGINEERING B.S. DEGREE-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>Mth 111 Calculus I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>ME 180 CADD Lab</b>	<b>1</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>PHY 201 General Physics I</b>	<b>4</b>
	<hr/>
	16
Second Semester	
<b>EGR 200 Intro. to Materials Science or</b>	<b>3</b>
<b>EES 202 Biogeochemistry</b>	
<b>Mth 112 Calculus II</b>	<b>4</b>
<b>EGR 140 Computer Utilization</b>	<b>3</b>
<b>PHY 202 General Physics II</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	17
Third Semester	
<b>Chm 113 Elements and Compounds Lab</b>	<b>1</b>
<b>Chm 115 Elements and Compounds</b>	<b>3</b>
<b>Mth 211 Intro. to Differential Equations</b>	<b>4</b>
<b>EE 211 Electrical Circuits and Devices</b>	<b>3</b>
<b>EE 283 Electrical Measurements Lab</b>	<b>1</b>
<b>ME 231 Statics &amp; Dynamics I</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	18
Fourth Semester	
<b>EGR 222 Mechatronics</b>	<b>3</b>
<b>ME 232 Strength of Materials</b>	<b>3</b>
<b>ME 234 Statics &amp; Dynamics II</b>	<b>3</b>
<b>ME 322 Egr. Thermodynamics</b>	<b>3</b>
<b>EGR 214 Linear Systems</b>	<b>3</b>

<b>ME 175 Intro to Mfg/Machining</b>	<b>1</b>
	<b>16</b>
Fifth Semester	
<b>ME 321 Fluid Mechanics</b>	<b>3</b>
<b>ME 323 Fluid Mechanics Lab</b>	<b>1</b>
<b>ME 215 Intro. to Manufacturing Processes</b>	<b>3</b>
<b>ME 335 Engineering Modeling and Analysis</b>	<b>3</b>
<b>ME 333 Machine Design I</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
	<b>16</b>
Sixth Semester	
<b>EGR 399 Cooperative Education or</b>	<b>6</b>
<b>Technical Electives</b>	<b>6</b>
<b>EGR 201 Professionalism and Ethics</b>	<b>1</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>EGM 320 Engr. Project Analysis</b>	<b>3</b>
	<b>16</b>
Seventh Semester	
<b>ME 324 Heat and Mass Transfer</b>	<b>3</b>
<b>ME 326 Heat &amp; Mass Transfer Lab</b>	<b>1</b>
<b>ME 384 Mechanical Design Lab.</b>	<b>3</b>
<b>ME 391 Senior Projects I</b>	<b>1</b>
<b>Technical Elective</b>	<b>3</b>
<b>EE 314 Control Systems</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>17</b>
Eighth Semester	
<b>Technical Elective</b>	<b>6</b>
<b>ME 392 Senior Projects II</b>	<b>2</b>
<b>ME 332 Mechanics of Vibration</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
	<b>14</b>

Technical Electives may be chosen from any advisor-approved math, science or engineering course numbered 200 or above to satisfy a concentration requirement. Students consult with Co-op advisor for availability and proper scheduling of Cooperative Education.

#### PHYSICS MINOR

Physics is the study of physical phenomena including forces, energy, momentum, friction, electricity, electrostatics, magnetism, acoustics, heat, light, and relativity. It is thus the foundation of mechanical, civil, and electrical

engineering and also is central to music, sound and architecture.

Wilkes University offers a minor in Physics, which requires the satisfactory completion of twenty hours as follows:

<i>Required courses</i>	<i>Credit hours</i>
<b>Phy 201, Phy 202, and Phy 203</b>	<b>11</b>
<b>Electives (from the following list; at least three credits must be a 300-level course):</b>	<b>9</b>
<b>CHM 251, CHM252, EE337, EGR200, GES251, GES280, ME231, ME321, ME322, MTH361, MTH362, PHY398</b>	
<b>Minimum Total Requirement</b>	<b>20</b>

The Physics minor may be ideally suited for engineers seeking additional theoretical preparation in the physical sciences.

DEPARTMENT OF  
ENVIRONMENTAL ENGINEERING  
AND EARTH SCIENCES

CHAIRPERSON: DR. MARLEEN A. TROY

*Faculty: Professors: Bruns, Case, Halsor,  
Redmond*

*Associate Professors: Murthy, Troy, Whitman*

*Adjunct Professors: Hofman, Toothill, Walski*

*Laboratory Manager: Oram*

*Laboratory Technician Longenberger*

*Visiting Assistant Professor: Frederick*

The Environmental Engineering and Earth Sciences Department (EEES) offers the following degree programs:

B.S. in Environmental Engineering

B.S. in Earth and Environmental Sciences

B.A. in Earth and Environmental Sciences

The above programs incorporate a strong background in all of the sciences and include extensive laboratory and field experience. The department highlights unique facilities such as a certified water quality laboratory used for teaching and contract work and The Center for Geographic Information Science (GIS). Other facilities in the area are used for field study in courses and student research.

The center for Geographic Information Science is an EEES state-of-the-art technology facility that integrates the use of GIS student research encompassing a variety of applications: environmental planning and assessment, watershed analysis, lake and stream studies, database management and analysis for soils, wetlands, vegetation, land cover, and environmental pollution. The Center was originally funded in 1993 by an extramural EEES faculty research grant and recently was expanded with a faculty education grant to facilitate GIS applications across various courses in the EEES environmental curriculum.

**EARTH AND ENVIRONMENTAL SCIENCES MAJOR**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES LEADING TO THE B.A. — 124.**

**WITH SECONDARY TEACHING CERTIFICATION IN EARTH AND SPACE SCIENCE — 133.**

**WITH SECONDARY TEACHING CERTIFICATION IN EARTH AND SPACE SCIENCE AND GENERAL SCIENCE — 137.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES LEADING TO THE B.S. — 123.**

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

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

The interdisciplinary nature of the programs provides the student with a unique breadth of understanding of the principles and concepts of the earth and environmental sciences while emphasizing methods of analysis and experimentation of very complex, dynamic, and interactive quality; cooperative internships with environmental organizations and industries are encouraged.

The major leading to the B.S. degree emphasizes the technical and analytical aspects of the earth and environmental sciences and is designed for those students intending to work as scientists in laboratory, field, or research positions. Students with this degree may enter graduate programs in geology, meteorology, and environmental sciences.

The major leading to the B.A. degree emphasizes human interactions with the earth and the environment. The student is required to choose an appropriate minor, such as elementary education. Other minors may be considered by the department. Another option is to satisfy the requirements leading to a Pennsylvania Secondary Teaching Certificate with certification in Earth and Space Science. By adding one chemistry and two biology courses, the student would also satisfy requirements for certification in General Science.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. These students will declare a MINOR in Secondary Education. The minor consists of the following courses: ED 190, ED 200, ED 210, ED 215, ED 220, ED 380, ED XXX (specific Secondary Methods Course), and ED 390. All Teacher Education students must apply for Admission to the Teacher Education Program in their sophomore or junior year. Candidates must maintain a 2.0 GPA in their secondary major courses and pass the appropriate PRAXIS tests in order to be certified.

**EARTH AND ENVIRONMENTAL SCIENCES AND GEOLOGY MINORS**

Two minors are offered by the department. A minor can be obtained by students with a demonstrated expertise in Earth and

Environmental Sciences or Geology as determined by the faculty of the department. The minimum requirement for the Earth and Environmental Sciences minor can be met by students who have completed 18 credits in EES courses (at least 12 credits at the 200-level or above). For the Geology minor, 18 credits of prequalified environmental EES geology courses are required (at least 15 credits at the 200-level or above). Only those course credits for which a student has achieved a grade of 2.0 or higher will count toward the minimum requirements for either minor. Courses counted toward the Geology minor could not be used for the existing EES minor; however, since there is no geology major, EES majors, like any other major, could pursue a Geology minor. Also, EES majors may take any of the Environmental Engineering courses (ENV), if prerequisites are satisfied.

*Courses that qualify for the Geology Minor*

<i>Course</i>	<i>Credits</i>
<b>EES 105 Planet Earth</b>	<b>3</b>
<b>EES 211 Physical Geology</b>	<b>4</b>
<b>EES 212 Historical Geology</b>	<b>3</b>
<b>ENV 315 Soils</b>	<b>3</b>
<b>ENV 321 Hydrology</b>	<b>4</b>
<b>EES 370 Geomorphology</b>	<b>3</b>
<b>EES 375 Geochemistry</b>	<b>3</b>
<b>EES 381 Mineralogy**</b>	<b>3</b>
<b>EES 382 Petrology**</b>	<b>3</b>
<b>EES 391* Senior Projects I</b>	<b>1</b>
<b>EES 392* Senior Projects II</b>	<b>2</b>
<b>EES 395* Independent Research I</b>	<b>1-3</b>
<b>EES 396* Independent Research II</b>	<b>1-3</b>

\*Content must be within the field of geology.

\*\* Required for minor in geology.

**MARINE SCIENCE OPTION WITH A MAJOR IN EARTH AND ENVIRONMENTAL SCIENCES AND A MINOR IN BIOLOGY**

Wilkes University is a member of the Wallops Island Marine Science Consortium, an association of both state and private institutions that oversee the operation of a marine field station located in southeastern Virginia. Through its membership in the Consortium, Wilkes offers to its students the full range of courses in marine sciences and oceanography regularly taught at the Station each summer. Interested students in Earth and Environmental Sciences may formally

pursue a Marine Science Option concentration in a four-year program that is fully integrated into their EES major and a minor in Biology. On a less formal basis, students who meet course prerequisites may complement regular coursework with these unique summer field experiences in oceanography.

Courses taken at the Wallops Island Marine Science Station typically carry three credits and involve three weeks of intensive field and laboratory study at the Marine Science Station and related field sites (e.g. Florida Keys and Honduras). Facilities at the Station include dormitory space, cafeteria, labs, lecture halls, a variety of field and laboratory equipment (e.g. one large oceanographic vessel and three inshore vessels) and a range of inshore, offshore, and estuarine field sites. To participate in the Marine Science Option concentration or to enroll in individual courses, students must first contact the coordinators of the Wallops Island Program at Wilkes University (prior to the spring semester) and then register for the appropriate course through the Wilkes University Registrar.

*Courses regularly offered at the Station include:*

MS 110 Introduction to Oceanography  
 MS 211 Field Methods in Oceanography  
 MS 221 Marine Invertebrates  
 MS 394 Physiology of Marine Organisms  
 MS 241 Marine Biology  
 MS 250 Wetland Ecology  
 MS 260 Marine Ecology  
 MS 300 Behavior of Marine Organisms  
 MS 330 Tropical Invertebrates  
 MS 331 Chemical Oceanography  
 MS 342 Marine Botany  
 MS 343 Marine Ichthyology  
 MS 345 Ornithology  
 MS 352 Modeling Applications in Environmental  
 MS 362 Marine Geology  
 MS 390 Undergraduate Research in Marine Science  
 MS 394 Physiology of Marine Organisms  
 MS 431 Ecology of Marine Plankton  
 MS 432 Marine Evolutionary Ecology  
 MS 433 Advanced Methods in Coastal Ecology  
 MS 450 Coastal Geomorphology  
 MS 451 Coastal Environmental Oceanography  
 MS 464 Biological Oceanography  
 MS 470 Research Diver Methods  
 MS 471 Scanning Electron Microscopy: Marine Applications  
 MS 490 Marine Aquaculture  
 MS 491 Coral Reef Ecology

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MS 492 Marine Mammals  
 MS 493 Behavioral Ecology and  
 Biological Sciences  
 MS 500 Problems in Marine Science  
 See Coordinators of the Wallops Island  
 Program for outlines of individual courses  
 and for more information on the structure of  
 the Marine Science Option.

EARTH AND ENVIRONMENTAL SCIENCES B.S.  
 DEGREE- REQUIRED COURSES AND  
 RECOMMENDED COURSE SEQUENCE

First Semester

<b>Eng 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>Mth 111 Calculus I or Mth 105a</b>	<b>4</b>
<b>Chm 113 Elements &amp; Compounds Lab</b>	<b>1</b>
<b>Chm 115 Elements &amp; Compounds</b>	<b>3</b>
	<b>15</b>

Second Semester

<b>Chm 114 Chemical Reaction Lab</b>	<b>1</b>
<b>Chm 116 Chemical Reaction</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>EES 211 Physical Geology</b>	<b>4</b>
<b>Mth 112 Calculus II or Mth 106a</b>	<b>4</b>
	<b>15</b>

Third Semester

<b>BIO 121 Modern Biology I</b>	<b>4</b>
<b>MTH 150 Statistics</b>	<b>3</b>
<b>Free Electives</b>	<b>2</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Phy 171 Classical and Modern Physics</b>	<b>4</b>
	<b>16</b>

Fourth Semester

<b>BIO 122 Modern Biology II</b>	<b>4</b>
<b>EES 240 Principles of Environmental Science</b>	<b>4</b>
<b>PHY 174 Classical &amp; Modern Physics</b>	<b>4</b>
<b>CS Elective</b>	<b>3</b>
	<b>15</b>

Fifth Semester

<b>EES 230 Ocean Science</b>	<b>4</b>
<b>EES 251 Synoptic Meteorology</b>	<b>4</b>
<b>EES 271 Environ. Mapping I or 3 EES/ENV Elective</b>	
<b>EES 394 Field Study</b>	<b>1</b>
<b>ENV 321 Hydrology</b>	<b>4</b>
<b>ME 180 CADD</b>	<b>1</b>

Sixth Semester

<b>EES 202 Biogeochemistry</b>	<b>3</b>
<b>EES 244 Instrumental Analysis</b>	<b>4</b>
<b>EES 272 Environ. Mapping II or EES/ENV Elective</b>	<b>3</b>
<b>EES 302 Literature Methods</b>	<b>1</b>
<b>EES 304 Environmental Data Analysis</b>	<b>2</b>
<b>Free Elective</b>	<b>2</b>
	<b>15</b>

Seventh Semester

<b>Free Elective</b>	<b>2</b>
<b>EES/ENV Electives</b>	<b>6</b>
<b>Distribution Requirement</b>	<b>6</b>
<b>EES 391 Senior Projects I</b>	<b>1</b>
	<b>15</b>

Eighth Semester

<b>ENV 330 Water Quality or ENV 332 Air Quality</b>	<b>4</b>
<b>EES/ENV Electives</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>EES 392 Senior Projects II</b>	<b>2</b>
	<b>15</b>

*a Substitution of Mth 105-106 is permissible in consultation with advisor. Mth 105-106 will not retrospectively satisfy the calculus requirement of any engineering degree at Wilkes.*

*B.S. candidates are encouraged to complete a science minor (e.g., Physics, Chemistry, etc.; consult the Bulletin for program details). Candidates are also encouraged to have relevant Co-op experience, 6 credits of which may count as EES electives.*

*Courses at the 200-level and above are intended for science and math majors only. Exceptions by permission of the instructor. Election of a 200-level course by a non-science major will preclude registration for the corresponding 100-level course.*

*A student following the above major sequence (and a 18 credit option in second semester freshman year) can satisfy all freshman and sophomore pre-pharmacy requirements except 6 credits of distribution requirements and 3 credits as COM 101. These may be addressed in consecutive summer sessions in consultation with the major advisor.*

MARINE OPTION CONCENTRATION WITH  
 MAJOR IN EARTH AND ENVIRONMENTAL  
 SCIENCES- REQUIRED COURSES AND  
 RECOMMENDED COURSE SEQUENCES

First Semester

<b>BIO 121 Modern Biology I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>MTH 111 Calculus I</b>	<b>4</b>
<b>CHM 113 Elem. &amp; Compounds Lab</b>	<b>1</b>

<b>CHM 115 Elements and Compounds</b>	<b>3</b>	<b>EES 391 Senior Projects I</b>	<b>1</b>
		<b>EES/ENV Electives</b>	<b>6</b>
	<b>15</b>	<b>Distribution Requirement</b>	<b>3</b>
Second Semester		<b>Free Electives</b>	<b>5</b>
<b>BIO 122 Modern Biology II</b>	<b>4</b>		<b>15</b>
<b>ENG 101 Composition</b>	<b>4</b>	Eighth Semester	
<b>MTH 112 Calculus II</b>	<b>4</b>	<b>EES 392 Senior Projects II</b>	<b>2</b>
<b>CHM 114 The Chem. Reaction Lab</b>	<b>1</b>	<b>EES/ENV Electives</b>	<b>6</b>
<b>CHM 116 The Chemical Reaction</b>	<b>3</b>	<b>Distribution Requirements</b>	<b>6</b>
	<b>16</b>	<b>Free Electives</b>	<b>2</b>
Third Semester			<b>16</b>
<b>EES 230 Ocean Science</b>	<b>4</b>	<sup>1</sup> EES/BIO 343 counts toward both EES degree and BIO minor.	
<b>BIO 225 Population and Evolutionary Biology</b>	<b>4</b>	<sup>2</sup> BIO minor includes 2 MS courses (biology content) at MSC Wallops Island, but not MS 110 or MS 260.	
<b>ME 180 CADD Lab</b>	<b>1</b>	<sup>3</sup> 22 minimum credits for BIO minor includes BIO/EES 343.	
<b>Distribution Requirements</b>	<b>6</b>	Note: Three (3) credits of EES Electives must be in either EES 271 or EES 272.	
	<b>15</b>	Summary of Requirements:	
Fourth Semester		EES Course Credits (EES 230, 211, 240, 251, 394, 343, 244, 302, 304, 391, 392 & Wilkes EES electives (15 credits)) = 44	
<b>EES 211 Physical Geology</b>	<b>4</b>	BIO Minor Credits (BIO 121, 122, 225, 226, 343 and 2 MS) = 25	
<b>Computer Science Elective</b>	<b>3</b>	Other Science, Math and Free Elective Credits = 38	
<b>EES 240 Principles of Environmental Science</b>	<b>4</b>	Core and Distribution Credits = 25	
<b>BIO 226 Cellular &amp; Molecular Biology</b>	<b>4</b>		
	<b>15</b>		
<b>MS__ Summer College MCS(BIO Course)<sup>2</sup></b>	<b>3</b>		
Fifth Semester		EARTH AND ENVIRONMENTAL SCIENCES B.A. DEGREE (EARTH AND SPACE SCIENCE EDUCATION)- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCES	
<b>PHY 171 Classical and Modern Physics or</b>	<b>4</b>	First Semester	
<b>PHY 201 Introductory Physics I</b>		<b>ENG 101 Composition</b>	<b>4</b>
<b>EES 251 Synoptic Meteorology</b>	<b>4</b>	<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>EES 394 Field Study</b>	<b>1</b>	<b>MTH 105 Intro to Calculus</b>	<b>4</b>
<b>EES/ENV Elective</b>	<b>3</b>	<b>PSY 101 General Psychology I</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>	<b>BIO 121 Principles of Modern Biology I</b>	<b>4</b>
	<b>15</b>		<b>18</b>
Sixth Semester		Second Semester	
<b>PHY 174 Classical and Modern Physics or</b>	<b>4</b>	<b>EES 211 Physical Geology</b>	<b>4</b>
<b>PHY 202 Introductory Physics II</b>		<b>Distribution Requirement</b>	<b>6</b>
<b>BIO/EES 343 Marine Ecology 1, 3</b>	<b>3</b>	<b>Computer Science Elective</b>	<b>3</b>
<b>EES 244 Instrumental Analysis</b>	<b>4</b>	<b>BIO 122 Principles of Modern Biology II or</b>	<b>4</b>
<b>EES 302 Literature Methods</b>	<b>1</b>	<b>BIO 225 Population and Evolutionary Biology</b>	
<b>EES 304 Environmental Data Analysis</b>	<b>2</b>		<b>17</b>
<b>MTH 150 Statistics</b>	<b>3</b>	Third Semester	
	<b>17</b>	<b>EES 230 Ocean Science</b>	<b>4</b>
<b>MS__ Summer College MCS(BIO Course)<sup>2</sup></b>	<b>3</b>		
Seventh Semester			

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<b>Distribution Requirement</b>	<b>6</b>
<b>PHY 171 Classical and Modern Physics</b>	<b>4</b>
<b>ED 190 Effective Teaching</b>	<b>3</b>
	<hr/>
	17
Fourth Semester	
<b>EES 240 Principles of Environmental Science</b>	<b>4</b>
<b>EES 212 Historical Geology</b>	<b>3</b>
<b>PHY 174 Classical &amp; Modern Physics</b>	<b>4</b>
<b>ED 200 Educational Psychology</b>	<b>3</b>
<b>ED 371 Methods of Teaching Science</b>	<b>3</b>
	<hr/>
	17
Fifth Semester	
<b>CHM 113 Elements and Compounds Lab</b>	<b>1</b>
<b>CHM 115 Elements and Compounds Lecture</b>	<b>3</b>
<b>EES 251 Synoptic Meteorology</b>	<b>4</b>
<b>ED 210 Teaching Students with Special Needs</b>	<b>3</b>
<b>ED 215 Integrating Technology in the Classroom</b>	<b>3</b>
<b>MTH 150 Elementary Statistics</b>	<b>3</b>
	<hr/>
	17
Sixth Semester	
<b>EES 210 Global Climate Change</b>	<b>3</b>
<b>EES 302 Literature Methods</b>	<b>1</b>
<b>EES 304 Environmental Data Analysis</b>	<b>2</b>
<b>EES 394 Field Study</b>	<b>1</b>
<b>ED 220 Multicultural Education</b>	<b>3</b>
<b>ED 380 Content Area Reading</b>	<b>2</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
	15
Seventh Semester	
<b>EES 391 Senior Projects I</b>	<b>1</b>
<b>ED 390 Intern Teaching</b>	<b>15</b>
	<hr/>
	16
Eighth Semester	
<b>EES 392 Senior Projects II</b>	<b>2</b>
<b>EES 280 Principles of Astronomy</b>	<b>4</b>
<b>EES Electives<sup>1</sup></b>	<b>9</b>
	<hr/>
	15

<sup>1</sup> Three credits of EES electives must include either EES 271 or EES 272.

NOTE: All B.A. degree candidates are required to complete an appropriate minor or teaching certification. Other B.A. programs

and minors may be considered by the Department.

Adding one additional course in Chemistry will satisfy the course requirements for certification in General Science.

*By adding CHM 114, CHM 116, BIO 121, and BIO 122 or 225 to the Earth and Space Science Education Track, the candidate would satisfy course certification requirements for general science.*

*Summary of Requirements:*

EES Course Credits (EES 210, 211, 212, 230, 240, 251, 280, 302, 304, 391, 392, 394) = 33

EES Electives = 9

ED Minor Credits (ED 190, 200, 210, 220, 315, 371, 380, 390A) = 36

Other Science and Math Credits = 30

Core and Distribution Credits = 24

ENVIRONMENTAL ENGINEERING MAJOR

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENVIRONMENTAL ENGINEERING LEADING TO THE B.S. DEGREE — 134.**

The Department of Environmental Engineering and Earth Sciences (EEES) offers a four-year ABET-accredited degree program in Environmental Engineering (ENV). This program provides strong engineering and scientific experience with advanced techniques heavily integrated into the curriculum. Students intending to major in this program are encouraged to be well prepared in the sciences and mathematics. The first year of coursework is common to all engineering programs. Specialization is achieved through the appropriate selection of the technical electives.

The department highlights unique facilities such as a certified water quality laboratory used for teaching and contract work, and The Center for Geographic Information Science (GIS). Other facilities in the area are used field study in courses and student research.

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

*Honors Program in Environmental Engineering*

Upon the recommendation and approval of the Environmental Engineering faculty, honor students in Environmental Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of 3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

## ENVIRONMENTAL ENGINEERING B.S. DEGREE-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

## First Semester

<b>Chm 113 Elements and Compounds lab</b>	<b>1</b>
<b>Chm 115 Elements and Compounds</b>	<b>3</b>
<b>Mth 111 Calculus I</b>	<b>4</b>
<b>ME 180 CADD Lab</b>	<b>1</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
	<b>16</b>

## Second Semester

<b>EES 202 Biogeochemistry or</b>	
<b>EGR 200 Intro. to Materials Science</b>	<b>3</b>
<b>Mth 112 Calculus II</b>	<b>4</b>
<b>CS 125 Computer Science I or</b>	<b>4</b>
<b>EGR 140 Computers in Engineering</b>	<b>3</b>
<b>PHY 201 General Physics I</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>17-18</b>

## Third Semester

<b>MTH 211 Intro. to Differential Equations</b>	<b>4</b>
<b>PHY 202 General Physics II</b>	<b>4</b>
<b>EE 211 Electrical Circuits and Devices</b>	<b>3</b>
<b>EE 283 Electrical Measurements Lab</b>	<b>1</b>
<b>ME 231 Statics &amp; Dynamics</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>18</b>

## Fourth Semester

<b>EES 211 Physical Geology</b>	<b>4</b>
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<b>ME 322 Engineering Thermodynamics</b>	<b>3</b>
<b>EES 240 Principles of Environmental Science</b>	<b>4</b>
<b>ME 232 Strength of Materials</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>17</b>

## Fifth Semester

<b>ENV 315 Soils</b>	<b>3</b>
<b>ENV 321 Hydrology</b>	<b>4</b>
<b>ME 321 Fluid Mechanics</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>ME 323 Fluid Mechanics Lab</b>	<b>1</b>
<b>Technical Elective<sup>1</sup></b>	<b>3</b>
	<b>17</b>

## Sixth Semester

<b>ENV 330 Water Quality</b>	<b>4</b>
<b>ENV 332 Air Quality</b>	<b>4</b>
<b>EGM 320 Engineering Project Analysis</b>	<b>3</b>
<b>Technical Elective<sup>1</sup></b>	<b>3</b>
<b>EGR 201 Professionalism and Ethics<sup>2</sup></b>	<b>1</b>
	<b>15</b>

## Seventh Semester

<b>ENV 305 Solid Waste Management</b>	<b>3</b>
<b>ENV 351 Water and Wastewater Treatment</b>	<b>4</b>
<b>ENV 353 Air Pollution Control</b>	<b>3</b>
<b>ENV 391 Senior Projects I</b>	<b>1</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Technical Elective<sup>1</sup></b>	<b>3</b>
	<b>17</b>

## Eighth Semester

<b>ENV 322 Water Resources Engineering</b>	<b>3</b>
<b>ENV 352 Environmental Engineering Hydraulics</b>	<b>3</b>
<b>ENV 354 Hazardous Waste Management</b>	<b>3</b>
<b>ENV 392 Senior Projects II</b>	<b>2</b>
<b>Technical Elective<sup>1</sup></b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<b>17</b>

<sup>1</sup> 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.

<sup>2</sup> Consult with advisor for availability and proper scheduling. May be taken on campus, at other institutions and/or off campus as an independent study or distance learning course.

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CHAIRPERSON: DR. V. MING LEW

Faculty: Professors: Berard, Koch, Tillman

Associate Professors: Bracken, Harrison, Kapolka, Lew, Sullivan, Zukoski

Assistant Professors: Kong

Visiting Assistant Professor: Pryor

Math Specialist: Gapinski

Faculty Emeriti: Earl, Merrill, Wong

COMPUTER INFORMATION SYSTEMS

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER INFORMATION SYSTEMS LEADING TO THE B.S. DEGREE — 120.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER INFORMATION SYSTEMS — 17.**

The Department of Mathematics and Computer Science offers an interdisciplinary program (in cooperation with the Jay S. Sidhu School of Business and Leadership) leading to a B.S. degree in Computer Information Systems.

COMPUTER INFORMATION SYSTEMS MAJOR

Computer Information Systems is concerned primarily with the use of computer systems in business and industrial organizations. Its principal focus includes the study of systems analysis, systems design and computer programming, along with other analytical areas of business that are pertinent to the development, implementation, and maintenance of information systems.

COMPUTER INFORMATION SYSTEMS MINOR

A minor in Computer Information Systems requires the completion of 18 credits, consisting of the following courses:

**Required Courses:**

**CS 125, CS 126, CS 225, CS 324                    14**

One additional course from:

<b>CS 226, CS 317, CS 321, CS 325,</b>	
<b>CS 334, CS 335, CS 340, CS 350,</b>	
<b>CS 355, CS 360, CS 363, CS 366,</b>	
<b>CS 367, CS 383, or MTH 354</b>	<b>3</b>
	<b>17</b>

COMPUTER INFORMATION SYSTEMS MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>CS 125 Computer Science I</b>	<b>4</b>
<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
	<b>14</b>

Second Semester

<b>CS 126 Computer Science II</b>	<b>4</b>
<b>BA 152 Integrated Management Exp. II</b>	<b>3</b>
<b>Mth 105 Calculus for Life, Managerial and Social Sciences</b>	<b>4</b>

**I**

<b>Distribution Requirements</b>	<b>3-6</b>
	14-17
Third Semester	
<b>CS 225 Computer Science III</b>	<b>3</b>
<b>Mth 150 Elementary Statistics</b>	<b>3</b>
<b>Eng 202 Technical Writing</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	15
Fourth Semester	
<b>CS 226 Computer Science IV</b>	<b>3</b>
<b>CS 224 Cobol and File Management or CS 283 Web Development I</b>	<b>3</b>
<b>ACC 162 Managerial Accounting and Decision-Making</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	15
Fifth Semester	
<b>CS 325 Database Management or CS 317 Software Integration</b>	<b>3</b>
<b>CS 324 Systems Analysis</b>	<b>3</b>
<b>CS Elective</b>	<b>3</b>
<b>BA 351 Management of Organizations and People</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3-6</b>
	15-18
Sixth Semester	
<b>CS 224 Cobol and File Management or CS 283 Web Development I</b>	<b>3</b>
<b>CS Elective</b>	<b>3</b>
<b>BA 354 Organizational Behavior</b>	<b>3</b>
<b>Distribution Requirements and/or Free Electives</b>	<b>6</b>
	15
Seventh Semester	
<b>CS 325 Database Management or CS 317 Software Integration</b>	<b>3</b>
<b>CS 391 Senior Projects I</b>	<b>1</b>
<b>BA Elective</b>	<b>3</b>
<b>Distribution Requirements or Free Electives</b>	<b>6-9</b>
	13-16
Eighth Semester	
<b>CS 392 Senior Projects II</b>	<b>2</b>

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<b>CS Elective</b>	<b>3</b>
<b>Distribution Requirements and/or Free Electives</b>	<b>9-12</b>
	14-17
<i>** See below for the Department's requirements regarding CS/Mth electives.</i>	
<i>Summary of Minimum Credit Distribution for the CIS Major:</i>	<i>Credit Hours</i>
<b>CS 125, 126, 224, 225, 226, 283, 317, 324, 325, 391, 392.</b>	<b>32</b>
<b>CS/Mth Electives (select 3 of the following)</b>	
<b>CS335, CS340, CS367, CS355, CS321, CS360, CS363, Mth 354, CS334, CS366, or CS350</b>	<b>9</b>
<b>BA required courses BA 151, 152, Acc 162, BA 351 and BA 354</b>	<b>15</b>
<b>BA elective courses (select one of the following) BA352, BA321, or BA341</b>	<b>3</b>
<b>Mth 105, 150</b>	<b>7</b>
<b>FYF 101, ENG 101, 202</b>	<b>10</b>
<b>Distribution Requirements</b>	<b>24</b>
<b>Free Electives</b>	<b>20</b>
<b>Total</b>	<b>120</b>

COMPUTER SCIENCE

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

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN COMPUTER SCIENCE LEADING TO THE B.S. DEGREE — 120.**

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MINOR IN COMPUTER SCIENCE — 17.**

A program of study leading to a B.A. or B.S. degree with a major or minor in Computer Science is offered by the Department of Mathematics and Computer Science.

**MAJOR IN COMPUTER SCIENCE**

The Computer Science curriculum consists of theoretical as well as application-oriented courses and is based on a strong foundation in mathematics. The B.A. degree is intended for those interested in management and social sciences, whereas the B.S. degree requires greater concentration in the engineering, natural and physical sciences. Two tracks of study are offered to satisfy students' interests and career goals. A gaming and media design track can be chosen to prepare students for work in the expanded gaming industry. A traditional track can be taken to prepare students for graduate study and research in the discipline, or for employment in government or industry. Students are encouraged, through the attainment of a minor or second major, to acquire competence in an area that lends itself to meaningful computer applications. Required courses for a Computer Science major are indicated in the curriculum outlines recommended below.

Because certain required and elective courses are offered in either alternate semesters or alternate years, or when demand warrants, degree candidates are strongly encouraged to meet with their advisors on a regular basis to discuss their academic schedule to ensure satisfactory progress toward the degree.

With departmental approval, a degree candidate may earn credits in a maximum of five (5) courses offered by the Department of Mathematics and Computer Science by passing special

challenge examinations. Interested students may obtain further details from the Department Chair.

## COMPUTER SCIENCE MINOR

A minor in Computer Science requires the completion of 17 credits, consisting of the following courses:

<i>Required Courses:</i>	<i>Credit Hours</i>
<b>CS 125, CS 126, CS 225 and CS 226</b>	<b>14</b>

*Electives:*

<b>Two additional 300-level courses, excluding CS 321, CS 324, CS 360, CS 363 and CS 364</b>	<b>6</b>
<b>Minimum Total Required</b>	<b>20</b>

## COMPUTER SCIENCE MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE, CLASSIC TRACK

## First Semester

	B.A.	B.S.
<b>CS 125 Computer Science I</b>	<b>4</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b> <b>3</b>	<b>4</b> <b>3</b>
<b>Mth 111 Calculus I</b>	<b>4</b>	<b>4</b>
	14-15	14-15

## Second Semester

	B.A.	B.S.
<b>CS 126 Computer Science II</b>	<b>4</b>	<b>4</b>
<b>Mth 112 Calculus II</b>	<b>4</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b> <b>3</b>	<b>4</b> <b>3</b>
	14-15	14-15

## Third Semester

	B.A.	B.S.
<b>CS 225 Computer Science III</b>	<b>3</b>	<b>3</b>
<b>Mth 202 Set Theory and Logic</b>	<b>4</b>	<b>4</b>
<b>Laboratory Science Sequence<sup>1</sup></b>	<b>0</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>9</b>	<b>6</b>
	16	17

## Fourth Semester

	B.A.	B.S.
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<b>CS 226 Computer Science IV</b>	<b>3</b>	<b>3</b>
<b>Mth 231 Discrete Math</b>	<b>3</b>	<b>3</b>
<b>Laboratory Science Sequence<sup>1</sup></b>	<b>0</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>	<b>3</b>
<b>Eng 202 Tech. Writing</b>	<b>3</b>	<b>3</b>
	<hr/>	
	15	16

Fifth Semester

	B.A.	B.S.
<b>CS 326 Operating System Principles* or CS 328 Analysis of Algorithms*</b>	<b>3</b>	<b>3</b>
<b>Mth 150 Elementary Statistics or Mth 351 Probability and Statistics I</b>	<b>3</b>	<b>3</b>
<b>Laboratory Science Elective</b>	<b>0</b>	<b>4</b>
<b>Distribution Requirements and/or Free Electives</b>	<b>9</b>	<b>6</b>
	<hr/>	
	15	16

Sixth Semester

	B.A.	B.S.
<b>CS 334 Software Engineering</b>	<b>3</b>	<b>3</b>
<b>CS Elective or CS330</b>	<b>3</b>	<b>3</b>
<b>CS Elective or CS 319 Programming Languages or CS 323 Theory of Computation or CS 327 Compiler Design</b>	<b>3</b>	<b>3</b>
<b>Free Electives</b>	<b>6</b>	<b>6</b>
	<hr/>	
	15	15

Seventh Semester

	B.A.	B.S.
<b>CS 391 Senior Project</b>	<b>1</b>	<b>1</b>
<b>CS Elective</b>	<b>3</b>	<b>3</b>
<b>CS 326 Operating System Principles or CS 328 Analysis of Algorithms</b>	<b>3</b>	<b>3</b>
<b>Free Electives</b>	<b>6-9</b>	<b>6-9</b>
	<hr/>	
	13-16	13-16

Eighth Semester

	B.A.	B.S.
<b>CS 392 Senior Projects II</b>	<b>2</b>	<b>2</b>
<b>CS Elective or CS330</b>	<b>3</b>	<b>3</b>
<b>CS Elective or CS 319 Senior Programming LanguagesI or</b>	<b>3</b>	<b>3</b>

**CS 323 Theory of  
Computation  
or CS 327 Compiler  
Design**

<b>Free Electives</b>	<u>6-9</u>	<u>6-9</u>
	14-17	14-17

COMPUTER SCIENCE B.S.- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE, GAMING AND MEDIA DESIGN TRACK

First Semester

<b>CS 125 Computer Science I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
	<b>3</b>
<b>Mth 111 Calculus I</b>	<b>4</b>
	<hr/>
	14-15

Second Semester

<b>CS 126 Computer Science II</b>	<b>4</b>
<b>Mth 112 Calculus II</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
	<b>3</b>
	<hr/>
	14-15

Third Semester

<b>CS 225 Computer Science III</b>	<b>3</b>
<b>Mth 202 Set Theory and Logic</b>	<b>4</b>
<b>Laboratory Science Sequence</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>6</b>
	<hr/>
	17

Fourth Semester

<b>CS 226 Computer Science IV</b>	<b>3</b>
<b>Mth 231 Discrete Math</b>	<b>3</b>
<b>Laboratory Science Sequence</b>	<b>4</b>
<b>Distribution Requirements or CS 366 Gaming I</b>	<b>3</b>
<b>Eng 202 Technical Writing</b>	<b>3</b>
	<hr/>
	16

Fifth Semester

<b>CS 328 Analysis of Algorithms or CS Elective</b>	<b>3</b>
<b>Mth 150 Elementary Statistics or Mth 351 Probability and Statistics I</b>	<b>3</b>
<b>CS 340 Artificial Intelligence or CS 367 Computer Graphics</b>	<b>3</b>
<b>PHY 201 - General Physics</b>	<b>4</b>
	<hr/>
	13

Sixth Semester

<b>CS 334 Software Engineering</b>	<b>3</b>
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College of Science and Engineering

<b>CS 366 Gaming I or CS 368 3D Game Development</b>	<b>3</b>
<b>CS Elective or Distribution Requirement</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	15
Seventh Semester	
<b>CS 328 Analysis of Algorithms or CS Elective</b>	<b>3</b>
<b>CS 340 Artificial Intelligence or CS 367 Computer Graphics</b>	<b>3</b>
<b>CS 391 Senior Projects I</b>	<b>1</b>
<b>Free Electives</b>	<b>6-9</b>
	<hr/>
	13-16
Eighth Semester	
<b>CS 368 3D Game Development or CS Elective</b>	<b>3</b>
<b>CS 392 Senior Projects II</b>	<b>2</b>
<b>Free Electives</b>	<b>9-12</b>
	<hr/>
	14-17

## SCIENCE ELECTIVES FOR COMPUTER SCIENCE MAJORS

*B.A. candidates:* See General Education Requirements.

*B.S. candidates:* A laboratory science sequence which must be one of the following:

Bio 121-122; Chem 113/115-114/116; EES 211, 230; or Phy 201-202.

and

One additional 4-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be numbered above 200 except that Bio 121, 122, Chm 113/115 or 114/116 are also acceptable in this requirement.

*Computer Science Electives for Computer Science Majors:*

CS 319 or CS 323 or CS 327, and three additional CS courses numbered 300 or above.

*Summary of Minimum Credit Distribution for  
Computer Science - Classic Track:*

	B.A.	B.S.
<b>CS 125, 126, 225, 226, 326, 328, 330, 334, 391, 392</b>	<b>29</b>	<b>29</b>
<b>CS 319 or 323 or 327</b>	<b>3</b>	<b>3</b>
<b>CS Electives</b>	<b>9</b>	<b>9</b>
<b>Mth 111, 112, 202, 231 and 150 or 351</b>	<b>18</b>	<b>18</b>
<b>Eng 101, 202</b>	<b>7</b>	<b>7</b>
<b>FYF 101</b>	<b>3</b>	<b>3</b>
<b>Science Electives</b>	<b>6</b>	<b>12</b>
<b>Distribution Requirements</b>	<b>18</b>	<b>18</b>
<b>Free Electives</b>	<b>27</b>	<b>21</b>
<i>Minimum Total Required</i>	<i>120</i>	<i>120</i>

*Computer Science Majors - Gaming and Media Design:*

	B.S.
<b>CS 125, 126, 225, 226, 328, 334, 340, 366, 367, 368, 391, 392</b>	<b>35</b>
<b>CS Electives</b>	<b>6</b>
<b>Mth 111, 112, 202, 231 and 150 or 351</b>	<b>18</b>
<b>Eng 101, 202</b>	<b>7</b>
<b>FYF 101</b>	<b>3</b>
<b>PHY201</b>	<b>4</b>
<b>Science Electives</b>	<b>8</b>
<b>Distribution Requirements</b>	<b>18</b>
<b>Free Electives</b>	<b>21</b>
<i>Minimum Total Required</i>	<i>120</i>

## MATHEMATICS MAJOR

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

## College of Science and Engineering

**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.**

Programs of study leading to the B.A. or B.S. degree with a major or minor in Mathematics along with a minor in Statistics are offered by the Department of Mathematics and Computer Science.

The Department offers two tracks leading to a baccalaureate degree in Mathematics: the Standard Mathematics Track and the Teacher Certification Track. The Teacher Certification Track provides preparation for secondary school teaching. The Standard Mathematics Track prepares students for graduate study and research in mathematics, or for careers in industry or government, depending on the upper-level electives chosen in consultation with the faculty advisor. The Standard Track, when combined with an appropriate second major or minor, can also provide an excellent foundation for professions in business and management; economics; law; medicine; actuarial, computing, engineering, environmental and physical sciences. Both tracks share a common core of study in modern algebra, analysis, probability, and statistics.

In both tracks a student may opt for either a Bachelor of Arts or Bachelor of Science degree. The B.A. degree is intended for those who wish to elect more humanities and social science courses, whereas the B.S. degree requires greater concentration in the natural and physical sciences.

Students interested in Secondary Education should make an appointment as early as possible in their program of study with the chairperson of the Education Department to plan their professional studies. The Teacher Certification track is specifically designed to incorporate requirements necessary for certification in secondary education. Upon completion of all requirements, students receiving a degree in mathematics with secondary teaching certification will also receive a minor in Secondary Education. Questions regarding requirements for the minor in Secondary Education should be directed to the Education Department.

With departmental approval, a degree candidate may earn credits in a maximum of five (5) courses offered by the Department of Mathematics and Computer Science by passing special challenge examinations. Interested students may obtain further details from the Department Chair.

### MATHEMATICS MINOR

*Required Courses:* *Credit Hours*

**Mth 111-112** **8**

#### *Electives:*

Two of the following courses:

**Mth 202, 211, 212, 214, 231** **7-8**

**Any two MTH courses numbered 300 or higher excluding MTH 303, MTH 391, and MTH 392** **6-8**

*Minimum Total Required* *21-24*

### 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.

*Required Courses:* *Credit Hours*

**Mth 105-106 or Mth 111-112** **8**

**CS 125** **4**

<b>Mth 351-352; and Mth 354</b>	<u>9</u>
<b>Minimum Total Required</b>	21

## STANDARD MATHEMATICS TRACK- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

## First Semester

	B.A.	B.S.
<b>Mth 111 Calculus I</b>	4	4
<b>Eng 101 Composition or Distribution Requirement</b>	4/3	4/3
<b>CS 125 Computer Science I</b>	4	4
<b>FYF 101 First-Year Foundations</b>	3	3
	14-15	14-15

## Second Semester

	B.A.	B.S.
<b>Mth 112 Calculus II</b>	4	4
<b>Eng 101 Composition or Distribution Requirement</b>	4/3	4/3
<b>Distribution Requirements</b>	9	6
<b>Phy 201 General Physics I</b>		4
	16-17	17-18

## Third Semester

	B.A.	B.S.
<b>Mth 202 Set Theory and Logic</b>	4	4
<b>Mth 211 Intro. to Ordinary Differential Equations</b>	4	4
<b>Science Elective</b>	3	3
<b>Distribution Requirements</b>	6	6
	17	17

## Fourth Semester

	B.A.	B.S.
<b>Mth 212 Multivariable Calculus</b>	4	4
<b>Mth 214 Linear Algebra</b>	3	3
<b>Science Elective</b>	3	4
<b>Distribution Requirements</b>	-	3
<b>Free Elective</b>	3	0
	13	14

## Fifth Semester

	B.A.	B.S.
<b>Mth 311 Functions of a Real Variable or Mth 331 Intro to Abstract Algebra</b>	4	4

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**I**

<b>Mth 351 Probability and Mathematical Statistics I</b>	<b>3</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>	<b>6</b>
	16	13

Sixth Semester

	B.A.	B.S.
<b>Mth/CS Elective</b>	<b>6</b>	<b>6</b>
<b>Free Electives</b>	<b>9</b>	<b>9</b>
	15	15

Seventh Semester

	B.A.	B.S.
<b>Mth 391 Senior Seminar</b>	<b>1</b>	<b>1</b>
<b>Mth 311 Functions of a Real Variable or Mth 331 Intro. to Abstract Algebra I</b>	<b>4</b>	<b>4</b>
<b>Mth/CS Elective</b>		<b>3</b>
<b>Free Electives</b>	<b>9</b>	<b>7</b>
	14	15

Eighth Semester

	B.A.	B.S.
<b>Mth 392 Senior Seminar</b>	<b>2</b>	<b>2</b>
<b>Mth/CS Elective</b>	<b>3</b>	<b>3</b>
<b>Free Electives</b>	<b>9</b>	<b>9</b>
	14	14

TEACHER CERTIFICATION MATHEMATICS TRACK- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

	B.A.	B.S.
<b>Mth 111 Calculus I</b>	<b>4</b>	<b>4</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4/3</b>	<b>4/3</b>
<b>CS 125 Computer Science I</b>	<b>4</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>	<b>3</b>
	14-15	14-15

Second Semester

	B.A.	B.S.
<b>Mth 112 Calculus II</b>	<b>4</b>	<b>4</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4/3</b>	<b>4/3</b>
<b>Psy 101 General Psychology</b>	<b>3</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>	<b>3</b>
<b>Lab Science Sequence I</b>		<b>4</b>

	16-17	17-18
Third Semester		
	B.A.	B.S.
<b>Mth 202 Set Theory and Logic</b>	<b>4</b>	<b>4</b>
<b>Ed 190 Effective Teaching</b>	<b>3</b>	<b>3</b>
<b>Lab Science Sequence II</b>	<b>3</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>	<b>6</b>
	16	17
Fourth Semester		
	B.A.	B.S.
<b>Mth 212 Multivariable Calculus</b>	<b>4</b>	<b>4</b>
<b>Mth 214 Linear Algebra</b>	<b>3</b>	<b>3</b>
<b>Ed 200 Educational Psychology</b>	<b>3</b>	<b>3</b>
<b>Science Elective</b>	<b>3</b>	<b>4</b>
<b>Free Elective</b>	<b>3</b>	
	16	14
Fifth Semester		
	B.A.	B.S.
<b>Ed 210 Teach. Students w/Special Needs</b>	<b>3</b>	<b>3</b>
<b>Mth 343 Intro. to Geometry or Mth 303 Teaching of Mathematics in Secondary School</b>	<b>3/4</b>	<b>3/4</b>
<b>Mth 311 Functions of a Real Variable or</b>	<b>4</b>	<b>4</b>
<b>Mth 331 Intro. to Abstract Algebra</b>	<b>-</b>	<b>3</b>
<b>Distribution Requirement</b>		
<b>Free Electives</b>	<b>3</b>	<b>0</b>
	13-14	13-14
Sixth Semester		
	B.A.	B.S.
<b>Mth/CS Electives</b>	<b>3</b>	<b>9</b>
<b>Ed 220 Multicultural Education</b>	<b>3</b>	<b>3</b>
<b>EDSP 225 Special Education Methodology</b>	<b>3</b>	<b>3</b>
<b>Ed 380 Content Area Reading</b>	<b>2</b>	<b>2</b>
<b>Free Electives</b>	<b>6</b>	<b>1</b>
	17	18
Seventh Semester		
	B.A.	B.S.
<b>Mth 343 Intro. to</b>	<b>3/4</b>	<b>3/4</b>

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**Geometry or Mth 303  
The Teaching of  
Mathematics in  
Secondary School**

**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 215 Technology in  
the Classroom**      **3**      **3**

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14-15      14-15

Eighth Semester

B.A.      B.S.

**EDSP 388 Inclusionary  
Practices**      **3**      **3**

**Ed 390A Intern  
Teaching**      **12**      **12**

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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 121-122; Chm 113/115-114/116; EES 211, 230; or Phy 201-202 and one additional 4-credit course in Biology, Chemistry, Earth and Environmental Sciences, Physics, or any Engineering course not cross-listed in Computer Science. The course must be numbered above 200 except that Bio 121, 122, Chm 113/115 or 114/116 are also acceptable in this requirement.

*Mathematics/Computer Science Electives for Mathematics Majors:*

*Standard Mathematics Track:*

Any two Mth courses numbered above 300; and for

*B.A. candidates:* Mth 231, CS 227, or any Mth or CS course numbered above 300, excluding Mth 303

*B.S. candidates:* Two of the following: Mth 231, CS 227, or any MTH or CS course numbered above 300, excluding Mth 303

*Teacher Certification Mathematics Track:*

Any one 3-credit MTH course numbered above 300; and for B.S. candidates:

Two of the following courses:

Mth 211, Mth 231, CS 227, or any Mth or CS course numbered above 300

*Summary of Minimum Credit Distribution:*

*Standard Mathematics Track*

	B.A.	B.S.
<b>Mth 111, 112, 202, 211, 212, 214, 311, 331, 351, 391, and 392</b>	<b>37</b>	<b>37</b>
<b>Mth/CS Electives</b>	<b>9</b>	<b>12</b>
<b>CS 125</b>	<b>4</b>	<b>4</b>
<b>Science Electives</b>	<b>6</b>	<b>12</b>
<b>Eng 101</b>	<b>4</b>	<b>4</b>

<b>FYF 101</b>	<b>3</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>18</b>	<b>18</b>
<b>Free Electives</b>	<b>39</b>	<b>30</b>
<b>Total</b>	120	120

*Teacher Certification Mathematics Track*

	B.A.	B.S.
<b>Mth 111, 112, 202, 212, 214, 303, 311, 331, 343, 351, and 391</b>	<b>38</b>	<b>38</b>
<b>Mth/CS Electives</b>	<b>3</b>	<b>9</b>
<b>CS 125</b>	<b>4</b>	<b>4</b>
<b>Science Electives</b>	<b>6</b>	<b>12</b>
<b>Eng 101</b>	<b>4</b>	<b>4</b>
<b>Ed 190, 200, 210, 220, EdSP225, 380, 388 and 390A</b>	<b>32</b>	<b>32</b>
<b>FYF 101</b>	<b>3</b>	<b>3</b>
<b>Psy 101</b>	<b>3</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>15</b>	<b>15</b>
<b>Free Electives</b>	<b>9</b>	<b>3</b>
<b>Total</b>	120	120

THE JAY S. SIDHU SCHOOL  
OF BUSINESS AND  
LEADERSHIP

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## THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

DEAN: DR. PAUL C. BROWNE

The Jay S. Sidhu School of Business and Leadership combines a strong core business education with the development of skills for authentic leadership and ethical business practices. The School offers degree programs for undergraduate and MBA students. In addition, it houses the Sovereign Center for Leadership and Management Development to provide leadership and professional development programs for business executives, managers and supervisors throughout the region.

The School bears the name of Jay S. Sidhu, a 1973 graduate of the Wilkes MBA program, a member of the University Board of Trustees, and former President and chief executive of Sovereign Bancorp. Mr. Sidhu and Sovereign Bank, a financial institution based in Reading, Pennsylvania, have provided Wilkes with a major gift to endow the School in Mr. Sidhu's name.

The Sidhu School offers three undergraduate degrees: the Bachelor of Business Administration degree (including an accelerated degree completion option for adult learners), the Bachelor of Business Administration degree in Entrepreneurship, and the Bachelor of Science degree in Accounting. The School also offers the Master of Business Administration degree, described in the *Wilkes University Graduate and Professional Studies Bulletin*.

The Sidhu undergraduate business program is centered on self-development through three interconnected components: a balanced set of foundation courses, preparation for entry into specific careers and jobs, and leadership development. At the heart of the experience is the Personal and Professional Development (PPD) Series. Consisting of seven one-credit courses, it engages small student cohorts in a four-year process of discovery and development. Students explore their knowledge, values, learning styles, and competencies in a spirit of self-examination, self-awareness and self-knowledge, forming the basis for an evolving Life and Learning Plan. The PPD series draws on the resources of the University and surrounding community and provides a linking thread throughout a student's experience in the business administration, accounting, and entrepreneurship programs. Courses challenge students to reflect on their learning

and assess how well they are progressing in the integration of content with skill and competency development. The goal is to develop graduates who understand the value of cognitive and emotional intelligence as they exercise authentic leadership in careers that demand individual commitment to excellence and genuine appreciation for teamwork.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of these programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing business programs at Wilkes.

Closely linked to the Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for students to apply what they study in classroom settings to functioning organizations under the direction of senior staff at each unit.

The School provides a wealth of co-curricular and extracurricular opportunities for students to develop and hone their personal leadership skills. Campus chapters of Delta Epsilon Chi ( ) and the Society for Advancement of Management (SAM) provide students with opportunities for professional development, social interaction and national exposure. The Wilkes University Students in Free Enterprise (SIFE) team provides the opportunity to make a difference through service and to develop leadership, teamwork and communication skills through learning, practicing and teaching the principles of free enterprise. These organizations are open to all students, regardless of major or career interests.

Upper-level accounting students serve as tax preparers in the Volunteer Income Tax Assistance (VITA) program of the U.S. Internal Revenue Service. VITA provides free tax-filing assistance for low-income and elderly residents of Wilkes-Barre and the surrounding vicinity, while giving students actual, hands-on experience in completing and filing personal tax returns. Wilkes University and the Sidhu School also sponsor an active chapter of Delta Mu Delta, an

honorary business society that recognizes the highest levels of academic achievement by undergraduate and graduate students.

*Bachelor's Degree-Majors*

Accounting (B.S.)  
Business Administration (B.B.A.)  
Entrepreneurship (B.B.A.)

## BUSINESS ADMINISTRATION AND ACCOUNTING

CHAIRPERSON: DR. JUSTIN C. MATUS

*Faculty: Professors: Alves, Batory, Liuzzo, Rexer, Taylor*

*Associate Professors: Chisarick, Engel*

*Assistant Professors: Das, Edmonds, Frear, Gordon, Hao, Matus, Raineri, Xiao*

*Adjunct Faculty: Albany, Gorman, Hughes, Kosicki, McDonald, Ruthkosky, Sabatini, Sowcik, Zipay*

*Faculty Emeriti: Broadt, Capin, Gera, Raspen*

### ACCOUNTING MAJOR

COORDINATOR: DR. MARIANNE M. REXER

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ACCOUNTING LEADING TO THE B.S. DEGREE — 125.**

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

The Jay S. Sidhu School of Business and Leadership offers a major in Accounting, providing the necessary background for an entry-level professional position in public, private or governmental accounting. Students receive the necessary educational background to compete successfully for placement in graduate and professional schools and licensures as certified public accountants and certified management accountants. Those choosing a career in administration receive the managerial training necessary for success in a full range of leadership roles.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited both the undergraduate and the graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the Accounting major at Wilkes.

The Accounting curriculum parallels that of Business Administration and Entrepreneurship and contains four tiers. The *first tier* begins with a comprehensive study

of the arts, sciences, mathematics, communications, and humanities. This liberal arts core is a common experience to all majors and provides the basis for a broadly educated individual. To become competitive, effective organizational leaders and self-fulfilled individuals, Accounting graduates are expected to possess the skills and knowledge acquired through this liberating exposure to the arts, sciences, mathematics, and the humanities.

The *second tier* of educational experience provides a general background in statistical, financial, and managerial techniques. Subjects included in this area of study are finance, economics, management, and marketing, including a two-semester Integrated Management Experience which serves as the school's foundation course in the study of accounting, business, and entrepreneurship. This tier also includes a sequence of seven one-credit courses called the "Professional and Personal Development" series, designed to engage all business students in an in-depth exploration and assessment of their personal strengths, goals, and career aspirations and provide a series of developmental activities and experiences to facilitate their transition into professional careers.

The *third tier* of basic educational skills relates to the fields of financial and managerial accounting. A rigorous thirty-six credit hours are devoted to current accounting theory and applications through the use of texts, computer applications, cases, and practical experience. The sequence begins with introductory level accounting and progresses through intermediate, tax, cost, auditing, and accounting information systems. A fourth tier utilizes an accounting internship to bond classroom knowledge with practical experience. Most students are placed with public accounting firms where it is possible to experience many areas of accounting as well as a broad range of business problems in a short time span. Additionally, for students with a more specialized interest, accounting internships are also available in banks, in private industry, and with the government. The Wilkes internship program is the oldest in Northeast Pennsylvania, and most successful interns have been placed in positions of their choice, including the large international accounting firms.

A *fifth tier*, a five and a half year BS/MBA program, is available for students who wish to meet the needs of a professional in the 21st century. This program offered by the Jay S. Sidhu School of Business and Leadership

has been developed to encompass each of the above-mentioned levels, along with an additional year and a half of graduate coursework. Upon successful completion, the student will have earned a Bachelor of Science degree in Accounting and a Master of Business Administration degree with 161 credit hours of coursework.

Accounting alumni can be found in public accounting firms ranging in size from those of individual practitioners to international organizations. Many of our graduates who began their careers in public accounting have since moved into leadership positions with government or private industry.

The Accounting major in the Jay S. Sidhu School of Business and Leadership at Wilkes University will provide an individual with the combined educational skills to be a future success as a leader in the accounting profession, industry, or government.

**ACCOUNTING MINOR**

Students from other disciplines, even those unrelated to business, have been inclined to select an Accounting minor to enhance their major field of study. The minor provides the student with enough background to begin with professional entry-level employment while developing a background in his or her chosen field of study. The minor program is composed of ACC 161-162, ACC 201-202 and six additional elective credits in accounting.

**ACCOUNTING MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

**First Semester**

<b>Acc 151 Integrated Management Experience I</b>	<b>3</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>CS 115 Computers and App.</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>PDD 101 Personal and Professional Development I</b>	<b>1</b>

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**Second Semester**

<b>Acc 152 Integrated Management Experience II</b>	<b>3</b>
<b>Mth 107 Business Math</b>	<b>3</b>
<b>COM 101 Public Speaking</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>BA 233 Legal Environment of Business</b>	<b>3</b>
<b>PDD 102 Personal and Professional Development II</b>	<b>1</b>

	<hr/> 16
<b>Third Semester</b>	
<b>Acc 161 Financial Accounting</b>	<b>3</b>
<b>Ec 101 Economics I</b>	<b>3</b>
<b>BA 234 Business Law</b>	<b>3</b>
<b>BA 351 Management of Organizations &amp; People</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>3</b>
<b>PPD 201 Personal and Professional Development III</b>	<b>1</b>
	<hr/> 16
<b>Fourth Semester</b>	
<b>Acc 162 Managerial Accounting</b>	<b>3</b>
<b>Ec 102 Economics II</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>BA 321 Marketing</b>	<b>3</b>
<b>PPD 202 Personal and Professional Development IV</b>	<b>1</b>
	<hr/> 16
<b>Fifth Semester</b>	
<b>Acc 201 Intermediate Accounting I</b>	<b>3</b>
<b>Acc 321 Taxes</b>	<b>3</b>
<b>BA 319 Business Statistics</b>	<b>3</b>
<b>BA 354 Organizational Behavior</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 301 Personal and Professional Development V</b>	<b>1</b>
	<hr/> 16
<b>Sixth Semester</b>	
<b>Acc 202 Intermediate Accounting II</b>	<b>3</b>
<b>Acc 322 Advanced Taxes</b>	<b>3</b>
<b>BA 341 Managerial Finance</b>	<b>3</b>
<b>BA 352 Prod/Operations Mgmt.</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 302 Personal and Professional Development VI</b>	<b>1</b>
	<hr/> 16
<b>Seventh Semester</b>	
<b>Acc 301 Advanced Accounting</b>	<b>3</b>
<b>Acc 331 Auditing</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
<b>BA 358 International Business Seminar</b>	<b>3</b>
<b>BA 361 Business Strategy and Decision-making</b>	<b>3</b>
<b>PPD 401 Personal and Professional Development VII</b>	<b>1</b>
	<hr/> 16

Eighth Semester	
<b>Acc 311 Cost Accounting</b>	<b>3</b>
<b>Acc 341 Accounting Info Systems</b>	<b>3</b>
<b>Acc 362 Accounting Internship or</b>	<b>6</b>
<b>Acc 362 Accounting Internship* and</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
	<b>12</b>

\* Accounting 362 may be taken for 6 credits in place of the Free Elective in semester 8.

**BUSINESS ADMINISTRATION MAJOR**

COORDINATOR: DR. JUSTIN C. MATUS

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A BACHELOR OF BUSINESS ADMINISTRATION DEGREE — 125.**

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

The Jay S. Sidhu School of Business and Leadership offers undergraduate and graduate degree programs in Business Administration with a variety of concentrations leading to executive, managerial and technical careers in business, industry, and governmental organizations.

The Association of Collegiate Business Schools and Programs (ACBSP) has accredited both the undergraduate and graduate Business Administration programs as well as the undergraduate program in Accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the Business Administration major at Wilkes. Students interested in pursuing graduate or professional studies will find that the curriculum provides the appropriate foundation for such opportunities.

The Business Administration curriculum parallels that of Accounting and Entrepreneurship and contains a minimum of three tiers. These tiers or steps are intended to combine simultaneously a rigorous general education with the flexibility of individualized program design. The *first tier* begins with a comprehensive study of the arts, sciences, mathematics, communications, and humanities. This liberal arts core is a common experience to all majors and provides the basis for a broadly educated individual. To become competitive, effective, organizational leaders and self-fulfilled individuals, Business Administration graduates are expected to possess the skills

and knowledge acquired through this liberating exposure to the arts, sciences, mathematics, and the humanities.

The *second tier* of the curriculum is the Business Administration core, which transmits a common educational experience to all Business Administration majors by addressing topics that are recognized to be basic and necessary to all practicing professionals. Although the following twenty-three courses are required by the Business Administration core, four of them fulfill Distribution Area requirements of the University core and so are counted in the first tier grouping. They appear here for completeness:

- ACC 161 Financial Accounting and Decision Making
- ACC 162 Managerial Accounting and Decision Making
- BA 151 Integrated Management Experience I
- BA 152 Integrated Management Experience II
- BA 233 The Legal Environment of Business
- BA 234 Business Law
- BA 257 Management Information Systems
- BA 309 Business Correspondence and Reports
- BA 319 Business Statistics
- BA 321 Marketing
- BA 341 Managerial Finance
- BA 351 Management of Organizations and People
- BA 352 Production and Operations Management
- BA 354 Organizational Behavior
- BA 356 The Social Responsibility of Business
- BA 358 International Business
- BA 361 Business Strategy and Decision-Making
- BA 362 Professional Business Experience (or an experiential Independent study)
- COM 101\* Public Speaking
- CS 115\* Computers and Applications
- Ec 101 Economics I
- Ec 102\* Economics II
- Mth 107\* Business Mathematics
- 6 additional credits in General Education Electives
- PPD 101 Personal and Professional Development I
- PPD 102 Personal and Professional Development II
- PPD 201 Personal and Professional Development III
- PPD 202 Personal and Professional Development IV

PPD 301 Personal and Professional Development V  
PPD 302 Personal and Professional Development VI  
PPD 401 Personal and Professional Development VII

\*Meets a requirement in the University core

The third tier requires completion of twelve credits of elective courses within the major (Both BA and ENT prefixed courses can be used). Students wishing to satisfy the requirements for a particular concentration area must complete at least six of their third-tier credits within that concentration area (See below for a complete description of these concentration areas.)

The Bachelor of Business Administration degree program also contains nine credits of free electives for further customization of one's educational program. A student who wishes to declare a minor in an area such as computer science, communication studies, foreign languages, political science, psychology, or sociology can easily do so. Through a judicious selection of elective concentration courses and use of the free electives courses, it is possible for a student to fulfill two concentrations without the necessity of adding extra credits or extra semesters to one's program. Academic, personal, and career advisors are available to assist students in the selection of concentration areas and coursework. In much the same way, minors, double majors, or a personalized package of electives can be constructed around the interests of the students with the concerned, caring advice of these counselors.

Business Administration alumni can be found in positions of leadership in organizations throughout the world. They are leaders in both the public and private sectors. In addition, our alumni are educators, researchers, scholars, entrepreneurs, and other professionals. For the next generation of executives and professionals seeking similar realizations of their ambitions, the Bachelor of Business Administration degree program at Wilkes will prepare them admirably for their demanding futures as leaders of our global and diverse environment in the 21st century.

Closely linked to the Jay S. Sidhu School of Business and Leadership are the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both units provide academic and experiential opportunities for business students to apply what they study in classroom settings to functioning

organizations under the direction of senior staff at each unit.

The following course sequence is recommended for students pursuing the Bachelor of Business Administration degree. By following this recommendation, all University core and School core requirements will be completed in their proper sequences. Students transferring into Wilkes and/or the Bachelor of Business Administration degree program can use this semester-by-semester outline as guidance for completing coursework.

#### MARKETING MINOR

For students in Business Administration and other disciplines, the Jay S. Sidhu School of Business and Leadership offers a minor program in Marketing. Students considering careers in or involving aspects of the marketing profession will find the Minor in Marketing an excellent complement to their primary academic and career interests. All students seeking the Minor in Marketing will be required to complete a minimum of eighteen (18) credits from the following list of courses:

- BA 321 Marketing
- BA 322 Advertising
- BA 324 Retailing
- BA 326 The Selling Process
- BA 327 Marketing Seminar
- BA 328 Consumer Behavior
- BA 198/298/398 Topics in Marketing
- BA 395/396 Independent Study in Marketing
- COM 302 Public Relations
- ENT 203 Opportunity Recognition: Creativity and Innovation
- ENT 252 The Entrepreneurial Leader
- ENT 321 Analyzing Markets and Competition
- ENT 384 Small Business Consultancy

#### BUSINESS ADMINISTRATION MINOR

For majors in other disciplines, the Jay S. Sidhu School of Business and Leadership offers the minor program in Business Administration. Thus, students who may be contemplating a career in business as a means of fully utilizing their already chosen majors will find that the Business Administration minor can complement their other academic and career interests. All students wishing to minor in Business Administration will be required to complete a minimum of eighteen credits, or six courses, to include three required courses, BA/ACC/ENT 151, BA/ACC/ENT 152, and BA 351, plus any three other courses (a) having the BA prefix and/or (b) approved by the

The Jay S. Sidhu School of Business and Leadership

Chairperson of the Jay S. Sidhu School of Business and Leadership.

BUSINESS ADMINISTRATION MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>BA 151 Integrated Management Experience I</b>	<b>3</b>
<b>CS 115 Survey of Computers</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>PPD 101 Personal and Professional Development I</b>	<b>1</b>
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Second Semester

<b>BA 152 Integrated Management Experience II</b>	<b>3</b>
<b>BA 233 Legal Environment of Business</b>	<b>3</b>
<b>Com 101 Public Speaking</b>	<b>3</b>
<b>Eng 101 Composition or Distribution Requirement</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 102 Personal and Professional Development II</b>	<b>1</b>
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16-17

Third Semester

<b>Acc 161 Financial Accounting and Decision Making</b>	<b>3</b>
<b>BA 234 Business Law</b>	<b>3</b>
<b>BA 351 Management of Organizations and People</b>	<b>3</b>
<b>EC 101 Economics I</b>	<b>3</b>
<b>Mth 107 Business Mathematics</b>	<b>3</b>
<b>PPD 201 Personal and Professional Development III</b>	<b>1</b>
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Fourth Semester

<b>Acc 162 Managerial Accounting and Decision Making</b>	<b>3</b>
<b>BA 257 Mgt. Information Systems</b>	<b>3</b>
<b>BA 321 Marketing</b>	<b>3</b>
<b>EC 102 Economics II</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 202 Personal and Professional Development IV</b>	<b>1</b>
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Fifth Semester

<b>BA 309 Business Correspondence and Reports</b>	<b>3</b>
<b>BA 319 Business Statistics</b>	<b>3</b>
<b>BA 354 Organizational Behavior</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
<b>PPD 301 Personal and Professional Development V</b>	<b>1</b>
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Sixth Semester

<b>BA 341 Managerial Finance</b>	<b>3</b>
<b>BA 352 Production &amp; Operations Mgt.</b>	<b>3</b>
<b>BA 356 Social Responsibility</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
<b>PPD 302 Personal and Professional Development VI</b>	<b>1</b>
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Seventh Semester

<b>BA 358 International Business</b>	<b>3</b>
<b>BA 361 Bus Strategy &amp; Dec Making</b>	<b>3</b>
<b>Concentration Electives</b>	<b>6</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 401 Personal and Professional Development VII</b>	<b>1</b>
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Eighth Semester

<b>BA 362 Management Field Experience</b>	<b>3</b>
<b>Concentration Electives</b>	<b>6</b>
<b>Free Elective</b>	<b>3</b>
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*Bachelor of Business Administration Degree*

Note: Students who pursue the Bachelor of Business Administration degree must complete 12 credits from any of the concentration areas or other elective courses having ACC, BA, EC, or ENT prefixes. Students who wish to satisfy the requirements for a particular concentration area must complete at least 9 of their 12 credits within that concentration area. Students are not required to satisfy the requirements for a concentration area, but they may choose to do so. Students may create a customized concentration through course selection approved by their advisor. Examples might include health services administration, electronic commerce, etc. Students will receive credit for no more than two concentration areas.

**Concentration Areas**

*Business Economics*

Any EC prefixed course in addition to EC 101, EC 102 and EC/BA 319; includes EC 198/298/398 (Topics in Economics), EC 395–396 (Independent Study in Economics), and EC 399 (Co-Op Ed in Economics).

*Finance*

ACC 201 Intermediate Accounting I  
 BA 342 Property and Life Insurance  
 BA 343 Investments and Portfolio Management  
 BA 345 Long-Range Financial Planning  
 BA 198/298/398 Topics in Finance  
 BA 395/396 Independent Research in Finance  
 ENT 342 Entrepreneurial Finance

*International Business*

BA 395/396 Independent Research in International Business  
 EC 340 International Trade and Finance  
 BA 198/298/398 Topics in International Business

*Marketing*

BA 322 Advertising  
 BA 324 Retailing  
 BA 326 The Selling Process  
 BA 327 Marketing Seminar  
 BA 328 Consumer Behavior  
 BA 198/298/398 Topics in Marketing  
 BA 395–396 Independent Study in Marketing  
 COM 302 Public Relations  
 ENT 203 Entrepreneurial Identification: Innovation and Creativity  
 ENT 252 The Entrepreneurial Leader  
 ENT 321 Analyzing Markets and Competition

**ACCELERATED BBA PROGRAM**

The Sidhu School offers a Bachelor of Business Administration degree through an accelerated degree completion option for adult learners, ages 25 and older, who have already earned credit for a substantial amount of prior college coursework. Candidates must have earned at least thirty credit hours of college credit to enter the program. A total of sixty credit hours, covering the general education requirements for a Wilkes undergraduate degree and free electives, must be earned outside the courses specifically included in the Accelerated BBA.

The program provides preparation that is equivalent to the regular BBA in business administration. It consists of sixty credits earned through twelve core courses and three concentration electives, each worth four

credits. The design assures that students will receive complete equivalent coverage of all learning outcomes delivered through the existing BBA program, in compliance with the standards of the Association of Collegiate Business Schools and Programs (ACBSP.) Students will take two courses each term, including fall, summer and spring, leading to completion of the program in seven and a half terms, over two and a half years.

**ACCELERATED BBA PROGRAM- COURSE SEQUENCE**

<b>Term</b>	<b>Block A (7 weeks)</b>	<b>Block B (7 weeks)</b>
<b>First Year</b>		
<b>1st</b>	<b>ABA 100 Integrated Management Exp.</b>	<b>ABA 110 Leadership and Org. Mgmt</b>
<b>2nd</b>	<b>ABA 161 Financial Accounting</b>	<b>ABA 190 Integrated Econ. for Business</b>
<b>3rd</b>	<b>ABA 130 Marketing and Retailing</b>	<b>ABA 150 The Legal Environment of Bus. and Bus. Law</b>
<b>Second Year</b>		
<b>4th</b>	<b>ABA 140 Integrated Bus. Math &amp; Stat.</b>	<b>ABA 120 Effective Comm. for Business</b>
<b>5th</b>	<b>ABA 162 Managerial Accounting</b>	<b>ABA 170 Human Res. &amp; Cust. Rel. Mgmt.</b>
<b>6th</b>	<b>ABA 180 Financial Management</b>	<b>ABA xxx Emphasis Elective 1</b>
<b>Third Year</b>		
<b>7th</b>	<b>ABA xxx Emphasis Elective 2</b>	<b>ABA 200 Bus. Strategy &amp; Decision Making</b>
<b>8th</b>	<b>ABA 210 Professional Bus. Experience</b>	

**ENTREPRENEURSHIP MAJOR**

COORDINATOR: DR. ALVES

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN ENTREPRENEURSHIP LEADING TO THE B.B.A. DEGREE — 125.**

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

Entrepreneurship creates value and improves society's standard of living. It is an integrating discipline that draws on knowledge and skills developed in a variety of areas. Entrepreneurial endeavors are successful when they identify opportunities, assess those opportunities, and take action to pursue the opportunities. Students earning the Bachelor of Business Administration in Entrepreneurship will understand the motivations, behaviors, and strategies necessary to create, implement, and sustain new ideas and ventures.

The Association of Collegiate Business Schools and Programs (ACBSP) accredited the undergraduate and graduate business administration programs as well as the undergraduate program in accounting. ACBSP accreditation affirms the excellence of our programs to graduate and professional schools as well as potential employers and therefore serves as a major competitive advantage for students completing the entrepreneurship major at Wilkes.

The entrepreneurship curriculum blends the traditional components of a management education with the study of those content, skill, and sensitivity areas that uniquely define entrepreneurship. Through a combination of academic and clinical experiences students will develop an appreciation and understanding of the entrepreneurial process. The entrepreneurship major curriculum is composed of three blocks: the general education or university core, the Entrepreneurship core, and electives. The university core provides the liberal arts foundation that is necessary for a well-balanced education and perspective.

The Entrepreneurship core is the second block or tier. It begins with the year-long foundation course, The Integrated Management Experience, ENT151 and ENT152, a course designed to provide an overview of the functions of management and their interrelatedness, to plan and operate a business integrated with and grounded in understanding financial accounting, and the entrepreneurial process. The Entrepreneurship core requires the following 30 courses. Four of them fulfill general education requirements and are counted as meeting university core requirements.

- ACC 161 Financial Accounting and Decision Making
- ACC 162 Managerial Accounting and Decision Making
- ENT 151 The Integrated Management Experience I

- ENT 152 The Integrated Management Experience II
- BA 233 Legal Environment of Business
- BA 234 Business Law
- BA 309 Business Correspondence and Reports
- BA 321 Marketing
- BA 341 Managerial Finance
- BA 356 Social Responsibility of Business
- COM 101\* Public Speaking
- CS 115\* Survey of Computers
- Ec 101 Principles of Economics I
- Ec 102\* Principles of Economics II
- ENT 201 Nature and Essence of Entrepreneurship
- ENT 203 Opportunity Identification: Creativity and Innovation
- ENT 252 The Entrepreneurial Leader
- ENT 321 Analyzing Markets and Competition
- ENT 342 Financing the Entrepreneurial Venture
- ENT 361 Practicing Entrepreneurship
- ENT 362 Entrepreneurship Internship
- ENT 385 Opportunity Assessment: Technical, Economic, and Market Feasibility
- Mth 107\* Business Mathematics
- PPD 101 Personal and Professional Development I
- PPD 102 Personal and Professional Development II
- PPD 201 Personal and Professional Development III
- PPD 202 Personal and Professional Development IV
- PPD 301 Personal and Professional Development V
- PPD 302 Personal and Professional Development VI
- PPD 401 Personal and Professional Development VII
- \* *Meets requirement in the University core*

The Third block includes major elective courses. Twelve credits of Entrepreneurship major electives are required. Nine credits must come from the following courses:

- BA 322 Advertising
- BA 327 Marketing Seminar
- BA 328 Consumer Behavior
- ENT 198/298/398 Topics Seminar
- ENT 384 Small Business Consultancy
- ENT 395/396 Independent Research

The final three Entrepreneurship major elective credits must come from disciplines with course number prefixes: ART, COM, EGM, DAN, ENG, MUS or THE.

In addition to the twelve Entrepreneurship major elective credits, nine free elective credits are required.

**ENTREPRENEURSHIP MINOR**

For majors in other disciplines, the Jay S. Sidhu School of Business and Leadership offers a minor in Entrepreneurship. Students who may be contemplating pursuit of entrepreneurial opportunities will find the Entrepreneurship Minor an excellent complement to their chosen majors. Required courses to complete the Entrepreneurship Minor are:

- ENT 151 Integrated Management Experience I
- ENT 152 Integrated Management Experience II
- BA 321 Marketing
- ENT 201 Nature and Essence of Entrepreneurship
- ENT 361 Practicing Entrepreneurship
- ENT 384 or ENT 362 Small Business Consultancy or Entrepreneurship Internship

The Entrepreneurship program is closely affiliated with the Allan P. Kirby Center for Free Enterprise and Entrepreneurship and the Small Business Development Center. Both offer academic and experiential opportunities under the direction of senior professional staff.

Change is an accepted constant in today's world. And change, whether it is gradual or radical, is a rich source of opportunity. The entrepreneurship Major and Minor will prepare students to recognize and act upon opportunities and meet the challenges that lie ahead.

The following course sequence is recommended for students pursuing the Bachelor of Business Administration in Entrepreneurship degree. By following this recommendation, all University and Entrepreneurship core requirements will be completed in their proper order. Students transferring into Wilkes and/or the Bachelor of Business Administration in Entrepreneurship degree program can use this semester-by-semester outline as guidance for completing coursework.

**ENTREPRENEURSHIP MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE**

**First Semester**

<b>ENT 151 Integrated Management Experience I</b>	<b>3</b>
<b>CS 115 Survey of Computers</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Eng 101 Composition</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
<b>PPD 101 Personal and</b>	<b>1</b>

**Professional Development I**

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<b>Second Semester</b>	
<b>ENT 152 Integrated Management Experience II</b>	<b>3</b>
<b>BA 233 Legal Environment of Business</b>	<b>3</b>
<b>Com 101 Public Speaking</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Mth 107 Business Mathematics</b>	<b>3</b>
<b>PPD 102 Personal and Professional Development II</b>	<b>1</b>
	16

**Third Semester**

<b>Acc 161 Financial Accounting and Decision Making</b>	<b>3</b>
<b>ENT 201 Nature and Essence of Entrepreneurship</b>	<b>3</b>
<b>ENT 203 Opportunity Identification: Creativity and Innovation</b>	<b>3</b>
<b>EC 101 Principles of Economics I</b>	<b>3</b>
<b>BA 234 Business Law</b>	<b>3</b>
<b>PPD 201 Personal and Professional Development III</b>	<b>1</b>
	16

**Fourth Semester**

<b>Acc 162 Managerial Accounting and Decision Making</b>	<b>3</b>
<b>BA 321 Marketing</b>	<b>3</b>
<b>ENT 252 The Entrepreneurial Leader</b>	<b>3</b>
<b>EC 102 Principles of Economics II</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 202 Personal and Professional Development IV</b>	<b>1</b>
	16

**Fifth Semester**

<b>BA 341 Managerial Finance</b>	<b>3</b>
<b>ENT 321 Analyzing Markets &amp; Competition</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
<b>Free Elective</b>	<b>3</b>
<b>PPD 301 Personal and Professional Development V</b>	<b>1</b>
	16

**Sixth Semester**

<b>BA 356 Social Responsibility of Business</b>	<b>3</b>
<b>ENT 385 Opportunity Assessment: Technical, Economic, and Market Feasibility</b>	<b>3</b>
<b>ENT 342 Financing</b>	<b>3</b>

The Jay S. Sidhu School of Business and Leadership

<b>Entrepreneurial Ventures</b>	
<b>Entrepreneurship Elective</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>PPD 302 Personal and Professional Development VI</b>	<b>1</b>
	<hr/>
	16
Seventh Semester	
<b>ENT 361 Practicing Entrepreneurship</b>	<b>3</b>
<b>BA 309 Business Correspondence and Reports</b>	<b>3</b>
<b>Entrepreneurship Electives</b>	<b>6</b>
<b>Free Elective</b>	<b>3</b>
<b>PPD 401 Personal and Professional Development VII</b>	<b>1</b>
	<hr/>
	16
Eighth Semester	
<b>ENT 362 Entrepreneurship Internship</b>	<b>3</b>
<b>Entrepreneurship Elective</b>	<b>3</b>
<b>Free Elective</b>	<b>3</b>
<b>Distribution Requirement</b>	<b>3</b>
	<hr/>
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# THE NESBITT COLLEGE OF PHARMACY AND NURSING

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THE SCHOOL OF PHARMACY  
THE DEPARTMENT OF NURSING

**THE NESBITT COLLEGE OF  
PHARMACY AND NURSING**

DEAN: DR. BERNARD W. GRAHAM, R.PH.

The Nesbitt College of Pharmacy and Nursing combines the two clinically based academic programs of Wilkes University. These programs, administered by the School of Pharmacy and the Department of Nursing, have a theme centered on the development of skills needed to care for patients in a 21st-century health care system.

The School of Pharmacy is the home for the two-year Prepharmacy Guaranteed Seat program and the four-year professional program. Students who successfully complete the Prepharmacy Guaranteed Seat program matriculate directly into the accredited program leading to the Doctor of Pharmacy degree. The School also accepts a limited number of Wilkes and other students into this professional program. The department of Pharmaceutical Sciences offers the B.S. in pharmaceutical sciences. This degree will prepare students for entry-level positions in the pharmaceutical industry or advanced study in graduate school.

The Department of Nursing houses a multitude of accredited nursing programs both undergraduate and graduate. Students of nursing may matriculate directly into the Bachelor of Science or from careers as LPNs or RNs. Students who already have a baccalaureate degree in another discipline and wish to pursue a career in the nursing profession may compete for a seat in the Professional Master's Program. Practicing professional nurses may choose to pursue the RN-MS program which leads into the advanced practice master's degree.

## SCHOOL OF PHARMACY

DEAN: DR. BERNARD W. GRAHAM, R.PH.

*Assistant Dean: Dr. Harvey A. Jacobs*

*Chairperson, Department of Pharmaceutical Sciences: Dr. Arthur H. Kibbe*

*Chairperson, Department of Pharmacy Practice: Dr. Edward F. Foote*

*Faculty: Professors: Foote, Graham, Kibbe, Witczak*

*Associate Professors: Jacobs, Kristeller, McManus, Trombetta, Wright*

*Assistant Professors: Bolesta, Bohan, Longyhore, Malinowski, McCune, Olenak, Patel, Prinster, Roke-Thomas, Russell, Welch*

*Instructors: Holt-Macey, Musheno, Nanstiel*

The School of Pharmacy offers a program of professional study leading to the Doctor of Pharmacy (Pharm.D.) degree. The purpose of the program is to prepare graduates for successful pharmacy practice in the health care environment of the twenty-first century. The U.S. health care system has been undergoing rapid, even dramatic, change. This transformation is expected by most observers to continue for some time. Those individuals and organizations responsible for the delivery of pharmaceutical care have not been and will not be sheltered from the forces of change. It becomes necessary, therefore, to provide new practitioners with the necessary knowledge base and skills required in a transformed health care system.

With the rapid transformation of health care delivery, a strong foundation in the basic sciences (e.g., 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 ability to communicate effectively and to function in a team environment.

### OUR MISSION

The mission of the Wilkes University School of Pharmacy is to educate and develop highly

qualified professionals for the ever-changing science and practice of pharmacy.

We will accomplish this by:

- Providing an integrated curriculum that is dynamic, challenging and outcome-driven;
- Continually assessing, reevaluating and improving our programs and systems;
- Attracting, retaining and developing highly qualified faculty and staff;
- Optimizing the use of state-of-the-art technology in education, practice and research;
- Ensuring availability of competent, interactive and caring preceptors;
- Creating a strong mentoring culture for students, faculty and staff; and
- Supporting scholarly endeavors among faculty, staff and students.

### OUR VISION

Through excellence in teaching, mentoring and scholarship, our students and graduates will reach their highest potential in the science and practice of pharmacy.

If we achieve our vision, our students, faculty and/or graduates will:

- Be recognized for excellence in providing and advancing patient care
- Be major contributors to healthcare teams
- Be active participants/leaders in healthcare and/or other professional organizations
- Be highly sought after and retained by employers
- Seek out opportunities to continually develop themselves
- Seek leadership roles in the profession
- Be prepared to work in diverse practice settings
- Actively engage in the community and the profession
- Experience positive personal and professional relationships with each other
- Continue to be actively involved in the School throughout their careers
- Participate in guided research and professional activities
- Be admitted to preferred post-graduate programs
- Be published in peer-reviewed journals

### OUR VALUES

**Teaching.** *This is primarily a teaching institution; the student is our reason for being here.*

**Patient Care.** *The patient is the ultimate beneficiary of all we do.*

**Professionalism.** *We strive to instill a sense of professionalism within students in every aspect of their educational experience*

**Mentoring.** *Positive mentoring relationships between students and faculty are critical to our graduates' professional success.*

**Interpersonal Relationships.** *We pride ourselves on having close working relationships among faculty and between departments*

**Communication.** *Our students, graduates and faculty will be able to professionally articulate their knowledge and effectively communicate with health professionals, administrators and patients.*

**Team Building.** *The ability to work effectively as part of a healthcare team is considered critical and is built into the learning structure.*

**Interdisciplinary Approach.** *The broader perspectives of other academic and healthcare disciplines are actively sought in curricular design and teaching.*

**Small Size.** *We are a small School and intend to remain small to provide meaningful faculty-student interaction and a unique educational experience.*

**Research and Practice.** *Research and practice are valued, as they support our commitment to educational excellence, faculty development, quality patient care and the advancement of science.*

**Diversity.** *We strive to promote an environment that values diversity at all levels (e.g. faculty, staff, students and patients).*

**Civic Responsibility.** *We have a commitment to and encourage service and volunteerism.*

#### **Accreditation**

The Accreditation Council for Pharmacy Education (ACPE) has granted the Doctor of Pharmacy (Pharm.D.) program at Wilkes University full accreditation.

*The six-year Pharmacy Program at Wilkes consists of two components. The first is the two-year Prepharmacy Program and the second is the Professional Program.*

#### **PREPHARMACY GUARANTEED SEAT PROGRAM**

The two-year, prepharmacy course sequence is intended to prepare the student for the challenges of Wilkes University's four-year Doctor of Pharmacy curriculum. The prepharmacy program at Wilkes University is outlined below.

*Admission to the Prepharmacy Guaranteed Seat Program (Enrollment limit: up to 70)*

Students may only enter the Prepharmacy Guaranteed Seat Program as freshmen from high school. Minimum criteria for consideration for admission are listed below.

**Applicants for the Prepharmacy Guaranteed Seat Program must first complete a Wilkes University Application which can be obtained from the University's Admissions Office.** Applicants who meet the SAT criteria and class rank criteria will be forwarded an application for the School of Pharmacy. These applications will be reviewed by the School of Pharmacy and top applicants will be invited for a personal interview. Final admission into the program will be based on a thorough evaluation of students based on high school rank (or GPA if school does not rank), SAT scores, and the results of the personal interview. Interviewed applicants not selected for immediate admission will be placed on a wait list. Wait-listed students will be offered seats in the Guaranteed Seat Prepharmacy Program as they become available. In some instances, students may not be notified of an available seat in the Prepharmacy Guaranteed Seat Program until the summer.

University applications for the *Prepharmacy Guaranteed Seat Program* are accepted beginning in June and must be completed in early January. School of Pharmacy applications for the *Prepharmacy Guaranteed Seat Program must be completed by February 1. There are typically many more applicants than seats in the entering Prepharmacy Guaranteed Seat Program. As applicants are admitted on a rolling basis, all seats may be awarded before the February 1 deadline. Applicants are encouraged to complete the application process as early as possible.*

*Minimally, each candidate must:*

- Be a graduate of, or near graduation from, an accredited high school or academy;
- Rank in the upper half of his/her class;
- Attain a combined SAT score of 1000;
- Complete the School of Pharmacy Prepharmacy Application. (This is separate from the Wilkes University Admissions Application.);
- Have worked in a pharmacy or have shadowed a pharmacist for at least eight hours;
- Submit one recommendation letter from a pharmacist;
- Submit two recommendation letters from teachers, employers, or other individuals

who can provide an objective appraisal of the student's ability and;

- Successfully complete an interview with the School of Pharmacy.

*PLEASE NOTE: attaining minimum academic requirements does not infer or promise an interview or admission into the Prepharmacy Guaranteed Seat program!*

PREPHARMACY\*- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>Eng 101 Composition or</b>	<b>4</b>
<b>MTH 105 Calculus I</b>	<b>4</b>
<b>Bio 121 Principles of Modern Biology I</b>	<b>4</b>
<b>Chm 113 Elements &amp; Compounds Lab</b>	<b>1</b>
<b>Chm 115 Elements and Compounds</b>	<b>3</b>
<b>IFY 101 First-Year Foundations</b>	<b>3</b>
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	<b>15</b>

Second Semester

<b>Eng 101 Composition or</b>	<b>4</b>
<b>MTH 105 Calculus I</b>	<b>4</b>
<b>Bio 122 Principles of Modern Bio II</b>	<b>4</b>
<b>Chm 114 The Chemical Reaction Lab</b>	<b>1</b>
<b>Chm 116 The Chemical Reaction Distribution Requirements</b>	<b>3</b>
	<b>6</b>
	<hr style="width: 100%;"/>
	<b>18</b>

Third Semester

<b>Chm 231 Organic Chemistry I</b>	<b>3</b>
<b>Chm 233 Organic Chemistry Lab</b>	<b>1</b>
<b>Com 101 Fundamentals of Speech</b>	<b>3</b>
<b>Ec 102 Principles of Economics II</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr style="width: 100%;"/>
	<b>16</b>

Fourth Semester

<b>Chm 232 Organic Chemistry II</b>	<b>3</b>
<b>Chm 234 Organic Chemistry Lab</b>	<b>1</b>
<b>Phy 174 Classical and Modern Physics</b>	<b>4</b>
<b>Mth 150 Elementary Statistics</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr style="width: 100%;"/>
	<b>17</b>

*\*Some requirements may be satisfied via satisfactory achievement on advanced placement tests or Wilkes' challenge exams.*

PROFESSIONAL PROGRAM

The Professional Program is four years and leads to the Doctor of Pharmacy (Pharm.D.) degree. Graduates of the program are eligible for state examination to become licensed pharmacists after completing appropriate internship hours. The four years of education consist of three years of in-class (i.e., lecture, laboratory, discussion group) and one year of experiential education.

*Admission into the Professional Program (Enrollment limit: 65)*

To be admitted into the Professional Program of the School of Pharmacy, a student must have either enrolled in and successfully completed the Prepharmacy Guaranteed Seat Program at Wilkes University as outlined above or have submitted a successful application to the School of Pharmacy.

**I. Admission through the Prepharmacy Guaranteed Seat Program**

Students enrolled in the Wilkes University Prepharmacy Guaranteed Seat Program who meet the following conditions are automatically admitted to the Professional Program must:

- complete four semesters as a full-time pre-pharmacy student and complete **ALL** pre-requisite courses at Wilkes University by the spring of the fourth semester (sophomore year). Pre-requisite courses taken must include 8 credits of general chemistry, 8 credits of organic chemistry, 4 credits of general physics, 8 credits of general biology, 4 credits of calculus, 3 credits of statistics, 3 credits of microeconomics and 3 credits of oral communications.
- maintain a **prerequisite cumulative GPA of 3.0** or better for the prerequisite courses listed above through the Spring of your fourth semester (sophomore year). *Failure to maintain your prerequisite cumulative GPA of 3.0 or better in the prerequisite courses listed above through the Spring of your fourth semester (sophomore year) will result in losing the guaranteed seat.*
- maintain a cumulative Grade Point Average (GPA) of 3.0 or better for all courses taken through the Spring of fourth semester (sophomore year). *Failure to maintain a cumulative Grade Point Average (GPA) of 3.0 or better in all courses taken through the Spring of your fourth semester (sophomore year) will result in losing the guaranteed seat.*

- earn grades of 2.0 or greater in all prerequisite courses through the spring of fourth semester (sophomore year). One prerequisite course grade less than 2.0 may be repeated at Wilkes University with the higher grade replacing the lower grade on the official transcript.

*All prerequisite courses must be recorded with a grade of 2.0 or greater by the end of the Spring of your fourth semester (sophomore year). Earning a grade of 2.0 or less in a course that cannot be repeated by the end of the Spring of your fourth semester (sophomore year) will result in losing your guaranteed seat. Also, earning two or more prerequisite course grades less than 2.0, even if one is successfully repeated, will result in losing the guaranteed seat. (Please see below, Admission through the Application Process.)*

- maintain the highest levels of academic and personal honesty throughout the prepharmacy program.  
*Students caught in the act of cheating, collusion, plagiarism or other and all acts violating the Wilkes University Honesty Policy and/or the Student Code of Conduct may be subject to dismissal from the Guaranteed Seat Program.*
- score at least the 25th percentile score in the composite Pharmacy College Admission Test (PCAT).

*The School of Pharmacy will accept the highest PCAT scores of multiple attempts.*

In addition, advanced placement courses may be accepted in fulfillment of some of these requirements. However, grades for AP-accredited courses will not be factored into the prerequisite or overall GPAs.

A majority of General Education Core Requirements must be completed prior to entering the Pharmacy Program. There is no room in the Pharmacy Curriculum to complete General Education Core Requirements. General Education Core Requirements may be completed at other accredited colleges or Universities and transferred into Wilkes University.

Students in the Wilkes University Prepharmacy Guaranteed Seat Program who do not meet these conditions must compete for available seats in the Professional Program through the application process.

## **II. Admission through the Application Process**

Faculty reserve the right to select from among the applicants who will have the best opportunity to complete the curriculum within four years and have productive professional lives. Admission is based upon the student's

academic ability as reflected in grades from prepharmacy courses, number of courses repeated, typical course loads, PCAT scores, total academic career, and references, as well as a successful interview. If applicable, the committee will also consider the most recent academic performance for those non-traditional students returning to college life after hiatus. Each Spring a select group of applicants are invited for an interview, based upon a complete evaluation of all submitted application materials. Any missing documentation will compromise the application.

The number of seats in the professional program available through the application process is dependent on the number of Guaranteed Seat Students able to claim a seat. Of the remaining seats, approximately 66% are available on a competitive basis to Wilkes students with overall and prerequisite GPAs above a 3.0. The remaining 33% seats will be available to Transfer students with overall and prerequisite GPAs above a 3.0 on a competitive basis. To be classified as a Wilkes student, the student must complete and be enrolled at Wilkes University for two full-time, consecutive semesters before enrollment AND must complete 18 credits of prerequisite courses at Wilkes University by the end of the Spring semester prior to enrollment in the professional program. Failure to meet both these criteria will result in classification as a "Transfer" student.

### **How to Apply**

*To obtain a School of Pharmacy application, you may call or write:*

*School of Pharmacy  
Wilkes University  
Wilkes-Barre, PA 18766  
(570) 408-4280  
1-800-WILKESU ext. 4280  
[pharm@wilkes.edu](mailto:pharm@wilkes.edu)*

*The application can be downloaded from:  
[www.wilkes.edu/include/academics/pharmacy/apply.doc](http://www.wilkes.edu/include/academics/pharmacy/apply.doc)*

*Please note: the School of Pharmacy application is different from the Wilkes University application. All applicants must complete the application and return it before February 1 for the upcoming Fall semester.*

### **Pharmacy Minimum Admission Requirements**

*To be considered for admission to the Professional Program of the School of Pharmacy, the applicant:*

- should complete the Wilkes University General Education Course Requirements or have completed a baccalaureate degree;

- must complete all Pharmacy Prerequisite Courses listed below by the end of the Spring semester prior to admission;
- must obtain a minimum overall GPA of 2.50 and a minimum GPA of 2.50 in the Pharmacy Prerequisite Courses listed below (Wilkes student);
- must obtain a minimum overall GPA of 3.00 and a minimum GPA of 3.00 in the Pharmacy Prerequisites listed below for preferential consideration (non-Wilkes student). Non-Wilkes students with overall GPAs less than 3.00 will be considered for admission on a lower priority;
- obtain a grade of C (2.0) or better in each of the Pharmacy Prerequisite Courses listed below;

*Prerequisite grades less than 2.0 may be repeated with the higher grade factoring into the GPA. However, applications will not be considered if more than 2 grades less than 2.0 in prerequisite courses are recorded. In addition, repeating courses in which a grade above a 2.0 was earned will not factor into the GPA. However, exceptions to the above rules will be considered on an individual basis and only if students can provide written explanation of extenuating circumstances.*

*(Note: admission into the Pharmacy Program is extremely competitive. Earning the minimum academic criteria necessary to submit an application does not in any way infer or promise an interview or admission into the program.)*

- must provide three completed recommendation forms, one of which must be from a pharmacist;
- must successfully complete the interview process;
- must demonstrate acceptable written communication skills;
- must take a standardized test of critical thinking skills; and
- must submit scores on the Pharmacy College Admission Test (PCAT) by February 1.

**Pharmacy prerequisites:**

Two semesters (8 credits) of General Chemistry with labs

Two semesters (8 credits) of Organic Chemistry with labs

Two semesters (8 credits) of General Biology with labs

One semester (4 credits) of Calculus

One semester (3 credits) of Statistics

One semester (4 credits) of General Physics with lab

One semester (3 credits) of Microeconomics

One semester (3 credits) of Oral Communications

**Professional Standards**

Students enrolled in the program of the School of Pharmacy are expected to endorse professional standards by subscribing to the Oath of the Pharmacist. Students are also expected to abide by the American Pharmacists Association's Code of Ethics of the Profession.

**Progression Requirements**

All students in the Professional Program of the School of Pharmacy are required to meet minimum standards for academic progression. Progression requirements include a minimum semester and a cumulative pharmacy GPA of 2.0. In addition, no student shall be allowed more than 8.0 credits of less than 2.0 grades in required professional courses both inside and outside of the School. Any course with a grade of 0.0 must be repeated. At the end of each semester the progress of each student in the Professional Program will be reviewed. Students failing to meet minimal academic standards at the end of any semester must petition the Student Review Subcommittee through the Assistant Dean to further progress in the School. More inclusive policies adopted within these guidelines are distributed to all students in the School of Pharmacy. Students are expected to read and abide by these guidelines.

**Experiential Curriculum Component**

Experiential learning is a critical component of the curriculum at Wilkes. Before being placed in an experiential setting, all students are required to:

- possess professional liability insurance,
- have documentation of immunizations,
- pass a physical examination,
- be certified in Basic Cardiac Life Support and Basic First Aid,
- possess an active Pennsylvania Pharmacy Intern License, and
- pass a drug test.

**The Introductory Pharmacy Practice Experience (IPPE) consists of a number of different experiences. During the summer following successful completion of the P-1 year, students will complete a 2-week (80 hour) Introductory Pharmacy Practice Experience (IPPE 1). The second professional year (the P-2 year) includes 40 hours of IPPE II during the fall and/or spring semester. In addition,**

students will complete a 2-week (80 hour) IPPE III during the summer after the P-2 year. In the third professional year (P-3) of the professional program, the curriculum includes a two-semester course in service learning (longitudinal care), and 40 hours of IPPE IV. These P-2 and P-3 experiences are in the Wilkes-Barre/Scranton area, but are away from campus.

The fourth professional year (the P-4 year) of the professional program is devoted to Advanced Pharmacy Practice Experience (APPE). Each student will be assigned to 1 six-week rotation, plus 6 five-week rotations, some of which may be at some distance from the Wilkes-Barre area. The student is responsible for paying all transportation and housing costs. As much as possible, The School of Pharmacy will assist in locating safe, affordable housing for clerkships. Since patient care is a continuous activity, some experiences may be conducted outside of regular school/business hours. Note also that APPE start and end dates do not adhere to the regular university calendar. The student is responsible for paying all transportation and housing costs for all experiential components of the curriculum.

*Graduation, Degree and Licensure Requirements*

It is the student's responsibility to meet all graduation requirements, and it is expected that all students accepted into the Pharm.D. Program will meet regularly and frequently with their advisors to ensure timely progress toward their Doctor of Pharmacy degree. Graduation is dependent on successful completion of all required and elective course requirements in the School of Pharmacy (see Progression Requirements) AND completion of all General Education Requirements mandated by Wilkes University.

A student entering the Professional Program with a bachelor's degree from a four-year accredited college or university is exempted from the University's General Education Requirements, but is not exempted from the prerequisite entry requirements prescribed by the School of Pharmacy for entry into the Professional Program.

All non-degreed students entering the Professional Programs are encouraged to complete the General Education Requirements prior to beginning the Professional Curriculum, and especially

before the completion of the second professional year (P-2). As a matter of record, non-degreed students who have successfully completed the second professional year (P-2) in the School of Pharmacy AND completed all General Education Requirements will be awarded a generic Bachelor of Science degree. The pass-through B.S. degree does not meet eligibility requirements for licensure as a pharmacist; it is only intended to acknowledge the academic achievement of students completing four years of university-level education.

Pharmacy licensure is governed by state law. All states require graduation from an accredited School or College of Pharmacy. Additional requirements for licensure should 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.

*Please note: Effective Fall 2008, applicants for a Pennsylvania pharmacist license must submit to the Board office a criminal history record check. The criminal history record check covering the 10-year period preceding application must be obtained from the state police. Individual reports must be submitted for all states in which an applicant has lived in the last 10 years and for all states in which the applicant has not lived but in which criminal charges have been brought during the last 10 years. The Dean's office of the School of Pharmacy will provide updates to students when the State Board of Pharmacy provides more details.*

*The School of Pharmacy reserves the right to revise the Pharmacy Curriculum at any time in order to prepare students for future practice roles, meet new accreditation requirements and to incorporate innovations in instruction.*

**DOCTOR OF PHARMACY PROGRAM REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE FOR PROFESSIONAL PROGRAM**

**P-1 Fall Semester**

<b>PHA 301 Found. of Pharm. Practice I</b>	<b>2</b>
<b>PHA 308 Pharm. and Health Care Delivery</b>	<b>3</b>
<b>PHA 311 Pharmaceutics I</b>	<b>4</b>
<b>PHA 313 Pharm. Calculations</b>	<b>1</b>
<b>PHA 327 Medical Microbiology</b>	<b>4</b>
<b>PHA 331 Anatomy/Physiology I</b>	<b>4</b>

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P-1 Spring Semester		<b>PHA 521*</b>	<b>2</b>
<b>PHA 302 Pharmacy Care Lab I</b>	<b>1</b>	<b>Pharmacotherapeutics VII</b>	
<b>PHA 304 Found. of Pharm. Practice II</b>	<b>2</b>	<b>PHA 523*</b>	<b>4</b>
<b>PHA 310 Clinical Research Design</b>	<b>3</b>	<b>Pharmacotherapeutics VIII</b>	
<b>PHA 312 Pharmaceutics II</b>	<b>4</b>	<b>PHA 525*</b>	<b>2</b>
<b>PHA 332 Anatomy &amp; Physiology II</b>	<b>4</b>	<b>Pharmacotherapeutics IX</b>	
<b>PHA 365 Medical Biochemsitry</b>	<b>4</b>	<b>Professional Elective</b>	<b>2-3</b>
	18		17-18
P-1 Summer		P-3 Spring Semester	
<b>PHA 335 Intro. Pharmacy Practice Exp (IPPE) I</b>	<b>2</b>	<b>PHA 502 Pharmacy Care Lab V</b>	<b>1</b>
		<b>PHA 504 Longitudinal Care II</b>	<b>1</b>
P-2 Fall Semester		<b>PHA 526*</b>	<b>2</b>
<b>PHA 401 Pharmacy Care Lab II</b>	<b>1</b>	<b>Pharmacotherapeutics X</b>	
<b>PHA 405 Pharmaceutical Care Systems</b>	<b>2</b>	<b>PHA 528*</b>	<b>2</b>
<b>PHA 411 Biopharm/Clinical Kinetics</b>	<b>4</b>	<b>Pharmacotherapeutics XI</b>	
<b>PHA 421*</b>	<b>2</b>	<b>PHA 530*</b>	<b>4</b>
<b>Pharmacotherapeutics I</b>		<b>Pharmacotherapeutics XII</b>	
<b>PHA 423*</b>	<b>2</b>	<b>PHA 532 Alternative Medicine/Nutrition</b>	<b>3</b>
<b>Pharmacotherapeutics II</b>		<b>PHA 555 Intro. Pharmacy Experience II/V</b>	<b>1</b>
<b>PHA 425*</b>	<b>3</b>	<b>Professional Elective</b>	<b>2-3</b>
<b>Pharmacotherapeutics III</b>			16-17
<b>Professional Elective</b>	<b>2-3</b>	<b>*Sequential Courses</b>	
	16-17		
P-2 Spring Semester		P-4 Advanced Pharmacy Practice Experiential Year	
<b>PHA 410</b>	<b>3</b>	Duration: 36 Weeks Credits: 36	
<b>Biotechnology/Immunology</b>		APPE Rotations	
<b>PHA 412 Mgt. of Pharm. Operations</b>	<b>3</b>	<b>The APPE portion of the curriculum consists of 7 rotations in various settings. Rotation #1 is 6 weeks in duration. Rotations #2-7 are 5 weeks in duration.</b>	
<b>PHA 426*</b>	<b>2</b>	There are four required APPE rotations.	
<b>Pharmacotherapeutics IV</b>		<b>PHA 510 Internal Medicine</b>	
<b>PHA 428*</b>	<b>4</b>	<b>PHA 511 Ambulatory Care</b>	
<b>Pharmacotherapeutics V</b>		<b>PHA 512 Community Practice</b>	
<b>PHA 430*</b>	<b>2</b>	<b>PHA 513 Health System</b>	
<b>Pharmacotherapeutics VI</b>		In addition, there are three elective APPE rotations	
<b>PHA 440 Intro. Pharmacy Experience II</b>	<b>1</b>		
<b>Professional Elective</b>	<b>2-3</b>		
	17-18		
P-2 Summer			
<b>PHA 445 Intro. Pharmacy Practice Exp (IPPE) III</b>	<b>2</b>		
P-3 Fall Semester			
<b>PHA 501 Pharmacy Care Lab IV</b>	<b>1</b>		
<b>PHA 503 Longitudinal Care I</b>	<b>1</b>		
<b>PHA 505 Pharmacy Law</b>	<b>2</b>		
<b>PHA 509 Economic Evaluation</b>	<b>3</b>		

DEPARTMENT OF  
PHARMACEUTICAL SCIENCES

CHAIRPERSON: DR. ARTHUR H. KIBBE

Faculty: Professors: Graham, Kibbe, Witczak

Associate Professors: Jacobs, McManus

Assistant Professors: McCune, Prinster, Roke-Thomas

**THE MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN PHARMACEUTICAL SCIENCES LEADING TO A B.S. DEGREE - 128**

*Introduction to the degree:* The Bachelor of Science in the pharmaceutical sciences (BSPS) will educate Wilkes University undergraduate students for entry-level positions in the pharmaceutical industry or advanced study in graduate school. This degree will serve students who are interested in a career in the pharmaceutical industry because of a desire to become involved in the research and development of new drugs rather than a career in direct patient care.

Note: This degree does not qualify the holder for licensure as a pharmacist nor to practice as a licensed pharmacist in the United States.

*Admissions and Progression:* To be admitted to the program from high school, students must be in the top 50% of their class and have a math SAT score of 550 or more. Academic progression within the major will be dependent on earning grades of 2.0 or higher in all major science courses. Failure to maintain these academic criteria will result in dismissal from the major.

PHARMACEUTICAL SCIENCES MAJOR-REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester

<b>BIO 121 Principles of Mod. Bio. I</b>	<b>4</b>
<b>CHM 115, 113 Elements &amp; Compounds &amp; Associated Laboratory</b>	<b>4</b>
<b>MTH 111 Calculus I</b>	<b>4</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
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Second Semester

<b>MTH 112 Calculus II</b>	<b>4</b>
<b>CHM 116, 114 The Chemical Reaction &amp; Associated Laboratory</b>	<b>4</b>
<b>ENG 101 Composition</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
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Third Semester

<b>CHM 231, 233 Organic Chemistry I &amp; Associated Laboratory</b>	<b>4</b>
<b>PHY 201 General Physics I</b>	<b>4</b>
<b>MTH 150 Elementary Statistics</b>	<b>3</b>
<b>CS 115 Computers &amp; Applications</b>	<b>3</b>
<b>COM 101 Fundamentals of Speech</b>	<b>3</b>
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	17

Fourth Semester

<b>CHM 232, 234 Organic Chemistry II &amp; Associated Laboratory</b>	<b>4</b>
<b>PHY 202 General Physics II</b>	<b>4</b>
<b>MTH 212 Multivariable Calculus</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	18

Fifth Semester

<b>CHM 351 Physical Chemistry I</b>	<b>3</b>
<b>PHS 331 A&amp;P I</b>	<b>4</b>
<b>Distribution Requirements</b>	<b>9</b>
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	16

Sixth Semester

<b>CHM 352 Physical Chemistry II</b>	<b>3</b>
<b>PHS 332 A&amp;P II</b>	<b>4</b>
<b>PHS 408 Clinical Research Design</b>	<b>3</b>
<b>PHA 365 Medical Biochemistry</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
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	17

Seventh Semester

<b>CHM 341, 343 Instrumental Methods for Chemical Analysis &amp; Associated Laboratory</b>	<b>4</b>
<b>PHS 301 Advanced Pharmaceutical Systems</b>	<b>3</b>
<b>PHS 413 Heterogeneous Pharmaceutical Systems</b>	<b>2</b>
<b>PHS 415 Solid Dosage Forms</b>	<b>2</b>
<b>PHA 552 Medicinal Chemistry</b>	<b>3</b>
<b>PHA 421 Pharmacology and Medicinal Chemistry</b>	<b>2</b>
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	16

Eighth Semester

<b>PHS 414 Pharmaceutical Regulatory Affairs</b>	<b>2</b>
<b>PHS 416 Operation of Quality Control Systems</b>	<b>2</b>
<b>PHS 418 Externship</b>	<b>8</b>
<b>PHS 498 Senior Research Project</b>	<b>3</b>
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	15

All of the course work can be performed at Wilkes University with the exception of the

externship that will be performed at a corporate site to be determined for each student. Every effort will be made to match students with externship sites so as to minimize any hardship on the student. The student should be prepared for the additional expense of an off-campus learning experience.

## DEPARTMENT OF NURSING

CHAIRPERSON: DR. MARY ANN MERRIGAN

*Faculty: Associate Professors: Merrigan, Telban, Zbegner, Zielinski*

*Assistant Professors: Darby, Havrilla, Ives, Malkemes, Rosenquist, Ruppert, Sheikh, Soprano, Stewart*

*Nursing Associates: Bilder, Daughtry, Grandinetti*

*Adjunct Faculty: Babcock*

*Faculty Emeriti: Castor, Druffner, Schreiber*

*Director of Clinical Nursing*

*Simulation Center: Chmil*

*Clinical Associate: Dennis*

*Director of Experiential Learning: Drozdis*

**TOTAL MINIMUM NUMBER OF CREDITS REQUIRED FOR A MAJOR IN NURSING LEADING TO THE B.S. DEGREE — 127.**

### ACCREDITATION

The baccalaureate program in Nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by the Commission on Collegiate Nursing Education (CCNE).

### *Philosophy and Curriculum*

The practice of professional nursing is a deliberative process of assessing, analyzing, planning, implementing, and evaluating care with clients that promotes and restores health and prevents illness. The baccalaureate program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care.

Professional nursing is based upon the integration of knowledge from the humanities, the physical and social sciences, nursing theories and research. The curriculum is based on the development of the individual throughout the life cycle.

The curriculum flows from the philosophy and covers a four-year academic period. It includes integrated nursing courses, electives and the General Education Requirements. Due to the cultural diversity of clients, it is suggested that students consider taking a foreign language. Written agreements with the cooperating hospitals and agencies in Northeastern Pennsylvania ensure clinical facilities for the student's practice, which is concurrent with the classroom theory. **(STUDENTS ARE RESPONSIBLE FOR THEIR OWN TRANSPORTATION TO ASSIGNED CLINICAL AREAS.)**

In addition, opportunities for learning are provided in the Clinical Nursing Simulation Center, which is equipped with audio-visual and computer-assisted instructional materials. A simulated clinical environment allows the student to practice the psychomotor skills necessary in nursing practice. A faculty member is available to assist the students.

### *Advanced Placement*

The Department of Nursing provides advanced placement for applicants to enter the program at their level of competency. Previous education and/or practical experience which would involve repetitive learning justify advancing the applicant to higher level responsibilities.

Transfer and professional master's students, registered nurse students and licensed practical nurses are required to have a personal interview with the department chairperson or her designee to plan their program and to determine their placement status before they can be accepted into the Wilkes Nursing Program.

### SPECIFIC REQUIREMENTS FOR THE NURSING PROGRAM

Students majoring in Nursing are required to have completed courses in English (4 units), Social Studies (three units), Mathematics (two units including Algebra), and Science (two units including Biology and Chemistry) during their secondary school program.

The student of nursing assumes all the financial obligations listed in the section on fees in this Bulletin. Additional expenses incurred in the Nursing Program are listed in the Nursing Student Handbook. A price list for these items follows.

Students must obtain from the Department Secretary, early each May, the appropriate health examination forms to be completed and returned to the Department of Nursing by August 1st. Failure to have all examinations completed and documented by August 1st results in a \$50 late fee.

In order to progress into clinical nursing courses, students must complete the Nurse Entrance Test (NET) from Educational Resources, Inc. with a composite score at the 50th percentile or better in each of the following: Essential Math Skills, Science Reading Comprehension, and Written Comprehension.

Clinical nursing courses are introduced in the sophomore year. Satisfactory clinical performance is an essential component of each nursing course. All nursing majors must

earn a 2.0 or better in all nursing courses, the required science courses (BIO 113, 115–116; Physics 170; EES 242), and English 101 to continue in the program. A nursing student who earns less than a 2.0 in a nursing course may repeat that course once. A nursing student who earns less than a 2.0 in a second nursing course is ineligible to continue in the nursing program.

A student may be required to submit, at any time, to a health evaluation by a physician, or nurse practitioner, if evident limitations interfere with the student's practice or learning.

In addition to fulfilling the academic requirements of the University, students majoring in Nursing are required to successfully complete comprehensive examinations and required studies as assigned by the Department of Nursing before being eligible to graduate.

#### LPN-BS PROGRAM

Licensed Practical Nurse (LPN) students have the opportunity to challenge the first clinical year in Nursing by successfully completing department 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 chairperson of the Nursing Department.

#### RN-BS PROGRAM

This program is designed for students who are already Registered Nurses (RNs) and have graduated from AD or diploma nursing programs. This practice is in compliance with the Pennsylvania Articulation Plan to promote educational mobility of RNs based on a common core of knowledge that is recognized without special testing. Upon successful completion of NCLEX-RN and Nursing 299 the student is awarded 36 Wilkes Nursing credits. Registered Nurse students meet the same academic requirements as the basic students with the exception of the total number of credits required (RNs' total number of credits is 120, a reduction of seven elective credits).

#### RN-MS PROGRAM

This program is designed for the experienced, practicing professional who plans to earn an advanced degree in nursing. Acceleration through the baccalaureate portion of the program allows this professional to enter into advanced practice efficiently.

For details and enrollment information, contact the Chairperson of the Nursing Department.

#### PROFESSIONAL MASTER'S PROGRAM

This program admits students with baccalaureate degrees, but no previous nursing education, and prepares them for entry into the nursing profession. Upon successful completion of the program, students are awarded a Master's Degree in Nursing (THIS IS NOT AN ADVANCED PRACTICE DEGREE.)

The program is designed for students who already hold a baccalaureate degree in a discipline other than nursing. Completion of the requirements for this master's-level program prepares a beginning, self-directed practitioner who is capable of initiating, implementing, and revising nursing care. The curriculum is designed for the adult learner and builds upon earlier educational experiences in the humanities, social studies and sciences. It is based on the development of the individual throughout the life cycle.

The curriculum flows from both the University's and the Department's philosophies and addresses the nursing needs of the region and the nation. It provides opportunity for individuals with changing career aspirations, and it is designed to prepare the learner for a variety of roles in professional practice. Following completion of the prerequisite courses, the program can be completed in three full-time semesters.

Graduates of the Professional Master's Program will earn a Master of Science degree and will be educationally eligible to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN), which must be successfully completed for registration as a professional nurse. A pass-through Bachelor of Science degree with a major in Nursing will be entered on the student's transcript upon completion of all Clinical Nursing courses.

#### PREREQUISITES:

- Applicants must have received a baccalaureate degree from an accredited institution with a minimum undergraduate GPA of 3.0.
- A 3-credit elementary statistics course is required and two semesters of anatomy and physiology and one semester of microbiology, with a related laboratory experience in each of these courses, are required.

**The Nesbitt College of Pharmacy and Nursing**

- A self-study Medical Terminology module (details and information provided by the Nursing Department) must be completed.
- The Nurse Entrance Test (NET) from Educational Resources, Inc. must be completed with a composite score in the 50th percentile or better in each of the following: Essential Math Skills, Science Reading Comprehension, and Written Comprehension.
- Applicants whose native language is not English or who hail from non-English-speaking countries must submit satisfactory scores on the TOEFL along with their applications.
- Nutrition, a co-requisite course, is to be completed no later than the student's first semester in the Professional Master's Program.

**and Clinical  
Decision-Making in Nsg. B**

16

*\*Clinical hours will be distributed among Acute, Chronic and Community settings.*

**LENGTH OF PROGRAM:**

- The total number of credits to complete the Professional Master's Program, beyond the pre- and co-requisite requirements, is 48.
- The Program can be completed in three full-time semesters.

**ACADEMIC PROGRESSION:**

- Any grade below 80 in a nursing course is a failure. A student who is unsuccessful in a nursing course is ineligible to continue in, and may not return to, the Professional Master's Program.

**PROFESSIONAL MASTER'S PROGRAM\*-  
REQUIRED COURSES AND RECOMMENDED  
COURSE SEQUENCE**

**First Semester**

<b>Nsg 401 Nursing Practice I</b>	<b>12</b>
<b>Nsg 505 Current Perspectives in Nsg.</b>	<b>3</b>
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**Second Semester**

<b>Nsg 402 Nursing Practice II</b>	<b>12</b>
<b>Nsg 406 Advanced Health Assessment</b>	<b>3</b>
<b>Nsg 498 Pharmacotherapeutics and Clinical Decision-Making in Nsg. A</b>	<b>2</b>
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	17

**Third Semester**

<b>Nsg 403 Nursing Practice III</b>	<b>12</b>
<b>Nsg 502 Application of Nursing Research</b>	<b>3</b>
<b>Nsg 498 Pharmacotherapeutics</b>	<b>1</b>
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License to Practice

Candidates for a license to practice in the health field are required to have "good moral character." The Pennsylvania State Board of Nursing takes into consideration, when deciding on the applications for registration and a license to practice under their jurisdiction, whether candidates have been convicted of any felony or misdemeanor. Candidates are referred to the regulations specified in the Professional Nurse Law (P.L. 317, No. 69).

*Additional Nursing Expenses and Fees*

Items	Freshman	Sophomore	Junior	Senior
<b>National Student Nurses Association (NSNA)</b>	<b>\$40</b>		<b>\$40</b>	
<b>Uniform Shirt</b>		<b>\$25-30</b>		
<b>Uniform Pants</b>		<b>\$15-25</b>		
<b>Lab Coat/Scrub Jacket</b>		<b>\$20-40</b>		
<b>Scrubs</b>		<b>\$20-30</b>		
<b>Uniform Shoes</b>		<b>\$40 and up</b>		
<b>Stethoscope</b>		<b>\$30 and up</b>		
<b>Bandage Scissors</b>		<b>\$6</b>		
<b>Hemostats</b>		<b>\$6</b>		
<b>Pen Light</b>		<b>\$2-6</b>		
<b>BP Cuff</b>		<b>\$30</b>		
<b>AHA CPR Certification for Health Care Providers</b>		<b>\$30</b>		<b>\$30</b>
<b>Criminal Record Check</b>		<b>\$33 and up</b>		
<b>PA Child-Abuse-</b>		<b>\$10</b>		<b>History Clearance</b>
<b>Physical, Immunizations, and PPD</b>		<b>\$100 and up*</b>	<b>\$100 and up*</b>	<b>\$100 and up*</b>
<b>Liability Insurance</b>		<b>\$30-40**</b>	<b>\$30-40**</b>	<b>\$30-40**</b>
<b>Comprehensive Examinations</b>		<b>\$65 per semester**</b>	<b>\$65 per semester**</b>	<b>\$65 per semester**</b>
<b>Field Trip</b>				<b>Approx. \$100**</b>

\*May be covered by student's medical insurance.

\*\*Will be billed by Financial Management Office.

THE DEPARTMENT 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.

The Nesbitt College of Pharmacy and Nursing

NURSING MAJOR- REQUIRED COURSES AND RECOMMENDED COURSE SEQUENCE

First Semester	
<b>Nsg 171 Health Care Terminology</b>	<b>1</b>
<b>Bio 115 Human Anatomy and Physiology I</b>	<b>4</b>
<b>Eng 101 Composition*</b>	<b>4</b>
<b>Psy 101 General Psychology or Soc 101 Intro. to Sociology or Ant 101 Intro. to Anthropology*</b>	<b>3</b>
<b>FYF 101 First-Year Foundations</b>	<b>3</b>
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Second Semester	
<b>Bio 113 Microbiology</b>	<b>4</b>
<b>Bio 116 Human Anatomy and Physiology II</b>	<b>4</b>
<b>Distribution Requirement</b>	<b>3</b>
<b>Psy 101 General Psychology or Soc 101 Intro. to Sociology or Ant 101 Intro. to Anthropology*</b>	<b>3</b>
<b>ANT 101, 212, SOC 251 or 263 or Distribution Requirement</b>	<b>3</b>
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	17
Third Semester	
<b>Nsg 200 Principles of Normal Nutrition</b>	<b>3</b>
<b>Nsg 210 Principles of Nursing</b>	<b>6</b>
<b>ANT 102, 212, SOC 251 or 263 or Distribution Requirement</b>	<b>3</b>
<b>Phy 170 Concepts in Physics and Chemistry</b>	<b>4</b>
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	16
Fourth Semester	
<b>Nsg 220 Nursing Care of the Child-bearing Family</b>	<b>4</b>
<b>Nsg 230 Nursing Care of the Child-rearing Family</b>	<b>4</b>
<b>EES 242 Environmental Health</b>	<b>4</b>
<b>Psy Elective</b>	<b>3</b>
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	15
Fifth Semester	
<b>Nsg 240 Nursing Care of the Adult Client I</b>	<b>8</b>
<b>Mth 150 Elementary Stats**</b>	<b>3</b>
<b>Distribution Requirements</b>	<b>6</b>
	<hr/>
	17
Sixth Semester	
<b>Nsg 250 Nursing Care of the Adult</b>	<b>4</b>

**Client II**

<b>Nsg 260 Nursing Care of the Psychiatric Mental Health Client</b>	<b>4</b>
<b>Nsg 272 Pharmacotherapeutics</b>	<b>3</b>
<b>Electives</b>	<b>6</b>
	<hr/>
	17
Seventh Semester	
<b>Nsg 310 Nursing Care of the Older Adult Client</b>	<b>8</b>
<b>Nsg 305 Intro. to Nursing Research</b>	<b>3</b>
<b>Electives</b>	<b>5</b>
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	16
Eighth Semester	
<b>Nsg 320 Senior Practicum</b>	<b>8</b>
<b>Nsg 303 Contemporary Issues in Nursing</b>	<b>3</b>
<b>Electives</b>	<b>3</b>
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	14

\* Please note students must take Eng 101 and both Psy and Soc/Ant 101 during their freshman year.

\*\*Please note: Math 150 is required and prerequisite to Nsg 305.

# INTERDISCIPLINARY MAJORS, INTERDISCIPLINARY MINORS, AND SPECIAL PROGRAMS

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## INTERDISCIPLINARY MAJORS

Individualized Studies Major

## INTERDISCIPLINARY MINORS

Women's Studies Minor

## SPECIAL PROGRAMS

Army ROTC (Military Science)

Cooperative Education

Pre-Law Studies

Pre-MBA Studies

Study Tour Experience

## INTERDISCIPLINARY MAJORS

### INDIVIDUALIZED STUDIES MAJOR

This program is designed for those capable and motivated students who wish to undertake a course of study that cannot be provided by any of the offered bachelor's degree programs. The student will be responsible for submitting a coherent written proposal for a program of study which must be attached to an Individualized Studies form available in the Registrar's Office and submitted to the Academic Standards Committee no later than the first semester of the student's junior year. The proposal should articulate what the course of study is, why the existing degree alternatives do not fulfill that course of study, and how the student will make use of existing Wilkes courses to accomplish his or her degree requirements. The proposal may be composed solely by the student; however, the student should seek the advice of his or her advisor in formulating the plan. The program of studies must take minimally three additional full-time semesters to complete, and may include courses offered by all departments at the University. The student's record must demonstrate previous academic excellence at Wilkes University. In addition, credit may be assigned for appropriate off-campus study, work, and/or travel, or for knowledge or experience obtained prior to enrollment, with approval of the appropriate department and the Academic Standards Committee. The proposal must be approved by an appropriate advisor, and then by the Academic Standards Committee.

### *Degree Requirements*

The basic requirements for the degree in Individualized Studies are the accumulation of at least 120 credits, the completion of the Wilkes University General Education Requirements, and the completion of an appropriate number of Junior/Senior-level courses.

See also Majors in Applied and Engineering Sciences; Biology Major/Marine Science Option/Minor in Earth and Environmental Sciences; Computer Information Systems; Criminology; Earth and Environmental Sciences Major/Marine Science Option/Biology Minor; Health Sciences; Integrative Media; International Studies; Medical Technology; Musical Theatre; and Nursing.

## INTERDISCIPLINARY MINORS

### WOMEN'S STUDIES MINOR

*Coordinator: Ms. Theresa Kintz*

*Women's Studies Coordinating Committee: Professors Anthony, Batory, Bracken, Elmes-Crahall, Garr, Hamill, Kalter, Lynch, Stanley, Taylor, Tindell, Tuttle*

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

The Women's Studies Program at Wilkes University welcomes students interested in the study of women, gender, sexuality, and feminism. This interdisciplinary program offers courses in a wide range of subject areas in the social sciences, humanities, sciences and contemporary arts.

The Women's Studies Minor focuses on expanding traditional scholarship by studying the ways gender has structured intellectual and social traditions. The minor is designed to add a professionally and personally valuable concentration for students majoring in such areas as business, sociology, English, communications, psychology, and nursing, as well as for students in pre-medical and pre-law courses of study.

Students may earn the minor by taking Women's Studies 101 and 15 credit hours of designated Women's Studies eligible courses. Students are additionally required to complete a major research project in their senior year that addresses gender as a category of analysis; ideally, the project will be integrated with the Capstone in the student's major. Students who intend to pursue a minor in Women's Studies should take WS 101 before taking more than two other courses offered in the minor.

Students who wish to declare the minor should contact the Women's Studies Program Coordinator, Professor Theresa Kintz, 321 Breiseth Hall, [Theresa.Kintz@wilkes.edu](mailto:Theresa.Kintz@wilkes.edu) to aid them in the selection of courses and assist in the development of the senior-year research project.

See also Minors in Aerospace Studies; Computer Engineering; Criminology; International Studies; Neuroscience; Policy Studies; Statistics.

## SPECIAL PROGRAMS

### ARMY ROTC (MILITARY SCIENCE)

CHAIRPERSON: LIEUTENANT COLONEL HAINES

*Faculty: Professor Major Ramsey*

## Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

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 5-minute walk north on Franklin Street from Wilkes University. Students that participate in this program do so without penalty to their full-time academic status at Wilkes University.

The primary objective of the Army Reserve Training Program is to develop leadership capabilities in students and to train future officers for the active Army, US Army Reserve and the Army National Guard.

Army ROTC is a flexible program that can be tailored to the individual student's schedule particularly in the freshman and sophomore years. Military Science instruction is offered at King's College with both two- and four-year programs leading to a commission as an officer in one of the three components of the United States Army.

To obtain a commission, qualified male and female students must pass a physical examination and complete either the two- or four-year program of Military Science courses. Students normally take one course per semester during their four-year course of study.

All students receiving ROTC scholarships, as well as juniors and seniors and some sophomores participating in Army ROTC, are contracted with the Army and receive a monthly stipend. The stipend starts as \$300 per month during their freshman year, increases to \$350 during their sophomore year, \$450 during their junior year and \$500 during their senior year. The stipend is paid directly to the student each month that the student is in school.

The Army ROTC Department provides all uniforms, equipment and textbooks required for the classes. In addition to the academic classes, students may also participate on a voluntary basis in many additional training opportunities such as physical training and hands-on equipment training each week. Each semester there is a military social event and at least one optional weekend training session that includes such events as military marksmanship, cross country orienteering, military rappelling, leadership application courses and obstacle/confidence courses. During breaks and vacations students can volunteer for active army training such as military parachute operations, helicopter operations, military mountain climbing and

training with active Army units in the United States and overseas. All training is cost-free to the student and students are paid for some summer training courses.

The ROTC program consists of two programs, the basic course normally given during the freshman and sophomore years and consisting of MS 211, MS 212, MS 221 and MS 222, and the advanced course, normally taken during the junior and senior years and consisting of MS 231, MS 232, MS 241, MS 242 and MS 251.

Students who have completed basic training in any U.S. service may qualify for placement in the advanced course. Additionally, students who have not completed the ROTC basic course may qualify for the advanced course by attending a paid four-week Leadership Training Course conducted at Fort Knox, Kentucky.

Freshman and sophomore students can compete for two-, three-, and four-year ROTC scholarships that pay full tuition and up to \$1200 per year for books. The Army will commission graduates as second lieutenants with a starting salary of over \$40,000 per year plus medical and dental benefits as well as 30 days paid vacation per year.

For more information on the Army ROTC program at Wilkes University contact the Army ROTC Department at 570-208-5900 ext 5305 or ext 5301.

The Basic Course constitutes a two-year program for freshmen and sophomores and is designed to provide a general knowledge of the roles, organization, missions, and basic leadership techniques. Students enrolled in the Basic course who are not receiving Army ROTC scholarships incur no military obligations.

### *Basic Course*

Consists of two one-credit and two two-credit courses, which provide students with a basic level of military knowledge and are open to all freshmen and sophomores. Students enrolling in basic level courses incur no military service obligation. Course credit values are shown with each course.

#### **First Semester**

<b>MIL 211 Concepts of Leadership I</b>	<b>1</b>
<b>MIL 251 Leadership Laboratory</b>	<b>0</b>
	<b>1</b>

#### **Second Semester**

<b>MIL 212 Concepts of Leadership II</b>	<b>1</b>
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## Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

<b>MIL 252 Leadership Laboratory</b>	<b>0</b>
	1
Third Semester	
<b>MIL 221 Dynamics of Leadership I</b>	<b>2</b>
<b>MIL 251 Leadership Laboratory</b>	<b>0</b>
	2
Fourth Semester	
<b>MIL 222 Dynamics of Leadership II</b>	<b>2</b>
<b>MIL 252 Leadership Laboratory</b>	<b>0</b>
	2

Army ROTC is a flexible program and variations of this schedule are possible. Sophomores and second-semester freshmen with no prior military experience can enroll in more than one basic level class under the ROTC Compression Program. Students who have not completed the basic courses and have at least two years remaining until graduation may still apply for entry into the Advanced Course, but must qualify for advanced placement credit.

### *Advanced Course*

Consists of two two-credit and six one-credit courses open to students who have three or four semesters of college remaining. Course credit values are shown with each course.

### Fifth Semester

<b>MIL 100 Physical Fitness Training</b>	<b>1</b>
<b>MIL 231 Military Leadership I</b>	<b>2</b>
<b>MIL 251 Leadership Laboratory</b>	<b>0</b>
	3

### Sixth Semester

<b>MIL 100 Physical Fitness Training</b>	<b>1</b>
<b>MIL 232 Military Leadership II</b>	<b>1</b>
<b>MIL 252 Leadership Laboratory</b>	<b>0</b>
	2

### Seventh Semester

<b>MIL 100 Physical Fitness Training</b>	<b>1</b>
<b>MIL 241 Advanced Military Leadership I</b>	<b>2</b>
<b>MIL 251 Leadership Laboratory</b>	<b>0</b>
	3

*MIL 251/252 (Leadership Laboratory) and MIL 100 (Physical Fitness Training) are mandatory for all cadets enrolled in the Army ROTC Advanced Course as well as ROTC scholarship recipients and must be taken concurrently with each Military Leadership course.*

### COOPERATIVE EDUCATION AND INTERSHIPS

Cooperative Education is a program that formally integrates a student's studies with

work experiences in employing organizations. Students may alternate semesters of full-time study and full-time professional work experience or they may combine work and study in the same term; in either case, students earn academic credit and, in many cases, a salary while gaining valuable experience in a work environment. Internships are available throughout the United States in the summer, spring and/or fall, and internship placements are readily available to eligible students. Students are urged to explore the various possibilities with the Coordinator of Cooperative Education as soon as possible after their arrival on campus.

### PRE-LAW STUDIES

*Pre-law Advisory Council: Professors Hepp, Kuhar, Liuzzo, Whitman*

*Coordinating Pre-Law Advisor: Kreider*

Wilkes University has developed a carefully designed Pre-law Advisory Program which has proved able to provide exceptionally effective support for students seeking admission to graduate schools of law. The Pre-law Program at Wilkes is based on the principle that admission to, and success in, law school depends upon completion of a rigorous curriculum at the undergraduate level as well as an up-to-date understanding of the law school admission process. One of the greatest strengths of Wilkes University is its ability to provide students from different educational backgrounds with a sound education that prepares them for the challenges of leading professional schools.

Law schools do not prescribe a specific undergraduate major but rather suggest a broadly-based educational program that enhances the student's ability to reason, read analytically, and write effectively. Students interested in law school may major in any field, but the most frequently chosen areas are: political science, English, history and business administration. Majors such as Philosophy, Sociology, Nursing, Biology, Engineering, Computer Science, Psychology, or Earth and Environmental Sciences also provide appropriate preparation for legal studies. Indeed, a major in a technical field may be especially useful in particular aspects of legal practice.

### *Advising*

Wilkes students are assigned to faculty advisors in the areas of their majors. These advisors guide them regarding degree requirements in particular fields. Pre-law students also consult with a designated pre-law advisor, who

**Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs**

acquaints them with aspects of legal study and practice. The pre-law advisor has available law school catalogs and information on the Law School Admission Test (LSAT). We strongly recommend that the LSAT be taken during June between the junior and senior year.

As the senior year approaches, the pre-law advisor can provide suggestions as to which law schools are most likely to admit students with particular academic records and LSAT scores. Most importantly, the pre-law advisor helps to overcome the myths which too often affect student thinking about law schools.

**PRE-MBA STUDIES**

The Jay S. Sidhu School of Business and Leadership offers a nationally accredited Master of Business Administration program that expands business knowledge, management skills and leadership capability of current and future professionals from many disciplines, functions, and jobs to enhance their success at work, adding value both for the student and for the organizations with which the student is associated. The program offers advanced training in the functional areas of business and also provides the opportunity for specialization in a selected field through additional training in Accounting, Entrepreneurship, Finance, Health Care Administration, Human Resources Management, International Business, Marketing, Operations Management, or Organizational Leadership and Development. An MBA degree is appropriate for students of any academic discipline who would like to receive the analytical and strategic skills they need to step confidently into the business world.

Undergraduate students who are interested in pursuing an MBA degree can register for the Pre-MBA program during any year of undergraduate study. This program is designed to prepare students with a variety of academic backgrounds for the MBA program. Undergraduate students may use undergraduate required and elective courses to satisfy MBA prerequisite Foundation Courses. These courses, each bearing one credit, represent fundamental business competencies. Up to twelve credits may be waived. This gives students the opportunity to earn an undergraduate degree and an MBA within five and one-half years. Listed below are the Foundation Competencies and the Undergraduate Course(s) that satisfy each.

**Foundation Undergraduate Course**

Competency	Equivalent(s)
<b>Financial Accounting</b>	<b>ACC 161</b>
<b>Managerial Accounting</b>	<b>ACC 162</b>
<b>Finance</b>	<b>BA 341 or EGM 320</b>
<b>Management</b>	<b>BA 351, PHA 412 or ENT 201</b>
<b>Marketing</b>	<b>BA 321</b>
<b>Law</b>	<b>BA 233 or 234 or PHA 505</b>
<b>Macroeconomics</b>	<b>EC 101 or PHA 509</b>
<b>Microeconomics</b>	<b>EC 102</b>
<b>International Business</b>	<b>BA 358</b>
<b>Statistics</b>	<b>BA 319, PSY 200, MTH 150 or ENT 321</b>
<b>Operations Management</b>	<b>BA 352 or EGM 336</b>
<b>MIS</b>	<b>BA 257 or ACC 341 or EGM 321</b>

Students who enter the Pre-MBA program will be counseled by a graduate advisor. Advising sessions are used as an opportunity to prepare students for entrance into the MBA program through communication of student career ambitions and strengths and identification of course scheduling options. It is recommended that entrance into the program occurs within the freshman or sophomore years in order to maximize the number of Foundation courses that will be waived upon degree completion. Students interested in the Pre-MBA program should contact the Office of Graduate Studies at (570) 408-4235 or [graduatestudies@wilkes.edu](mailto:graduatestudies@wilkes.edu) in order to arrange an appointment with a graduate advisor.

**STUDY ABROAD**

Study Abroad is an elective option to all students in good academic standing who wish to study at foreign institutions. Earned academic credit may be applied toward the requirements for a bachelor's degree at Wilkes. Overseas study may be for a period of a year, a semester, or a summer. Information regarding the specific programs available to Wilkes students is available from the Study Abroad Coordinator. Students wishing to use financial aid to assist with the costs of study abroad must see the Director of Financial Aid and must complete the "Consortium Financial Aid Agreement" form, available in the Registrar's

## Interdisciplinary Majors, Interdisciplinary Minors, and Special Programs

Office. Students must also complete all required application materials of the desired program before registering for Study Abroad. Course selection and preregistration take place with the student's academic advisor in coordination with the Study Abroad Coordinator. Students must complete the "Transfer Credit Request Form" (with all the appropriate signatures) and register for Study Abroad before conducting their study abroad.

### STUDY TOUR EXPERIENCE

*Study Tour Experience Coordinating Committee: Professors Arora, Hamill, Merryman, Morrison, Stamer.*

The Study Tour Experience is a unique learning experience recently developed for students who wish to travel but who cannot afford the time to spend an entire semester abroad. The Study Tour Experience is a three-credit course with a variety of sections designed to give students the opportunity to experience another culture through an intensive period of study and travel abroad under the guidance of a knowledgeable instructor. Offered during summer sessions or winter break intercessions, current sections include tours to China, India, Africa, England, and Malaysia. New sections are being developed continuously.

The Study Tour Experience has four components: a pre-travel orientation, the concentrated group travel experience, a writing emphasis, and a post-travel follow-up session. The five- to ten-day period of on-campus pre-travel orientation includes an overview of the geography, ecology, history, language, art, and culture of the country or area of study. The group travel portion of the course consists of a ten- to fourteen-day

study tour guided by a course instructor who is particularly well experienced in the culture. Students will be more than tourists; they will be afforded an up-close, interactive, hands-on experience that will be memorable, enjoyable, and educational. In addition, students will be expected to keep a detailed travel journal and, after the trip, write a paper or conduct a short project appropriate to the area of study. Finally, upon return to campus a follow-up session will be held in which students will meet for a joint class debriefing to share insights and reflections.

One unique feature of this learning experience is that it is available for credit or without credit. Students may receive three elective credits for the study tour at the significantly reduced tuition of \$500, in addition to travel expenses. Those who elect to travel but receive credit will pay only touring costs, generally not to exceed a maximum of \$3,000. Travel fees are intended to include all costs, including air and overland travel, hotels, meals, transfers, visas and inoculations where required. These credits may then be used in a variety of ways, to be determined by each division of the University. Furthermore, the course is open to alumni and community members who might wish to accompany friends and family members abroad, or who might simply want to travel in the comfort and safety of a Wilkes University program.

Anyone who is interested in further details about the Study Tour Experience should contact the Center for Continued Learning or any member of the coordinating committee.

# COURSE DESCRIPTIONS

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## Course Descriptions

### ACCOUNTING COURSES

#### ACC 151. INTEGRATED MANAGEMENT EXPERIENCE I

THREE CREDITS

Same as BA 151 and ENT 151. See BA 151 for course description.

#### ACC 152. INTEGRATED MANAGEMENT EXPERIENCE II

THREE CREDITS

Same as BA 152 and ENT 152. See BA 152 for course description. *Prerequisite: ACC 151 or BA 151 or ENT 151.*

#### ACC 161. FINANCIAL ACCOUNTING AND DECISION-MAKING

THREE CREDITS

This is a study of the nature, function, and environment of accounting, including the accounting information system, account analysis and decision-making. The course provides an understanding of accounting issues and objectives for proper interpretation and analysis of financial accounting information.

#### ACC 162. MANAGERIAL ACCOUNTING AND DECISION-MAKING

THREE CREDITS

Managerial accounting is an internal tool to generate information for managerial planning and control. Students will develop an understanding of operating and capital budgets, standard costs, incremental concepts, relevant costs, transfer pricing, and responsibility and profit center reports as a means of analysis as well as techniques of measurement. *Prerequisite: ACC 161.*

#### ACC 201. INTERMEDIATE ACCOUNTING I

THREE CREDITS

A study of the accounting information system and the accounting standards applicable to corporate balance sheet accounts and their related counterparts that result in revenue and expense recognition on the income statement and statement of retained earnings. Course topics include the financial accounting standards, financial statement preparation, cash and receivables, inventories and cost of goods sold, and plant and depreciation. *Prerequisite: ACC 161.*

#### ACC 202. INTERMEDIATE ACCOUNTING II

THREE CREDITS

This course is a study of the accounting standards applicable to intangible assets, liabilities, and stockholders' equity. Also, it focuses on the application of generally accepted accounting principles that relate to various technical reporting areas within financial statements. Emphasis is placed on technical standards and the necessary disclosure requirements for these reporting areas. Course topics include earnings per share, securities that can dilute earnings per share, corporate investments and accounting for corporate income taxes and pensions. *Prerequisite: ACC 201.*

#### ACC 301. ADVANCED FINANCIAL ACCOUNTING

THREE CREDITS

A comprehensive review and analysis of various accounting issues relating to corporate consolidations, partnerships, governmental units, non-profit organizations, estates, trusts, and bankruptcies. Extensive computerized applications are an integral part of this course. *Prerequisite: Acc 202.*

#### ACC 311. ADVANCED MANAGERIAL ACCOUNTING

THREE CREDITS

Advanced treatment of managerial accounting topics with emphasis on generation, communication, and use of information to assist management in performance of the planning and control function. Information systems design, budgeting, variance analysis, and direct costing concepts are covered. *Prerequisite: ACC 162.*

#### ACC 321. TAXES

THREE CREDITS

Introduction to the Internal Revenue Code for individuals and sole-proprietorships. Preparation of individual tax returns based on the current tax law, regulations, and revenue ruling letters. Introduction to tax research using various traditional and electronic reference services. *Prerequisite: Acc 161.*

ACC 322. ADVANCED TAXES  
THREE CREDITS

Introduction to certain tax laws as they apply to Corporations, S Corporations, and Partnerships. This involves developing a thorough understanding of tax research and how tax planning may help the financial entity to minimize the tax liability. *Prerequisite: Acc 321.*

ACC 331. AUDITING  
THREE CREDITS

To understand the most important concepts in auditing and how they are used in decision making, evidence accumulation and reporting. This entails understanding the concepts, methods and processes of control that provide for the accuracy and integrity of financial data and the safeguarding of business assets; along with understanding the nature of attest services and the conceptual and procedural bases for performing them. *Prerequisite: Acc 202.*

ACC 341. ACCOUNTING INFORMATION SYSTEMS  
THREE CREDITS

To develop a solid understanding of and appreciation for the use of accounting information employed to process and sort business events so as to provide information for the functions of financial reporting, internal responsibility accounting and decision support. This understanding includes applications via spreadsheets, databases, general ledgers, and the internet. *Prerequisite: Acc 162 and BA 351.*

ACC 362. ACCOUNTING INTERNSHIP  
THREE OR SIX CREDITS

This course provides job experience as an entry-level accountant through a minimum of 170 (3 credits) or 340 (6 credits) hours working experience with either certified public accounting firms, governmental agencies, or private businesses. Internships are offered on a competitive basis following student interviews with interested employers. (All courses listed through the seventh semester should be taken prior to this course.) *Prerequisite: ACC 202.*

ACC 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

ACC 397. SEMINAR  
ONE TO THREE CREDITS

ACC 198/298/398. TOPICS  
VARIABLE CREDIT

Special offerings designed to introduce students to subjects of current interest in accounting which are not covered in other courses.

## AIR AND SPACE STUDIES COURSES

AS 101-102. FOUNDATIONS OF THE USAF I/II  
TWO CREDIT HOURS EACH

This survey course briefly covers topics relating to the Air Force and defense. It focuses on the structure and missions of Air Force organizations, officership and professionalism. It is also a good introduction into the use of communication skills.

AS 103/104. LEADERSHIP LABORATORY  
NO CREDIT

This course (to be taken in conjunction with AS 101 and 102) is a weekly laboratory that touches on the topics of Air Force customs and courtesies, health and physical fitness, and drill and ceremonies.

AS 201-202 EVOLUTION OF USAF AIR AND SPACE POWER I/II  
TWO CREDIT HOURS EACH

This survey course is concerned with the beginnings of manned flight and the development of aerospace power in the United States, including the employment of air power in WWI, WWII, Korea, Vietnam, the Gulf War and the peaceful employment of U.S. air power in civic actions, scientific missions and support of space exploration.

## Course Descriptions

### AS 203/204. LEADERSHIP LABORATORY

NO CREDIT

This course (to be taken in conjunction with AS 201 and 202) provides you with the opportunity to demonstrate fundamental management skills and prepares you for Field Training.

### AS 240. AFROTC FIELD TRAINING (4-WEEKS) (SUMMER)

TWO CREDITS

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics. *Prerequisites: AS 101, 102, 201, 202 ; an interview by Professor of Air and Space Studies and other military requirements.*

### AS 250. AFROTC FIELD TRAINING (5-WEEKS) (SUMMER)

THREE CREDITS

Intensive study of military education, experience in leadership and management at an active duty installation. Also training in marksmanship, survival, and athletics. *Prerequisite: Interview by Professor of Air and Space Studies and other military requirements.*

## PROFESSIONAL OFFICER COURSES

The Professional Officer Courses (POC) constitute a four-semester program, normally taken during the junior and senior years, leading to commissioning as a U.S. Air Force officer. The POC concentrates on concepts and practices of management and leadership, national defense policy, and communicative skills.

### AS 301-302. AIR FORCE LEADERSHIP STUDIES I/II

THREE CREDITS EACH

This course is a study in the anatomy of leadership, the need for quality and management leadership, the role of discipline in leadership situations and the variables affecting leadership. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts. Deal with actual problems and complete projects associated with planning and managing the Leadership Laboratory.

*Prerequisite: AFROTC approved membership in the POC or permission of instructor.*

### AS 303/304. LEADERSHIP LABORATORY

NO CREDIT

This course (taken in conjunction with AS 301 and 302) provides you the opportunity to develop your fundamental management skills while planning and conducting cadet activities.

### AS 401-402 NATIONAL SECURITY AFFAIRS/PREPARATION FOR ACTIVE DUTY I/II

THREE CREDITS EACH

Learn about the role of the professional military leader in a democratic society; societal attitudes toward the armed forces; the requisites for maintaining adequate national defense structure; the impact of technological and international developments on strategic preparedness and the overall policy-making process; and military law. In addition, you will study topics that will prepare you for your first active-duty assignment as an officer in the Air Force.

*Prerequisite: AFROTC approved membership in the POC or permission of instructor.*

### AS 403/404. LEADERSHIP LABORATORY

NO CREDIT

This course (taken in conjunction with AS 401 and 402) provides you with the opportunity to use your leadership skills in planning and conducting cadet activities. It prepares you for commissioning and entry into the active-duty Air Force.

## ANTHROPOLOGY COURSES

### ANT 101. INTRODUCTION TO ANTHROPOLOGY

THREE CREDITS

A general survey of the processes that generate human cultural and biological variation through time and among contemporary human groups. An introduction to cultural and physical anthropology, archaeology, and anthropological linguistics.

ANT 102. CULTURAL ANTHROPOLOGY  
THREE CREDITS

A detailed examination of the methods and theories employed in the description and comparison of human cultures, as applied to problems in intercultural relations. Course content is based upon case and cross-cultural studies.

ANT 211. ANTHROPOLOGY THROUGH FILM  
THREE CREDITS

A general survey of the use of still photography and cinematography in the depiction of the content of various cultures.

ANT 212. PEOPLES AND CULTURES OF THE WORLD  
THREE CREDITS

An overview of social organizations, ethnicity, and cultural developments in various regions of the world: North American Native Americans, the Middle East, Africa, Latin America, Asia. Topics are rotated. The contributions of ecological, economic, political and ideological factors to the region's social system are examined in regard to present cultural obligations.

ANT 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: By arrangement with an instructor and approval of department chairperson.*

ANT 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ANT 198/298/398/498. TOPICS  
THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

## ART COURSES

ART 101. EXPERIENCING ART  
THREE CREDITS

Lectures and discussion on the elements of art and the forerunners of modern and contemporary art. Two and three dimensional studio work is explored through the creative process in a variety of media. Fee: \$40.

ART 111. FUNDAMENTALS OF COLOR AND DESIGN  
THREE CREDITS

A basic level design course involving the elements and principles of two-dimensional design and the study of color systems. Fee: \$40.

ART 113. DRAWING  
THREE CREDITS

An introductory course exploring the organization and potential of line, space, and texture through a variety of media and subject matter. Fee: \$40.

ART 120. PAINTING I  
THREE CREDITS

An introduction to painting methods and materials with an emphasis on composition and basic color theory. Oil, watercolor, and acrylic painting techniques are explored in both realistic and abstract styles. Fee: \$40.

## Course Descriptions

### ART 121. PRINTMAKING THREE CREDITS

An introduction to monotype, intaglio and relief printmaking processes. Traditional and creative contemporary approaches to printing original works on paper in a print workshop environment. Fee: \$40.

### ART 122. SCULPTURE THREE CREDITS

An introductory to the basic concepts of three-dimensional form and space. Modeling in clay from life; and casting, carving and direct building techniques in plaster among other traditional methods of sculpture will be explored. Fee: \$40.

### ART 123. CERAMICS THREE CREDITS

Exploration into the basic methods and techniques of hand building and wheel work. Experimentation in surfaces decoration, glazing, and kiln firing. Fee: \$40.

### ART 133. PHOTOGRAPHY THREE CREDITS

An introduction to the fundamentals of photography; camera usage, subject consideration, lighting, darkroom techniques, and the preparation of photographs for exhibit. Fee: \$40. *NOTE: Each student must have access to an adjustable 35mm camera and provide their own black and white film and photo paper.*

### ART 134. COMPUTER GRAPHICS I THREE CREDITS

A foundation course that introduces the basics of Photoshop, Illustrator, InDesign and Adobe Acrobat, as well as the theory, terminology, and genres of graphic design. Fee: \$40.

### ART 140. HISTORY OF ART I THREE CREDITS

A survey of the art and architecture of Western Civilization from pre-history through the Early Renaissance. Non-western cultures will also be introduced. Slide lectures and discussion will focus on major artworks and trends within their cultural setting.

### ART 141. HISTORY OF ART II THREE CREDITS

A survey of the art and architecture of Western Civilization from the High Renaissance to the present. Slide lectures and discussions will focus on major artists, artworks, and trends within their cultural setting.

### ART 220. PAINTING II THREE CREDITS

Increased emphasis on development of style and experimentation in contemporary art methods and techniques. Fee: \$40. *Prerequisite: Art 120 or permission of instructor.*

### ART 234. COMPUTER GRAPHICS II THREE CREDITS

A continuation of Graphic Design I designed to reinforce further development in Photoshop, Illustrator, InDesign, and Adobe Acrobat, as well as theory, terminology, and genres of graphic design. Includes the use of media and processes of scanning, collage, typography, and layouts for print. Fee: \$40. *Prerequisite: Art 134 or permission of instructor.*

### ART 240. MODERN ART AND DESIGN THREE CREDITS

20th century art and design will be considered in relation to central themes in modern civilization, such as science and technology, social and political revolution, historicism, and formalism. Slide lectures and discussions will treat objects as diverse as paintings and refrigerators, buildings and billboards.

ART 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and creative work for advanced students in the field of the major under the direction of a staff member. *Prerequisite: Approval of department chairperson is required.*

ART 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ART 198/298/398. TOPICS  
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Recent studio topics have included Life Drawing, Mural Painting, Color Photography, and Ceramic Sculpture. Past topics in art history have included Modern Architecture, A History of Surrealism, and Nineteenth Century Art.

## BIOLOGY COURSES

BIO 105. THE BIOLOGICAL WORLD  
THREE CREDITS

This course presents concepts and modern ideas pertaining to the natural world and the life sciences. Each semester a selected topic will be addressed and explored from an investigative set of perspectives. While the scientific method will be emphasized in each offering, the range of topics, identified as a subtitle in the course offering data, will include for example (1) Genetics, Evolution and Ecology: Implications for a Changing Society, or (2) Human Biology, or (3) Contemporary Issues in the Life Sciences, among others. This course is intended for students who are not majoring in science, engineering, prepharmacy, nursing or B.S. programs in mathematics or computer science. Fall semesters: Human Biology—two hours of lecture and two hours of laboratory per week. Dissections of specimen may be required in the laboratory component. Fee: \$100. Spring semesters: Contemporary Issues in the Life Sciences—three hours of lecture each week.

BIO 113. MICROBIOLOGY  
FOUR CREDITS

This course presents the basic principles of bacteriology and the relationship of micro-organisms to disease and its prevention, control, and treatment. It considers the effects of microbes within the body and the body's reaction to them. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$100. Offered every spring semester.

BIO 115-116. HUMAN ANATOMY AND PHYSIOLOGY  
FOUR CREDITS EACH

This course provides a general study of the human body, its structure and normal function. It provides an appreciation of the complex nature of the human body with relation to the promotion of a healthy organism. Dissections of specimens are required in the laboratory portion of these courses. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$100 each course. *Prerequisite for Bio 116: Bio 115 or permission of instructor.* Bio 115: Offered every fall semester. Bio 116: Offered every spring semester.

BIO 121. PRINCIPLES OF MODERN BIOLOGY I  
FOUR CREDITS

An introduction to concepts of modern biology for students majoring in biology and other sciences. Topics covered include the origin of life, basic biochemistry, cell structure and function, energetics, reproduction and heredity, molecular genetics, and evolution. Four hours of lecture and three hours of laboratory per week. Required of all Biology majors. Laboratory fee: \$100. *Corequisite: Chm 115. Offered every fall semester.*

## Course Descriptions

### BIO 122. PRINCIPLES OF MODERN BIOLOGY II FOUR CREDITS

An introduction to biological diversity and mammalian structure and function for science majors, usually taken as a continuation of BIO 121. Topics include organismal classification, a survey of biological diversity (including characteristics, ecology, phylogenetic relationships, and economic and biomedical uses) of plants, animals and microbes, and an overview of the mammalian body addressing the form and function of key organ systems. Dissections of specimens are required in the laboratory portion of this course. Four hours of lecture, three hours of laboratory per week. Required of all Biology majors. Laboratory fee: \$100. *Offered every spring semester.*

### BIO 225. POPULATION AND EVOLUTIONARY BIOLOGY FOUR CREDITS

This course emphasizes the patterns and processes of evolutionary change in living systems in an ecological context. It reviews the basic characteristics and dynamics of populations, and the relevance of population ecology and population genetics to the evolution of species. Human evolution, sociobiology and other controversial issues are also covered. Laboratory exercises emphasize an experimental approach to more in-depth study of specific topics covered in lecture. Four hours of lecture, three hours of laboratory. Required of all biology majors. Laboratory fee: \$100. *Prerequisite: Bio 121–122. Offered every fall semester.*

### BIO 226. CELLULAR AND MOLECULAR BIOLOGY FOUR CREDITS

Cell structure in relation to function. Biochemistry and physiology of animal, plant, and bacterial cells and their viruses are presented in a molecular biology context. The cell in division and development. Four hours lectures, three hour of laboratory. Required of all biology majors. Laboratory fee: \$100. *Prerequisite: Bio 121-122. Offered every spring semester.*

### BIO 306. INVERTEBRATE BIOLOGY FOUR CREDITS

This course is a study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology, and ecology. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

### BIO 311. COMPARATIVE PHYSIOLOGY FOUR CREDITS

Comparative Physiology encompasses the study of organ functions and organ system functions in different animal groups. Emphasis will be on the systemic physiology of vertebrate animals. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

### BIO 312. PARASITOLOGY FOUR CREDITS

Parasitology is the study of organisms that live on or within other organisms and the relationship of these organisms to their hosts. This course deals with the common parasites that infect man and other animals. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

### BIO 314. COMPARATIVE VERTEBRATE ANATOMY FOUR CREDITS

This course deals with the evolution and anatomy of the organ systems of vertebrates. Lectures survey the comparative anatomy of the vertebrate classes. Laboratory Dissections include the Lamprey, Shark, Mud Puppy, and Cat in detail. Lecture three hours per week, laboratory three hours per week. Laboratory fee: \$100. *Prerequisites: BIO 121–122, 225. Offered in alternate years.*

### BIO 321. MAMMALIAN PHYSIOLOGY FOUR CREDITS

This course examines the function of mammalian systems with regard to homeostasis, metabolism, growth and reproduction. Normal physiological processes as well as some pathophysiological situations are covered. The emphasis is on human physiology; however, other mammalian systems are discussed to demonstrate physiological adaptability to various environmental situations. Laboratory exercises include physiological experimentation in living systems and in computer simulations. Lecture: three hours; Laboratory: three hours. Fee: \$100. *Prerequisites: Bio 121–122,*

226, or permission of instructor. Offered in alternate years.

**BIO 323. FUNCTIONAL HISTOLOGY**

**FOUR CREDITS**

This course emphasizes the microscopic examination of mammalian tissues from morphological and physiological perspectives. Reference is made to organ embryogenesis to support the understanding of organ form and function. Tissue preparation for histological examination is included. Lecture, three hours; laboratory, three hours per week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 325. ENDOCRINOLOGY**

**FOUR CREDITS**

This course will focus on the structure, biochemistry, and function of mammalian hormones and endocrine glands; avian, amphibian and invertebrate hormones will also be discussed, where relevant. Clinical pathologies resulting from excess or insufficient hormones will be discussed, as this is essential to mastering an understanding of Endocrinology. Laboratory exercises include experimentation in living systems and computer simulations. Lecture: three hours per week; Laboratory: three hours per week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 226, or permission of instructor. Offered in alternate years.*

**BIO 326. IMMUNOLOGY AND IMMUNOCHEMISTRY**

**FOUR CREDITS**

This course is concerned with the biologic mechanisms and chemistry of reactants and mediators associated with natural and acquired states of immunity, tissue and blood serum responses to infection and immunization, and related patho-physiologic alterations of hypersensitivity phenomena in vertebrate animals and man. Three lectures and one three-hour laboratory per week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 327. MEDICAL MICROBIOLOGY**

**FOUR CREDITS**

Medical Microbiology provides a professional-level introduction to microbiology that is focused on application of microbiology to the study of infectious disease etiology and epidemiology. The laboratory covers techniques used in isolation and identification of microorganisms. Lecture: three hours a week; Laboratory: three hours per week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, Chm 231-232*

**BIO 328. DEVELOPMENTAL BIOLOGY**

**FOUR CREDITS**

A course dealing with the principles of animal development from descriptive, experimental, and evolutionary perspectives. Laboratory work includes both descriptive and experimental embryology as well as more molecular techniques. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

**BIO 329. VIROLOGY**

**THREE CREDITS**

Virology provides an introduction to the biology of animal viruses. Description of viral molecular architecture and genome organization is followed by a survey of strategies employed for multiplication and regulation of gene expression. Pathogenesis of viral infections is considered from perspectives of viral reproduction strategies and host defense. *Prerequisites: Bio 121-122, 225-226, Chm 231, 232, 233, 234.*

**BIO 330. INTRODUCTION TO BIOINFORMATICS**

**THREE CREDITS**

An introduction to the ways computers are used to make sense of biological information, especially the data generated by the human genome project. Topics covered include databases and data mining, pair-wise and multiple sequence alignment, molecular phylogeny, finding genes in raw DNA sequences, predicting protein and RNA secondary and tertiary structures, generating and analyzing microarray data, DNA fingerprinting, rational drug design, metabolic simulation and artificial intelligence. *Offered online alternate spring semesters, with one assignment each week.*

## Course Descriptions

### BIO 341. FRESHWATER ECOSYSTEMS

#### THREE CREDITS

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$100. (same as EES 341) *Prerequisites: EES 211 or 240 or BIO 121–122, or consent of instructor. Offered in alternate years.*

### BIO 343. MARINE ECOLOGY

#### THREE CREDITS

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$100. (Cross-listed with EES 343) *Prerequisites: EES 230 (Ocean Science) and Bio 121-122. Students must have formal course experiences in oceanography and biology at the science major level or have completed their sophomore year as a biology major. Offered in alternate years.*

### BIO 344. ECOLOGY

#### FOUR CREDITS

An examination of contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$100. (Cross-listed with EES 344) *Prerequisites: Bio 121-122, or permission of instructor. Offered in alternate years.*

### BIO 345. GENETICS

#### FOUR CREDITS

This course presents a detailed treatment of genetics beyond the introductory level in the areas of both transmission and molecular genetics. Includes discussion of the role of genetics in such areas as developmental medicine. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every fall semester.*

### BIO 346. ANIMAL BEHAVIOR

#### FOUR CREDITS

Animal Behavior is a course emphasizing behavior as the response of an organism to physical and social environmental change, and covering the processes that determine when changes in behavior occur and what form the changes take. Laboratories, using local fauna, demonstrate principles discussed in lecture. Lecture, three hours; laboratory, three hours a week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered in alternate years.*

### BIO 361. PLANT FORM AND FUNCTION

#### FOUR CREDITS

An introduction to the morphology, anatomy, cytology and physiology of vascular plants. Structural and functional aspects of plants are interpreted in relation to each other and within ecological and evolutionary contexts. Offered in a workshop format of two three-hour sessions per week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every fall semester.*

### BIO 362. PLANT DIVERSITY

#### FOUR CREDITS

A comprehensive survey of algae, bryophytes, and vascular plants emphasizing their structure, reproductive biology, natural history, evolution, and importance to humans. Offered in a workshop format of two three-hour sessions per week. Laboratory fee: \$100. *Prerequisites: Bio 121-122, 225-226, or permission of instructor. Offered every spring semester.*

### BIO 366. FIELD BOTANY

#### THREE CREDITS

A specialized summertime field course that emphasizes a taxonomic, phylogenetic, and ecological survey of vascular plants indigenous to Northeastern Pennsylvania. Course includes field trips to a diverse array of habitats in Northeastern Pennsylvania. (Cross-listed with EES 385) *Prerequisites: Bio 121-122, or permission of instructor. Offered in alternate years.*

BIO 368. MEDICAL BOTANY  
THREE CREDITS

A specialized summertime course that provides a scientifically-based overview of the ways that plants affect human health. Topics include cultural and historical perspectives of plants and medicine, plants that treat human ailments, and psychoactive plants. Lecture two hours per day for five weeks. *Prerequisites: Bio 121-122, 225, Chm 231-232 or permission of instructor. Offered in alternate years.*

BIO 391-392. SENIOR RESEARCH PROJECTS  
ONE CREDIT, TWO CREDITS

The student will pursue independent research as a member of a team of senior biology majors. Each team will be responsible for the identification of an original research problem, a thorough literature review of the problem, a detailed prospectus prepared in the format of a grant proposal, complete execution of the research project, a formal oral presentation, and a final manuscript prepared in standard journal format. Senior research is required of all biology majors seeking a four-year degree in biology. *Prerequisite: Open only to senior biology majors. Bio 391. Offered every fall semester. Bio 392. Offered every spring semester.*

BIO 394. BIOLOGICAL FIELD STUDY  
ONE TO THREE CREDITS

On-site study of biological problems or situations incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour of lecture per week plus field trip. Fee: variable. *Prerequisites: Bio 121-122, or permission of instructor.*

BIO 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

This course involves independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required; it must also be orally presented at an appropriate off-campus science meeting. *Prerequisite: Written approval of department chairperson is required. Candidates for Independent Research must have a minimum GPA of 3.00 and be of upper class standing.*

BIO 397. PROFESSIONAL PREPARATION TECHNIQUES  
TWO CREDITS

Professional Preparation Techniques introduces biology majors to biology as a profession. Students learn how to read, write, and analyze research papers, and how to make oral presentations and posters using electronic and paper-based supplements. Career development issues, including effective presentation of credentials, are also addressed. *Prerequisite: Junior-level standing. Offered every fall and every spring semester.*

BIO 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 minimum cumulative average, consent of academic advisor, approval of placement by department chairperson.*

BIO 198/298/398. TOPICS  
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Laboratory fee: variable. *Prerequisites: Bio 121-122, 225-226, or permission of instructor.*

ACCELERATED BBA COURSES

ABA 100. INTEGRATED MANAGEMENT  
FOUR CREDITS

The first module takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. In the second module you learn how businesses operate through the study of functional areas such as

## Course Descriptions

marketing, management, human resources, accounting and finance, and operations. Most importantly, you will learn and experience how the pieces fit together through integrating the functional areas and tracking information and performance using financial accounting principles.

### ABA 110. LEADERSHIP AND ORGANIZATIONAL MANAGEMENT FOUR CREDITS

This course takes an interdisciplinary approach combining the major theories of management and organizational behavior. The theories and practices of planning, organizing, controlling and leading the organization are incorporated into a behavioral approach including ethical decisionmaking. Understanding of individual, formal, and informal group behavior; macro- and microorganizational structures, motivation and leadership theories, group influences, conflicts, decision-making, communication, with emphasis on behavioral science applications in developing organizational effectiveness are explored with an emphasis on the global business environment. *Prerequisite: ABA 100.*

### ABA 120. EFFECTIVE COMMUNICATIONS FOR BUSINESS FOUR CREDITS

An emphasis on written and oral communications. Students practice writing major business correspondence including letters, persuasive requests and refusals, inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing. Students learn the major techniques of effective oral presentations such as, organizing for impact, gaining and keeping audience attention, multimedia applications, and adapting to cross-cultural audiences. *Prerequisite: ABA 100.*

### ABA 130. MARKETING AND RETAILING FOUR CREDITS

Marketing and Retailing (BA 130) an introduction to the planning and activities of marketing. The course will provide an understanding of the dynamic role marketing plays in the global and national economy as well as the organization. You will have the opportunity to build a knowledge base about the following areas: strategic marketing, research, consumer behavior, segmentation and targeting, marketing mix planning, the selling process, implementation, and evaluation. We will identify marketing and retailing challenges, ethical thinking and action, and global dimensions of the practice of marketing and retailing. *Prerequisite: ABA 100.*

### ABA 140. INTEGRATED BUSINESS MATH AND STATISTICS FOUR CREDITS

This course serves as an introduction to the primary calculations and tools needed in business and economics. Topics include, but are not limited to: algebraic functions, interest rates, defining and describing data, numerical and graphical summaries of data, hypothesis testing, and regression and correlation analysis. Emphasis on mathematical modeling in the business environment.

### ABA 150. THE LEGAL ENVIRONMENT AND BUSINESS LAW FOUR CREDITS

This course provides a foundation for business managers to operate within the legal environment in which all businesses in our society function. It provides an overview of law and our legal system, the lawmaking and adjudicatory processes, and the roles of economic, social, and political forces in the shaping of constraining legal rules and regulations. It also provides an indepth study of contracts, commercial transactions, the Uniform Commercial Code, businessorganizations, property law, liability and accountants, and debtor-creditor relationships.

### ABA 161. FINANCIAL ACCOUNTING FOUR CREDITS

This course will communicate an understanding of the nature, function and environment of accounting and the accounting information system within an organization. Through analysis of both financial accounting information and supporting accounting principles, students will study decision-making and how those decisions affect the organization and its financial statements.

### ABA 162. MANAGERIAL ACCOUNTING FOUR CREDITS

Managerial accounting is an internal tool used to generate information for managerial planning and control. Students will develop an understanding of how costs flow through the manufacturing process and how financial and non-financial information is used to make budgeting and other

managerial accounting decisions.

*Prerequisite: ABA 161.*

**ABA 170. HUMAN RESOURCES AND CUSTOMER RELATIONSHIP MANAGEMENT**

FOUR CREDITS

This course deals with acquiring skills and understanding of the legal aspects, as well as the planning and technologies involved with local, regional, national, and global human resource management. Topics such as global human resource management, selection and recruitment, job analysis and design are explored. Also included are appraising and rewarding performance, compensation and benefits, and labor management relations. Along with these topics customer relationship management is explored from a human resources perspective. *Prerequisite: ABA 100.*

**ABA 180. FINANCIAL MANAGEMENT**

FOUR CREDITS

A study of the financial theories and decision-making models relating to: financial analysis and planning; working capital management; cash budgeting; capital asset acquisitions; capital asset financing; cost of capital; capital structuring; acquisitions; divestitures; and reorganizations. *Prerequisite: ABA 100 and ABA 140.*

**ABA 190. INTEGRATED ECONOMICS FOR BUSINESS**

FOUR CREDITS

This course introduces the student to both macroeconomic and microeconomic theories. Core issues in both disciplines such as supply and demand, fiscal policy, employment, and monetary policy are explored in a business environment context. *Prerequisites: ABA 100.*

**ABA 200. BUSINESS STRATEGY AND DECISION MAKING**

FOUR CREDITS

This is a capstone course which integrates the functional areas of business from the perspective of top management. Emphasis is on the role of management in the formation and execution of strategic plans and a particular emphasis on improving a company's performance. *Prerequisites: ABA 100, ABA 130 and ABA 180.*

**ABA 210. PROFESSIONAL BUSINESS EXPERIENCE**

FOUR CREDITS

This course is part of a two-session (14 Week) professional business experience in which students apply their accumulated knowledge, skills, and abilities in a private or public organization related to the students' academic objectives and career goals. The course will include cooperative education, independent study, and/or an experiential component. Components of the Personal and Professional Development Program will be explored during class time. *Prerequisites: ABA 100, ABA 140 and ABA 180.*

## BUSINESS ADMINISTRATION COURSES

**BA 151. INTEGRATED MANAGEMENT EXPERIENCE I**

THREE CREDITS

Integrated Management Experience is a two-semester sequence that takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. You learn how businesses plan and operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. Most importantly, you will learn and experience how the pieces fit together through integrating the functional areas and tracking information and performance using financial accounting principles. (Same as ACC 151 and ENT 151).

**BA 152. INTEGRATED MANAGEMENT EXPERIENCE II**

THREE CREDITS

Integrated Management Experience is a two-semester sequence that takes you through the entrepreneurial process from creating a business concept to planning the venture to launching and operating the business to harvest and closure of the firm. You learn how businesses plan and operate through the study of functional areas such as marketing, management, human resources, accounting and finance, and operations. You develop a clear understanding of the importance of accounting cycles and how financial accounting principles provide not only information but an integrating thread for all types of organizations. (Same as ACC 152 and ENT 152). *Prerequisite:*

## Course Descriptions

### ACC/BA/ENT 151.

#### BA 230. MONEY AND BANKING THREE CREDITS

A study of money credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent developments in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships. (Cross listed as EC 230).

#### BA 233. THE LEGAL ENVIRONMENT OF BUSINESS THREE CREDITS

This course provides a foundation for business managers to operate within the legal environment in which all businesses in our society function. It provides an overview of law and our legal system, the lawmaking and adjudicatory processes, and the roles of economic, social, and political forces in the shaping of constraining legal rules and regulations.

#### BA 234. BUSINESS LAW THREE CREDITS

An in-depth study of contracts, commercial transactions, the Uniform Commercial Code, business organizations, property law, liability and accountants, and debtor-creditor relationships. Provides the necessary legal background for those entering the accounting profession.

#### BA 257. MANAGEMENT INFORMATION SYSTEMS THREE CREDITS

This course introduces the fundamental concepts underlying the design, implementation, control, and evaluation of business-oriented computer based information systems, office automation, information reporting, and decision making.

#### BA 309. BUSINESS CORRESPONDENCE AND REPORTS THREE CREDITS

An emphasis on written communications: practice in writing major classification of business letters; persuasive requests and refusals, inquiry, order, sales, application, credit, collection, and goodwill letters. Investigative techniques of research and analytical report writing.

#### BA 319. BUSINESS STATISTICS THREE CREDITS

An introduction to the primary tools of research in business and economics; the collection, summarization, analysis, and interpretation of statistical findings relevant to business decisions. Two hours of lecture and one hour of individualized laboratory. Topics covered will include, but not be limited to, descriptive statistics, probability, sampling theory, hypothesis testing, and regression and correlation analysis. (Cross-listed as Ec 319.)

#### BA 321. MARKETING THREE CREDITS

An introduction to the planning and activities of marketing. Emphasis on budgeting, product conception and development, pricing, distribution channels and promotion.

#### BA 322. ADVERTISING THREE CREDITS

A managerial analysis of the decisions involved in advertising. Topics include research, ethics, campaign design, copy, art, media, budgeting, and effectiveness. *Prerequisite: BA 321.*

#### BA 324. RETAILING THREE CREDITS

A basic course that discusses opportunities in retailing; types of retail institutions; problems of store policy, store location; study of organizational structure of department stores; organization and functions of all store divisions. *Prerequisite: BA 321.*

#### BA 326. THE SELLING PROCESS THREE CREDITS

Examines the buyer-seller relationship process of marketing products and services to consumers and organizations. Emphasis is placed on sales techniques, presentation styles and sales management skills appropriate to the business interaction. *Prerequisite: BA 321.*

BA 327. MARKETING SEMINAR  
THREE CREDITS

In-depth examination of selected issues and problems in marketing. Specific topics alternate depending on student and faculty interests in areas such as marketing strategy formulation, marketing research, new product development, international marketing and sports marketing. *Prerequisite: BA 321.*

BA 328. CONSUMER BEHAVIOR  
THREE CREDITS

This course presents a survey and integration of concepts and theories that help explain or predict consumer behavior. Emphasis is on the implications of this information for marketing planning. *Prerequisite: BA 321.*

BA 341. MANAGERIAL FINANCE  
THREE CREDITS

A study of the financial theories and decision-making models relating to: financial analysis and planning; working capital management; cash budgeting; capital asset acquisitions; capital asset financing; cost of capital; capital structuring; acquisitions; divestitures; and reorganizations. *Junior/Senior standing recommended.*

BA 342. PROPERTY AND LIFE INSURANCE  
THREE CREDITS

A study of principles of life, health, property, and liability insurance applied to the needs of individuals and organizations *Prerequisite: BA 341.*

BA 343. INVESTMENTS AND PORTFOLIO MANAGEMENT  
THREE CREDITS

A survey of the features and characteristics of investment instruments; the operation and regulation of security markets; the techniques of security analysis and valuation; financial intermediaries; modern and traditional portfolio theory and management. *Junior/Senior standing recommended.*

BA 345. LONG-RANGE FINANCIAL PLANNING  
THREE CREDITS

A survey of the tools and techniques currently employed by financial decision-makers when evaluating organizational performance and developing future courses of action. Emphasis will be placed upon long-range planning and capital budgeting techniques. *Prerequisites: BA 341 and BA 343.*

BA 351. MANAGEMENT OF ORGANIZATIONS AND PEOPLE  
THREE CREDITS

Introduction to the theory and practice of managing organizations, including planning, organizing, and controlling. Interdisciplinary in nature, social and ethical dimensions of managing are examined. *Junior standing or ACC/BA/ENT 151 recommended.*

BA 352. PRODUCTION AND OPERATIONS MANAGEMENT  
THREE CREDITS

Principles of decision-making, systems design, introduction to quantitative tools of analysis; fundamentals of production, inventory, financial, and distribution management. *Prerequisite: BA 319 and BA 351.*

BA 354. ORGANIZATIONAL BEHAVIOR  
THREE CREDITS

A behavioral science approach to understanding individual, formal, and informal group behavior; macro- and micro-organizational structures, motivation and leadership theories, group influences, conflicts, decision-making, communication, with emphasis on behavioral science applications in developing organizational effectiveness. *Prerequisite: BA 351.*

BA 356. THE SOCIAL RESPONSIBILITY OF BUSINESS  
THREE CREDITS

A course dealing with the problems faced by managers in responding to issues such as: the kinds and extent of social responsibility to be assumed by businesses, employee rights, consumerism, and the balance of public and private interests. *Junior standing recommended.*

## Course Descriptions

### BA 358. INTERNATIONAL BUSINESS

#### THREE CREDITS

An introduction to the field of international business. The empirical dimensions of the world economy; business enterprise in international trade; trade channels; effects of economic, political and social environment on international management problems of international operations; the role of government in fostering international business. A substantial amount of writing is required. *Prerequisite: BA 351 and senior standing.*

### BA 359. BUSINESS LEADERSHIP THEORY AND PRACTICE

#### THREE CREDITS

This course offers the student an introduction to leadership theory and practice. The course addresses the use and usefulness of various leadership styles and models in the decision-making process. Emphasis is placed on the student's personal growth and development. Through a series of self-assessments, students explore their personal leadership style. The class includes presentations and projects focused on increasing leadership skills. *Prerequisite: BA 151, BA 351 or permission of instructor.*

### BA 361. BUSINESS STRATEGY AND DECISION-MAKING

#### THREE CREDITS

The first of a two-semester capstone experience. This course integrates the functional areas of business from the perspective of top management. Emphasis is on the role of management in the formation of strategic and long-range plans. *Prerequisite: BA 321, BA 341, and BA 351.*

### BA 362. PROFESSIONAL BUSINESS EXPERIENCE

#### THREE CREDITS

This course is part of a two-semester professional business experience in which students apply their accumulated knowledge, skills and abilities in a private or public organization related to the students' academic objectives and career goals. The course will include cooperative education (see Cooperative Education section of this Bulletin for placement procedures), independent study, and/or an experiential component. (Credits in excess of 3 may be applied toward the degree's Free Elective requirement.) *Prerequisite: BA 321, BA 341, and BA 351.*

### BA 390. E-BUSINESS I

#### THREE CREDITS

The course is designed to help develop your knowledge and understanding of the fluid field of e-commerce. The internet is a key platform facilitating commerce and communication on a global basis. After the slow introduction phase and the incredibly fast growth stage, e-commerce has matured and is transforming the value chain of virtually every industry in the United States. This course will provide you with the opportunity to learn and experience e-marketing, security and privacy issues associated with the legal/regulatory environment in cyberspace, and ethics and public policy issues. *Prerequisites: BA 321, BA 351.*

### BA 393 E-BUSINESS II

#### THREE CREDITS

The content and process of the capstone course provides a rigorous, integrative experience of all areas of management and transnational management in a variety of environments. Through lectures and discussions of articles, students are exposed to seminal theory on a given topic. In addition, topic-specific, integrative thinking and communication skills are developed throughout the discussions of the articles and cases. The main topics will include competitive strategy and formulation, industry analysis, globalization of management, information systems, e-commerce, manufacturing as a competitive strategy, horizontal and vertical integration, computer integrated manufacturing and capacity expansion. *Prerequisites: BA 390, CS 383.*

### BA 395-396. INDEPENDENT RESEARCH

#### ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

### BA 198/298/398. TOPICS

#### VARIABLE CREDIT

Lectures on subjects of special current interest in business which are not covered in other courses.

## CAREERS COURSES

CAR 101. LIFE/CAREER PLANNING  
ONE CREDIT

A study of the components of career decision-making, including the influence of personal goals, values, interests, and perceived skills. The practical application of theory results in a portfolio of information essential to deliberate and effective decision-making.

## CHEMISTRY COURSES

CHM 95. PREPARATION FOR GENERAL CHEMISTRY  
THREE CREDITS

This course is designed to serve the remedial needs of students who require a "preparatory" course to General Chemistry (CHM 115/116). It provides an introduction to and practice with the principles and concepts essential for understanding chemistry. Key topics covered in this course include reviewing basic mathematical tools and improving problem-solving skills. In addition, a discussion of the fundamental chemical laws, the structure of matter, and the periodic table is presented. Finally, the use of chemical formulas to describe various chemical reactions and their stoichiometry is covered. Please note, however, that this course does not satisfy any chemistry requirements in any major.

CHM 105. CHEMISTRY AND MODERN SOCIETY  
THREE CREDITS

This course will emphasize consumer applications of chemistry with some emphasis on environmental consequences of the use of various forms of energy (nuclear, coal, petroleum, natural gas) and everyday chemicals including food, drugs, agricultural chemicals, and chemicals used in pest control. Details are given separately. Class, two hours a week; laboratory, two hours a week.

CHM 113. ELEMENTS AND COMPOUNDS LAB  
ONE CREDIT

Three hours a week. Fee: \$90. *Corequisite: Chm 115.*

CHM 114. THE CHEMICAL REACTION LAB  
ONE CREDIT

Three hours a week. Fee: \$90. *Corequisite: Chm 116.*

CHM 115. ELEMENTS AND COMPOUNDS  
THREE CREDITS

Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure. Class, three hours a week; problem session, one hour a week. *Corequisite: Chm 113.*

CHM 116. THE CHEMICAL REACTION  
THREE CREDITS

A detailed study of chemical equilibria in aqueous solution. Class, three hours a week; problem session, one hour a week. *Prerequisite: Chm 113, Chm 115; Corequisite: Chm 114.*

CHM 231. ORGANIC CHEMISTRY I  
THREE CREDITS

An introduction to the chemistry of carbon compounds which develops the interconnected relationship between bonding, structure and reactivity in organic compounds. Instrumental methods will be presented as a means to determine the structure of reaction products. Class, three hours a week; pre-lab session, one hour a week. *Prerequisite: Chm 114, 116; Corequisite: Chm 233.*

CHM 232. ORGANIC CHEMISTRY II  
THREE CREDITS

A continuation of Chm 231 with emphasis on organic syntheses. Class, three hours a week; pre-lab session, one hour a week. *Prerequisite: Chm 231; Corequisite: Chm 234.*

CHM 233. ORGANIC CHEMISTRY I LAB  
ONE CREDIT

After an introduction to standard organic reaction, purification, physical characterization, and spectroscopic techniques, students will investigate concepts discussed in CHM 231. Three hours a

## Course Descriptions

week. Fee: \$90. *Corequisite: Chm 231.*

CHM 234. ORGANIC CHEMISTRY II LAB  
ONE CREDIT

Weekly labs that parallel the lecture topics and emphasize organic synthesis and characterization, including multistep synthesis. Three hours a week. Fee: \$90. *Corequisite: Chm 232.*

CHM 246. ANALYTICAL CHEMISTRY LAB  
ONE CREDIT

Laboratory for Chm 248. One three hour laboratory per week. Lab fee \$90. *Co-requisite: Chm 248.*

CHM 248. ANALYTICAL CHEMISTRY  
THREE CREDITS

A course in the application of the principles of chemical equilibria to obtain the qualitative and quantitative information about the composition and structure of matter. An introduction to the importance of sampling is included along with methods for the statistical treatment of data. The course focuses primarily on the analyses of elemental and ionic species using electrochemical, spectroscopic and chromatographic techniques. Three one-hour lecture sessions per week. *Prerequisite: Chm 116 and Chm 114 Co-requisite: Chm 246*

CHM 322. INORGANIC CHEMISTRY  
THREE CREDITS

CHM 322 presents a survey of current topics in Inorganic Chemistry. The first half of the course offers a survey of main group chemistry, including individual group trends. The second half of the course covers Crystal Field Theory, Ligand Field Theory, reaction mechanisms and organometallic compounds. *Prerequisites: Chm 116, Chm 114.*

CHM 341. INSTRUMENTAL METHODS FOR CHEMICAL ANALYSIS  
THREE CREDITS

A course in the fundamental principles that provide the basis for the design and fabrication of chemical instrumentation. The underlying physical basis for each method is introduced through an exploration of the capabilities, limitations, and applications of a wide range of separations, spectroscopic, and electrochemical methods. Two one-hour lecture periods and one hour of on-line instruction. *Co-requisite: CHM 343, CHM 351.*

CHM 343. INSTRUMENTAL METHODS FOR CHEMICAL ANALYSIS LAB  
ONE CREDIT

Laboratory for CHM 341. One three-hour laboratory per week. Lab fee \$90. *Co-requisite: CHM 341.*

CHM 351. PHYSICAL CHEMISTRY I  
THREE CREDITS

This course emphasizes the molecular approach to physical chemistry. It begins discussing the principles of quantum mechanics and their applications in chemistry, leading to atomic and molecular structure, and chemical bonding. These concepts are then used in the development of atomic and molecular spectroscopy. Photochemistry is introduced. Three one-hour lecture sessions per week. *Prerequisites: CHM 116, MTH 212, PHY 202.*

CHM 352. PHYSICAL CHEMISTRY II  
THREE CREDITS

Statistical mechanics is used to formulate Thermodynamics in terms of atomic and molecular properties. A molecular interpretation of the laws of thermodynamics is presented. The thermodynamic concepts of enthalpy, entropy and free energy are applied to the description of macroscopic systems leading to the notion of equilibrium, including phase and chemical equilibria. Chemical kinetics is studied and reaction dynamics is introduced. Three one-hour lecture sessions per week. *Prerequisites: CHM 351*

CHM 353. PHYSICAL CHEMISTRY I LAB  
ONE CREDIT

Laboratory experiments are performed in order to reinforce concepts in CHM351. Bench as well as computational experiments are carried out, including photoelectric effect, resonance states in the particle in a one-dimensional box system, molecular orbital theory applications and molecular spectroscopy. Fee: \$90. *Co-requisite: CHM 351*

CHM 354. PHYSICAL CHEMISTRY II LAB  
ONE CREDIT

Laboratory experiments are performed in order to reinforce concepts in CHM352. Bench as well as computational experiments are carried out, including calorimetry, phase equilibrium, colligative properties, kinetics and applications of the Monte Carlo method to chemical kinetics. Fee: \$90. *Co-requisite: CHM 352*

CHM 361. BIOCHEMISTRY: STRUCTURE AND FUNCTION  
THREE CREDITS

This course is a study of the physical and chemical properties of proteins, nucleic acid, fatty acids, and carbohydrates emphasizing the relationship between the chemical structure and the biological function. The course includes the physical methods of biochemistry, enzyme kinetics, bioenergetics and nucleic acid transcription and translation. *Prerequisite: Chm 232.*

CHM 362. BIOCHEMISTRY: METABOLISM  
THREE CREDITS

This course is a study of the catabolism and anabolism of carbohydrates, fatty acids and amino acids. The course emphasizes the regulation and integration of major metabolic pathways, including glycolysis, the Krebs cycle, electron transport, gluconeogenesis, pentose phosphate pathway, fatty acid metabolism and amino acid metabolism. *Prerequisite: Chm 232.*

CHM 370-372. INTEGRATED LABORATORY I-III  
ONE-TWO CREDITS EACH

Laboratory experiments related to the five major areas of chemistry. Labs will be chosen in order to show proficiency in each of the required areas. Labs will include synthesis, isolation and characterization of chemical compounds, spectroscopy, kinetics, calorimetry, chromatography, electrophoresis, and other chemical and biochemical methods. Laboratory 3 hours a week per credit hour. Fee: \$90. *Pre-requisites: CHM 232, CHM341*

CHM 390. JUNIOR SEMINAR  
ONE CREDIT

CHM 390 is a 1 hour course offered during the spring semester and designed to prepare chemistry/biochemistry students for: their careers after graduation, and for their capstone research projects undertaken in their fourth year. The course will cover topics such as résumé preparation, communication of scientific information, internships, job searches, and preparation for graduate school. Students will prepare a topical literature review on their chosen project in conjunction with their selection of a research advisor. *Pre-requisite: Junior standing and declared Chemistry/Biochemistry major.*

CHM 391. SENIOR RESEARCH I  
TWO CREDITS

The planning and execution of a chemistry research project under the direction of a faculty member. It is expected that this will be a laboratory research project. Students will also learn how to search the chemical literature using modern computer methods. Students are required to attend weekly Department seminars and present at least one seminar. Fee: \$90. *Prerequisite: Senior standing in a Chemistry curriculum.*

CHM 392. SENIOR RESEARCH II  
TWO CREDITS

Students will carry out a chemistry research project under the direction of a faculty member. It is expected the project will be a laboratory research project. The project must culminate in a written report and the results must be presented at a Department seminar. Students are required to attend weekly Department seminars and present at least one seminar. Fee: \$90.

## Course Descriptions

### CHM 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS EACH

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper is required. Fee: \$90.

### CHM 398. TOPICS

ONE TO THREE CREDITS

A study of topics of special interest, such as advanced physical chemistry, advanced analytical chemistry, advanced organic chemistry, surface and colloid chemistry, nuclear chemistry, chemical kinetics, polymer chemistry, or spectroscopy.

### CHM 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson. Students without the indicated prerequisites for 200- and 300-level chemistry courses may enroll after written permission of the instructor has been approved by the department chairperson.*

## COMMUNICATION STUDIES COURSES

### COM 101. FUNDAMENTALS OF PUBLIC SPEAKING

THREE CREDITS

Principles of study, application, and evaluation of public speaking. Emphasis will be upon meeting the needs of students through individualized instruction in oral communication settings. The course is taught each semester.

### COM 102. PRINCIPLES OF COMMUNICATION

THREE CREDITS

A study of the theory and process of communication. Required of all department majors. Taught every spring semester.

### COM 124. MASS MEDIA LITERACY

THREE CREDITS

This is a survey course that takes a literacy approach to the study of mass media and their role in society. Taught every spring semester.

### COM. 144. DEPARTMENT PRACTICUM

ONE TO TWO CREDITS

A – Debate and Forensics, B – P.R. Agency, C – WCLH Radio, D – The Beacon, E – Television, F – Department. The Department Practicum may be taken for one to two credits per semester with the total not to exceed six. Students may earn credit for major roles and positions of major responsibility in the above cocurricular activities. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Credits earned are applicable toward graduation but do not count toward the requirements of any concentration in COM. Written approval of credit must be by advisor and Department Chairperson.

### COM 201. ADVANCED PUBLIC SPEAKING

THREE CREDITS

Inquiry into the practice and principles of speech composition and presentation. Detailed analysis of the areas of invention, arrangement, style, and delivery, and an introduction to speech criticism. *Prerequisite: COM 101 or consent of instructor.*

### COM 202. INTERPERSONAL COMMUNICATION

THREE CREDITS

The course focuses on interpersonal communication theory and its application to improving the student's interpersonal skills in managing conflict, negotiating, interviewing, and in developing

relationships. Taught fall semesters. *Prerequisite: COM 102 or consent of instructor*

COM 203. SMALL GROUP COMMUNICATION  
THREE CREDITS

The course is designed to expand the student's knowledge of the theories and types of small group communication. Emphasis on the task, leadership, and interpersonal skills of participants. *Prerequisite: COM 102.*

COM 204. ARGUMENTATION AND DEBATE  
THREE CREDITS

Training in the fundamentals of argumentation and debate, with practice in gathering and organizing evidence and support materials. Course taught every other fall semester. *Prerequisite: COM 101 or consent of instructor.*

COM 206. BUSINESS AND PROFESSIONAL COMMUNICATION  
THREE CREDITS

Course will concentrate on communication theory as applied to business and professional settings. Students will make several oral presentations and participate in interviewing and conferences. *Course taught fall semester alternate years.*

COM 220. INTRODUCTION TO TELECOMMUNICATIONS  
THREE CREDITS

Study of the radio, television, and cable industries. Emphasis on their development as public and commercial institutions. Consideration of economic and regulatory issues affecting programming.

COM 221. DIGITAL AUDIO PRODUCTION  
THREE CREDITS

A study of the principles and techniques of audio production. A special emphasis is placed on radio-related issues, skills, and projects. Consideration of the sound media as tools of artistic expression. Lecture and laboratory. *Taught every fall semester.*

COM 222. BASIC VIDEO PRODUCTION  
THREE CREDITS

A study of the principles and techniques of TV Studio Production. A special emphasis is placed on the utilization of these techniques in a broadcast setting. Included will be: Camerawork, Switching, Studio Equipment, Set Design, Directing and Producing. Every semester. Fee: \$40.

COM 223. THE ART OF FILM  
THREE CREDITS

An introduction to the esthetics, techniques, and critical analysis of cinematic art through the study of representative films of current and past film directors. Screenings and writing intensified.

COM 252. INTERNSHIP  
THREE TO SIX CREDITS

A supervised program of work and study in any of the concentrations. Written permission of the department is required. *Every semester.*

COM 260. BASIC NEWSWRITING  
THREE CREDITS

Fundamentals of newsgathering, newswriting, and news judgment for all media; study of news sources; fieldwork, research, and interview techniques. Fee: \$40. *Prerequisite: Eng 101.*

COM 262. VISUAL RHETORIC  
THREE CREDITS

This course offers a rhetorical approach to visual design theory and application. Through readings, discussions, and assignments, students will learn the specialized language of visual design strategies and theories; to experiment with specific design software programs (PageMaker, Adobe Photoshop, QuarkXPress); to analyze rhetorical elements of visual and verbal design choices; to apply creative and ethical design strategies; to work with a real client, problem-solve and troubleshoot for design needs; to understand the interdependency between visual and verbal persuasive appeals in all forms of print and web communication. *Prerequisite: COM 260.*

## Course Descriptions

### COM 300. COMMUNICATION CRITICISM

THREE CREDITS

Theories from classical to contemporary will be applied to the analysis of written, visual and electronic messages. Emphasis on speech writing and criticism. *Prerequisite: COM 101.*

### COM 301. PERSUASION

THREE CREDITS

Study and practice of persuasive speaking. General theories of persuasion, the role of persuasion in a democratic society, and an introduction to modern experimental research in the field. *Prerequisite: COM 101.*

### COM 302. FUNDAMENTALS OF PUBLIC RELATIONS

THREE CREDITS

An introduction to the fundamentals of public relations practice, including program planning and evaluation, working with the media, writing for PR, and coordinating special events and functions. Taught fall semesters. *Prerequisite: COM 260.*

### COM 303. ORGANIZATIONAL COMMUNICATION

THREE CREDITS

Course focuses attention on traditional and modern concepts of communication channels in simple and complex organizations. Considerable attention is given to interviewing and conducting communication audits. *Prerequisite: COM 102 or permission of instructor.*

### COM 304. INTERCULTURAL COMMUNICATION

THREE CREDITS

Intercultural Communication is a systematic study of what happens when people from different cultural backgrounds interact face-to-face. The course is a balance between theoretical and practical knowledge, with emphasis on immediately usable knowledge. Guest speakers, in-class simulations, cross-cultural interviews, and research projects ask students to apply communication skills to actual intercultural situations. *Prerequisite: COM 102 or permission of instructor.*

### COM 320. MEDIA MANAGEMENT

THREE CREDITS

This course will provide a framework for understanding the functions and methods of media managers in both print and non-print media. *Prerequisites: COM 220, or permission of instructor.*

### COM 321. BROADCAST JOURNALISM

THREE CREDITS

A study of the principles and methods of broadcast journalism. *Prerequisites: COM 221 and COM 222.*

### COM 322. ADVANCED VIDEO PRODUCTION

THREE CREDITS

A study of the principles and techniques of video production. Scripting, producing, and editing videography are subjects covered extensively by this course. Each student will produce several video productions. Taught every spring semester. *Prerequisite: COM 222.*

### COM 324. COMMUNICATION RESEARCH METHODS

THREE CREDITS

Study of research methods in various areas of communication. Emphasis on ability to research literature and critique a research design. Consideration of content analysis and empirical design. Required of all majors. *Prerequisite: COM 102 and completion of departmental writing requirement. Course taught every fall semester.*

### COM 352. ADVANCED PUBLIC RELATIONS CAMPAIGNS

THREE CREDITS

COM 352 is an advanced course in public relations, taught in seminar format. Emphasis is placed on planning, researching, budgeting, carrying out and evaluating actual public relations campaigns. The course is both writing and speaking intensive. In cooperation with various community-based businesses and non-profit clients, student "teams" conduct actual, semester-long promotional campaigns. Students should be competent in basic newswriting, interviewing and fundamentals of public relations. Course taught alternate spring semesters. *Prerequisite: COM 302.*

COM 360. ADVANCED NEWSWRITING  
THREE CREDITS

A study of specialized reporting and an introduction to news editing. *Prerequisite: COM 260.*

COM 361. FEATURE WRITING  
THREE CREDITS

A study of feature articles for newspapers, syndicates, magazines, and specialized publications. Practice in research, interviewing, and writing. *Prerequisite: COM 260.*

COM 362. MASS COMMUNICATION LAW  
THREE CREDITS

Current legal problems, theory of controls in journalism, television, and radio; libel, copyright, privacy law, and other legal issues affecting the mass media. A case study approach will be used.

COM 370. WRITING FOR MAGAZINES AND E-ZINES  
THREE CREDITS

This course will introduce students to writing and publishing processes, particularly as they pertain to trade, consumer and electronic magazines. The course investigates various publishing avenues including freelance submissions; research, writing and editing roles on established publications; and ghost writing. Students will develop a variety of articles for both traditional print and electronic publications, as well as develop the necessary query letters and electronic inquiry messages. In addition, students will hone existing research, interview and editing skills. Final projects will have students collaborate in writers' workshop settings to develop an original electronic publication as well as write and revise a publishable portfolio to freelance articles for consumer or trade publications. *Prerequisite: COM 260.*

COM 372. MANAGING A PUBLIC RELATIONS AGENCY  
THREE CREDITS

Focus on difference between in-house public relations and agency operators. Students work with several clients. *Prerequisite: COM 302.*

COM 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the speech and communication programs under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. Written permission of department is required.

COM 397. SENIOR SEMINAR/COMMUNICATIONS  
THREE CREDITS

An in-depth investigation of current research and ethical issues in communication. A research paper and senior project required. Required of all majors. *Prerequisite: COM 324 and junior/senior standing. Course taught every spring semester.*

COM 398. TOPICS  
ONE TO THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

COM 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.). *Prerequisites: Sophomore standing, 2.25 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

## COMPUTER SCIENCE COURSES

CS 115. COMPUTERS AND APPLICATIONS  
THREE CREDITS

An introduction to computers and computing, with emphasis on personal computing in both the Windows and OSX operating systems. Extensive hands-on experience will involve the application of current commercial software (including word processing, database, and spreadsheet). *Not open to*

## Course Descriptions

*students who have received credit in any 200-level CS course. Students majoring in either Computer Science or Computer Information Systems will not receive credit for this course.*

### CS 125. COMPUTER SCIENCE I FOUR CREDITS

Introduction to information technology and programming (history of computing, Unix, text editors, word processing, spreadsheets, introduction to programming), basic data types, functions, decision structures, loops, one-dimensional list structures, testing, debugging, and an introduction to computer graphics). 3 hours lecture, 2 hours laboratory each week. *Prerequisite: Secondary mathematics including geometry and algebra II. Offered every fall, spring and summer.*

### CS 126. COMPUTER SCIENCE II FOUR CREDITS

A study of advanced programming concepts, structures, and techniques (professional/ethical issues, testing/debugging, fundamentals of programming, basic data structures: strings, lists, multidimensional arrays, objects, hashes, objects/inheritance/polymorphism, recursion, divide and conquer, machine representation of data, hardware components, machine instructions). 3 hours lecture, 2 hours laboratory each week. *Prerequisite: CS 125 or equivalent programming experience. Offered every fall and spring.*

### CS 224. COBOL AND FILE MANAGEMENT THREE CREDITS

A study of file management techniques using ANS COBOL. Introductory and advanced programming techniques are presented using problems commonly found in a business environment. Topics include control break processing, tables and arrays, file processing, and interactive processing. *Prerequisite: CS 126 or previous programming experience. Offered every other spring.*

### CS 225. COMPUTER SCIENCE III THREE CREDITS

A study of the use of a high-level language to implement basic data structures such as strings, lists, arrays, objects, and hashes and their application to searching, sorting, and hashing. Representation of numbers and strings at the machine level. The course will also include an introduction to the concepts of algorithm design and problem solving with an emphasis on algorithm development, analysis and refinement. *Prerequisite: CS 126. Offered every fall.*

### CS 226. COMPUTER SCIENCE IV THREE CREDITS

A continuation of CS 225. Topics include programming language paradigms, advanced use of word processors and spreadsheets, including macros, linked data structures, and an introduction to discrete mathematics, including counting, probability, and graphs. *Prerequisite: CS 225. Offered every fall.*

### CS 265. MEDICAL INFORMATICS THREE CREDITS

This course will cover basic principles of computer use and information management in health care (including general medicine, dentistry, optometry, pharmacy). Topics will include basic computing concepts, the characteristics of medical data, and the use of computers in the administrative, diagnostic, and research-oriented medical tasks. The course is primarily directed towards students who intend to pursue careers in health-related fields. *Offered every spring.*

### CS 283. WEB DEVELOPMENT I THREE CREDITS

An introduction to the development of interactive web sites, including HTML, Javascript, forms and CGI programs, server side includes, cookies, web server configuration and maintenance, and Java Applets. *Prerequisites: CS 126. Offered every spring when demand warrants.*

### CS 317. SOFTWARE INTEGRATION THREE CREDITS

An introduction to the integration of application programs, including email clients, word processors, spreadsheets, and database systems using Microsoft Office and Visual Basic. *Prerequisite: CS 126. Offered every fall.*

CS 319. PRINCIPLES OF PROGRAMMING LANGUAGES

THREE CREDITS

A study of the principles that govern the design and implementation of programming languages. Topics include language structure, data types, and control structures. Programming projects will familiarize students with features of programming languages through their implementation in interpreters. *Prerequisite: CS 226. Offered in the spring semester of even years when demand warrants.*

CS 321. SIMULATION AND DATA ANALYSIS

THREE CREDITS

Methods of handling large data bases including statistical analysis and computer simulations. The emphasis will be upon discrete simulation models with a discussion of relevant computer languages, ARENA, GPSS, and/or SIMSCRIPT. *Prerequisites: CS 125 and either Mth 105 or Mth 111. Offered in the fall semester of odd years when demand warrants.*

CS 323. THEORY OF COMPUTATION

THREE CREDITS

This course formalizes many topics encountered in previous computing courses. Topics include languages, grammars, finite automata, regular expressions and grammars, context-free languages, push-down automata, Turing machines and computability. *Prerequisites: Mth 231 and CS 126. Offered in the spring semester of odd years when demand warrants.*

CS 324. SYSTEMS ANALYSIS

THREE CREDITS

A study of the design and implementation of large computer projects. Special emphasis is placed on applications to business systems. Students will use a CASE tool for automated systems analysis and design. *Prerequisite: CS 217 or CS 224 or CS 226. Offered every fall.*

CS 325. DATABASE MANAGEMENT

THREE CREDITS

Practical experience in solving a large-scale computer problem including determination of data requirements, appropriate data organization, data manipulation procedures, implementation, testing and documentation. *Prerequisite: CS 126. Offered in the fall semester of odd years when demand warrants.*

CS 326. OPERATING SYSTEM PRINCIPLES

THREE CREDITS

Analysis of the computer operating systems including Batch, Timesharing, and Realtime systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices. *Prerequisite: CS 226. Offered in the fall semester of odd years.*

CS 327. COMPILER DESIGN

THREE CREDITS

A study of compiler design including language definition, syntactic analysis, lexical analysis, storage allocation, error detection and recovery, code generation and optimization problems. *Prerequisite: CS 226. Offered in the spring semester of odd years when demand warrants.*

CS 328. ALGORITHMS

THREE CREDITS

Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication of real numbers, and various combinatorial algorithms. *Prerequisites: CS 226 and Mth 202. Offered in the fall semester of even years.*

CS 330. COMPUTER ARCHITECTURE

THREE CREDITS

A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers". An emphasis will be placed on machine language, instruction formats, addressing modes, and machine representation of numbers. *Prerequisite: CS 226.*

CS 334. SOFTWARE ENGINEERING

THREE CREDITS

A course in "programming in the large." Topics include software design, implementation, validation, maintenance, and documentation. There will be one or more team projects. *Prerequisite:*

## Course Descriptions

CS 226. Offered every spring.

CS 335. ADVANCED DATABASE CONCEPTS  
THREE CREDITS

A continuation of CS 325. Concentration on the design of a large scale database system, current special hardware and software, and the role of a DBMS in an organization. *Prerequisite: CS 325. Offered in the spring semester of even years when demand warrants.*

CS 340. ARTIFICIAL INTELLIGENCE  
THREE CREDITS

This course will provide an overview of artificial intelligence (AI) application areas and hands-on experience with some common AI computational tools. Topics include search, natural language processing, theorem proving, planning, machine learning, robotics, vision, knowledge-based systems (expert systems), and neural networks. *Prerequisite: CS 126. Offered in the fall semester of odd years when demand warrants.*

CS 350. OBJECT-ORIENTED PROGRAMMING  
THREE CREDITS

Object-oriented concepts and their application to human-computer interaction. Concepts to be covered include object, classes, inheritance, polymorphism, design patterns, GUI interface guidelines, and design of interfaces. There will be programming projects in one or more object-oriented languages using one or more GUI interface guidelines. *Prerequisite: CS 226.*

CS 355. COMPUTER NETWORKS  
THREE CREDITS

This course introduces basic concepts, architecture, and widely used protocols of computer networks. Topics include the Open System Interconnection (OSI) model consisting of physical link layer, data layer, network layer, transport layer, session layer, presentation layer, and application layer; medium access sublayer and LAN; various routing protocols; Transmission Control Protocol (TCP) and Internet Protocol (IP) for internetworking. *Prerequisite: Either CS 225, or CS 126 and CS 224. Offered in the spring semester of even years when demand warrants.*

CS 360. LINEAR PROGRAMMING  
THREE CREDITS

Graphical linear programming, simplex algorithm sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with MTH 360). *Prerequisites: CS 125, and either Mth 105 or Mth 111. Offered in the spring semester of even years.*

CS 363. OPERATIONS RESEARCH  
THREE CREDITS

A survey of operations research topics such as decision analysis, inventory models, queueing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with Mth 363). *Prerequisites: CS 125, and either Mth 105 or Mth 111. Offered in the spring semester of odd years.*

CS 364. NUMERICAL ANALYSIS  
THREE CREDITS

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with MTH 364). *Prerequisites: Mth 112 and CS 125 (or equivalent programming experience). Offered when demand warrants.*

CS 366. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION  
THREE CREDITS

This course will explore the foundations of 3 dimensional animation processes as they apply to multiple mediums. Students will build computer-based models and environments, texture, light, animate and render content for Integrative Media projects or as stand-alone pieces. (Cross-listed with IM 350). *Prerequisite: CS 126 or IM 201.*

CS 367. COMPUTER GRAPHICS  
THREE CREDITS

Introduction to equipment and techniques used to generate graphical representations by computer. Discussion of the mathematical techniques necessary to draw objects in two- and three-dimensional space. Emphasis on application programming and the use of a high-resolution color raster display. *Prerequisite: CS 226. Offered in the fall semester of even years when demand warrants.*

CS 368. 3 DIMENSIONAL GAME DEVELOPMENT  
THREE CREDITS

An overview of simulation, engine-based, and real-time game systems with a focus on theory, creation and animation of three-dimensional models used within a game context. (Cross-listed with IM 368) *Prerequisite: CS 366 (IM 350) or CS 367.*

CS 370. SPECIAL PROJECTS  
VARIABLE CREDIT

The definition, formulation, programming, solution, documentation, and testing of a sophisticated problem or project under close faculty supervision. The project will be drawn from industry, business, or governmental agency in the greater Wilkes-Barre area. The student will be expected to present a written report at the conclusion of the project. This course may be taken as part of the Cooperative Education Program. A student may apply at most six credits of CS 370 and a maximum of twelve credits in CS 370 and Cooperative Education 399 toward the graduation requirement in the computer science major. *Prerequisite: Senior standing and approval of department chairperson.*

CS 383. WEB DEVELOPMENT II  
THREE CREDITS

An introduction to the development of dynamic, database-driven sites, including active server pages, PHP, authentication, session tracking and security, and the development of shopping cart and portal systems. *Prerequisite: CS 283, CS 325. Offered every spring.*

CS 391. SENIOR PROJECTS I  
ONE CREDIT

Design and implementation of a software project under the direction of a faculty member. Students will normally work in teams. Detailed requirements and design documents are required, and will be presented at the end of the semester. *Prerequisite: CS 334 or CS 325. Offered every fall.*

CS 392. SENIOR PROJECTS II  
TWO CREDITS

Design and implementation of a software project under the direction of a faculty member. Students will normally work in teams. Production of a finished product, including software and documentation, is required. There will be an open-forum presentation of the project at the end of the semester. *Prerequisite: CS 391. Offered every spring.*

CS 395-396. INDEPENDENT STUDY IN COMPUTER SCIENCE  
VARIABLE CREDIT

Individual study in a chosen area of computer science under the supervision of a faculty member. May be repeated for credit. *Prerequisite: Approval of department chairperson.*

CS 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures. *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

CS 198/298/398. TOPICS IN COMPUTER SCIENCE  
VARIABLE CREDIT

Study of one or more special topics in computer science. May be repeated for credit, if involving different topics. *Prerequisite: Varies with selected topics. Offered when demand warrants.*

## Course Descriptions

### EARTH AND ENVIRONMENTAL SCIENCES COURSES

#### EES 105. PLANET EARTH THREE CREDITS

The nature of our planet and how it works are examined in the context of Earth as a constantly changing dynamic system. An emphasis on global scale processes and the interaction of humans and their physical environment is coupled with in-depth coverage of how science is done and the scientific principles that influence our planet, its rocks, mountains, rivers, atmosphere and oceans. Major subtopical areas in the Planet Earth series may include geology (Forces of Geologic Change), oceanography (The Restless Ocean), astronomy (The Cosmic Perspective), and the relationship between people and their physical surroundings (The Global Environment). Intended for students who are not majoring in science, engineering, prepharmacy, nursing, or B.S. programs in mathematics or computer science. Two hours lecture and two hours laboratory per week. Fee: \$90. *Prerequisite: No previous background in science or college-level mathematics is required.*

#### EES 202. BIOGEOCHEMISTRY THREE CREDITS

Fundamentals of the circulation of materials through the earth's air, soils, waters, and living organisms are examined from the perspective of introductory chemical principles. Global cycles of water, carbon, nitrogen, phosphorus, and sulfur are investigated in detail with emphasis on the roles of microorganisms, chemical equilibrium, and oxidation-reduction processes in biogeochemical cycling. Laboratory focuses on (1) student designed projects to gather data which illustrate key concepts in chemical weathering processes in aqueous solutions, oxidation-reduction reactions, and microbial mediation of elemental cycling and (2) building problem solving skills. Two hours lecture and three hours laboratory per week. Fee: \$90. *Prerequisite: CHM 115.*

#### EES 210. GLOBAL CLIMATIC CHANGE THREE CREDITS

The nature and function of earth's global climate are examined from a unified system perspective. Major questions focus on scientific versus public understanding of trends in global temperature, precipitation, and sea level. The course emphasizes negative and positive feedback processes that force key changes in the earth's climate system: past, present, and future. Topics include fundamentals of global and regional heat and water balance; the role of elemental cycles in controlling climate (e.g. the carbon cycle); descriptive climate classification; long-term, short-term, and catastrophic climatic change (e.g. ice ages and bolide impacts); and human effects on climate (e.g. enhanced greenhouse, rising sea level). This course integrates a scientific understanding of climatic change and explores contemporary social and economic policy responses to change scenarios.

#### EES 211. PHYSICAL GEOLOGY FOUR CREDITS

Description, analysis, and laboratory studies of earth materials, structures, and processes, including earth's surface, interior, age, and origin. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

#### EES 212. HISTORICAL GEOLOGY THREE CREDITS

A study of the geologic record of the earth's formation and evolution, including methods of dating. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisite: EES 211 or consent of instructor.*

#### EES 218. ENVIRONMENTAL ETHICS THREE CREDITS

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism, and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as PHL 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

#### EES 230. OCEAN SCIENCE FOUR CREDITS

An interdisciplinary approach to the study of the fundamentals of oceanography emphasizing

physical, chemical, and biological interrelationships. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

**EES 240. PRINCIPLES OF ENVIRONMENTAL SCIENCE**  
FOUR CREDITS

A study of living systems as they are integrated with their physical environments and impacted by human activity. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

**EES 242. ENVIRONMENTAL HEALTH**  
FOUR CREDITS

To provide students with an understanding of man's impact on the environment and how those impacts can be controlled or mitigated. Students completing this course should be able to recognize environmental problems and understand control and preventative measures. Three hours lecture, three hours laboratory Fee: \$90. *Prerequisites: Introductory physics and chemistry. Students who have taken EES 240 will be admitted only with the consent of the instructor.*

**EES 244. INSTRUMENTAL ANALYSIS**  
FOUR CREDITS

Primarily a laboratory course in the applications of instrumental techniques for obtaining quantitative information about the composition and structure of matter. Lab work includes chromatographic, spectroscopic and electrochemical techniques. Emphasis is placed on the use of computers for data acquisition, management and analysis. The course serves students in biochemistry, chemistry, biology, geology, health-related sciences, engineering and environmental sciences who desire experience with these techniques and how they are applied to problem solving. Two 1-hour lecture and one 3-hour laboratory sessions per week. Fee \$90. (Cross-listed with CHM 246/248). *Prerequisite: CHM 116.*

**EES 251. SYNOPTIC METEOROLOGY**  
FOUR CREDITS

Topics include surface and upper-air weather systems, weather phenomena, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

**EES 261. REGIONAL GEOGRAPHY**  
THREE CREDITS

Topics covered include maps and charts, and basic elements of physical, cultural, historical, and economic geography as applied to specific geographic regions. Three hours lecture.

**EES 271. ENVIRONMENTAL MAPPING I: THE GLOBAL POSITIONING SYSTEM**  
THREE CREDITS

An introduction to the Global Positioning System (GPS) and environmental mapping concepts and applications. Topics include coordinate systems, reference ellipsoids, geodetic datums, and map projections. Practical field use of GPS is emphasized within the context of understanding system components, satellite signal processing, selective availability, base station differential correction, and data export to a geographical information system. Two hours lecture and three hours laboratory. Fee: \$90.

**EES 272. ENVIRONMENTAL MAPPING II: GEOGRAPHIC INFORMATION SYSTEMS**  
THREE CREDITS

An introduction to Geographic Information Systems (GIS). Topics include history of GIS, relational database management, data input/output, quality control, integration with CAD and remote sensing technologies, data analysis, and GIS as a decision support tool. Laboratory component emphasizes practical skills in GIS data management and analysis. Two hours lecture and three hours laboratory. Fee: \$90.

**EES 280. PRINCIPLES OF ASTRONOMY**  
FOUR CREDITS

Topics include orbital mechanics, results of planetary probes, spectra and stellar evolution, and cosmology. Three hours lecture and three hours laboratory. Fee: \$90. (For science majors only)

## Course Descriptions

### EES 302. LITERATURE METHODS

ONE CREDIT

The nature and use of important sources of information in earth and environmental sciences are developed through retrospective searching methods and current awareness techniques. The use of computer data bases, the design of personal computer information files, information search strategies, and manual search procedures are included. Literature preparation for Senior Projects (EES 391-392). *Prerequisite: Junior standing.*

### EES 304. ENVIRONMENTAL DATA ANALYSIS

TWO CREDITS

To acquaint students majoring in earth and environmental sciences with the techniques and methods of data acquisition and analysis, including environmental sampling methodology and data management. Emphasis will be placed on examination of real data sets from various areas of the earth and environmental sciences with particular emphasis placed on using and applying graphical and statistical procedures used in EES 391-392 (Senior Projects). *Prerequisite: MTH 150 and junior standing or consent of instructor.*

### EES 341. FRESHWATER ECOSYSTEMS

THREE CREDITS

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$90 (same as BIO 341) *Prerequisites: EES 211 or 240 or BIO 121-122, or consent of instructor. Offered in alternate years.*

### EES 343. MARINE ECOLOGY

THREE CREDITS

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$90. (Same as BIO 343). *Prerequisites: EES 230 (Ocean Science) and BIO 121-122 or consent of instructor.*

### EES 344. ECOLOGY

FOUR CREDITS

Ecology examines contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$90. (Same as BIO 344). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

### EES 366. FIELD BOTANY

THREE CREDITS

This is a specialized summertime field course which emphasizes a taxonomic, phylogenetic, and ecological survey of higher plants indigenous to Northeastern Pennsylvania. Due to the extensive field work, enrollment is somewhat more restricted than in other courses; therefore, written permission from the instructor is the prime prerequisite of those upperclassmen wishing to register for the course. (Same as BIO 366). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

### EES 370. GEOMORPHOLOGY

THREE CREDITS

Land forms, their evolution, and the human role in changing the surface of the earth, utilization of geologic and hydrologic information, and field investigations. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 211 and ENV 321.*

### EES 381. MINERALOGY

THREE CREDITS

Ionic structure of minerals; physical properties and external form as consequences of structure; determination of minerals by physical tests. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 211 and CHM 115.*

EES 382. PETROLOGY  
THREE CREDITS

A study of the identification, classification, composition, genesis, and alteration of igneous, sedimentary, and metamorphic rocks and their relation to crustal processes and environments. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 381.*

EES 391. SENIOR PROJECTS I  
ONE CREDIT

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in EES.*

EES 392. SENIOR PROJECTS II  
TWO CREDITS

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EES 391 or approval of the instructor.*

EES 394. FIELD STUDY  
ONE TO THREE CREDITS

On-site study of an earth or environmental problem or situation incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour lecture, plus field trip(s). Fee: \$90. *Prerequisites: EES 211 and EES 240.*

EES 395-396. INDEPENDENT RESEARCH I & II  
ONE TO THREE CREDITS EACH

Independent study or research of a specific earth or environmental science topic at an advanced level under the direction of a departmental faculty member. For three credits, a defensible research paper is required. *Prerequisites: Upper-class standing and approval of academic advisor, research advisor, and department chairperson.*

EES 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures). *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EES 198/298/398. TOPICS IN EES  
VARIABLE CREDIT

Departmental courses on topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. May be repeated for credit. *Prerequisite: Varies with topic studied.*

EES 498. ADVANCED TOPICS  
ONE TO THREE CREDITS

Departmental courses on advanced topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. Available for either undergraduate or graduate credit. May be repeated for credit. *Prerequisite: Senior or graduate standing.*

## DANCE COURSES

DAN 100. DANCE APPRECIATION: COMPREHENSIVE DANCE FORMS  
THREE CREDITS

A general introduction to the various types of dance: (classical ballet, modern, jazz, and theatrical). This course is appropriate for the person who has had absolutely no participatory experience in this art form. It is designed to cultivate especially an appreciation of the aesthetic dimensions of dance,

## Course Descriptions

perceived for the first time as an opportunity for personal physical engagement.

### DAN 120. TAP DANCE THREE CREDITS

An introduction to the fundamentals of tap dancing, with special reference to the techniques of great American artists.

### DAN 150. CLASSICAL DANCE FOR THE STAGE TWO CREDITS

An introductory course entailing lecture/demonstration and studio exercises designed to explore the movement dynamics appropriate to dramatic presentation. Special emphasis is given to the development of sound classical ballet technique (per a modified Vaganova methodology) as the foundation for the cultivation of poise, stage presence, kinetic flexibility, and physical stamina — valuable qualities for the acting profession. Particular attention is given to pantomime and non-dance movement such as fencing and hand-to-hand combat in a stage-space setting.

### DAN 153. POINTE I TWO CREDITS

Basic techniques of ballet on pointe; introduction to variations from the classical repertory. This course is designed to help the female dancer make the transition from demi-pointe dancing.

### DAN 157. PAS DE DEUX I TWO CREDITS

The basic techniques required for male and female dancers to perform as a unit. This course is intended to provide a gradual and individually-paced introduction into the techniques as well as the psychology of classical ballet partnering. *Prerequisite: Audition.*

### DAN 210. MODERN DANCE I THREE CREDITS

This course builds on the foundation provided the student in DAN 110, elaborating further on the fundamentals of modern dance according to the Graham method. It is designed to provide an experimenter structured and professionally informed exploration of the art of modern dance. Its objective is the acquisition, at each individual student's pace, of the qualities of grace, physical stamina, muscular and ligament flexibility, and movement musicality.

### DAN 211. MODERN DANCE II THREE CREDITS

This course is the sequel to DAN 210, providing the truly committed student with the opportunity, at an intermediate level, for an even more substantive and diversified participatory engagement in modern dance. It engages the student/dancer in highly individualized movements based on personalized, multi-faceted and changing artistic standards. *Prerequisite: DAN 210 or permission of instructor.*

### DAN 220. ADVANCED TAP THREE CREDITS

The acquisition and development of advanced tap dance technique through drills and exercises and the appreciation of the rich history of tap dance in America through lecture, video/demonstrations, and readings. *Prerequisite: DAN 120 or permission of instructor.*

### DAN 230. JAZZ DANCE I THREE CREDITS

The first course involving an intensive and progressively challenging engagement in jazz technique and performance utilizing a fusion of methodologies all of which are ballet based. This course is designed for the student with limited dance experience, still having a basic understanding of ballet terminology and body placement. Core skills as well as body conditioning are emphasized, investigating different genres within the context of the jazz discipline. Classical Jazz, Musical Theatre Jazz, Musical Video style jazz and lyrical styles of jazz will be introduced.

### DAN 231. JAZZ DANCE II THREE CREDITS

The second in the progressively demanding courses in the four-semester sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills by utilizing a fusion of methodologies, all of which are ballet based. Through the study of jazz dance techniques

as systematized using various methods, students are encouraged to perceive the nature of dance movement and to acquire some proficiency in its application to stage performance and achieve greater awareness of body structure and function. Select choreographers, directors, and teachers will play a significant role in the material chosen for this course. *Prerequisite: DAN 230 or permission of instructor.*

DAN 250. CLASSICAL BALLET I  
THREE CREDITS

The first course in the study of the theory and techniques of Russian classical ballet, as pursued in the curricula of the schools of the Bolshoi and Kirov Ballets and derived from the methodology devised by Agrippina Vaganova and Cecchetti.

DAN 251. CLASSICAL BALLET II  
THREE CREDITS

This course is designed to build on the foundation acquired in DAN 250 for an intensive intellectual, emotional, and physical engagement in the study of the theory and techniques of Russian classical ballet, as pursued in the curricula of the schools of the Bolshoi and Kirov Ballets and derived from the methodology devised by Agrippina Vaganova and Cecchetti. *Prerequisite: DAN 250 or permission of instructor.*

DAN 261. DANCE IMPROVISATION I  
TWO CREDITS

Designed to develop creativity in dance by exercising the student in movement in free forms while training the body as a disciplined instrument. Exploration of the broad range of dance movement in a choreographical context is intended to introduce the student into the elementary aspects of dance perception and design.

DAN 310. MODERN DANCE III  
THREE CREDITS

This is an advanced course in modern dance, affording the student the opportunity to engage, experientially, in some of the more technically and choreographically demanding and innovative aspects of modern dance. In the exploration of these movement elaborations, the aesthetic vision of the choreographers may be perceived, especially in terms of how they adapted much of the disciplined technique of classical ballet in an exciting syncretic fusion. *Prerequisite: DAN 211 or permission of instructor.*

DAN 311. MODERN DANCE IV  
THREE CREDITS

An advanced level course in Modern Dance technique. In addition to continued study of the concepts from DAN 310, specific contemporary styles will be explored.

DAN 320. DANCE COMPOSITION  
THREE CREDITS

An introduction to the craft of making dance works. Class emphasis is on developing movement material, structuring solid dance works and documenting the creative process. A writing component is required. *Prerequisite: DAN 120 or permission of instructor.*

DAN 330. JAZZ DANCE III  
THREE CREDITS

Jazz Dance III is third in the progressively demanding courses in the four-semester elective sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills using various methodologies, all of which are ballet based. Students at this level are expected to have a greater understanding of ballet terminology and body placement. Emphasizing a blending of theory and practice, this course is intended to encourage students to explore another dimension of personal fulfillment while cultivating realistically their potential as physically coordinated, aesthetically sensitive, poised and graceful persons, with a deeper understanding of dance as recreation vs. dance in a professional environment relating to theatre studies. Within this course the student will investigate the intent of the choreographer/director as well as experience the choreographic process itself. Creativity, logic and reasoning skills will be enhanced, with the intention of aiding the student in transferring these aspects to their chosen major. Select choreographers, directors, and teachers will play a significant role in the material presented, with the expectation of the student delving deeper into the creative process of dance.

## Course Descriptions

*Prerequisite: DAN 231 or permission of instructor.*

### DAN 331. JAZZ DANCE IV THREE CREDITS

The fourth level in the progressively demanding courses in the four-semester elective sequence in which students are intensively engaged in learning and executing jazz techniques and performance skills per various methodologies, all of which are ballet based. At this level the student is expected to have an adequate knowledge of ballet terminology, body placement, and body conditioning, with a focus on transferring these skills to choreography, improvisation, class structure and the creative process itself. This course is intended to take the dance student to a higher level of physical and creative awareness. A greater understanding of physics, as it relates to dance, kinesiology, anatomy, and the processing of more intricate exercises and combinations are a major focus. Once again, select choreographers, directors and teachers will play a significant role in the material presented. A deeper understanding of a person's creative potential will be investigated, using life experiences of selected persons. *Prerequisite: DAN 330 or permission of instructor.*

### DAN 350. CLASSICAL BALLET III THREE CREDITS

This course is designed to build on the foundation laid in DAN 250-251. Course presentation will employ lecture/demonstration and studio exercises designed to explore the movement dynamics which are especially appropriate to the classical dance genre. The objective of this course is the continued individually paced development of the qualities of grace, physical stamina, muscular and ligament flexibility, and movement musicality, especially via direct and active engagement in classical dance technique. *Prerequisite: DAN 251 or permission of instructor.*

### DAN 351. CLASSICAL BALLET IV THREE CREDITS

This course is designed to continue to build on the foundation laid in DAN 250-251, 350. Special emphasis will be given in this course to the development of sound classical ballet technique (per a modified Vaganova methodology) as the foundation for the cultivation of poise, stage presence, kinetic flexibility, and physical stamina. *Prerequisite: DAN 350 or permission of instructor.*

### DAN 198/298. TOPICS VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses.

## EARTH AND ENVIRONMENTAL SCIENCES COURSES

### EES 105. PLANET EARTH THREE CREDITS

The nature of our planet and how it works are examined in the context of Earth as a constantly changing dynamic system. An emphasis on global scale processes and the interaction of humans and their physical environment is coupled with in-depth coverage of how science is done and the scientific principles that influence our planet, its rocks, mountains, rivers, atmosphere and oceans. Major subtopical areas in the Planet Earth series may include geology (Forces of Geologic Change), oceanography (The Restless Ocean), astronomy (The Cosmic Perspective), and the relationship between people and their physical surroundings (The Global Environment). Intended for students who are not majoring in science, engineering, prepharmacy, nursing, or B.S. programs in mathematics or computer science. Two hours lecture and two hours laboratory per week. Fee: \$90. *Prerequisite: No previous background in science or college-level mathematics is required.*

### EES 202. BIOGEOCHEMISTRY THREE CREDITS

Fundamentals of the circulation of materials through the earth's air, soils, waters, and living organisms are examined from the perspective of introductory chemical principles. Global cycles of water, carbon, nitrogen, phosphorus, and sulfur are investigated in detail with emphasis on the roles of microorganisms, chemical equilibrium, and oxidation-reduction processes in biogeochemical cycling. Laboratory focuses on (1) student designed projects to gather data which illustrate key concepts in chemical weathering processes in aqueous solutions, oxidation-reduction reactions, and microbial mediation of elemental cycling and (2) building problem solving skills. Two hours lecture and three hours laboratory per week. Fee: \$90. *Prerequisite: CHM 115.*

EES 210. GLOBAL CLIMATIC CHANGE

THREE CREDITS

The nature and function of earth's global climate are examined from a unified system perspective. Major questions focus on scientific versus public understanding of trends in global temperature, precipitation, and sea level. The course emphasizes negative and positive feedback processes that force key changes in the earth's climate system: past, present, and future. Topics include fundamentals of global and regional heat and water balance; the role of elemental cycles in controlling climate (e.g. the carbon cycle); descriptive climate classification; long-term, short-term, and catastrophic climatic change (e.g. ice ages and bolide impacts); and human effects on climate (e.g. enhanced greenhouse, rising sea level). This course integrates a scientific understanding of climatic change and explores contemporary social and economic policy responses to change scenarios.

EES 211. PHYSICAL GEOLOGY

FOUR CREDITS

Description, analysis, and laboratory studies of earth materials, structures, and processes, including earth's surface, interior, age, and origin. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

EES 212. HISTORICAL GEOLOGY

THREE CREDITS

A study of the geologic record of the earth's formation and evolution, including methods of dating. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisite: EES 211 or consent of instructor.*

EES 218. ENVIRONMENTAL ETHICS

THREE CREDITS

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism, and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as PHL 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

EES 230. OCEAN SCIENCE

FOUR CREDITS

An interdisciplinary approach to the study of the fundamentals of oceanography emphasizing physical, chemical, and biological interrelationships. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

EES 240. PRINCIPLES OF ENVIRONMENTAL SCIENCE

FOUR CREDITS

A study of living systems as they are integrated with their physical environments and impacted by human activity. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

EES 242. ENVIRONMENTAL HEALTH

FOUR CREDITS

To provide students with an understanding of man's impact on the environment and how those impacts can be controlled or mitigated. Students completing this course should be able to recognize environmental problems and understand control and preventative measures. Three hours lecture, three hours laboratory Fee: \$90. *Prerequisites: Introductory physics and chemistry. Students who have taken EES 240 will be admitted only with the consent of the instructor.*

EES 244. INSTRUMENTAL ANALYSIS

FOUR CREDITS

Primarily a laboratory course in the applications of instrumental techniques for obtaining quantitative information about the composition and structure of matter. Lab work includes chromatographic, spectroscopic and electrochemical techniques. Emphasis is placed on the use of computers for data acquisition, management and analysis. The course serves students in biochemistry, chemistry, biology, geology, health-related sciences, engineering and environmental sciences who desire experience with these techniques and how they are applied to problem solving.

## Course Descriptions

Two 1-hour lecture and one 3-hour laboratory sessions per week. Fee \$90. (Cross-listed with CHM 246/248). *Prerequisite: CHM 116.*

### EES 251. SYNOPTIC METEOROLOGY FOUR CREDITS

Topics include surface and upper-air weather systems, weather phenomena, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Three hours lecture and three hours laboratory. Fee: \$90. (For CS/Engineering/Math/Science majors only).

### EES 261. REGIONAL GEOGRAPHY THREE CREDITS

Topics covered include maps and charts, and basic elements of physical, cultural, historical, and economic geography as applied to specific geographic regions. Three hours lecture.

### EES 271. ENVIRONMENTAL MAPPING I: THE GLOBAL POSITIONING SYSTEM THREE CREDITS

An introduction to the Global Positioning System (GPS) and environmental mapping concepts and applications. Topics include coordinate systems, reference ellipsoids, geodetic datums, and map projections. Practical field use of GPS is emphasized within the context of understanding system components, satellite signal processing, selective availability, base station differential correction, and data export to a geographical information system. Two hours lecture and three hours laboratory. Fee: \$90.

### EES 272. ENVIRONMENTAL MAPPING II: GEOGRAPHIC INFORMATION SYSTEMS THREE CREDITS

An introduction to Geographic Information Systems (GIS). Topics include history of GIS, relational database management, data input/output, quality control, integration with CAD and remote sensing technologies, data analysis, and GIS as a decision support tool. Laboratory component emphasizes practical skills in GIS data management and analysis. Two hours lecture and three hours laboratory. Fee: \$90.

### EES 280. PRINCIPLES OF ASTRONOMY FOUR CREDITS

Topics include orbital mechanics, results of planetary probes, spectra and stellar evolution, and cosmology. Three hours lecture and three hours laboratory. Fee: \$90. (For science majors only)

### EES 302. LITERATURE METHODS ONE CREDIT

The nature and use of important sources of information in earth and environmental sciences are developed through retrospective searching methods and current awareness techniques. The use of computer data bases, the design of personal computer information files, information search strategies, and manual search procedures are included. Literature preparation for Senior Projects (EES 391-392). *Prerequisite: Junior standing.*

### EES 304. ENVIRONMENTAL DATA ANALYSIS TWO CREDITS

To acquaint students majoring in earth and environmental sciences with the techniques and methods of data acquisition and analysis, including environmental sampling methodology and data management. Emphasis will be placed on examination of real data sets from various areas of the earth and environmental sciences with particular emphasis placed on using and applying graphical and statistical procedures used in EES 391-392 (Senior Projects). *Prerequisite: MTH 150 and junior standing or consent of instructor.*

### EES 341. FRESHWATER ECOSYSTEMS THREE CREDITS

A study of the biological and ecological aspects of streams, lakes, and wetlands from a watershed perspective. An initial introduction to physical, chemical, and geological principles of limnology is followed by a focus on freshwater biology. Laboratories include field-based watershed investigations and lake management assessments using geographic information systems techniques. Two hours lecture and three hours laboratory. Laboratory fee: \$90 (same as BIO 341) *Prerequisites: EES 211 or 240 or BIO 121-122, or consent of instructor. Offered in alternate years.*

EES 343. MARINE ECOLOGY  
THREE CREDITS

An examination of the biology of marine life within the context of modern ecological principles. The structure and physiology of marine organisms will be studied from the perspectives of adaptation to the ocean as habitat, biological productivity, and interspecific relationships. Emphasis will be placed on life in intertidal zones, estuaries, surface waters, and the deep sea. Two hours of lecture and three hours of laboratory per week. Fee: \$90. (Same as BIO 343). *Prerequisites: EES 230 (Ocean Science) and BIO 121-122 or consent of instructor.*

EES 344. ECOLOGY  
FOUR CREDITS

Ecology examines contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$90. (Same as BIO 344). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

EES 366. FIELD BOTANY  
THREE CREDITS

This is a specialized summertime field course which emphasizes a taxonomic, phylogenetic, and ecological survey of higher plants indigenous to Northeastern Pennsylvania. Due to the extensive field work, enrollment is somewhat more restricted than in other courses; therefore, written permission from the instructor is the prime prerequisite of those upperclassmen wishing to register for the course. (Same as BIO 366). *Prerequisites: BIO 121-122, 223-224, or permission of instructor. Offered in alternate years.*

EES 370. GEOMORPHOLOGY  
THREE CREDITS

Land forms, their evolution, and the human role in changing the surface of the earth, utilization of geologic and hydrologic information, and field investigations. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 211 and ENV 321.*

EES 381. MINERALOGY  
THREE CREDITS

Ionic structure of minerals; physical properties and external form as consequences of structure; determination of minerals by physical tests. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 211 and CHM 115.*

EES 382. PETROLOGY  
THREE CREDITS

A study of the identification, classification, composition, genesis, and alteration of igneous, sedimentary, and metamorphic rocks and their relation to crustal processes and environments. Two hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 381.*

EES 391. SENIOR PROJECTS I  
ONE CREDIT

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in EES.*

EES 392. SENIOR PROJECTS II  
TWO CREDITS

Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EES 391 or approval of the instructor.*

EES 394. FIELD STUDY  
ONE TO THREE CREDITS

On-site study of an earth or environmental problem or situation incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results. One hour lecture, plus field trip(s). Fee: \$90. *Prerequisites: EES 211 and EES 240.*

## Course Descriptions

EES 395-396. INDEPENDENT RESEARCH I & II

ONE TO THREE CREDITS EACH

Independent study or research of a specific earth or environmental science topic at an advanced level under the direction of a departmental faculty member. For three credits, a defensible research paper is required. *Prerequisites: Upper-class standing and approval of academic advisor, research advisor, and department chairperson.*

EES 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures). *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EES 198/298/398. TOPICS IN EES

VARIABLE CREDIT

Departmental courses on topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. May be repeated for credit. *Prerequisite: Varies with topic studied.*

EES 498. ADVANCED TOPICS

ONE TO THREE CREDITS

Departmental courses on advanced topics of special interest, not extensively treated in regularly scheduled offerings, will be presented under this course number on an occasional basis. Available for either undergraduate or graduate credit. May be repeated for credit. *Prerequisite: Senior or graduate standing.*

## ECONOMICS COURSES

EC 101. PRINCIPLES OF ECONOMICS

THREE CREDITS

Presents basic economic problems and shows how these problems are solved in a free enterprise economy; the effects of the increasing importance of the economic role of government; the nature of national income and the modern theory of income determination; how money and banking, fiscal policy, and monetary policy fit in with income analysis and keep the aggregate system working. The course deals mainly with macroeconomic problems.

EC 102. PRINCIPLES OF ECONOMICS II

THREE CREDITS

Based upon a broad microeconomic foundation concentrating on such units as the consumer, the firm, and the industry. A general view of the free market system; the economics of the firm and resource allocation under different market structures; production theory; pricing and employment of resources; economic growth and development.

EC 230. MONEY AND BANKING

THREE CREDITS

A study of money, credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent developments in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships. (Cross listed with BA 230.)

EC 320 THE ECONOMICS OF CRIME

THREE CREDITS

A study of the economic approach to crime and crime prevention. The course will apply economic analysis to such areas of interest as deterring crime, the impact of criminal activity, the allocation of crime-fighting resources, crimes against people, property crime, and victimless crimes. Controversial issues such as the desirability of the death penalty and gun control legislation will be featured. *Prerequisite: EC 102*

EC 330. PUBLIC FINANCE  
THREE CREDITS

Fundamental principles of public finance; government expenditures; revenue; financial policies and administration; taxation; principles of shifting and incidence of taxation; public debts and the budget; fiscal problems of federal, state, and local government; the relation of government finance to the economy. *Prerequisites: Ec 101 and 102.*

EC 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a full-time faculty member. A research paper at a level significantly beyond a term paper is required. *Prerequisites: Ec 101 and 102.*

EC 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

EC 198/298/398. TOPICS  
VARIABLE CREDIT

Lectures on current issues and developments in economics.

## EDUCATION COURSES

ED 150. PRACTICUM IN EDUCATION  
ONE CREDIT

This practicum experience provides an opportunity for students to gain experience as teachers' aides under supervision in regional school classrooms and programs.

ED 190. EFFECTIVE TEACHING WITH FIELD EXPERIENCE  
THREE CREDITS

This course emphasizes concepts and skills for effective teaching. These skills include instructional techniques, library research, writing, and field experiences. Students will be involved in their first 30-hour practicum experience.

ED 200. EDUCATIONAL PSYCHOLOGY  
THREE CREDITS

This course is designed to present a study of Educational 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 solution of educational problems. The course focuses on the psychology and development of learners, psychosocial principles of learning and motivation and their applications to teaching, and research-based classroom management techniques. Emphasis is also placed on effective classroom communication and interpersonal relationships. *Prerequisite: Admission to the Teacher Education Program.*

ED 210. TEACHING STUDENTS WITH SPECIAL NEEDS  
THREE CREDITS

This course is designed to enable preservice teachers to develop the knowledge base and instructional skills necessary to meet the educational needs of students with special needs in the classroom. Students will be familiarized with varied exceptionalities, including behavioral disorders, learning disabilities, mental retardation, Attention Deficit Hyperactivity Disorder, and physical and sensory disabilities. This course will incorporate useful pedagogical information which addresses the learning abilities of exceptional students and enhances instruction across all subject areas. *Prerequisite: Admission to the Teacher Education Program.*

## Course Descriptions

### ED 215. INTEGRATING TECHNOLOGY INTO THE CLASSROOM

#### THREE CREDITS

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.

*Prerequisite: CS 115 or comparable skills or permission of the Teacher Education Program.*

### ED 220. MULTICULTURAL EDUCATION

#### THREE CREDITS

This course is designed to address the urgent need for multicultural education by covering topics such as racism, bias, and cultural information in order to help students develop instructional strategies for creating within their classrooms a knowledge of, appreciation of, and respect for diversity. Teaching strategies for English Language Learners (ELLs) and issues relevant to ELLs, particularly immigration and globalization, will be discussed. The course will also help students develop the knowledge base and instructional skills necessary to teach their future students basic world geography in order to understand the cultural/political effects that geography has had on the diverse cultural groups included in the American educational system. *Prerequisite: Admission to the Teacher Education Program.*

### ED 263. CHILD DEVELOPMENT

#### TWO CREDITS

This course is designed to study aspects dealing with development and research issues relating to children and their families. Theories of instruction that support the cognitive, affective, and physical development of infants, toddlers, preschoolers, and primary children are discussed and evaluated. Relationships among cultural, social, academic characteristics, intelligence, and health are analyzed. Professional and ethical issues are discussed as are laws and policies related to child development.

*Prerequisites: Admission to the Teacher Education Program and Psy 221.*

### ED 310. HEALTH, PHYSICAL EDUCATION AND SAFETY IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION

This 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. *Prerequisite: Admission to the Teacher Education Program.*

### ED 321. FOUNDATIONS OF READING WITH FIELD EXPERIENCE

#### THREE CREDITS

This course will present basic concepts of reading instruction: emphasis on the nature of the reading process; the nature of the learner; and reading as an interactive process. This course requires completion of a 30-hour practicum. *Prerequisite: Admission to the Teacher Education Program.*

### ED 322. TEACHING OF READING

#### THREE CREDITS

The course is designed to investigate and analyze major instructional methods for teaching reading. The material is based upon current research theories and findings, and includes topics now recognized by theorists and practitioners as being most critical to developing effective school reading programs. *Prerequisite: Successful completion of Ed 321 and admission to the Teacher Education Program.*

### ED 323. DIAGNOSTIC READING METHODS

#### THREE CREDITS

The purpose of this course is to develop knowledge and skill in classroom-based reading assessment to diagnose students' reading strengths and needs. The analysis of data and the determination of instructional interventions will be emphasized. A range of assessment devices and their use in the diagnosis of reading difficulties will be studied. *Prerequisites: Successful completion of Ed 190 and 321 and admission to the Teacher Education Program.*

### ED 324. CHILDREN AND ADOLESCENT LITERATURE

#### THREE CREDITS

This course will involve students in actively reading a wide range of children 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 readers. *Prerequisites: Successful completion of Ed 190 and 321 and admission to the Teacher Education Program.*

ED 325. APPLIED READING STRATEGIES WITH FIELD EXPERIENCE  
THREE CREDITS

This course is designed to build upon the foundational knowledge of reading instruction with a strong experimental component in the design and delivery of instruction. The field experience involves students in a summer reading camp for children and adolescents or in tutoring children needing reading support during the school year. *Prerequisites: Successful completion of Ed 190 and 321 and admission to the Teacher Education Program. Departmental permission is required. ED 323 Diagnostic Reading Methods is recommended prior to enrollment.*

ED 330. MATHEMATICS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION  
TWO CREDITS

This course is designed to present a study of the research, concepts, and methodologies pertinent to the teaching of mathematics at the early childhood and elementary school levels. Emphasis is placed on 1) the integration of concrete manipulatives to facilitate the learning process, 2) the knowledge necessary to guide children to become mathematically literate, and 3) the implementation of planning and instructional techniques in the teaching of mathematics. *Prerequisite: Admission to the Teacher Education Program.*

ED 338. TEACHING ESL: MATERIALS AND METHODOLOGY  
THREE CREDITS

This three-credit course will address the methodology and materials needed for professional educators who wish to teach English as a Second Language to non-native speakers, grades K–12. Students will explore the mechanics involved in second language acquisition and will apply that knowledge in developing instructional strategies appropriate for the ESL classroom. Students will examine cross-cultural information in order to develop an understanding of the richly diverse members of the ESL classroom, with the goal of creating a supportive and safe classroom environment, free from cultural/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 institutional skills. A fifteen-hour experience in ESL is incorporated into this course. *Prerequisite: ED 190, ED 210, ED 220, ENG 101.*

ED 341. LANGUAGE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION  
THREE CREDITS

The purpose of this course is to inform and actively involve learners in studying a variety of concepts and methodologies for teaching the language arts at the early childhood and elementary school level. The course focuses on the integration of the language arts and endorses a multidisciplinary approach to teaching and learning. The incorporation of children's literature genres as the basis for language arts themes and activities is fundamental to the course (OPO course). *Prerequisite: Admission to the Teacher Education Program.*

ED 345. ASSESSMENT IN EDUCATION  
THREE CREDITS

This course will address a number of different professional areas both of theoretical importance and practical significance. Assessment concepts will provide a framework to critically analyze any assessment, whether commercial or teacher-made. Practical skills will enable the preservice 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). *Prerequisite: Admission to the Teacher Education Program.*

ED 350. THE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION  
THREE CREDITS

This course is designed as an exploration of the importance of the arts in the development of children in the cognitive, affective, and psychomotor domains. Students will discover how the arts are directly related to our natural and manmade environments and learn specific teaching methodologies that foster creativity and the integration of art with other subject areas. *Prerequisite:*

## Course Descriptions

### *Admission to the Teacher Education Program.*

#### ED 360. SOCIAL STUDIES IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION THREE CREDITS

In this course, students will gain an understanding for teaching social studies at the early childhood and elementary school levels. Students will develop their personal philosophy of the purpose of social studies, review national curriculum guidelines and Pennsylvania state standards, and explore a variety of teaching strategies. *Prerequisite: Admission to the Teacher Education Program.*

#### ED 361. EARLY CHILDHOOD EDUCATION THREE CREDITS

Through the study of developmental characteristics, appropriate practices, and theories of learning, early childhood preservice teachers experience theoretical and practical examples for educating young children. A 15-hour practicum highlights quality care programs for infants, toddlers, and preschool children. Students study federal and state regulations necessary for operating a child care program, evaluate effective instruction, and reflect on classroom observations. In addition, students prepare lessons, centers, and activities that reflect developmentally appropriate themes. *Prerequisite: Admission to the Teacher Education Program.*

#### ED 362. INSTRUCTION IN EARLY CHILDHOOD EDUCATION THREE CREDITS

This course is designed as a comprehensive study of the relationship between how children learn during their most formative years and the application of effective instructional techniques to enhance their development. This course offers opportunities to study and evaluate theoretical views of cognitive, affective, and physical development, developmentally appropriate practices for planning instruction, authentic assessment tools, and relevant children's literature for creating integrated thematic plans. A 30-hour practicum offers the preservice teacher practical application of instructional strategies in local day care and school settings. *Prerequisite: Admission to the Teacher Education Program.*

#### ED 370. SCIENCE IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION TWO CREDITS

This course presents a study of the methods and curriculum for teaching science to young children. Emphasis is placed on instruction that is activity oriented and leads to the development of science process skills, problem-solving strategies, and well-developed conceptual frameworks. *Prerequisite: Admission to the Teacher Education Program.*

#### ED 380. CONTENT AREA READING TWO CREDITS

This course is designed to explore the use of various reading strategies in teaching content area subjects through the use of instructional techniques for the adaptation, enrichment, and development of materials to address the diverse reading levels of students in secondary school programs. *Prerequisite: Admission to the Teacher Education Program.*

#### ED 385. CLASSROOM MANAGEMENT THREE CREDITS

This course is designed to highlight fundamental researchers and their models as profiles of effective theories for instruction and conduct in elementary and secondary school settings. Management techniques will be identified, analyzed, evaluated, and demonstrated. The course will contain activities and demonstrations that foster practical application of the principal components of classroom management. *Prerequisite: Admission to the Teacher Education Program.*

#### EDSP 388 INCLUSIONARY PRACTICES THREE CREDITS

This course is designated for student teachers and interns 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. This course is taken during the same semester in which the student teaching / intern experience is completed.

#### ED 390. STUDENT TEACHING WITH SEMINAR TWELVE CREDITS

Students are assigned to work with selected classroom teachers. The students assume classroom

responsibilities and teach under supervision. Observations and conferences are held on a regular basis with the university supervisors and the cooperating teachers. In addition, students attend seminars at the University (OPO course). Fee: \$70. Section A—Secondary (7-12) Section B—Elementary/Early Childhood Section C—K-12 Art. *Prerequisite: Will be completed in conjunction with EDSP 388.*

ED 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson is required.*

ED 198/298/398. TOPICS IN EDUCATION  
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses.

SECONDARY METHODS IN EDUCATION  
FOUR CREDITS

A study of instructional methodology in concentration areas at the secondary level. 30 hours practicum.

Ed 300—Foreign Languages (G 7-12)

Ed 351—Communication (G 7-12)

Ed 371—Sciences (G 7-12)

Ed 381—Social Studies (G 7-12)

Eng 393—English (G 7-12)

Mth 303—Mathematics (G 7-12)

*Prerequisite: Admission to the Teacher Education Program.*

## SPECIAL EDUCATION COURSES

EDSP 225. SPECIAL EDUCATION METHODOLOGY I WITH FIELD EXPERIENCE  
THREE CREDITS

This course addresses 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 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 (15 hours) facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content (OPO course). *Prerequisites: ED 190, ED 200, ED 210, ED 220.*

EDSP 226. SPECIAL EDUCATION METHODOLOGY II WITH FIELD EXPERIENCE  
THREE CREDITS

This course addresses 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 higher incident populations (multiple disabilities, hearing/vision impairments, orthopedic and health conditions) within included settings, resource room, learning support, and segregated environments. A field experience component (15 hours) facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content.

EDSP 227. BEHAVIORAL MANAGEMENT WITH FIELD EXPERIENCE  
THREE CREDITS

This course will assist preservice teachers in developing a working framework of social, behavioral, environmental, individualized, and collective management techniques. Techniques practiced in the course will focus on approaches for classroom organization, constructive discipline, and proactive responses to intervention, including applied behavior analysis and functional behavioral assessments.

## Course Descriptions

A field experience component (15 hours) facilitates direct interaction with special needs learners, supplemented by cooperative discussions of experiential applications to course content.

### EDSP 300. ASSESSMENT IN SPECIAL EDUCATION THREE CREDITS

This 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 vocation/transition-related evaluations. Cooperative discussions will focus on instructional decision-making based upon student learning profiles.

### EDSP 389. ISSUES AND TOPICS IN SPECIAL EDUCATION THREE CREDITS

This course will offer a colloquium for constructive exploration of specialized topics in the field of special education. Preservice teachers will be given the opportunity to pursue independent issues relative to their endeavor as special educators, as well as finalizing their position statements about Pennsylvania Department of Education professional competencies. Competencies will be integrated with specific skills and performances which will serve as the summative experience of all education coursework prior to the student teaching experience. A special education teacher handbook will be implemented as the primary vehicle for reviewing and reinforcing skills in the critical areas of assessment, inclusion, IEP development, discipline, management, transition, organization, planning, collaboration, and professional/personal development. (This is final EDSP course.)

## ELECTRICAL ENGINEERING COURSES

### EE 211. ELECTRICAL CIRCUITS AND DEVICES THREE CREDITS

Various techniques for circuit analysis of resistive networks. Inductance and capacitance. Sinusoidal steady-state analysis and power calculations. Introductory principles of three-phase circuits, electronic circuits, operational amplifiers, filters, digital logic circuits, transient circuits, and energy conversion schemes. *Prerequisite: Mth 112.*

### EE 241. DIGITAL DESIGN THREE CREDITS

The electronics of digital devices, including Bipolar TTL and CMOS; digital logic functions, such as AND, OR, INVERT; Boolean algebra; combinational logic; minimization techniques; digital storage devices; synchronous sequential design; state machines; programmable logic. Three one-hour lectures and one two-hour lab per week. Fee: \$75.

### EE 251. ELECTRONICS I THREE CREDITS

Circuit concepts involving nonideal dependent and constant voltage and current sources. Operational amplifiers. Development of physics, operating principles, and terminal characteristics of diodes, bipolar and field-effect transistors. Development of typical design applications and other considerations like conception, analysis, simulation, interference, small and large signal modeling, power, temperature, and frequency effects. Three hours lecture per week. *Prerequisite: EE 211.*

### EE 252. ELECTRONICS II FOUR CREDITS

Multi-transistor amplifiers. Building blocks of an operational amplifier. Frequency response and bandwidth of BJT, FET, and operational amplifiers. Filters. Power amplifiers. Feedback circuits. Three one-hour lectures and one three-hour lab per week. Fee:\$75. *Prerequisite: EE 251.*

### EE 271. SEMICONDUCTOR DEVICES THREE CREDITS

Basic properties of semiconductors and their conduction processes, with special emphasis on silicon and gallium arsenide. Physics and characterizations of p-n junctions. Homojunction and heterojunction bipolar transistors. Unipolar devices including MOS capacitor and MOSFET. Microwave and photonic devices. *Prerequisites: Physics 202, Chm 115.*

EE 283. ELECTRICAL MEASUREMENTS LAB  
ONE CREDIT

A laboratory for the development of measurement techniques and use of electrical instruments for the measurement of various electrical quantities. One two-hour laboratory per week. Fee: \$75. *Corequisite: EE 211.*

EE 298. TOPICS IN ELECTRICAL ENGINEERING  
ONE TO THREE CREDITS

Selected topics in the field of electrical engineering. *Prerequisite: Sophomore standing and permission of instructor.*

EE 314. CONTROL SYSTEMS  
THREE CREDITS

Laplace transforms and matrices. Mathematical modeling of physical systems. Block diagram and signal flow graph representation. Time-domain performance specifications. Stability analysis; Routh-Hurwitz criterion. Steady state error analysis. Root-locus and frequency response techniques. Design and compensation of feedback systems. Introductory state space analysis. Two hours lecture and one two-hour laboratory per week. *Prerequisite: EE 211 and EGR 214.*

EE 318. MACHINE VISION AND NAVIGATION  
THREE CREDITS

Navigation coordinate systems including charts, piloting, principles of bearings, fixes, and dead reckoning; global navigation principles; vehicle relative coordinates; course and navigation technique planning. Coverage of image processing, including filtering, edge detection, correlation and feature recognition, with an emphasis on the use of such information in the context of autonomous vehicle navigation. *Prerequisite: Programming knowledge.*

EE 325. ENERGY CONVERSION DEVICES  
THREE CREDITS

Magnetic circuit calculations. Principle of operation and applications of transformers, DC machines, synchronous machines, and induction motors. Applications of power electronics. Direct energy conversion schemes. *Prerequisites: EE 211, EE 252*

EE 337. ENGINEERING ELECTROMAGNETICS I  
FOUR CREDITS

Waves and phasors; concepts of flux and fields; transmission line, Smith chart, and impedance matching; vector calculus; Maxwell's equations for electrostatic and magnetostatic fields. Three hours of lecture and one two-hour laboratory per week. Fee: \$75. *Prerequisites: EGR 214, PHY 202.*

EE 339. ENGINEERING ELECTROMAGNETICS II  
FOUR CREDITS

Maxwell's equations for time-varying fields; boundary conditions and boundary value problems; plane wave propagation; reflection, refraction and wave guides; stripline; s-parameters and microwave devices; directional coupler, attenuator; radiation and antennas; satellite communication systems and radar sensors. Three hours of lecture and one three-hour laboratory per week. Fee:\$75. *Prerequisite: EE337*

EE 342. MICROCOMPUTER OPERATION AND DESIGN  
THREE CREDITS

Microprocessor architecture, microcomputer design, and peripheral interfacing. Microprogramming, software systems, and representative applications. Associated laboratory experiments consider topics such as bus structure, programming, data conversion, interfacing, data acquisition, and computer control. Two hour lecture and one two-hour laboratory a week. Fee: \$75. *Prerequisite: EE 241.*

EE 345. COMPUTER ORGANIZATION  
THREE CREDITS

Number representation, digital storage devices and computational units, bus structures; execution sequences and assembly language concepts; control units with horizontal and vertical microcoding; addressing principles and sequencing; microprocessors; basic input and output devices; interrupts; survey of RISC principles including pipelined execution. *Prerequisite: EE 241.*

## Course Descriptions

### EE 346. COMPUTER ARCHITECTURE THREE CREDITS

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest "supercomputers." (Same as CS 330) *Prerequisite: CS 230 or EE 342.*

### EE 373. CAD FOR MICROFABRICATION ONE CREDIT

Simulation tools in transistor process design and extraction of device parameters. Examples covered include the following technologies Bipolar, NMOS, CMOS, and BICMOS. Process design project for a bipolar junction transistor. One two-hour lecture laboratory a week. *Prerequisite: Junior engineering standing. Corequisite: EE 381.*

### EE 381. MICROFABRICATION LAB THREE CREDITS

The theoretical and practical aspects of techniques utilized in the fabrication of bipolar junction transistors (BJT's). Includes crystal characteristics, wafer cleaning, oxidation, lithography, etching, deposition, diffusion, metallization, process metrics, and device characterization. One-and-a-half hour lecture and one, four-hour lab a week. Fee: \$75. *Prerequisite: Junior engineering standing.*

### EE 382. MODERN COMMUNICATION SYSTEMS FOUR CREDITS

Introduction to probability and statistics and their use in communication systems. Fundamental properties of signals, principles of signal processing, multiplexing, modulator/demodulator design, noise and its effects. Sampling theorem and Nyquist's criteria for pulse shaping; signal distortion over a channel; line coding, signal to noise ratios, and performance comparison of various communication systems. Three hours lecture and one three-hour laboratory a week. Fee: \$75. *Prerequisite: EE 252, EE 337, EGR 214*

### EE 391. SENIOR PROJECTS I ONE CREDIT

Design and development of selected projects in the field of electrical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in engineering.*

### EE 392. SENIOR PROJECTS II TWO CREDITS

Design and development of selected projects in the field of electrical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of the EE 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EE 391.*

### EE 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS EACH

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson is required.*

### EE 398. TOPICS IN ELECTRICAL ENGINEERING THREE CREDITS

Selected topics in the field of electrical engineering. These may include one or more of the following: control systems; information theory; signals and noise measurements; communication systems; network design and synthesis; magnetic and non-linear circuits; digital and analog systems; computer systems; medical engineering; power systems and generation. May be repeated for credit. *Prerequisite: Junior engineering standing.*

## ENGINEERING COURSES

### EGR 140. COMPUTER UTILIZATION IN ENGINEERING THREE CREDITS

An introduction to computer techniques for engineering design and analysis of components, mechanisms, systems, and processes. Utilization of computer software packages in problem solving,

performance evaluations, demonstration, trouble shooting, and determination of the interrelationships among system components as well as processes. Two hours lecture and one two-hour laboratory per week. Fee: \$75.

EGR 200. INTRODUCTION TO MATERIALS SCIENCE AND ENGINEERING  
THREE CREDITS

Application of materials properties to engineering design. Introduction to atomic arrangements, crystal structures, imperfection, phase diagrams, and structure-property relations. Fundamentals of iron, steel, and non-ferrous materials. The behavior of materials in environmental conditions.

EGR 201. PROFESSIONALISM AND ETHICS  
ONE CREDIT

Responsibility of an engineer as a professional; ethics in science and engineering; role of professional societies; recent trends in technological innovations; career planning. Review of professional exam. *Prerequisite: Junior engineering standing.*

EGR 214. LINEAR SYSTEMS  
THREE CREDITS

Modeling of physical systems. Engineering applications of Laplace transforms, Fourier series, matrices, statistics and probability, and related topics to solve problems in electromagnetics, heat and mass transfer, control systems, fluid mechanics, robotics, engineering management, and communication systems. Emphasis on the use of simulation packages. Two hours lecture and one two-hour laboratory per week. *Prerequisite: EE 211.*

EGR 222. MECHATRONICS  
THREE CREDITS

Introduction to mechatronics system design with emphasis on using sensors to convert engineering system information into an electrical domain, signal conditioning and hardware integration, programming, and using actuators to effect system changes. Two one-hour lectures and one three-hour laboratory per week. Fee: \$75. *Prerequisites: EE 211, EE 283.*

EGR 327. THIN FILM PROCESSING  
THREE CREDITS

Nucleation and growth theory; crystalline, amorphous, epitaxial growth morphology. Deposition techniques like DC, RF, magnetron sputtering, ion beam sputtering, evaporation, chemical vapor deposition, physical vapor deposition. Structure, properties and applications for specific thin film processing techniques. Two hours lecture and two hours laboratory a week. Fee: \$75. *Prerequisite: EGR 200, Phy 203.*

EGR 391. SENIOR PROJECTS I  
ONE CREDIT

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in engineering.*

EGR 392. SENIOR PROJECTS II  
TWO CREDITS

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of the EGR 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EGR 391.*

EGR 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

## Course Descriptions

### ENGINEERING MANAGEMENT COURSES

#### EGM 320. ENGINEERING PROJECT ANALYSIS THREE CREDITS

Economic analysis of evaluating cash flows over time. Depreciations: techniques and strategies. Replacement analysis, break even analysis, benefit/cost ratio evaluation. Evaluating a single project: deterministic criteria and techniques. Multiple projects and constraints. Risk analysis and uncertainty. Models of project selection. Project selection using capital asset pricing theory. *Prerequisite: Junior engineering standing.*

#### EGM 321. QUANTITATIVE ANALYSIS AND PROGRAMMING METHODS THREE CREDITS

Discussion of various quantitative analysis and optimization methodologies. Analytical/numerical approaches are used in solving linear and nonlinear optimization problems. Emphasizes the development of ability in analyzing problems, solving problems by using software, and post solution analysis. *Prerequisite: Junior standing or consent of instructor.*

#### EGM 336. ENGINEERING AND MANAGEMENT MODELS THREE CREDITS

Discussion of the techniques in and the art of modeling practical problems encountered by engineers and managers. *Prerequisite: Junior standing or consent of instructor.*

#### EGM 391. SENIOR PROJECTS I ONE CREDIT

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required.

#### EGM 392. SENIOR PROJECTS II TWO CREDITS

Design and development of selected projects in the field of engineering management under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: EE/EGM/ME 391.*

### ENGLISH COURSES

#### ENG 101. COMPOSITION FOUR CREDITS

Practice in writing for specific purposes and audiences to develop a coherent voice for engaging in academic and professional discourse; practice in writing with the support of computer technology; study of primary texts, models, and principles of expository and argumentative writing to develop critical reading, writing, and thinking skills; introductory bibliographic instruction and practice in writing that incorporates library research.

#### ENG 120. INTRODUCTION TO LITERATURE AND CULTURE THREE CREDITS

An introduction to literature through critical reading, writing, and discussion of the major forms of literary and cultural expression. Students will explore works in Western and Non-Western literary traditions. Major subtopic areas for the course will include: Reading Classical Traditions; Reading Great Works; Reading Cultural Crossroads; and Reading American Experience:

##### *Reading Classical Traditions*

Study of major works from the ancient world to the Renaissance, emphasizing the impact these texts have had on our literary tradition and our culture.

##### *Reading Great Works*

Study of major works since the Renaissance, emphasizing the principal modes of literary expression (poetry, drama, fiction and film).

##### *Reading Cultural Crossroads*

Study of works emphasizing a variety of cultural values, intercultural relationships, global perspectives, and aesthetic experiences.

##### *Reading American Experience*

Study of works from American literature, emphasizing the multicultural heritage and nature of American writers and American culture.

*Prerequisite: Eng 101*

ENG 190. PROJECTS IN WRITING AND EDITING  
ONE TO THREE CREDITS

Independent projects in writing, editing, and/or peer consulting connected to the English program newsletter, student literary magazine, and university Writing Center.

ENG 201. WRITING ABOUT LITERATURE AND CULTURE  
FOUR CREDITS

Introduction to conventions, theoretical approaches, research methods, and practice of literary and cultural studies. Application of contemporary critical perspectives and research methodology in reading and writing about literary and cultural texts. *Prerequisite: Eng 101.*

ENG 202. TECHNICAL AND PROFESSIONAL WRITING  
THREE CREDITS

Practice in "real world writing." Students write on subjects associated with their major or intended careers. Students learn to perform as self-aware writers who have something to say to someone, to adapt their roles and voices to various audiences, and to marshal and present persuasively data that is relevant to a particular purpose and context. *Prerequisite: Eng 101.*

ENG 203. INTRODUCTION TO CREATIVE WRITING  
THREE CREDITS

Analysis and practice of various forms of creative writing. Study of the writer's tools and choices in creating poetry, short fiction, and dramatic scenes. *Prerequisite: Eng 101.*

ENG 218. WRITING PRACTICUM AND COMPOSITION  
THREE CREDITS

An integration of writing and composition theory and practice for particular audiences. *Prerequisite: Eng 101.*

ENG 225. COMPARATIVE GRAMMAR  
THREE CREDITS

A comparative and critical study of traditional, structural, and transformational-generative grammar. *Prerequisite: Eng 101.*

ENG 228. PROFESSIONAL AND WORKPLACE WRITING  
THREE CREDITS

Study and practice of effective writing techniques related to writing at work for the professional world that focuses on producing polished documents, enhancing research techniques, and fine-tuning oral communication skills. *Prerequisite: Eng 101.*

ENG 233. SURVEY OF ENGLISH LITERATURE I  
THREE CREDITS

A study of the major works and movements in English literature from the Anglo-Saxon period through the eighteenth century. *Prerequisite: Eng 101.*

ENG 234. SURVEY OF ENGLISH LITERATURE II  
THREE CREDITS

A study of the major works and movements in English literature from the Romantic movement to the present. *Prerequisite: Eng 101.*

ENG 281. SURVEY OF AMERICAN LITERATURE I  
THREE CREDITS

Overview of writers, works, and movements represented in indigenous and European colonial writers in North and Central America from the 1490s to the Civil War. *Prerequisite: Eng 101.*

ENG 282. SURVEY OF AMERICAN LITERATURE II  
THREE CREDITS

Study of the major writers, works, and movements from the Civil War to the present. *Prerequisite: Eng 101.*

## Course Descriptions

ENG 303. ADVANCED WORKSHOP IN CREATIVE WRITING  
THREE CREDITS

Seminar experience where students write and critique poetry, fiction, nonfiction, or scripts. Specific genre designated in each course. *Prerequisite: Eng 203 or permission of instructor.*

ENG 308. RHETORICAL ANALYSIS AND NONFICTIONAL PROSE WRITING  
THREE CREDITS

The study and practice of strategies for producing responsibly written public information, including persuasive and argumentative propositions for particular audiences. *Prerequisite: Eng 101.*

ENG 324. HISTORY OF THE ENGLISH LANGUAGE  
THREE CREDITS

A chronological study of the origins of the English language and the systematic changes that have made it the language we speak and write today. *Prerequisite: Eng 101.*

ENG 331. STUDIES IN MEDIEVAL ENGLISH LITERATURE  
THREE CREDITS

A study of English literature to 1500, exclusive of Chaucer. *Prerequisite: Eng 101.*

ENG 332. STUDIES IN SIXTEENTH-CENTURY LITERATURE  
THREE CREDITS

The study of texts produced by the English Renaissance, focused on the evolution of literary, dramatic, and cultural works from about 1485 to 1603. *Prerequisite: Eng 101.*

ENG 333. STUDIES IN SEVENTEENTH-CENTURY LITERATURE  
THREE CREDITS

The study of seventeenth-century texts, focused on literary, dramatic, and cultural works from about 1603 to 1660. *Prerequisite: Eng 101.*

ENG 334. STUDIES IN EIGHTEENTH-CENTURY LITERATURE  
THREE CREDITS

Study of eighteenth-century authors and culture. *Prerequisite: Eng 101.*

ENG 335. STUDIES IN ROMANTIC LITERATURE  
THREE CREDITS

Study of chief poets and prose writers of the Romantic Period. *Prerequisite: Eng 101.*

ENG 336. STUDIES IN VICTORIAN LITERATURE  
THREE CREDITS

Study of major writers, works, and topics of the Victorian Age. *Prerequisite: Eng 101.*

ENG 340. STUDIES IN CHAUCER  
THREE CREDITS

A study of selected major and minor works by Chaucer. *Prerequisite: Eng 101.*

ENG 342. STUDIES IN SHAKESPEARE  
THREE CREDITS

A study of selected plays by Shakespeare. *Prerequisite: Eng 101.*

ENG 344. STUDIES IN MILTON  
THREE CREDITS

A study of Milton's selected poetry and prose. *Prerequisite: Eng 101.*

ENG 350. STUDIES IN THE ENGLISH NOVEL  
THREE CREDITS

Study of the novel in English, excluding American writers. *Prerequisite: Eng 101.*

ENG 351. STUDIES IN POSTMODERNISM  
THREE CREDITS

A study of the major postmodern writers from the 1960s to the present. *Prerequisite: Eng 101.*

ENG 352. STUDIES IN THE AMERICAN NOVEL  
THREE CREDITS

Study of the American novel from its eighteenth-century beginnings to the present. *Prerequisite: Eng 101.*

ENG 353. STUDIES IN POSTCOLONIAL LITERATURE  
THREE CREDITS

Study of colonial and postcolonial literature that examines the effects of British imperial pursuits and provides an overview of major issues within postcolonial studies. *Prerequisite: Eng 101.*

ENG 355. STUDIES IN THE MODERN NOVEL  
THREE CREDITS

Study of twentieth-century texts focused on a particular theme or movement, as determined by instructor. *Prerequisite: Eng 101.*

ENG 358. STUDIES IN CONTEMPORARY FICTION  
THREE CREDITS

A study of fiction, including the novel, short story, and novella, written since World War II. Works from English, American, and world literature may be included to reflect the diversity of contemporary literature and the emergence of post-modernist themes and forms. *Prerequisite: Eng 101.*

ENG 361. STUDIES IN EARLY ENGLISH DRAMA  
THREE CREDITS

Study of the drama from the tenth century to 1642; reading of plays by medieval and early modern dramatists exclusive of Shakespeare. *Prerequisite: Eng 101.*

ENG 365. STUDIES IN MODERN DRAMA  
THREE CREDITS

Studies in major theatrical genres, themes, and playwrights of modern world drama through the mid-twentieth-century. *Prerequisite: Eng 101.*

ENG 366. STUDIES IN AMERICAN OR BRITISH DRAMA  
THREE CREDITS

A study of major American and/or British playwrights and movements, focus to be determined by instructor. *Prerequisite: Eng 101.*

ENG 368. STUDIES IN CONTEMPORARY DRAMA  
THREE CREDITS

A study of major playwrights and theatrical movements in contemporary world drama from the mid-twentieth-century to today. *Prerequisite: Eng 101.*

ENG 370. STUDIES IN MODERN BRITISH POETRY  
THREE CREDITS

Study of major British poetry of the twentieth century. *Prerequisite: Eng 101.*

ENG 376. STUDIES IN MODERN AMERICAN POETRY  
THREE CREDITS

Study of major movements and representative figures in modern American poetry. *Prerequisite: Eng 101.*

ENG 390. PROJECTS IN WRITING  
ONE TO THREE CREDITS

Independent projects in writing for advanced students. *Prerequisite: Six credits in advanced writing courses and permission of department chair.*

ENG 391-392. SENIOR PROJECTS  
ONE CREDIT EACH

An independent project in the area of the student's concentration culminating in a formal written and oral presentation. The project serves as a capstone experience demonstrating the student's learning in the major. *Prerequisite: Open only to senior English majors.*

ENG 393. THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS  
FOUR CREDITS

The course deals with the theory and practice of teaching composition, literature, and English language studies on the secondary school level (grades 7 through 12). Topics include planning, methodology, presentation, and assessment of lessons. The course includes 30 hours of field experience. *Prerequisites: Junior standing in English and admission to the Teacher Education Program.*

## Course Descriptions

ENG 394. LITERARY CRITICISM  
THREE CREDITS

A study of literary theory and the techniques of analysis. *Prerequisite: Eng 101.*

ENG 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chair is required.*

ENG 397. SEMINAR  
THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chair is required.*

ENG 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENG 198/298/398. TOPICS  
VARIABLE CREDIT

The study of a special topic in language, literature, or criticism. *Prerequisite: Eng 101.*

## ENTREPRENEURSHIP COURSES

ENT 151. INTEGRATED MANAGEMENT EXPERIENCE I  
THREE CREDITS

Same as ACC 151 and BA 151. See BA 151 for course description.

ENT 152. INTEGRATED MANAGEMENT EXPERIENCE II  
THREE CREDITS

Same as ACC 152 and BA 152. See BA 152 for course description. *Prerequisite: ACC 151 or BA 151 or ENT 151.*

ENT 201. NATURE AND ESSENCE OF ENTREPRENEURSHIP  
THREE CREDITS

An introduction to entrepreneurs and self-career creation in small and large entrepreneurial organizations. The importance of entrepreneurs in the local, national and world economies and personal characteristics of successful entrepreneurs will be studied. Guest speakers and a case study are included.

ENT 203. OPPORTUNITY IDENTIFICATION: INNOVATION AND CREATIVITY  
THREE CREDITS

An introduction to the creative and innovative processes. Emphasis on forms of creativity and how they are interrelated, psychology and behavioral aspects of creativity, recognizing creativity, and the practice of managing innovation and creativity in different environments. Direct experience with two or more forms of creativity.

ENT 252. THE ENTREPRENEURIAL LEADER  
THREE CREDITS

Examines leadership characteristics and behaviors of entrepreneurs. Emphasis on authentic and integrity-based leadership, role of emotional intelligence, and effective leadership strategies in entrepreneurial environments.

ENT 321. ANALYZING MARKETS AND COMPETITION  
THREE CREDITS

In-depth study of identification and assessment of markets and competition. Sources of information, key analytical techniques, and evaluation strategies are examined. *Prerequisite: BA 321.*

ENT 342. ENTREPRENEURIAL FINANCE

THREE CREDITS

The study of the financial dimensions of launching and growing ventures. Topics include financial characteristics and requirements of growth, venture capital, angel capital and private investment, equity markets and public offerings, and specialized funding programs. *Prerequisite: BA 341.*

ENT 361. PRACTICING ENTREPRENEURSHIP

THREE CREDITS

Advanced essentials and elements of becoming an entrepreneur, or intrapreneur, will be examined through current classic "real life" entrepreneurial case readings and entrepreneur and guest faculty lectures. Students will create their own entrepreneurial enterprise as a team project. *Prerequisites: Senior standing, ENT 201, or permission of instructor.*

ENT 362. ENTREPRENEURIAL INTERNSHIP

THREE CREDITS

The course content provides on-the-job multi-discipline experience assisting a working local entrepreneur in the development and operation of a business enterprise.

ENT 384. SMALL BUSINESS CONSULTANCY

THREE CREDITS

Teams of students diagnose, analyze, and recommend solutions for problems defined by small business clients. Course requires students to apply a range of classroom skills in a real situation and present oral and written reports to the client firm. *Prerequisites: Senior standing and instructor permission.*

ENT 385. OPPORTUNITY ASSESSMENT: TECHNICAL, ECONOMIC AND MARKET FEASIBILITY

THREE CREDITS

Theory and practice of assessing market, economic, and technical feasibility. Use of project management techniques to develop an in-depth feasibility analysis plan for expected outcomes.

ENT 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

ENT 399. COOPERATIVE EDUCATION

ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENT 198/298/398. TOPICS

VARIABLE CREDIT

Special offerings designed to introduce students to subjects of current interest in entrepreneurship.

## ENVIRONMENTAL ENGINEERING COURSES

ENV 305. SOLID WASTE MANAGEMENT

THREE CREDITS

Assessment of the scope of the solid waste problem and engineering and management strategies. Lecture topics include: solid waste sources, characterization and generation rates; collection and transportation technologies and management options; sanitary landfill design and operation and recycling strategies and technologies. Three hours lecture. *Prerequisites: EES 240, CHM 116 or EES 202.*

ENV 315. SOILS

THREE CREDITS

Study of the structure, properties, and classification of soils. Fundamental concepts of soils science are applied to the environmental management of terrestrial ecosystems. Topics include soil genesis, classification and physical properties of soils; soil chemistry; and soil moisture relationships. Two

## Course Descriptions

hours lecture and three hours laboratory. Fee: \$90. *Prerequisites: EES 211, CHM 116 or EES 202.*

### ENV 321. HYDROLOGY FOUR CREDITS

A quantitative analysis of the physical elements and processes which constitute the hydrologic cycle. Topics include precipitation, infiltration, evaporation, runoff, streamflow, and ground water flow. Ground water modeling and advanced treatment of Darcy's Law is presented within the context of migration of ground water pollutants. Three hours lecture and three hours laboratory. Fee: \$90. *Prerequisite: EES 211.*

### ENV 322. WATER RESOURCES ENGINEERING THREE CREDITS

Engineering aspects of hydrologic systems including flood control, reservoir systems, open channel design, surface and groundwater development. Three hours lecture/demonstration. *Prerequisite: ENV 321.*

### ENV 330. WATER QUALITY FOUR CREDITS

The physical, chemical and biological processes that affect the quality of water in the natural environment. The measurement of water quality parameters in water and wastes. The behavior of contaminants in ground and surface water. Three hours lecture and three hours lab per week. Fee: \$90. *Prerequisites: CHM 116 or EES 202, EES 240.*

### ENV 332. AIR QUALITY FOUR CREDITS

Study of atmospheric pollutants, their sources and effects; measurement and monitoring techniques for air pollutants; atmospheric chemical transformations; regulatory control of air pollution; meteorology of air pollution; transport and dispersion of air pollutants; and introduction to indoor air pollution. Lab work includes both problem-oriented and hands-on exercises. Exercises include basic gas concepts; volume measuring devices; flow, velocity and pressure measuring devices; calibration of such devices; various sampling techniques. Three hours lecture and a three hour-lab per week. Fee: \$90. *Prerequisites: CHM 116 or EES 202, EES 240.*

### ENV 351. WATER AND WASTEWATER TREATMENT FOUR CREDITS

Design of water and wastewater treatment systems. Estimation of demands. Physical, chemical, biological and land-based treatment processes. Sludge handling and disposal. Three hours lecture and three hours lab. Fee: \$90. *Prerequisite: ENV 330.*

### ENV 352. ENVIRONMENTAL ENGINEERING HYDRAULICS THREE CREDITS

Water distribution, sewage collection, pipe network models, piping materials, pumps and pumping stations, valves and tanks. Design and operation. *Prerequisite: ME 321.*

### ENV 353. AIR POLLUTION CONTROL THREE CREDITS

This course provides the philosophy and procedures for design of air pollution control systems. Methods used for controlling air-borne emissions of gases, aerosols, and organic vapors are covered. Designs are carried out based on data for typical systems. Evaluations of alternatives with cost comparisons are also presented. Three hours lecture/ demonstration. *Prerequisite: ENV 332.*

### ENV 354. HAZARDOUS WASTE MANAGEMENT THREE CREDITS

An overview and application of engineering principles to management of hazardous wastes and the remediation of contaminated sites. Introduction to regulatory compliance and environmental laws. Three hours lecture. *Prerequisite: ENV 351 or permission of instructor.*

### ENV 373. OCCUPATIONAL HEALTH THREE CREDITS

Appraisal of environmental health hazards, sampling techniques, instrumentation and analytic methods. Principles of substitutions, enclosure and isolation for the control of hazardous operations in industry. Three hours lecture/demonstration. *Prerequisite: Junior or senior standing in engineering or science.*

ENV 391. SENIOR PROJECTS I  
ONE CREDIT

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress report are required. *Prerequisite: Senior standing in environmental engineering.*

ENV 392. SENIOR PROJECTS II  
TWO CREDITS

Design and development of selected projects in the field of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. This is a continuation of ENV 391. A professional paper to be presented and discussed in an open forum is required. *Prerequisite: ENV 391.*

ENV 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of their major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

ENV 397. SEMINAR  
ONE TO THREE CREDITS

Presentations and discussions of selected topics and projects. *Prerequisite: Senior environmental engineering standing.*

ENV 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

ENV 198/298/398. TOPICS IN ENGINEERING  
VARIABLE CREDIT

Selected topics in the field of engineering and related areas. These may include: mechanical engineering; civil engineering; engineering management; geotechnology; radiation, etc. *Prerequisite: Permission of instructor.*

## FIRST-YEAR FOUNDATIONS COURSES

FYF 101. FIRST-YEAR FOUNDATIONS  
THREE CREDITS

The First-Year Foundations Program provides rigorous learning experiences that challenge first-year students to develop the strategies essential for a successful transition into the Wilkes campus community. The program offers a variety of special topics courses, and faculty members are encouraged to explore topics that are of particular interest to them. All sections of FYF, regardless of topic, however, facilitate significant learning experiences (inside and beyond the classroom) through which first-year students develop self-knowledge and intellectual curiosity, openness to diversity, and a commitment to lifelong learning and civic responsibility. Writing, critical thinking, and information literacy are embedded in the exercises and activities of each FYF course within the context of the specific topic explored.

In addition, the FYF Program connects students to university resources, including the advising and comprehensive academic support services of University College, the resources of the Farley Library, and the rich array of cultural events sponsored by the University.

**NOTE:** Students who have completed twenty-three (23) or fewer credit hours earned in a college classroom when they matriculate at the University are required to complete an FYF course during their first semester. All students who have completed more than twenty-three (23) credit hours earned in a college classroom when they matriculate at the University are

## Course Descriptions

eligible, but not required to take a FYF course. A student may obtain academic credit towards graduation for only one (1) FYF course.

## HISTORY COURSES

HST 101. THE HISTORICAL FOUNDATIONS OF THE MODERN WORLD  
THREE CREDITS

A thematic survey of the forces shaping the modern world. Topics studied include: world religions, science, rationalism, industrial capitalism, liberalism, socialism, global discovery, imperialism, nationalism and totalitarianism.

HST 102. EUROPE BEFORE 1600  
THREE CREDITS

A survey of European history from Ancient times through the Reformation.

HST 125. AMERICAN HISTORY I  
THREE CREDITS

A survey of North American/U.S. history from European-Native American contact to the Civil War.

HST 126. AMERICAN HISTORY II  
THREE CREDITS

A survey of U.S. history from the Civil War to the present

HST 297 HISTORICAL RESEARCH AND METHODS SEMINAR  
THREE CREDITS

An introduction to the skills and methods needed for successful research and writing about history. Enrollment is limited to history majors and minors except by permission of instructor.

HST 321. AMERICAN CULTURAL AND SOCIAL HISTORY (A)  
THREE CREDITS

An examination of differences and divisions within American society through such topics as social movements, demographic trends, gender, ethnicity and class, effect of industrialization and immigration, cultural expressions, religion, and the family.

HST 324. AMERICAN ECONOMIC HISTORY (A)  
THREE CREDITS

A survey of the evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the development of the United States as an industrial world power since about 1850.

HST 325. DIVERSITY IN PENNSYLVANIA HISTORY (A)  
THREE CREDITS

A study of the history of the Commonwealth with particular focus on ethnic and racial diversity.

HST 328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES (A)  
THREE CREDITS

A selective treatment of major themes in American foreign policy from the founding of the Republic to the present.

HST 329. AMERICAN WOMEN'S HISTORY (A)  
THREE CREDITS

A study of the role, status, and culture of women in America beginning with the First Americans and European contact up to the present time.

HST 331. COLONIAL AMERICA (A)  
THREE CREDITS

Discovery, exploration, and settlement; development of social, political, religious, and intellectual institutions; independence and political reorganization.

HST 332. THE NEW NATION (A)  
THREE CREDITS

A study of America's social, cultural, economic and political development in the first generations of nationhood, 1783-1840.

HST 333. VICTORIAN AMERICA (A)

THREE CREDITS

A study of the development of the United States from the end of the Civil War through the end of World War I. Special attention will be paid to urbanization and industrialization and their effects on everyday life.

HST 334. THE UNITED STATES, 1900-1945 (A)

THREE CREDITS

The emergence of the United States as a world power and the corresponding development of its political, economic, social, and religious institutions.

HST 335. THE UNITED STATES SINCE 1945 (A)

THREE CREDITS

An examination of the political, social, and economic changes in the United States since World War II. Special attention is paid to America's dominant role in the immediate post-war world and how changing conditions over the past forty years have altered this role.

HST 341-342. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH (N)

THREE CREDITS EACH

A study of British history from the Neolithic period to present times. The first semester will cover social, economic, and political developments to 1783, including expansion overseas. The second semester will cover the consequences of the industrial revolution and the evolution of the Empire into the Commonwealth.

HST 345. HISTORY OF NORTHEASTERN EUROPE (N)

THREE CREDITS

A study of the cultural, political and intellectual history of the Poles, Czechs, Slovaks, Croats, Slovenes and Hungarians, who occupy the northern tier of Eastern Europe. Special attention is given to the roles of the Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences of the forces of nationalism in the region.

HST 346. HISTORY OF THE BALKANS (N)

THREE CREDITS

A study of the cultural, political and intellectual history of the Bulgarians, Serbs, Croats, Slovenes, Albanians, Greeks, Romanians and Turks, who occupy the southern, or Balkan, tier of Eastern Europe. Special attention is given to the roles of the Ottoman Turkish, Habsburg and Russian empires in shaping the historical destinies of these peoples, and to the roots and consequences in the region of such forces as Christian-Muslim cultural interrelationships and nationalism.

HST 348. HISTORY OF RUSSIA (N)

THREE CREDITS

A study of the political, social, and intellectual history of Russia. Emphasis is placed upon the emergence of Russia as a major power after 1700.

HST 352. THE RENAISSANCE AND REFORMATION (N)

THREE CREDITS

Within the political and economic framework of the period, study will be made of the culture of the Renaissance, the religious reforms and conflicts resulting from the crisis in the sixteenth century.

HST 353. AGE OF ABSOLUTISM (N)

THREE CREDITS

The political, social, economic, intellectual, and cultural development of Europe and dependencies from 1600 to about 1750.

HST 354. THE ERA OF THE FRENCH REVOLUTION AND NAPOLEON (N)

THREE CREDITS

A study of the structure of the Ancien Regime and an examination of the causes, events, and consequences of the French Revolution culminating in the Napoleonic Empire.

HST 355. EUROPE IN THE NINETEENTH CENTURY (N)

THREE CREDITS

A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

## Course Descriptions

HST 356. EUROPE, 1900-1960 (N)  
THREE CREDITS

Against a background of the internal and international developments of the leading powers, students will study the origins and results of the two World Wars.

HST 357. THE WORLD SINCE 1945 (N)  
THREE CREDITS

This course examines many important events and developments in the modern world since 1945. It considers incidents of largely historical significance, such as the Cold War between the United States and the Soviet Union, and those of continuing relevance, like the globalization and privatization of the economy.

HST 367. HISTORY OF MODERN INDIA (N)  
THREE CREDITS

A study of the political, social, and economic development of the Indian sub-continent since 1500.

HST 376. WORLD WAR II (C)  
THREE CREDITS

Consideration of the causes of the war, military strategy and tactics, diplomatic interests of the participants, and resulting cold war problems.

HST 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

HST 397. SEMINAR  
THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of instructor is required.*

HST 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

HST 198/298/398. TOPICS  
VARIABLE CREDIT

Special topics in history. This course will be offered from time to time when interest and demand justify it.

## INTEGRATIVE MEDIA COURSES

IM 101. INTEGRATIVE MEDIA FOUNDATIONS I  
THREE CREDITS

This course is an introduction and multiple media survey of artists, styles and techniques, influential in the development of contemporary media. Through this exposure and readings, a creative process will be developed and absorption will stimulate, motivate and inspire a personal aesthetic vision. In addition, through intensive thought, analysis and critique we will explore media as it affects our society and our responsibility as media content generators.

IM 201. INTEGRATIVE MEDIA FOUNDATIONS II  
THREE CREDITS

This course is an introduction to the foundational design principles as they apply to digital new media applications. Students will produce digital projects through the introductory application of various digital tools with a continued focus on the constant evolution of a personal aesthetic vision. A survey of new media applications, terminology and techniques will be researched and discussed along with our responsibility as communicators to mass media markets. *Prerequisite: IM 101*

IM 255. INTEGRATIVE MEDIA PRACTICUM  
ONE TO TWO CREDITS

The Department Practicum may be taken for one to two credits per semester. Students may earn credit for major roles and positions of major responsibility in the cocurricular activities in the Creative Production Studio, Studio020. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Credits earned are applicable toward graduation, but do not count toward the requirements of the IM core. Written approval for credit must be by advisor or Department Chairperson.

IM 301. INTEGRATIVE MEDIA PRINCIPLES OF MOTION AND LAYERING  
THREE CREDITS

This course will address the foundational concepts of assembling digital imagery; relational to short format projects, focusing on historical and contemporary principles of montage, timing and pacing. In addition, the technical and aesthetic principles of compositing will be covered producing multi-layered projects for a variety of mediums. *Prerequisite: IM 201.*

IM 302. INTEGRATIVE MEDIA PRINCIPLES OF INTERACTIVITY  
THREE CREDITS

Technical and aesthetic principles of interactivity will be conveyed and practiced to produce a range of interactive mediums. Addressing issues of human static and dynamic interactive ergonomics as they apply to contemporary commercial and artistic applications. *Prerequisite: IM 201.*

IM 320. INTEGRATIVE MEDIA CONCEPT DEVELOPMENT AND PRACTICES  
THREE CREDITS

Through research, writing and example, students will gain an advanced understanding of the creative generating processes in a new media environment. These processes will be used to formulate solid, cohesive concepts and present storyboards that are visually communicative and professional. With discussion, critique and reiteration, the concepts are refined and reinforced. *Prerequisite: IM 201.*

IM 350. 3 DIMENSIONAL ENVIRONMENTS AND ANIMATION  
THREE CREDITS

This course will explore the foundations of 3 dimensional animation processes as they apply to multiple mediums. Students will build computer-based models and environments, texture, light, animate and render content for Integrative Media projects, stand-alone projects or 3D foundations used within the CS gaming track. (Cross-listed with CS 366). *Prerequisite: IM students - IM 301; CS students - CS 125.*

IM 355. DIGITAL AUDIO PRINCIPLES AND EDITING  
THREE CREDITS

The foundational concepts behind music theory, sound design and digital audio editing techniques will be addressed in this course. This knowledge can then be applied to creating and adapting sound components for use within the variety of Integrative Media projects. *Prerequisite: IM 201.*

IM 368. 3 DIMENSIONAL GAME DEVELOPMENT  
THREE CREDITS

An overview of simulation, engine-based, and real-time game systems with a focus on theory, creation and animation of three-dimensional models used within a game context. (Cross-listed with CS 368). *Prerequisites: IM 350 (CS 366) or CS 367.*

IM 391. INTEGRATIVE MEDIA PROJECT I  
THREE CREDITS

This project-based course will begin to assemble production teams to produce project(s) from concept to completion. Students will develop storyboards, and through creative and organizational work sessions define a completion plan and production schedule. All phases of the production process will be addressed under creative, financial and deadline benchmarks. *Prerequisite: IM 320.*

IM 392. INTEGRATIVE MEDIA PROJECT II  
THREE CREDITS

Students will initiate new or continue team oriented integrative media productions. The production process will be optimized to continue the experience of industry scenarios. Expanded business

## Course Descriptions

practices and production techniques will build upon prior skill-sets. *Prerequisite: IM 391.*

### IM 399. COOPERATIVE EDUCATION ONE-SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) Integrative Media majors will be required to complete a minimum of 3 credit hours of Cooperative Education.

### IM 400. INTEGRATIVE MEDIA PORTFOLIO CAPSTONE THREE CREDITS

As the capstone of the IM curriculum, this course will focus on the compilation of visual materials produced throughout the set of courses, as necessary in the job submission process. Creating a self "brand" will be a concentration along with the compilation of written works, flatbook and reel. Understanding the perspective of the employer will be heavily discussed and the various positions, procedures and environments that produce IM products. *Prerequisite: IM 391.*

## INTERCOLLEGIATE ATHLETICS COURSES

### IA 101. INTERCOLLEGIATE ATHLETICS NO CREDIT

This course is limited to students participating in intercollegiate athletics during their sport season. This course may be repeated.

## INTERNATIONAL STUDIES COURSES

### IS 380. INTERNATIONAL STUDIES SENIOR PROJECT THREE CREDITS

This course is the capstone experience for International Studies majors. Students will coordinate the writing of a capstone with a faculty member from an International Studies content area. Throughout the semester, the student will work closely with that faculty member to gather data and write a formal paper. The student will present the findings in a public forum to content-area faculty and students. *Prerequisites: Senior standing, permission of instructor.*

## MATHEMATICS COURSES

### MTH 84. COLLEGE PREPARATORY MATHEMATICS THREE CREDITS\*

Designed for students who need to review basic mathematics skills before taking Mth 94, 101 or 103. Topics include a review of arithmetic, introductory algebra, and quantitative reasoning. Only P (passed) or F (failed) grades are given. *\*Credits in this course will not be counted toward the graduation requirement in any degree program at Wilkes.*

### MTH 94. COLLEGE ALGEBRA THREE CREDITS

Designed for students who need to review basic algebra before taking Mth 100 or Mth 150. Topics include polynomials, solution of equations and inequalities, exponents and radicals, graphing, and solution of systems of equations. *Offered every fall.*

### MTH 100. PRECALCULUS THREE CREDITS

A course in advanced algebra and trigonometry designed to prepare students for calculus. Topics include functions, inverse functions, logarithms, exponentials, and trigonometry. *Prerequisite: Mth 94 or two years of secondary school mathematics in algebra and geometry.*

### MTH 101. SOLVING PROBLEMS USING MATHEMATICS THREE CREDITS

An introduction to the methodology of mathematical modeling as a technique in working towards the solution to real world problems. In an effort for the nonspecialist to gain an appreciation of the use of mathematics in our society, topics are selected from among the following: basic voting

theory, fair division schemes, routing problems, population growth, and descriptive statistics and probability.

MTH 103. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS  
THREE CREDITS

A study of the theory of arithmetic, structure of the number systems, and other topics relevant to the teaching of mathematics in elementary schools. *Prerequisite: Admission to the Teacher Education Program or consent of instructor. Offered every fall.*

MTH 104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS II  
THREE CREDITS

A continuation of Mth 103. Topics include elementary probability, statistics, and geometry. *Prerequisite: Mth 103. Offered every spring.*

MTH 105. CALCULUS FOR LIFE SCIENCES I  
FOUR CREDITS

Topics include: algebra review, limits, differentiation, and integration. Students cannot enroll for credit if credit for Mth 111 has been earned. *Prerequisites: Student must have completed Mth 100 or meet Department of Mathematics and Computer Science placement criteria.*

MTH 106. CALCULUS FOR LIFE SCIENCES II  
FOUR CREDITS

A continuation of Mth 105. Topics include: partial differentiation, differential equations, and probability. Not open to students with credits in Mth 112. *Prerequisite: Mth 105.*

MTH 107. BUSINESS MATHEMATICS  
THREE CREDITS

Designed for business and accounting majors. Emphasis on mathematical modeling in the business environment. Topics include algebraic functions; mathematics of finance; systems of linear equations; linear programming; average and instantaneous rates of change. *Prerequisite: Mth 94 or two years of secondary school mathematics in algebra and geometry.*

MTH 111. CALCULUS I  
FOUR CREDITS

Calculus of functions of one variable. Topics include: functions, limits and continuity, derivatives and their applications, and definite integrals. Students cannot enroll for credit if credit for Mth 105 has been earned. *Prerequisites: Student must have completed Mth 100 or meet Department of Mathematics and Computer Science placement criteria.*

MTH 112. CALCULUS II  
FOUR CREDITS

A continuation of Mth 111. Topics include inverse functions, techniques of integration, applications of the integral, and infinite sequences and series. Not open to students with credit in Mth 106. *Prerequisite: Mth 111.*

MTH 150. ELEMENTARY STATISTICS  
THREE CREDITS

Elementary statistical inference, with an emphasis on ideas, techniques, and applications in the life, physical, and social sciences. Topics include descriptive statistics, confidence intervals, hypothesis testing, contingency tables, multiple regression, and analysis of variance. Not open to mathematics majors or students with credit in Mth 351. *Prerequisite: Mth 94 or two years of high school algebra.*

MTH 202. SET THEORY AND LOGIC  
FOUR CREDITS

Provides a foundation in logic and set theory for upper-level courses in mathematics and computer science. Topics include the logic and language of proofs, the axiomatic method, sets, relations, and functions. *Prerequisite: Mth 106 or Mth 112 or consent of instructor. Offered every fall.*

MTH 211. INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS  
FOUR CREDITS

First-order and linear higher-order differential equations; matrices, determinants, and systems of differential equations; numerical and power series methods of solution; the Laplace transform. *Prerequisite: Mth 112. Offered every fall.*

## Course Descriptions

### MTH 212. MULTIVARIABLE CALCULUS

FOUR CREDITS

Differential and integral calculus of real and vector valued functions. Topics include continuity, partial differentiation, implicit functions, Taylor's Theorem, gradient, curl, line, surface and multiple integrals, inverse functions, theorems of Green and Stokes. *Prerequisite: Mth 112. Offered every spring.*

### MTH 214. LINEAR ALGEBRA

THREE CREDITS

An axiomatic approach to vector spaces, linear transformations, systems of linear equations, eigenvalues and eigenvectors. *Prerequisite: Mth 112 or consent of instructor. Offered every spring.*

### MTH 231. DISCRETE MATHEMATICS

THREE CREDITS

Designed to provide background in discrete mathematics for upper-level courses in computer science. Topics include: basic counting principles; introduction to recurrence relations and their application in analyzing algorithms; basic properties of graphs, trees, and networks; AND, OR, and NOT gates and designing combinatorial circuits, finite-state automata, transducers and Turing machines *Prerequisites: Mth 202 and CS 125. Offered every spring.*

### MTH 303. THE TEACHING OF MATHEMATICS IN SECONDARY SCHOOLS

FOUR CREDITS

This course deals with educational perspectives which pertain to the teaching of mathematics at the secondary level (grades 7 through 12). Topics of discussion include recommendations by the National Council of Teachers of Mathematics (NCTM) regarding instructional methods, assessment techniques, and curricular issues. 30 hours practicum. *Prerequisites: Junior standing in mathematics and admission to the Teacher Education Program. Offered in the fall semester of odd years.*

### MTH 311. REAL ANALYSIS

FOUR CREDITS

A rigorous study of the topology of the real line, limits, continuity, differentiation, integration, and series of functions. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of even years.*

### MTH 314. COMPLEX ANALYSIS

THREE CREDITS

Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues. *Prerequisite: Mth 212 or consent of instructor. Offered when demand warrants.*

### MTH 331. ABSTRACT ALGEBRA I

FOUR CREDITS

A rigorous study of elementary number theory, groups, rings, and fields. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of odd years.*

### MTH 343. GEOMETRY

THREE CREDITS

A study of selected topics from Euclidean and non-Euclidean geometry. *Prerequisite: Mth 202 or consent of instructor. Offered in the fall semester of even years.*

### MTH 351. PROBABILITY AND MATHEMATICAL STATISTICS I

THREE CREDITS

Random variables, probability distributions, expectation and limit theorems, introduction to confidence intervals and hypothesis testing. *Prerequisite: Mth 106 or 112 or consent of instructor. Offered every fall.*

### MTH 352. PROBABILITY AND MATHEMATICAL STATISTICS II

THREE CREDITS

Hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models. *Prerequisite: Mth 351 or consent of instructor. Offered in the spring semester of odd years when demand warrants.*

MTH 354. STATISTICAL METHODOLOGY  
THREE CREDITS

This course emphasizes applications, using statistical computer packages (such as BMDP, SPSS, and JMP) and real data sets from a variety of fields. Topics include estimation and testing; stepwise regression; analysis of variance and covariance; design of experiments; contingency tables; and multivariate techniques, including logistic regression. *Prerequisite: Mth 150 or Mth 351 or consent of instructor. Offered in the spring semester of even years when demand warrants.*

MTH 360. LINEAR PROGRAMMING  
THREE CREDITS

Graphical linear programming, simplex algorithm and sensitivity analysis. Special L.P. models such as the transportation problem, transshipment problem, and assignment problem. May include integer programming, branch and bound algorithm, geometric programming, goal programming. (Cross-listed with CS 360). *Prerequisites: Either Mth 106 or Mth 112 and CS 125 (or equivalent programming experience). Offered in the spring semester of even years when demand warrants.*

MTH 361. APPLIED MATHEMATICS I  
THREE CREDITS

Intended for physical science and engineering students. Topics include inner product spaces, operator algebra, eigenvalue problems, Sturm-Liouville theory, Fourier series and partial differential equations. *Prerequisites: Mth 211 and 212, or consent of instructor. Offered in the fall semester of odd years when demand warrants.*

MTH 362. APPLIED MATHEMATICS II  
THREE CREDITS

Intended for physical science and engineering students. Topics include systems of linear differential equations, nonlinear differential equations; qualitative, numerical, and finite difference methods; theorems of Green and Stokes and the Divergence Theorem. *Prerequisites: Mth 211 and 212, or consent of instructor. Offered in the spring semester of even years when demand warrants.*

MTH 363. OPERATIONS RESEARCH  
THREE CREDITS

A survey of operations research topics such as decision analysis, inventory models, queueing models, dynamic programming, network models, heuristic models, and non-linear programming. (Cross-listed with CS 363). *Prerequisites: Mth 106 or Mth 112 and CS 125 (or equivalent programming experience), or consent of instructor. Offered in the spring semester of odd years when demand warrants.*

MTH 364. NUMERICAL ANALYSIS  
THREE CREDITS

An introduction to numerical algorithms as tools to providing solutions to common problems formulated in mathematics, science, and engineering. Focus is given to developing the basic understanding of the construction of numerical algorithms, their applicability, and their limitations. (Cross-listed with CS 364). *Prerequisites: Mth 112 and CS 125 (or equivalent programming experience), or consent of instructor. Offered when demand warrants.*

MTH 391-392. SENIOR SEMINAR  
ONE CREDIT, TWO CREDITS

Presentations and discussions of selected topics in mathematics, conducted by students and faculty. *Prerequisite: Senior standing in mathematics and either Mth 311 or Mth 331.*

MTH 395-396. INDEPENDENT STUDY IN MATHEMATICS  
VARIABLE CREDITS

Individual study in a chosen area of mathematics under the supervision of a faculty member. May be repeated for credit. *Prerequisite: Approval of department chairperson.*

MTH 397. SEMINAR  
ONE TO THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson.*

MTH 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are

## Course Descriptions

required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

### MTH 413. FUNCTIONS OF SEVERAL VARIABLES THREE CREDITS

A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration on manifolds leading to the classical theorems of Green and Stokes. Prerequisites: Mth 214 and 311. Offered when demand warrants.

### MTH 432. ABSTRACT ALGEBRA II THREE CREDITS

A continuation of Mth 331. Polynomial rings, ideals, field extensions, and Galois Theory. *Prerequisite: Mth 331. Offered when demand warrants.*

### MTH 442. TOPOLOGY THREE CREDITS

Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces. *Prerequisite: Mth 311 or consent of instructor. Offered when demand warrants.*

### MTH 470. READING COURSE ONE TO THREE CREDITS

Advanced study of special topics under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics. May be repeated for credit. *Prerequisites: Senior standing and approval of department chairperson.*

### MTH 198/298/398/498. TOPICS IN MATHEMATICS VARIABLE CREDITS

A study of topics of special interest. It may be a continuation and intensive study of topics begun in the upper-level courses in analysis, topology, algebra, and probability. May be repeated for credit. *Prerequisite: Varies with selected topics. Offered when demand warrants.*

## MECHANICAL ENGINEERING COURSES

### ME 175. INTRODUCTION TO MANUFACTURING AND MACHINING ONE CREDIT

Familiarizing with traditional machining processes and measuring equipment used in manufacturing. Hands-on experience with traditional and numerical control (NC) machines; various manufacturing processes and fundamentals of metrology. Three-hour lab per week. Fee: \$70.

### ME 180. CADD LAB ONE CREDIT

An introduction to the symbolic and visual languages used in the various engineering fields. The use of the computer in design and drafting, and familiarization with various software packages in the CADD (Computer Aided Design and Drafting) laboratory. Blueprint reading and printed circuit layouts. Emphasis will also be placed on the representation and interpretation of data in graphical form as well as the fundamentals of 2-dimensional and 3-dimensional graphic formats. Two hours lecture/laboratory per week. Fee: \$70.

### ME 215. INTRODUCTION TO MANUFACTURING PROCESSES THREE CREDITS

An introduction to manufacturing that examines traditional processes such as metal forming and casting, and advanced manufacturing processes associated with thin film deposition, microfabrication, and piezoelectric devices. Quality assurance and quality control issues in manufacturing. *Prerequisites: EGR 200, ME 180, ME 232.*

### ME 231. STATICS AND DYNAMICS I THREE CREDITS

Statics of particles; including resolution of forces into components, vector sums, concurrent force systems. Statics of rigid bodies and the study of moments. Equilibrium of bodies in two and three dimensions and determination of reactions. Analysis of trusses and frames. Determination of centroids and moments of inertia. Kinematics of particles; including displacement; velocity; and

acceleration. *Prerequisite: Phy 201, Mth 112.*

ME 232. STRENGTH OF MATERIALS  
THREE CREDITS

Analysis of statically determinate and indeterminate structural systems; computation of reactions, shears, moments, and deflections of beams, trusses, and frames. Bending and torsion of slender bars; buckling and plastic behavior. *Prerequisite: ME 231.*

ME 234. STATICS AND DYNAMICS II  
THREE CREDITS

This course continues the development of Newtonian mechanics with application to the motion of free bodies and mechanisms. Topics include: rectilinear motion, vector calculus, particle motion, inertial and rotating reference frames, rigid body motion, rotational dynamics, linear and rotational momentum, work and kinetic energy, virtual work and collision. *Prerequisite: ME 231.*

ME 298. TOPICS IN MECHANICAL ENGINEERING  
ONE TO THREE CREDITS

Selected topics in the field of mechanical engineering. *Prerequisite: Sophomore standing and permission of instructor.*

ME 312. MANUFACTURING SYSTEM ENGINEERING  
THREE CREDITS

Fundamentals of manufacturing processes and systems. Analytical models of manufacturing processes including: metal removal rate, tool wear, setup and tool change times. Analysis and optimization of manufacturing productivity and throughput. Automation and computer control of manufacturing processes. *Prerequisite: Junior standing in ME.*

ME 317. ROBOTICS  
THREE CREDITS

The analysis and design of robots. Class covers the mechanical principles which govern the kinematics of robotics. Course topics include forward kinematics and the determination of the closed form kinematic inversion, as well as workspace and trajectory generation. Class also covers the formation and computation of the manipulator Jacobian matrix. *Prerequisites: Senior standing in ME.*

ME 321. FLUID MECHANICS  
THREE CREDITS

Thermodynamics and dynamic principles applied to fluid behavior and to ideal, viscous, and compressible fluids under internal and external flow conditions. (same as Phy 213) *Prerequisite: ME 231. Corequisite: ME 322.*

ME 322. ENGINEERING THERMODYNAMICS  
THREE CREDITS

The fundamental concepts and laws of thermodynamics, thermodynamic properties of perfect and real gases, vapors, solids and liquids. Applications of thermodynamics to power and refrigeration cycles, and flow processes. Development of thermodynamic relationships and equations of state. Review of the first and second laws. Reversibility and irreversibility. *Prerequisites: Math 112.*

ME 323. FLUID MECHANICS LABORATORY  
ONE CREDIT

Experiments with and analysis of basic fluid phenomena, hydrostatic pressure, Bernoulli theorem, laminar and turbulent flow, pipe friction, and drag coefficient. One three-hour lab a week. Fee: \$70. *Prerequisite: Concurrent with or after ME 321.*

ME 324. HEAT AND MASS TRANSFER  
THREE CREDITS

Fundamental principles of heat transmission by conduction, convection and radiation; application of the laws of thermodynamics; mass transfer; application of these principles to the solution of engineering problems. *Prerequisites: ME 322 and Mth 211.*

ME 325. ENERGY SYSTEMS  
THREE CREDITS

Fundamental principles of energy transmission and energy conversion. Comprehension of the

## Course Descriptions

physical systems in which the conversion of energy is accomplished. Primary factors necessary in the design and performance analysis of energy systems. *Prerequisites: ME 322.*

### ME 326. HEAT TRANSFER LABORATORY ONE CREDIT

Basic heat transfer modes are demonstrated experimentally. This includes conduction, convection, and radiation of heat as well as fin and heat exchanger. One two-hour lab a week. Fee: \$70. *Prerequisite: Concurrent with or after ME 324.*

### ME 328. COMBUSTION ENGINES THREE CREDITS

Investigation and analysis of internal and external combustion engines with respect to automotive applications. Consideration of fuels, carburetion, combustion, detonation, design factors, exhaust emissions, and alternative power plants. *Prerequisite: ME 322.*

### ME 332. VIBRATION OF DYNAMIC SYSTEMS THREE CREDITS

An introductory course in mechanical vibration dealing with free and forced vibration of single and multi-degrees of freedom for linear and nonlinear systems. *Prerequisites: ME 234, Mth 211.*

### ME 333. MACHINE DESIGN I THREE CREDITS

A first course of a two-course sequence in design of machine elements dealing with theories of deformation and failure, strength and endurance limit, fluctuating stresses, fatigue and design under axial, bending, torsional, and combined stresses. A study of fasteners, welds, gears, ball roller bearings, belts, chains, clutches, and brakes. *Prerequisites: ME 232.*

### ME 335. ENGINEERING MODELING AND ANALYSIS THREE CREDITS

Introduction to finite element method for static and dynamic modeling and analysis of engineering systems. Finite element formulation and computer modeling techniques for stress, plane strain, beams, axisymmetric solids, heat conduction, and fluid flow problems. Solution of finite element equation and post processing of results for further use in the design problem. Two hours lecture and two hours lab per week. *Corequisites: ME 232. Corequisite: Mth 211.*

### ME 337. MICRO-ELECTRO-MECHANICAL SYSTEMS ENGINEERING THREE CREDITS

This course explores the principles of MEMS by understanding materials properties, micro machining, sensor and actuator principles. The student will learn that MEMS are integrated micro-devices combining mechanical and electrical systems, which convert physical properties to electrical signals and, consequently, detection. This course provides the theoretical and exercises the hands-on experience by fabricating a micro-pressure sensor. Two hours lecture; three hours lab each week. Fee: \$70. *Prerequisite: Junior standing in engineering. Corequisite: EGR 222.*

### ME 338. MACHINE DESIGN II THREE CREDITS

The second course of a two-course sequence in design of machine elements dealing with theories of deformation and failure, strength and endurance limit, fluctuation stresses, fatigue and design under axial, bending, torsional, and combined stresses. A study of fasteners, welds, gears, ball roller bearings, belts, chains, clutches and brakes. *Prerequisite: ME 333.*

### ME 340. HEATING, VENTILATION AND AIR CONDITIONING THREE CREDITS

Introduction of fundamentals of HVAC design and construction. Study of the psychometric process and fundamental calculations and layout of HVAC systems. Calculations of heat loss and heat gain in commercial and residential structures. *Prerequisite: ME 322.*

### ME 384. MECHANICAL DESIGN LABORATORY THREE CREDITS

Advanced open-ended laboratory simulating R&D environment. Emphasis on experimental performance, evaluations, and design. Topics include mechanical system, thermo/fluids, manufacturing processes, and mechanics. One hour lecture, six hours lab a week. Fee: \$70. *Prerequisite: Junior standing and ME 232.*

ME 391. SENIOR PROJECTS I  
ONE CREDIT

Design and development of selected projects in the field of mechanical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required. *Prerequisite: Senior standing in mechanical engineering.*

ME 392. SENIOR PROJECTS II  
TWO CREDITS

Design and development of selected projects in the various fields of mechanical engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper and detailed progress reports are required. This is a continuation of ME 391. An open-forum presentation and discussion of the professional paper is required. *Prerequisite: ME 391.*

ME 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in the field of mechanical engineering under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Senior standing and approval of department chairperson is required.*

ME 397. SEMINAR  
ONE TO THREE CREDITS

Presentations and discussions of selected topics. Prerequisite: Senior standing or by special departmental permission.

ME 398. TOPICS IN MECHANICAL ENGINEERING  
ONE TO THREE CREDITS

Selected topics in the field of mechanical engineering. These may include one or more of the following: control systems, automation, robotics, manufacturing systems, solid mechanics, energy systems, fluid flow, acoustics, computer systems, bio-mechanics. May be repeated for credit. *Prerequisite: Junior or senior engineering standing.*

## MILITARY SCIENCE (ARMY ROTC) COURSES

MIL 100. PHYSICAL FITNESS TRAINING  
ONE CREDIT

U.S. Army Master Fitness trainers supervise a modern fitness program based on the latest military fitness techniques and principles. The classes are conducted on Monday, Wednesday and Friday at the King's College Scandlon Fitness Center and are one hour each.

MIL 211/212. CONCEPTS OF LEADERSHIP I AND II  
ONE CREDIT EACH

Instruction focuses on providing a basic understanding of the Army and general military knowledge and skills while concentrating on leadership skills and civic responsibilities important to everyone. Classes are one hour each week.

MIL 221/222. DYNAMICS OF LEADERSHIP I AND II  
TWO CREDITS EACH

Instruction is designed to familiarize students with basic military leadership at the junior leader and immediate supervisor level. Classes are two hours each week.

MIL 231/232. BASIC MILITARY LEADERSHIP I AND II  
TWO/ONE CREDITS

Instruction focuses on continued leadership development. Students are trained and evaluated on developing, managing and presenting training to the MS I and II cadets. The goal of the MS III year is to prepare students for the Leadership Development Assessment. Classes are two hours each week. *Prerequisite: Advanced placement credit.*

MIL 241/242. ADVANCED MILITARY LEADERSHIP I AND II  
TWO/ONE CREDITS

Instruction focuses on teaching students to function as a member of a staff and continues to develop leadership skills. This course covers public speaking, military briefing, and effective writing as well as training management and administrative and logistical support. Classes are two hours each week.

## Course Descriptions

### MIL 251/252. LEADERSHIP APPLICATION LABORATORY

NO CREDIT

This class focuses on hands-on application and reinforcement of classroom instruction as well as teaching weapons, first aid, land navigation and tactical leadership. This class meets at the University of Scranton for two hours each week; it is highly encouraged for students in the basic course and is required for students in the advanced course.

## MUSIC COURSES

### MUS 000. PERFORMANCE CLASS

NO CREDIT

This course is required each semester for all music majors. Degree requirement for graduation.

### MUS 100-400. APPLIED PERFORMANCE

ONE CREDIT OR TWO CREDITS

Instruction offered in all keyboard, band and orchestral instruments, guitar and voice. Individual instruction. Select areas conduct a weekly master class for discussion and performance. Participation is required. Additional fees apply. *Prerequisite: Consent of instructor.*

### MUS 100. FRESHMAN LEVEL

### MUS 200. SOPHOMORE LEVEL

### MUS 300. JUNIOR LEVEL

### MUS 400. SENIOR LEVEL

### MUS 301. JUNIOR RECITAL

NO CREDIT

### MUS 401. SENIOR RECITAL

NO CREDIT

<i>Section A</i>	Flute	<i>Section I</i>	Voice	<i>Section P</i>	Bass
<i>Section B</i>	Clarinet	<i>Section J</i>	Baritone	<i>Horn Section Q</i>	Percussion
<i>Section C</i>	Oboe	<i>Section K</i>	Trombone	<i>Section R, S, T</i>	Piano
<i>Section D</i>	Bassoon	<i>Section L</i>	Tuba	<i>Section U</i>	Organ
<i>Section F</i>	Saxophone	<i>Section M</i>	Violin	<i>Section V</i>	Guitar
<i>Section G</i>	Trumpet	<i>Section N</i>	Viola	<i>Section X, Y</i>	Voice
<i>Section H</i>	French Horn	<i>Section O</i>	Cello	<i>Section Z</i>	Drum Set

### MUS 101. INTRODUCTION TO MUSIC I

THREE CREDITS

The materials of music and their interrelationships. Illustrations are derived from literature of all periods for the purpose of developing understanding and enjoyment through perceptive listening.

### MUS 103 MUSIC THEORY I

THREE CREDITS

This course presents fundamental materials and structure of music theory. Analysis, composition, solfege, dictation, and rudimentary keyboard skills are developed through the study of Western and non-Western music.

### MUS 104. MUSIC THEORY II

THREE CREDITS

A continuation of MUS 103: Music Theory I, this course presents materials and structures of music theory through application to basic form types. Analysis, composition, solfege, dictation, and rudimentary keyboard skills are developed through the study of Western and non-Western music examples. *Prerequisites: Successful completion of MUS 103 or placement by a diagnostic exam.*

### MUS 207-208. HISTORICAL ANALYSIS OF MUSIC III-IV

THREE CREDITS

A degree requirement. In-depth studies of the historical evolution of musical styles, antiquity to the present, through class lectures, analysis of the literature, and performance practices. *Corequisite: To be taken in sequence with Comprehensive Musicianship and Harmonic Foundations (for all Music*

*majors) or consent of instructor.*

MUS 110. MUSIC, THE ARTS, SOCIETY AND IDEAS  
THREE CREDITS

As the first course in the music history sequence, this course presents a multicultural study of music in the context of the humanistic tradition. A degree requirement for all applied performance and music education majors.

MUS 121. WILKES CIVIC BAND  
ZERO TO THREE CREDITS

Large symphonic band and small wind ensemble experience. The Wilkes Civic Band presents a minimum of two concerts per year with programming focusing on standards of the band repertoire, which may include contemporary and non-Western literature for large symphonic band. Students acquire and refine skills in the areas of reading musical notation, good tone production on his/her chosen instrument, and precision in all aspects of musical performance appropriate to a large instrumental ensemble setting. Membership open to all members of the University and surrounding community. May be repeated for credit.

MUS 125. UNIVERSITY CHORUS  
ZERO TO THREE CREDITS

Large mixed choral ensemble experience. The University Chorus presents a minimum of two concerts per year with programming focusing on standards of the choral repertoire, which may include contemporary and non-Western literature for large mixed chorus. Language selection is diverse. Students acquire and refine skills in the areas of reading musical notation, vocal production, and precision in all aspects of musical performance appropriate to a large choral setting. Membership open to all members of the University and surrounding community. *Prerequisite: Permission of instructor.*

MUS 126. CHAMBER SINGERS  
ONE-HALF CREDIT

Membership is limited to a small group of selected singers who learn and perform solo and ensemble pieces from the literature of opera, operetta, and musical theatre.

MUS 127. JAZZ ENSEMBLE  
ZERO TO THREE CREDITS

Open to all members of the University community. The ensemble rehearses and presents performances of literature encompassing a wide range of jazz styles and techniques.

MUS 128. CHAMBER PERFORMANCE  
ONE CREDIT

Participation required of all applied performance majors for a minimum of three semesters. Students will study and publicly perform chamber literature appropriate to their instruments. Coaching and supervision by faculty members, as assigned. *Prerequisites: consent of instructor.*

MUS 131. UNIVERSITY ORCHESTRA  
ZERO TO THREE CREDITS

Open to all members of the College community, by audition. The orchestra performs concerts throughout the year of chamber and symphonic literature. May be repeated for credit.

MUS 210. MUSIC HISTORY I: ANCIENT THROUGH BAROQUE  
THREE CREDITS

An intensive 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. This course is designed to introduce the student to the discipline of musicology (including methodology and techniques of investigation) as it relates to music of the Ancient World, the Middle Ages, the Renaissance, and the Baroque era. Emphasis will be placed on musical traditions of the Western world; styles and traditions of non-Western cultures will be studied as they influenced the Western musical tradition, especially in music of the Ancient World, the Middle Ages, and the Renaissance. *Prerequisites: MUS 103, MUS 104, MUS 110.*

MUS 211. MUSIC HISTORY II: CLASSICAL THROUGH TWENTIETH CENTURY  
THREE CREDITS

An intensive study of the history of music and the genres, styles, and forms of the stylistic periods of

## Course Descriptions

musical composition, Classical through the Twentieth Century and the movements, eras, and themes associated with these periods. This course is designed to introduce the student to the discipline of musicology (including methodology and techniques of investigation) as it relates to music of the Classical and Romantic periods and the Twentieth Century. Emphasis will be placed on musical traditions of the Western world and the incorporation of non-Western music into the Western musical tradition, especially in the twentieth century. Prerequisites: MUS 103, MUS 104, MUS 110, MUS 210 or consent of instructor.

MUS 298. TOPICS  
THREE CREDITS

A study in topics of special interest not extensively treated in regularly offered courses.

MUS 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in music under the direction of a staff member. A research paper at a more substantial level beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

## MUSIC EDUCATION COURSES

MED 129. WORLD MUSIC ENSEMBLE  
ONE-HALF CREDIT

Practical experience on non-Western instruments and the use of special vocal techniques, emphasizing an awareness of music of non-Western cultures and the development of ensemble performance techniques through group performance. Students improvise and rehearse weekly on a variety of world instruments and learn vocal techniques that are found in the music of non-Western cultures. Degree requirement for all Music Education majors. Offered every spring semester. *Corequisite for freshmen Music Education majors: MED 100, MUS 110.*

## NURSING COURSES

NSG 171. HEALTH CARE TERMINOLOGY  
ONE CREDIT

This course is designed to have students study terms common to the health care professions. The emphasis is on analysis and understanding rather than on memorization.

NSG 200. PRINCIPLES OF NORMAL NUTRITION  
THREE CREDITS

An introduction of the basic science of human nutrition; principles of normal nutrition, meal planning, computation of diets, physiological, psychosocial, and social effects of food and its constituents; and some contemporary local, national, and international nutrition problems. *Corequisite: Nsg 210.*

NSG 210. PRINCIPLES OF NURSING: INDIVIDUAL, FAMILY, AND COMMUNITY  
SIX CREDITS

This course introduces the student to the profession of nursing. Use of the nursing process is emphasized in meeting the basic human needs of clients within families and their communities. Nursing theory is correlated with clinical practice in the Clinical Nursing Simulation Center and selected clinical agencies. Hours weekly: 4 hours class, 6 hours clinical practice. Fee: \$90. *Prerequisites: Bio 113, Bio 115-116, Eng 101, Nsg 171. Corequisites: Nsg 200, Phy 170.*

NSG 220. NURSING CARE OF THE CHILD-BEARING FAMILY  
FOUR CREDITS

The nursing process is utilized in assisting child-bearing families within their communities to meet their human needs. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45 *Prerequisites: NSG 200, 210. Co-requisites: EES242, PSY 101, SOC 101/ANT 101.*

NSG 230. NURSING CARE OF THE CHILD-REARING FAMILY  
FOUR CREDITS

The nursing process is utilized in assisting child-rearing families within their communities to meet

their human needs. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical.

**NSG 240. NURSING CARE OF THE ADULT CLIENT I: INDIVIDUAL, FAMILY, AND COMMUNITY  
EIGHT CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 220, Nsg 230.*

**NSG 250. NURSING CARE OF THE ADULT CLIENT II: INDIVIDUAL, FAMILY AND COMMUNITY  
FOUR CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected medical-surgical problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45. *Prerequisite: Nsg 240.*

**NSG 260. NURSING CARE OF THE PSYCHIATRIC MENTAL HEALTH CLIENT, INDIVIDUAL, FAMILY, AND  
COMMUNITY  
FOUR CREDITS**

The nursing process is utilized in assisting adults and their families, within their communities, to achieve optimum health and to resolve selected health problems. Nursing theory is correlated with clinical practice in a variety of health care settings. Hours weekly: 2 hours class, 6 hours clinical practice. Fee: \$45. *Prerequisite: Nsg 240.*

**NSG 270. RECENT TRENDS IN CLINICAL NUTRITION  
THREE CREDITS**

This elective course is an introduction to diet therapy, with a discussion of the contemporary issues in clinical nutrition. Deals with the popular myths about nutrition and health and substantiates or refutes these claims with research evidence. *Prerequisite: Nsg 200 or RN status.*

**NSG 272. PHARMACOTHERAPEUTICS AND CLINICAL DECISION-MAKING IN NURSING  
THREE CREDITS**

This course is designed to assist students to understand the multidisciplinary science of pharmacology based on human systems. Content includes drug classifications, indications, adverse effects and contraindications, age-related variables, dosages, and nursing implications. Using critical thinking skills related to drug therapy, clinical decision-making is developed. *Prerequisite: Nsg 220, Nsg 230.*

**NSG 273. PHYSICAL ASSESSMENT  
THREE CREDITS**

This elective course is designed to facilitate the integration of physical assessment skills as an essential element of the nursing process. The components of physical assessment, including the health history and physical examination, are organized to allow the student to proceed from an assessment of the overall functions of a client to the more specific functions of each body system. *Prerequisites: Junior and Senior Nursing majors or Registered Nurses.*

**NSG 274. DIMENSIONS IN HEALTH AND WELLNESS  
THREE CREDITS**

This elective course provides a framework for the exploration of the concepts of holistic health, wellness, and alternative health care modalities through experiential exercises, reading, journaling and lectures. During the course the student will assess his/her personal health and wellness status, develop a plan to modify a specified health behavior, implement the plan using a variety of holistic modalities, and evaluate the outcome of the plan. This is a wellness elective appropriate for any student at any level. Lecture, discussion, class participation. No prerequisites. No corequisites. No fees.

**NSG 299. NURSING FORUM  
SEVEN CREDITS**

This course is designed to facilitate the transition of RN students from other educational routes into baccalaureate nursing education. Use of the nursing process is applied throughout the growth and development of clients. Nursing theory is correlated with clinical practice in community settings.

## Course Descriptions

Upon successful completion of N299 (7 credits), 36 additional credits, (N171, N220, N 230, N 240, N 250, N 260, N 272, N 310), will be assigned in recognition of work completed. Hours weekly: 5 hours class, 3 hours clinical practice. Fee: \$90. *Prerequisites: RN status or NCLEX eligibility, Eng 101. Corequisites: Nsg 200 or challenge examination.*

### NSG 303. CONTEMPORARY ISSUES AND TRENDS IN NURSING THREE CREDITS

This seminar course explores current issues and trends in nursing and health care. Designated oral presentation option (OPO). *Prerequisites: Nsg 250, 260 or RN students who have completed Nsg 299.*

### NSG 305. INTRODUCTION TO NURSING RESEARCH THREE CREDITS

The research process is examined in this course. Emphasis is placed on studies in nursing which provide a foundation for critical reflection on research reports and application of findings to practice. Designated oral presentation option (OPO). Offered fall semester only. *Prerequisites: Mth 150, Nsg 250, Nsg 260, and RN students who have completed Nsg 299.*

### NSG 310. NURSING CARE OF THE OLDER ADULT CLIENT: INDIVIDUAL, FAMILY, AND COMMUNITY EIGHT CREDITS

The nursing process is utilized in the care of older adult clients and their families within their communities in a variety of settings. Nursing theory is correlated with clinical practice. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 250, Nsg 260, Nsg 272.*

### NSG 320. SENIOR PRACTICUM EIGHT CREDITS

This course prepares the student for professional role development in emerging health care delivery systems. The student synthesizes knowledge from all previous nursing and supportive courses to manage care in an area of clinical practice consistent with career goals. Hours weekly: 2 hours class, 19 hours clinical practice. Fee: \$90. *Prerequisite: Nsg 310.*

### NSG 395-396. INDEPENDENT STUDY ONE TO THREE CREDITS

Independent study for advanced students in nursing under the direction of a staff member. *Prerequisites: By arrangement with an instructor. Candidates for independent study must have a minimum cumulative and nursing G.P.A. of 3.00 and be of senior class standing.*

### NSG 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

### NSG 406. ADVANCED HEALTH ASSESSMENT THREE CREDITS

This course presents an overview of the full and comprehensive health assessment of the adult client. Emphasis on multiple aspects of assessment including physical, functional, and mental health assessment, along with transcultural variations, will prepare the student for advanced practice nursing. Students are given the opportunity to practice their assessment skills in a laboratory component. *Prerequisite: Graduate standing or permission of instructor.*

### NSG 198/298/398. TOPICS IN NURSING VARIABLE CREDIT

A study in topics of special interest that are not exclusively treated in regularly offered courses.

## PERSONAL AND PROFESSIONAL DEVELOPMENT COURSES

### PPD 101. PERSONAL AND PROFESSIONAL DEVELOPMENT I ONE CREDIT

Personal and Professional Development I is the first course in a required 7-course sequence of

Personal and Professional Development opportunities in the Business Curriculum at Wilkes University. The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation.

**PPD 102. PERSONAL AND PROFESSIONAL DEVELOPMENT II**  
ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. *Prerequisite: PPD 101.*

**PPD 201. PERSONAL AND PROFESSIONAL DEVELOPMENT III**  
ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PPD 201 continues the Life Plan and prepares students for development of a Personal Learning Plan. *Prerequisite: PPD 102.*

**PPD 202. PERSONAL AND PROFESSIONAL DEVELOPMENT IV**  
ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 202 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 201.*

**PPD 301. PERSONAL AND PROFESSIONAL DEVELOPMENT V**  
ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 301 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 202.*

**PPD 302. PERSONAL AND PROFESSIONAL DEVELOPMENT VI**  
ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 302 continues the Life Plan and prepares students for development of a Personal Learning Plan. The Learning Portfolio is reviewed as part of the on-going competencies and skills self-assessment. *Prerequisite: PPD 301.*

**PPD 401. PERSONAL AND PROFESSIONAL DEVELOPMENT VII**  
ONE CREDIT

The PPD Series adds value and depth to your learning program by explicitly targeting personal and professional competency assessment, development, practice, and evaluation. PDD 401 continues the Life Plan and prepares students for development of a Personal Learning Plan. Emphasis will be on continued portfolio and resume development, interview skills, and job search strategies. *Prerequisite: PPD 302.*

## PHARMACEUTICAL SCIENCE COURSES

**PHS 301. ADVANCED PHARMACEUTICS**  
THREE CREDITS

An overview of the various dosage forms used in the pharmaceutical industry and their manufacture. Particular emphasis will be placed on the excipients used and the manufacturing process and how these affect the physical and chemical nature of the dosage form. *Prerequisite: CHM 251 & 252.*

**PHS 331. MEDICAL ANATOMY AND PHYSIOLOGY I**  
FOUR CREDITS

Same as PHA 331. See PHA 331 for course description.

## Course Descriptions

### PHS 332. MEDICAL ANATOMY AND PHYSIOLOGY II

FOUR CREDITS

Same as PHA 332. See PHA 332 for course description.

### PHS 365. MEDICAL BIOCHEMISTRY

FOUR CREDITS

Same as PHA 365. See PHA 365 for course description.

### PHS 408. CLINICAL RESEARCH DESIGN

THREE CREDITS

Same as PHA 310. See PHA 310 for course description.

### PHS 413. HETEROGENEOUS PHARMACEUTICAL SYSTEMS

TWO CREDITS

An introduction to the design of heterogeneous systems as dosage forms. Emphasis will be placed on the physical and chemical evaluation of creams, lotions, emulsions, suspensions, semisolids and aerosols. *Prerequisite: CHM 251 & 252, & PHS 301.*

### PHS 414. PHARMACEUTICAL REGULATORY AFFAIRS

TWO CREDITS

An introduction to the regulation of the pharmaceutical industry by the Food and Drug Administration. It will focus on the requirements for product approval by the FDA and for the establishment of Good Manufacturing Practices and Good Laboratory Practices. *Prerequisite: Permission of Instructor.*

### PHS 415. SOLID DOSAGE FORMS

TWO CREDITS

An introduction to the design and manufacture of traditional oral solid dosage forms and the design of sustained/controlled release dosage forms. *Prerequisite: CHM 251 & 252, PHS 301.*

### PHS 416. OPERATION OF QUALITY CONTROL SYSTEMS

TWO CREDITS

An introduction to the design and operation of quality control or quality assurance systems. *Prerequisite: CHM 251 & 252, PHS 301.*

### PHS 417. BIOPHARMACEUTICS AND PHARMACOKINETICS

THREE CREDITS

An introduction to the principles of biopharmaceutics and pharmacokinetics. The focus is on understanding the effect of dosage form design and selection on the therapeutic outcomes. The selection of the correct mathematical model to describe the fate of a drug substance in the body will also be covered. *Prerequisite: PHS 301, PHA 331 & 332.*

### PHS 418. EXTERNSHIP IN PHARMACEUTICAL MANUFACTURE

EIGHT CREDITS

This is the capstone course for the BS in Pharmaceutical Sciences in which the classroom experiences are integrated and applied to a drug development project in a pharmaceutical company or a quality assurance testing laboratory at the Food and Drug Administration. *Prerequisite: PHS 301, 413, 414, 415, 416 & 417.*

### PHS 498. SENIOR RESEARCH PROJECT

THREE CREDITS

The planning and execution of a formulation project under the direction of a faculty mentor. It is expected that students will search the literature and patent records, design a series of experiments and eventually develop a formula and method of manufacture that will be commercially viable. *Prerequisite: PHS 301, 413, 414, 415, 416 & 417.*

## PHARMACY COURSES

### INTRODUCTORY PHARMACY PRACTICE EXPERIENCE (IPPE)

#### PHA 335. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE I

TWO CREDITS

This course will provide introductory practice experience to students in the community setting.

The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to community pharmacy. The student will take an independent learning approach under the supervision of a practicing community pharmacist. The course is two full-time weeks (80 hours) of experience. *Prerequisite: Successful completion of P-1 year.*

PHA 440. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE II  
ONE CREDIT

This course will provide introductory practice experience to students in two health care settings: prescriber's clinics and a faculty practice site. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play. *Prerequisite: P-2 standing.*

PHA 445. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE III  
TWO CREDITS

This course will provide introductory practice experience to students in the health-system setting. The course fosters the development of professionalism in an environment of practical application of knowledge, skills, and attitudes. Students will be faced with a variety of issues practical to this area of practice. The student will take an independent learning approach under the supervision of a practicing pharmacist. The course is two full-time weeks (80 hours) of experience. *Prerequisite: Successful completion of P-2 year.*

PHA 555. INTRODUCTORY PHARMACY PRACTICE EXPERIENCE IV  
ONE CREDIT

This course will provide introductory practice experience to students in two health care settings: home health and long-term care. Students will have an independent approach to learning and gain a broader understanding of these settings and the role that pharmacists may play. *Prerequisite: P-3 standing.*

GENERAL PHARMACY COURSES

PHA 302, 401, 501, 502. PHARMACY CARE LAB I - IV  
ONE CREDIT EACH

This four-semester sequence is designed to develop the student's ability to integrate and apply information as well as practice skills that are taught throughout the curriculum. The use of case studies, role-plays, presentations and other active-learning strategies engages students in the learning process and requires them to synthesize information at increasing levels of complexity as the student moves through the course sequence. Fee: \$30. *Prerequisite: P-1, P-2 or P-3 standing as appropriate for each laboratory.*

PHA 308. PHARMACEUTICAL AND HEALTH CARE DELIVERY  
THREE CREDITS

Examination of health and pharmaceutical delivery in the U.S. conducted from a societal perspective. Emphasis is on public policy, economic behavior and outcomes. Application will be made to various pharmaceutical sectors (e.g., retail, health systems, manufacturing). Students should gain an understanding of the factors driving transformation of health care delivery and the implications for future pharmacy practice. Lecture: Three hours per week. *Prerequisite: P-1 standing or consent of instructor.*

PHA 310. CLINICAL RESEARCH AND DESIGN  
THREE CREDITS

Application of research design concepts and statistical techniques to design, critically analyze and interpret preclinical, clinical and economic studies of pharmaceuticals and treatment plans. Lecture: Three hours per week. *Prerequisite: MTH 150 or equivalent and P-1 standing or consent of instructor.*

PHA 311 & PHA 312. PHARMACEUTICS I & II  
FOUR CREDITS EACH

The study and application of physico-chemical principles that are necessary for the design, development and preparation of pharmaceutical dosage forms. The study of quantitative skills necessary for an understanding of the basic and clinical pharmaceutical sciences, including skills in pharmaceutical calculations and extemporaneous preparation of dosage forms. Lecture: Three hours

## Course Descriptions

per week. Laboratory/Recitation: Three hours per week. Fee: \$80 *Prerequisite: P-1 standing or consent of instructor. PHA 311 is a prerequisite for PHA 312.*

### PHA 313. PHARMACY CALCULATIONS ONE CREDIT

The common mathematical processes that a pharmacist may encounter in professional practice are covered. Interpretation of the prescription, including Latin abbreviations, will be discussed. Medical terminology and the generic name, trade name, manufacturer and classification of the top 100 drugs will also be presented. Lecture one hour per week. *Prerequisite: P-1 standing or consent of instructor.*

### PHA 327. MEDICAL MICROBIOLOGY FOUR CREDITS

An overview of microbiology with special emphasis on pathogenic microbiology. Lecture: Three hours per week. Laboratory: Three hours per week. Fee: \$80. Cross listed with BIO 327. *Prerequisite: P-1 standing or consent of instructor.*

### PHA 331 & PHA 332. MEDICAL ANATOMY AND PHYSIOLOGY I & II FOUR CREDITS EACH

In-depth principles of human anatomy and physiology as well as an introduction to pathophysiology will be presented. Lecture: Two hours per week. Laboratory/Recitation: Three hours per week. Discussion/Recitation: two hours per week. Fee: \$80. *Prerequisite: P-1 standing or consent of instructor. PHA 331 is a prerequisite for PHA 332.*

### PHA 365. MEDICAL BIOCHEMISTRY FOUR CREDITS

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. *Prerequisite: P-1 standing or consent of instructor.*

### PHA 405. PHARMACEUTICAL CARE SYSTEMS: DESIGN AND CONTROL TWO CREDITS

Examines delivery of pharmaceutical products and services from a systems perspective in a variety of patient care settings. Focus is upon effectiveness, efficiency and quality. Covers design of systems, establishment and monitoring of key indicators, total quality management and quality assurance agencies (e.g., JCAHO, NCQA). Lecture: Two hours per week.

### PHA 410. IMMUNOLOGY/BIOTECHNOLOGY THREE CREDITS

A discussion of nonspecific host defense mechanisms and a detailed description of specific immunity. Products that impart artificial active and passive immunity are presented. The concept of biotechnology is discussed together with the currently available products of genetic engineering that relate to immunology. The various immunological disorders and the immunology of cancer and HIV are discussed. Lecture: Three hours per week. *Prerequisite: PHA 331, 332, 365 or consent of instructor.*

### PHA 411. BIOPHARMACEUTICS AND CLINICAL PHARMACOKINETICS FOUR CREDITS

The fundamentals of biopharmaceutics and pharmacokinetics are presented. The physical and chemical properties of the drug and dosage form and the impact of the route of administration and patient characteristics and disease state will be related to the absorption, distribution, metabolism and elimination in the body. Individual drugs and patient case histories will be used to familiarize the student to practice. Lecture: Three to four hours per week. Recitation: zero to three hours per week. *Prerequisite: PHA 311, PHA 312 or consent of instructor.*

### PHA 412. MANAGEMENT OF PHARMACY OPERATIONS THREE CREDITS

The principles of management, including personnel and financial management, will be covered as they apply to management of pharmacy operations in a variety of settings (e.g., community, health system, managed care). Lecture: Three hours per week. *Prerequisite: PHA 308 or consent of instructor.*

PHA 421, 423, 425, 426, 428, 430, 521, 523, 525, 526, 528, 530. PHARMACOTHERAPEUTICS

A four-semester, twelve-module sequence (three modules per semester) integrates pharmacology, medicinal chemistry, pathophysiology and pharmacotherapy. This team-taught, interdisciplinary course provides students with the opportunity to learn and apply concepts from these four disciplines. Topics and associated credits are as follows: *Prerequisite: PHA 310, 327, 331, 332, 365.*

PHA 421 PHARMACOTHERAPEUTICS I: PRINCIPLES OF PHARMACOLOGY & MEDICINAL CHEMISTRY  
TWO CREDITS

PHA 423 PHARMACOTHERAPEUTICS II: PRINCIPLES OF PHARMACOTHERAPEUTICS  
TWO CREDITS  
*Prerequisite: PHA 421.*

PHA 425 PHARMACOTHERAPEUTICS III: SELF-CARE AND DERMATOLOGY\*  
THREE CREDITS

PHA 426 PHARMACOTHERAPEUTICS IV: GASTROINTESTINAL DISORDERS\*  
TWO CREDITS

PHA 428 PHARMACOTHERAPEUTICS V: INFECTIOUS DISEASES\*  
FOUR CREDITS

PHA 430 PHARMACOTHERAPEUTICS VI: HEMATOLOGY, JOINT DISORDERS, SURGERY\*  
TWO CREDITS

PHA 450. NEUROPHARMACOLOGY OF DRUGS OF ABUSE  
THREE CREDITS

In-depth analysis of drugs of abuse, including pharmacokinetics, pharmacodynamics, tolerance, sensitization, physical dependence, and effects of drug use during pregnancy. Drug testing and substance abuse treatment strategies will also be discussed. Lecture: Three hours. *Prerequisite: PHA 421 or consent of instructor*

PHA 452. EXTEMPORANEOUS COMPOUNDING  
THREE CREDITS

Students will achieve basic and advanced skills in compounding pharmaceutical dosage forms for individualized patient therapy to replace a lack of commercially available products, and enhance therapeutic problem-solving between the pharmacist and physician to enhance patient compliance. Students will work independently on research assignments and compounding preparations. Lecture one hour, laboratory six hours per week. Fee: \$80. *Prerequisites: PHA 311 and PHA 312 and permission of instructor.*

PHA 454. HISTORY OF PHARMACY AND DRUG DEVELOPMENT  
THREE CREDITS

The History of Pharmacy and Drug Discovery is designed to provide the student with a general understanding of the development of the profession of pharmacy and its interrelationship with the discovery of critical therapeutic agents. This course will consider the contributions of the ancient Mesopotamian, Egyptian, Chinese, Greek and Roman cultures to the development of Pharmacy. The student will also be exposed to events that lead to the rise of professional pharmacy in Europe during the Renaissance period. Using this as a foundation the course will focus on the development and rise of professional pharmacy within the United States from the 15th century to modern times. An important aspect of this course will be discussions concerning the development of critical therapeutic agents that revolutionized the treatment of disease and how these discoveries affected the profession of pharmacy. Aspects of the scientific process and how it has contributed to these discoveries will also be discussed.

PHA 455. INTRODUCTION TO THE MANAGEMENT OF THE COMMUNITY PHARMACY  
THREE CREDITS

This course is designed to introduce the student to concepts needed to be a successful community pharmacist. The student will be introduced to principles in pharmacy and fiscal management, legal issues relating to pharmacy and entrepreneurship. This course will consist of lectures and projects related to pharmacy management and practice, and legislative issues.

## Course Descriptions

### PHA 457. INTRODUCTION INTO HEALTH SYSTEM PHARMACY PRACTICE

THREE CREDITS

This course is designed to introduce the student to the practice of pharmacy within a health system (e.g. hospital) setting. The student will be introduced to the history, management, clinical services within, and career options in a health-system pharmacy. Furthermore, the student will need to complete health-system site visits, a Drug-Use Evaluation (DUE), and formulary evaluation.

*Prerequisites: P-2 Standing.*

### PHA 503 AND PHA 504. LONGITUDINAL CARE LAB I & II

ONE CREDIT EACH

Students will follow a patient or patients over an extended period of time in a medical or home setting. Pharmaceutical knowledge and skills will be applied in communications, health assessment, monitoring of pharmacotherapy, evaluation of both humanistic and clinical outcomes. Issues of health care, cost access and quality as revealed through each patient's interaction with health and pharmaceutical care systems will be addressed. Three hours per week. Students are responsible for transportation to and from all off-campus experiential sites. *Prerequisite: PHA 503 is prerequisite to PHA 504.*

### PHA 505. PHARMACY LAW

TWO CREDITS

The study of federal and state statutes, regulations and court decisions which control the practice of pharmacy and drug distribution. Civil liability in pharmacy practice and elements of business and contract law will be covered. Lecture: Two hours per week.

### PHA 521 PHARMACOTHERAPEUTICS VII: PULMONARY DISORDERS\*

TWO CREDITS

### PHA 523 PHARMACOTHERAPEUTICS VIII: CARDIOVASCULAR DISORDERS\*

FOUR CREDITS

### PHA 525 PHARMACOTHERAPEUTICS IX: RENAL DISORDERS\*

TWO CREDITS

### PHA 526 PHARMACOTHERAPEUTICS X: ENDOCRINE DISORDERS & WOMEN'S HEALTH ISSUES\*

TWO CREDITS

### PHA 528 PHARMACOTHERAPEUTICS XI: NEOPLASTIC DISEASES\*

TWO CREDITS

### PHA 530 PHARMACOTHERAPEUTICS XII: CENTRAL NERVOUS SYSTEM DISORDERS\*

FOUR CREDITS

*\* PHA 423 is prerequisite to PHA 425-530.*

### ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE)

### PHA 509 ECONOMIC EVALUATION OF PHARMACEUTICAL PRODUCTS AND SERVICES

THREE CREDITS

Introduction to commonly used economic evaluation methods (e.g., cost-minimization, cost-utility, cost-benefit, cost-effectiveness) as applied to pharmaceutical products and services. Quality of life and outcomes research will also be explored. Emphasis is on understanding evaluation methods and research design and interpreting the relevant literature for practice applications. Lecture: Three hours per week. *Prerequisite: PHA 308 and PHA 310 or consent of instructor.*

### PHA 532. ALTERNATIVE MEDICINE AND NUTRITION

THREE CREDITS

This course gives an overview of various alternative/contemporary medicine practices: homeopathy, herbal therapy, chiropractic, acupuncture, acupressure, body massage, ayurvedic, and shamanic practices. This course will also give an overview on the concept and practice of nutrition: parenteral and enteral nutrition. Lecture: Three hours. *Prerequisite: PHA 331, 332, 365 or consent of instructor.*

### PHA 550. PRINCIPLES OF EXPERIMENTAL PHARMACOLOGY

THREE CREDITS

This course is designed to increase the student's appreciation of the science of pharmacology. The

student will be exposed to principles and theories that are currently used to interpret pharmacological data about new drug products and physiological systems in both humans and animals. A series of articles will be used to demonstrate application of pharmacological techniques, and the student will be asked to suggest additional techniques to further clarify published hypotheses. The student will conduct experiments to apply pharmacological theories and techniques and to use the scientific method to gain data to support a hypothesis. Fee: \$80.

PHA 551. VETERINARY PRODUCTS  
THREE CREDITS

Veterinary Products is designed to introduce pharmacy students to Veterinary Pharmacology and Therapeutics and the role of the pharmacist in the care of animals. The students will evaluate the most commonly used drugs in veterinary care and relate that evaluation to the use of these drugs in humans. The student will learn fundamental concepts that will allow the student to provide pharmaceutical care to animals and assist the veterinarian and owner in the care of pets and domestic animals. There will be a field trip to a zoo on one Saturday during the course. *Prerequisites: PHA 424 and 426.*

PHA 552. PRINCIPLES OF BIOORGANIC AND MEDICINAL CHEMISTRY  
THREE CREDITS

This will be an introductory course whose aims are to provide the principles of bioorganic and medical chemistry, including an understanding of drug structure-activity relationships, prediction of the physicochemical properties of a drug, basic knowledge of the major pathways of drug metabolism and factors that can contribute to drug-drug interactions. *Prerequisites: CHEM 231-232, PHA 327, 365.*

PHA 395-396. INDEPENDENT STUDY  
ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 495-496. INDEPENDENT STUDY  
ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 595-596. INDEPENDENT STUDY  
ONE TO SIX CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. *Prerequisites: Approval of department chairperson.*

PHA 599 A, B AND C. ELECTIVE ADVANCED PHARMACY EXPERIENCE ROTATIONS  
FIVE-SIX CREDITS

Advanced pharmacy practice experience involved in different aspects of pharmaceutical care. (Courses to be determined.) Clinical practice 40 hours per week for a total of five weeks. *Prerequisites: P-4 standing.*

ADVANCED PHARMACY PRACTICE EXPERIENCE (APPE)

PHA 510. GENERAL MEDICINE  
FIVE-SIX CREDITS

Integration of the basic pharmacy related concepts to the delivery of pharmaceutical care in general medicine practice. Clinical practice: Forty hours per week for a total of five weeks. *Prerequisite: P-4 standing.*

PHA 511. AMBULATORY CARE ADVANCED PHARMACY PRACTICE EXPERIENCE  
FIVE-SIX CREDITS

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in ambulatory care settings. Clinical practice: Forty hours per week for a total of six weeks. *Prerequisite: P-4 standing.*

PHA 512. COMMUNITY ADVANCED PHARMACY PRACTICE EXPERIENCE  
FIVE-SIX CREDITS

Integration of basic pharmacy related concepts to the delivery of pharmaceutical care in community

## Course Descriptions

practice settings. Clinical practice: Forty hours per week for a total of six weeks. *Prerequisite: P-4 standing.*

### PHA 513. HEALTH SYSTEM ADVANCED PHARMACY PRACTICE EXPERIENCE FIVE-SIX CREDITS

Integration of advanced pharmacy related concepts to the delivery of pharmaceutical care in the health system setting. Clinical practice: Forty hours per week for a total of five weeks. *Prerequisite: P-4 standing.*

## PHILOSOPHY COURSES

### PHL 101. INTRODUCTION TO PHILOSOPHY THREE CREDITS

An introduction to some of the major figures, problems, and concerns of philosophical thought. Students in this course typically examine a variety of philosophical questions and problems such as: the existence of God, human nature and the good life, freedom and responsibility, skepticism and the nature of knowledge, and theories of reality.

### PHL 110. INTRODUCTION TO ETHICAL PROBLEMS THREE CREDITS

An exploration of a series of basic ethical problems. Topics to be covered include basic ethical theories, how to evaluate ethical theories and moral arguments, the relationship between religion and ethics, and a selection of current moral problems such as abortion, capital punishment, affirmative action, animal rights, etc. Specific moral problems covered will vary. Other ethical questions such as "How should we live?" may also be covered in the course.

### PHL 122. INTRODUCTION TO SYMBOLIC LOGIC THREE CREDITS

An introduction to the nature of logical systems and deductive reasoning. The study of the syntax and semantics of formal languages; testing arguments for validity; and an examination of other important logical notions, such as proof and consistency.

### PHL 214. MEDICAL ETHICS THREE CREDITS

A selection of important issues facing health care providers, patients, and society in general are examined. Topics include euthanasia, abortion, doctor-patient relationships, the use and misuse of information, research on human and non-human animals, informed consent, patients' rights, truthfulness and the right to know, conflicts of obligations, the right to health care, the allocation of resources, mandatory testing for AIDS, and the use of genetic and reproductive technologies. *Prerequisite: PHL 101 or permission of instructor.*

### PHL 216. PHILOSOPHIES OF NONVIOLENCE THREE CREDITS

An examination of the concept of nonviolence and arguments supporting nonviolence as a way of life. Historical and modern theories as well as applications of nonviolence will be considered including ideas from the Buddha, Jesus, Gandhi, Tolstoy, Martin Luther King, Jr., Thoreau, the Dalai Lama, Thich Nhat Hanh, and others. Students will be expected to consider the importance and relevance of these ideas for their own lives. *Prerequisite: PHL 101, 110 or permission of instructor.*

### PHL 217. THE QUESTION OF ANIMAL RIGHTS THREE CREDITS

An exploration of arguments supporting a wide variety of conclusions regarding our ethical obligations to nonhuman animals. We will examine standard moral theories, theories about the nature of current social practices, the history of our attitudes toward nonhuman animals, feminist arguments that our attitudes toward nonhuman animals are connected to negative views of female humans, and more. *Prerequisite: PHL 101, 110 or permission of instructor.*

### PHL 218. ENVIRONMENTAL ETHICS THREE CREDITS

An examination of the central problems of environmental ethics as viewed from the perspectives of science and of philosophy. The value of nature and "natural objects," differing attitudes toward

wildlife and the land itself, implications of anthropocentrism, individualism, ecocentrism and ecofeminism, bases for land and water conservation, and other topics will be examined within a framework of moral and scientific argument. (same as EES 218). *Prerequisite: PHL 101 or EES 240 or permission of instructor.*

**PHL 236. AMERICAN POLITICAL PHILOSOPHY**  
**THREE CREDITS**

See description under Political Science Department listing. (Same as PS 262). May not be used to meet Area I of the General Education Requirements.

**PHL 242. THE MEANING OF LIFE**  
**THREE CREDITS**

A selection of culturally diverse classic and contemporary answers to the question of the meaning of life will be examined and the implications for our lives will be explored. Perspectives to be addressed include those of Epicurus, Epictetus, Aristotle, Lao-tzu, Buddha, Viktor Frankl, Albert Camus, A.J. Ayer, Peter Singer, and more. *Prerequisites: PHL 101, PHL 110, or permission of instructor.*

**PHL 244. BUDDHIST THOUGHT**  
**THREE CREDITS**

An exploration and examination of basic ideas in Buddhist philosophy, considering all three main "vehicles" of Buddhist thought—Theravada, Mahayana, and Vajrayana schools. Comparisons to Western philosophical thought will be made and some Buddhist practices explored. *Prerequisites: PHL 101 or permission of instructor.*

**PHL 272. PHILOSOPHY OF RELIGION**  
**THREE CREDITS**

An examination of various problems that arise when religion is made the object of philosophical reflection: the nature and forms of religious experience, the relationship between faith and reason, arguments for the existence of God, the problem of evil, arguments for immortality, the concepts of worship and miracle, the nature of religious language, and the possibility of religious knowledge. *Prerequisite: PHL 101 or permission of instructor.*

**PHL 298. TOPICS**  
**THREE CREDITS**

The study of a topic of special interest not extensively treated in other courses. Topics chosen according to interest of instructor. Because of its variable content, this course may be repeated for credit. *Prerequisite: PHL 101 or permission of instructor.*

**PHL 301. ORIGINS OF WESTERN THOUGHT**  
**THREE CREDITS**

The development of Western philosophical thought from its beginnings in the Greek world to early Christian thought. Philosophers to be studied include the Pre-socratics, Plato, Aristotle, Plotinus, the Stoics, Epicurus, Sextus Empiricus, and St. Augustine. *Prerequisite: PHL 101 or permission of instructor.*

**PHL 310. ETHICAL THEORY**  
**Three Credits**

A study of classical and contemporary ethical theories, the problems that they raise and the problems they are intended to solve. The theories of Plato, Aristotle, Kant, Hume, and Mill will be examined as well as recent contributions by Ross, Harman, Moore, Ayer, Stevenson, and Hare. Questions addressing ethical relativism, the relationship of religion to ethics, skepticism, moral realism, egoism, and value judgments will also be discussed. *Prerequisite: PHL 101 or permission of instructor.*

**PHL 314. ADVANCED TOPICS IN BIOETHICS**  
**THREE CREDITS**

An in-depth exploration of the ideas of a selection of philosophers known for their often radical contributions in the field of bioethics. Topics include the appropriate and inappropriate use of moral principles and theories, public policies to change or maintain in the area of bioethics, and whether our attitudes toward personhood and life and death are defensible. *Prerequisite: PHL 214*

## Course Descriptions

*or permission of instructor.*

### PHL 316. MORAL PSYCHOLOGY THREE CREDITS

An analysis of some current questions in moral psychology, an area of philosophy that addresses normative issues regarding human psychology including motives, emotions, psychological reactions, etc. Questions to be addressed include questions about moral luck (whether it is possible for an agent to be caught in a situation, through no fault of her own, in which it is impossible to act rightly), about whether one's moral character may be subject to luck in important ways, about whether there are reasons to act morally if one does not care about reputation or morality, and questions about when judgments of responsibility for actions and character are appropriate. *Prerequisites: PHL 310 or permission of instructor.*

### PHL 332. SOCIAL AND POLITICAL PHILOSOPHY THREE CREDITS

Social and political institutions as seen by such classic critics as Plato, Aristotle, Hobbes, Locke, Hume, Rousseau, Bentham, and others. More recent views such as those of Marx, Rawls, and Nozick will also be covered. Special attention is paid to the related questions of the role of the state and the relationship between the individual and the state. (Same as PS 263) *Prerequisite: PHL 101 or permission of instructor.*

### PHL 344. ADVANCED TOPICS IN BUDDHIST THOUGHT THREE CREDITS

An examination of the history of Buddhist philosophy and the issues it raises with particular emphasis on *Shunyata*. *Prerequisite: PHL 244 or permission of instructor.*

### PHL 350. PHILOSOPHY OF SCIENCE THREE CREDITS

A critical examination of various issues concerning scientific thought. Topics may include the nature of science, distinguishing science from pseudo-science, the nature of theories, scientific explanation, space and time, causality, the problem of induction, laws of nature, and the reality of theoretical entities. *Prerequisite: PHL 101 or permission of instructor.*

### PHL 372. ADVANCED TOPICS IN PHILOSOPHY OF RELIGION THREE CREDITS

An intensive examination of a major problem or figure in the philosophy of religion. Because of its variable content, this course may be repeated for credit. *Prerequisite: PHL 272 or permission of instructor.*

### PHL 390. SENIOR PROJECTS: CAPSTONE ONE CREDIT

An independent project culminating in a formal essay and presentation. The project serves as a capstone experience demonstrating the student's learning in the major. *Open only to senior Philosophy majors.*

### PHL 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson.*

### PHL 397. SEMINAR ONE TO THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson is required.*

### PHL 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the

student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

## PHYSICS COURSES

### PHY 105. CONCEPTS IN PHYSICS

#### THREE CREDITS

Basic concepts of physical science, including the scientific method, will be studied. Theories, laws, and experiments from mechanics, electricity and magnetism, thermodynamics, optics, and atomic and nuclear physics may be included. Viewpoints will be classical and modern, including quantum and relativistic. Class meets four hours a week: two hours of lecture and one two-hour lab per week. Fee: \$70 *Prerequisite: No previous background in science or college-level mathematics is required.*

### PHY 170. CONCEPTS IN PHYSICS AND CHEMISTRY

#### FOUR CREDITS

An overview of Classical Mechanics, Thermodynamics, and the elementary principles of modern physics, including selected topics in basic chemistry and applications to human health. Emphasis is placed on basic physical and chemical principles and on algebraic calculations, scaling, units conversions, Cartesian graphing, acid and base reactions, and numerical problem solving. Three hours of lecture/discussion, one three hour lab per week. Fee: \$70. *Prerequisite: Previous courses in Chemistry, Algebra, Geometry.*

### PHY 171. PRINCIPLES OF CLASSICAL AND MODERN PHYSICS

#### FOUR CREDITS

An introductory course designed to promote an understanding of the more important fundamental laws and methods of mechanics and electricity and magnetism. Laboratory work to emphasize basic principles and to acquaint the student with measuring instruments and their use, as well as the interpretation of experimental data. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee:\$70. *Corequisite: Mth 105 or Mth 111.*

### PHY 174. APPLICATION OF CLASSICAL AND MODERN PHYSICS

#### FOUR CREDITS

An introductory course designed to promote an understanding of the more important fundamental laws and methods of heat, optics and modern physics. Laboratory work to emphasize basic principles and to acquaint the student with measuring instruments and their use, as well as the interpretation of experimental data. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee:\$70. *Corequisite: Mth 105 or Mth 111.*

### PHY 201. GENERAL PHYSICS I

#### FOUR CREDITS

A thorough grounding in the concepts, principles, and laws of mechanics, thermodynamics, and wave motion. Instruction by demonstration-lecture, recitation, problem solving, and experimental work. Demonstration-lecture three hours a week, recitation one hour per week, and laboratory two hours a week. Fee: \$70. *Corequisite: Mth 111.*

### PHY 202. GENERAL PHYSICS II

#### FOUR CREDITS

Electricity and magnetism, optics and light. Demonstration-lecture three hours a week, recitation one hour a week, and laboratory two hours a week. Fee: \$70 *Prerequisite: Phy 171 or 201. Corequisite: Mth 112.*

### PHY 203. GENERAL PHYSICS III

#### THREE CREDITS

Modern physics including the experimental basis, concepts, and principles of atomic and nuclear physics. Demonstration-lecture three hours a week. *Prerequisite: Phy 202.*

### PHY 395-396. INDEPENDENT RESEARCH

#### ONE TO THREE CREDITS

Independent study and research for advanced students in the field of physics under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisites: Senior standing and approval of department chairperson.*

## Course Descriptions

PHY 198/298/398. TOPICS IN PHYSICS  
VARIABLE CREDIT

Selected topics in the field of physics. These may include one or more of the following: astronomy; geophysics; biophysics; nuclear power & waste; relativity; quantum mechanics; semi-conductors; cryogenics; health physics. May be repeated for credit. *Prerequisite: Varies with topic studied.*

## POLITICAL SCIENCE COURSES

PS 111. INTRODUCTION TO AMERICAN POLITICS  
THREE CREDITS

A descriptive and analytical study of the theory and practice of American government, its constitutional basis, organization, powers, functions, and problems. *Offered every semester.*

PS 141. INTRODUCTION TO INTERNATIONAL POLITICS  
THREE CREDITS

An introduction to the field of international relations. Attention is given to basic theories of international relations as well as the issues and problems that confront contemporary world politics. Factors that determine a nation's foreign policy are also examined. *Offered every spring.*

PS 151. GOVERNMENTS OF THE WORLD  
THREE CREDITS

This course is an introduction to the study of the politics and government of selected foreign countries. The course will begin with the examination of the various structures and concepts of government around the world and their regional variations. Progressing from the study of a number of alternative structures of politics and government, the course will examine several countries in detail providing a specific introduction to the political structures of a number of countries. *Offered every spring.*

PS 212. URBAN GOVERNMENT AND POLITICS  
THREE CREDITS

An examination of the structure and operation of urban governments. Metropolitan politics is also considered. Special attention is given to the politics and policy problems confronting American cities. (Same as SOC 263) Counts as Criminology elective.

PS 213. POLITICAL PARTIES AND POLITICAL PARTICIPATION  
THREE CREDITS

An introduction to the role and function of political parties in democratic regimes, with particular attention given to the U.S. Extensive discussion of the political activities of the American electorate in forms other than parties, such as interest groups, as well as grass roots movements. *Offered in fall semester in even years.*

PS 221. INTRODUCTION TO PUBLIC ADMINISTRATION  
THREE CREDITS

An introduction to the principles and problems of public administration in an increasingly complex society. Attention to such topics as leadership, informal organizational processes (infrastructure), the relation of administration to its cultural context, and the question of administrative responsibilities. Survey of the technical problems of personnel, finance, and administrative law.

PS 224. PUBLIC POLICY ANALYSIS  
THREE CREDITS

This course is an introduction to the study of public policy at the national level. It will examine approaches to public policy and the operation of the "policy process." A range of public policy examples will be employed from social welfare to foreign and defense issues.

PS 232. CRIMINAL LAW  
THREE CREDITS

An introduction to the study of criminal law. The principles of criminal law are presented using the case method. The structure and operation of the criminal justice system are also reviewed. *Offered every fall.*

PS 233. LAW AND SOCIETY  
THREE CREDITS

An introduction to the study of law and its role in social and political systems. Attention is given to theories of law, and the structure of the legal system. Students are given the opportunity to engage in hypothetical dispute resolutions using common law methods. *Offered every spring.*

PS 242. INTERNATIONAL LAW AND ORGANIZATION  
THREE CREDITS

The study of the nature, application, and sources of international law and how it relates to the evolution of global and regional organizations and alliances, including international non-governmental organizations and other non-state factors. *Prerequisite: PS 141 or consent of instructor.*

PS 251. EUROPEAN POLITICS  
THREE CREDITS

Comparison of the development, institutions, problems and prospects of democratic systems in Europe, both west and east. Attention is given to the European Community and its role in the transformation of Europe as well as the development of the former communist states in eastern Europe.

PS 260. INTRODUCTION TO POLITICAL THINKING  
THREE CREDITS

An introduction to the study of politics through an examination of the crucial issues with which political scientists grapple: justice, equality, freedom, power, and the good life, to name a few. *Offered every fall.*

PS 261. CONCEPTS AND METHODS IN POLITICAL SCIENCE  
THREE CREDITS

A survey of the major concepts, theories and methods of political science as a discipline. Preparation of a research design and a review of quantitative methods also included. *Offered every fall.*

PS 262. AMERICAN POLITICAL THOUGHT  
THREE CREDITS

The study of the political ideas, ideals and ideologies which contributed to and developed from the American experience. An analysis of the ideas which underlie our political institutions and practices. (Same as PHL 236) May not be used to meet Area I of the General Education Requirements.

PS 263. SURVEY OF POLITICAL PHILOSOPHY  
THREE CREDITS

See description under Philosophy Department listing. (Same as PHL 230). *Prerequisite: Phl 101 or permission of instructor.*

PS 264. SURVEY RESEARCH METHODS  
THREE CREDITS

See description under Sociology Department listing. (Same as SOC 371).

PS 265. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES  
THREE CREDITS

This course is an introduction to quantitative analysis for the social sciences using SPSS, one of the most frequently and widely used statistical packages in the world. Students will learn how to enter and manipulate data in SPSS, apply and interpret statistics from descriptive through multiple regression, and test hypothesis using statistical methods (same as SOC 373). *Prerequisites: PS 111 or 141, PS 261 or SOC 371, or approval of instructor.*

PS 311. THE AMERICAN PRESIDENCY  
THREE CREDITS

An exploration and analysis of the development and powers of the American President as political leader, chief executive, and world leader. Special attention is given to the selection process and the effect of the process on the Presidency. *Prerequisite: PS 111 or consent of instructor. Offered in fall semester in odd years.*

## Course Descriptions

### PS 312. LEGISLATIVE BEHAVIOR

THREE CREDITS

An analysis of the theory and practice of representative institutions in political systems with emphasis given to the American Congress. Legislative elections, floor procedures, committee functions, and ethics are all considered as well as their collective impact upon the formation of public policy. *Prerequisite: PS 111 or consent of instructor. Offered in spring semester in even years.*

### PS 331. THE CONSTITUTION AND THE FEDERAL SYSTEM

THREE CREDITS

The study of the growth and change of the American Constitution through analysis of the Continuation of the study of the meaning of the Constitution as interpreted by the Supreme Court. Analysis of the landmark decisions regarding free speech and press, separation of church and state, rights of persons accused of crimes, equal protection of the laws, voting rights. *Prerequisite: PS 111 or PS 233, or consent of instructor. Offered in spring semester in odd years.*

### PS 332. CIVIL RIGHTS AND LIBERTIES

THREE CREDITS

leading cases decided by the U.S. Supreme Court. Analysis of the powers of the three branches of government and of the relations between the states and the federal government. *Prerequisite: PS 111 or PS 233, or consent of instructor. Offered in fall semester in even years.*

### PS 345. AMERICAN NATIONAL SECURITY POLICY

THREE CREDITS

This course analyzes U.S. National Security Policy, the combination of foreign and defense policies. Using theories of international politics and foreign policy, students learn about the evolution of U.S. national Security from the War of Independence to the contemporary period. Theoretical approaches, such as geopolitics, balance of power, and force doctrines, are examined. The agencies and personnel that develop and implement security policy are also studied. *Prerequisite: PS 141 or permission of instructor.*

### PS 350. COMPARATIVE POLITICS: THEORY AND ANALYSIS

THREE CREDITS

This course is an introduction to the study of politics and governments from a comparative perspective. It is not a survey course of the governmental institutions of particular countries, but rather an examination of types of governments and regimes, the transitions that may occur between types of government, and approaches to studying these topics. We will also examine the ways that ethnicity and cultural ideas affect governments and regime transition. *Prerequisite: Sophomore Standing.*

### PS 380. POLITICAL SCIENCE SENIOR PROJECT

THREE CREDITS

This course is the capstone experience for political science majors. During the semester, the student will complete the research project begun during PS 261 (i.e. data and/or information will be gathered and analyzed.), and the results written in a formal paper. The student will present the findings in public forum in which the department's faculty and students are present. *Prerequisite: Senior Standing. Offered every semester.*

### PS 394. PRACTICUM

ONE TO THREE CREDITS

Educational experiences associated with faculty research, club activities, experiential learning are available to the student for credit depending upon the amount of time the student invests in the experience. Students may work in the University's Survey Center, assist in a major research project with a faculty member, or participate in the Model UN or some other educational simulation. (Maximum of nine credits can be accumulated by a student over four years). *Prerequisite: No course prerequisites but the permission of the instructor/faculty member is required in advance. Offered every semester.*

### PS 395-396. INDEPENDENT RESEARCH

ONE TO THREE CREDITS

Independent study and research for advanced students in the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: Approval of department chairperson. Offered every semester.*

PS 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

PS 198/298/398. TOPICS IN POLITICAL SCIENCE / TOPICS IN POLICY ANALYSIS  
VARIABLE CREDIT

A study of topics of special interest not extensively treated in regularly offered courses. Examples of possible topics would be: film and politics; minorities in the political process; American conservatism; the First Amendment in law and practice; war in the ancient era; Marxism, etc. May be repeated when topics differ. A topics course in a specific field of public policy, such as Energy, Environmental Science, Health Policy and Politics, etc., may be offered also. *Prerequisite: Permission of department chairperson, criterion depending on topic.*

## PSYCHOLOGY COURSES

PSY 101. GENERAL PSYCHOLOGY  
THREE CREDITS

An introduction to the field of psychology with emphasis on objective and systematic methods of inquiry. Extensive treatment of major psychological topics including sensation, perception, learning, motivation, intelligence, personality development, frustration, conflict, and mental health.

PSY 200. STATISTICS IN PSYCHOLOGY  
THREE CREDITS

An introduction to the use of statistical procedures in the analysis of psychological data. Topics include descriptive statistics and inferential statistics. Techniques such as t-tests and analysis of variance (ANOVA) will be used for hypothesis testing. *Prerequisite: Psy 101; Mth 101 or higher.*

PSY 221. DEVELOPMENTAL PSYCHOLOGY  
THREE CREDITS

The course provides a general view of human growth and development from conception through the life span. Physical, cognitive, personal, and social development of the various stages of life will be presented. Discussions will include issues such as the influence of heredity versus environment and how these issues can be studied using various developmental research techniques. *Prerequisite: Psy 101.*

PSY 222. ADOLESCENT PSYCHOLOGY  
THREE CREDITS

This course is designed as a study of the adolescent stage of life. Emphasis will be placed on the following areas of development: physical, emotional, cognitive, and social. *Prerequisite: Psy 101.*

PSY 242. PERSONALITY  
THREE CREDITS

An examination of the major theoretical perspectives on personality development and functioning, with additional emphasis on the assessment of personality and the treatment of disorders of personality. *Prerequisite: Psy 101.*

PSY 300. EXPERIMENTAL PSYCHOLOGY  
THREE CREDITS

A lecture and laboratory course designed to familiarize the student with the methods and the results of modern psychological research. The course includes a study of several of the famous experiments in the field of psychology. Also included is practice with the older as well as the more recent methods of experimental research. Lecture and laboratory. Fee \$50. *Prerequisite: Psy 101, Psy 200.*

PSY 311. BEHAVIORAL NEUROSCIENCE  
FOUR CREDITS

A study of the physiological mechanisms mediating behavior and cognition. Emphasis on the structure and function of the nervous system and the neurophysiological bases of sensory processes,

## Course Descriptions

emotion, abnormal behavior, sleep, learning and memory, pain, and drug abuse. Laboratory experience includes brain dissection and psychophysiological techniques employed in human behavioral neuroscience research. Fee: \$30. *Prerequisites: Psy 101; junior or senior standing.*

### PSY 312. SENSORY AND PERCEPTUAL PROCESSES FOUR CREDITS

Principles and phenomena of human sensory and perceptual processes are studied within the visual, auditory, olfactory, gustatory, proprioceptive and cutaneous systems. Students are familiarized with techniques used in the investigation of sensory and perceptual phenomena. *Prerequisite: Psy 101; junior or senior standing.*

### PSY 331. COGNITION THREE CREDITS

A survey of human cognitive processes such as attention, pattern recognition, memory, language, and problem solving as well as other selected aspects of human cognition. The course includes historical as well as current perspectives on cognitive issues and emphasis on the research techniques used. *Prerequisite: Psy 101.*

### PSY 333. CRITICAL THINKING IN PSYCHOLOGICAL SCIENCE THREE CREDITS

This course provides an opportunity to learn and practice the basic skills of critical thinking within the context of psychological science. Students will evaluate claims and theories in psychology, generate alternative explanations of psychological findings, identify common fallacies in thinking, construct and evaluate arguments, and learn how to become a more intelligent consumer of information. Additional topics include the interface of politics and the media with science, and the dangers of pseudoscience. *Prerequisite: Psy 101.*

### PSY 341. INTRODUCTION TO SOCIAL PSYCHOLOGY THREE CREDITS

A general survey of the field of social psychology. Social factors in human nature; psychology of individual differences; social interaction; collective behavior, psychology of personality; social pathology. (Same as Soc 341) *Prerequisites: Soc 101 or Ant 101 or Psy 101.*

### PSY 351. BEHAVIORAL MEDICINE THREE CREDITS

This course provides a survey of the basic theoretical concepts and major issues in Behavioral Medicine. Specifically, this course examines how the areas of health, illness and medicine can be studied from a psychological perspective. Topics of emphasis include: the psychological aspects of wellness and illness, preventive medicine, stress, chronic and terminal diseases (such as cancer and AIDS), and the use of alternative medicine. *Prerequisites: Psy 101; junior or senior standing.*

### PSY 352. PSYCHOPATHOLOGY THREE CREDITS

A general survey of psychological disorders in children and adults with emphasis on symptomatology, etiology, and assessment. Forensic and classification issues are also examined. *Prerequisite: Psy 101, Psy 242.*

### PSY 353. CLINICAL METHODS IN PSYCHOLOGY THREE CREDITS

A survey of the clinical methods in psychology including general therapeutic models and specific clinical techniques. Issues of assessment and diagnosis of psychological disorders are examined. *Prerequisite: Psy 101, Psy 352.*

### PSY 354. THE EXCEPTIONAL INDIVIDUAL THREE CREDITS

A study of the psychological, physical, and social challenges and needs of exceptional individuals with an emphasis on etiology, assessment, impact and educational interventions. *Prerequisites: Psy 101, Psy 221.*

### PSY 355. FORENSIC PSYCHOLOGY THREE CREDITS

A survey of the role that psychology has played in the legal system from issues of morality and theories of crime, to eyewitness testimony, the evaluation of criminal suspects, and jury selection.

The application of the methods and theories of psychology to the legal system will be emphasized. *Prerequisite: Psy 101; junior or senior standing.*

PSY 356. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY  
THREE CREDITS

A survey of the applied areas of personnel, organizational, human factors, and consumer psychology. *Prerequisite: Psy 101.*

PSY 357. NEUROPSYCHOLOGY  
THREE CREDITS

A survey of the relationship between nervous system physiology and human behavior with emphasis on neurological disorders, neuropsychological assessment, head injury, cerebral asymmetry, and rehabilitation. *Prerequisite: Psy 101.*

PSY 358. PSYCHOLOGICAL TESTS AND MEASURES  
THREE CREDITS

A survey of the psychometric properties of various instruments and measures of psychological phenomena (especially intelligence and personality). a variety of group and individual tests are studied as to their reliability, validity and utility. *Prerequisite: Psy 101, Psy 200.*

PSY 359. PSYCHOPHARMACOLOGY  
THREE CREDITS

A study of the effects and mechanisms of the action of psychoactive drugs on behavior. Focus will be placed on drugs used to treat psychopathological disorders and drugs of abuse. Topics of emphasis include a survey of: stimulants, depressants, antipsychotics, antidepressants, psychedelics, legal drugs such as caffeine, nicotine and alcohol. *Prerequisite: Psy 101.*

PSY 361. COMPARATIVE PSYCHOLOGY  
THREE CREDITS

A survey of underlying genetic and biological mechanisms influencing human and non-human behavior. Emphasis is on the role of evolution and natural selection in the development of behavioral adaptations, and to behavioral comparisons among species. Topics include the fields of ethology, sociobiology, and behavioral genetics. *Prerequisite: Psy 101.*

PSY 362. HISTORY OF PSYCHOLOGY  
THREE CREDITS

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. *Prerequisite: Psy 101.*

PSY 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research under the direction of a faculty member. *Prerequisite: PSY 300; Approval of department chairperson is required.*

PSY 198/298/398. TOPICS IN PSYCHOLOGY  
VARIABLE CREDIT

A study in topics of special interest not extensively treated in regularly offered courses.

PSY 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

PSY 400. SENIOR CAPSTONE  
THREE CREDITS

This course is designed to provide a capstone experience for senior Psychology majors. Students will run an experiment, conduct the appropriate statistical analysis and present the results formally in an APA manuscript, a poster, and in an oral presentation. Issues related to the field, including

## Course Descriptions

careers and graduate school, will also be discussed. *Prerequisites: Senior status and departmental permission.*

## SOCIOLOGY COURSES

### SOC 101. INTRODUCTION TO SOCIOLOGY THREE CREDITS

A systematic view of sociology, providing essentials for an approach to questions about man in society; analysis of social processes, structures, and functions.

### SOC 211. THE FAMILY THREE CREDITS

History and ethnological studies of family. Role of family in the development of the individual. Interrelation of church, state, and family. Social conditions and changes affecting the American family. Family stability and disorganization. *Prerequisite: Soc 101 or Ant 101 or 102 or approval of instructor.*

### SOC 212. HUMAN SEXUALITY THREE CREDITS

A balanced and thoughtful introduction to what is currently known about human sexuality. Research in sexuality comes from a variety of disciplines including Psychology, Sociology, Biology, Medicine, Physical Education and Human Education. Without assuming that the student has an extensive background in any of these fields, this course draws liberally on all of them and works hard to show how the biology, psychology and sociology of sex are interrelated. *Prerequisite: Soc 101 or approval of instructor.*

### SOC 214. SEX ROLES THREE CREDITS

This course deals with the origins of sex roles, the historical changes in sex roles, the consequences of sex roles to the individual and to society, and the outlook for sex roles in the future. *Prerequisites: Soc 101 or Ant 101 or 102 or approval of instructor.*

### SOC 215. FAMILY VIOLENCE THREE CREDITS

It is customary to think of violence between family members as infrequent and, when it does occur, as being the result of some mental defect or aberration. Research evidence shows that neither of these views is correct. This course examines the prevalence, experience, causes, and prevention of family violence. *Prerequisites: Soc 101 or Ant 101 or 102 or approval of instructor.*

### SOC 222. CRIMINOLOGY THREE CREDITS

An analysis of the nature and extent of crime and the causes and prevention of criminality. Topic areas include the history of criminology, criminological research methods, the extent and patterns of crime, and theories of criminal behavior, and criminal law and its functions. *Prerequisite: Soc 101 or approval of instructor.*

### SOC 223. DRUGS AND ALCOHOL IN AMERICAN SOCIETY THREE CREDITS

An examination of drugs and alcohol in American society as a major social problem. *Prerequisite: Soc 101 or approval of instructor. Offered every other year.*

### SOC 224. SOCIAL GERONTOLOGY THREE CREDITS

Considers major findings about the social organization of aging and dying. Reviews history, present and future implications of the rapidly expanding population of elderly. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of the instructor.*

### SOC 225. JUVENILE DELINQUENCY THREE CREDITS

An examination of the nature and extent of juvenile delinquency, its causes, and its prevention. Topics include the similarities and differences between juvenile and adult justice systems; trends in juvenile delinquency; theories of delinquency; gangs; and the roles of family, schools, and legal institutions as well as community-based programs and their role in delinquency prevention and

control. *Prerequisite: Soc 101 or approval of instructor.*

SOC 226. CORRECTIONS, PROBATION AND PAROLE  
THREE CREDITS

A study of the agencies devoted to the correction and treatment of convicted offenders with a special focus on adult and juvenile probation, parole agencies supervising offenders in the community, as well as residential correction facilities including jails, prisons and juvenile institutions. *Prerequisite: Soc 101 or approval of instructor.*

SOC 228. DEVIANCE AND SOCIAL CONTROL  
THREE CREDITS

This course examines the nature of deviant behavior and the social responses to it. Topics covered are: what constitutes deviance, theories of deviance, varieties of deviant behavior, and the types of social responses to deviant behavior. *Prerequisite: Soc 101 or approval of instructor.*

SOC 231. FIELDS OF SOCIAL WORK  
THREE CREDITS

A survey of the main problems of social work and of agencies and methods that have developed to cope with them. The nature and requirements of the different fields of social work. *Prerequisite: Soc 101 or Ant 101 or 102 or Psy 101 or approval of instructor.*

SOC 234. GROUP COUNSELING  
THREE CREDITS

Students enrolled in this course will learn about different types of group counseling services. Students will acquire knowledge of group practice issues for each phase in the evolution of groups. Students will develop initial competence in beginning work as a group leader/facilitator. *Prerequisite: Soc 101.*

SOC 235. CORRECTIONS COUNSELING  
THREE CREDITS

Interviewing and intervention strategies in dealing with the criminal offender population in both prison and community settings as well as the social services available for this population. *Prerequisite: Soc 101 or approval of instructor.*

SOC 236. INDIVIDUAL COUNSELING  
THREE CREDITS

Students enrolled in this course will gain knowledge of the counseling process including values, goals, methods, and limitations. Students will learn about various client characteristics that impact the counseling relationship. Students will develop initial competence in delivering counseling services. *Prerequisite: Soc 101.*

SOC 251. SOCIOLOGY OF MINORITIES  
THREE CREDITS

A theoretical analysis of inter-group tensions and processes of adjustment with special reference to modern racial, national, and religious conflicts. *Prerequisite: Soc 101 or Ant 101 or 102 or approval of instructor.*

SOC 261. SOCIOLOGY OF SPORT  
THREE CREDITS

An examination of sport from a social and cultural perspective. Emphasis is placed on examining how the institution of sport is a microcosm of American society, reflecting society's major cultural beliefs, and how the organization of sport reflects that of society. *Prerequisite: Soc 101 or approval of instructor. Offered every other year.*

SOC 263. THE URBAN ENVIRONMENT  
THREE CREDITS

See description under Political Science listing, PS 212. (Same as PS 212).

SOC 341. INTRODUCTION TO SOCIAL PSYCHOLOGY  
THREE CREDITS

A general survey of the field of social psychology. Social factors in human nature; psychology of individual differences; social interaction; collective behavior; psychology of personality; social pathology. (Same as PSY 341) *Prerequisite: Soc 101 or Ant 101 or 102 or Psy 101 or approval of*

## Course Descriptions

*instructor.*

### SOC 352. SOCIAL STRATIFICATION THREE CREDITS

A survey of the structure and dynamics of social inequality in American life. Attention is focused on the institutionalization of power arrangements that perpetuate intergenerational patterns of economic, political, and prestige inequalities among collectivities. A special effort is made to compare the consequences of structured social inequality for the very wealthy and the very poor. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of instructor.*

### SOC 361. MEDICAL SOCIOLOGY THREE CREDITS

Surveys findings and methods in current applications of sociology to medicine. Includes a consideration of large and small scale social influences on the organization of medical institutions and practices. *Prerequisites: Soc 101 or Ant 101 or 102 or permission of the instructor.*

### SOC 371. METHODS OF RESEARCH IN SOCIOLOGY THREE CREDITS

Introduction to sociological research; selected problems of research in social relations; interviewing techniques; questionnaire design and case studies. *Prerequisite: Soc 101 or approval of instructor.*

### SOC 373. QUANTITATIVE REASONING FOR THE SOCIAL SCIENCES THREE CREDITS

This course is an introduction to quantitative analysis for the social sciences using SPSS, one of the most frequently and widely used statistical packages in the world. Students will learn how to enter and manipulate data in SPSS, apply and interpret statistics from descriptive through multiple regression, and test hypotheses using statistical methods. (Same as PS 265). *Prerequisite: Soc 101, Soc 371 or PS 261, or approval of instructor.*

### SOC 381. SOCIOLOGICAL THEORY THREE CREDITS

The aim of the course is to provide the student majoring in sociology, or in one of the related fields, with a historical background necessary for understanding of the current trends in sociology as well as for clarification of its distinct subject matter, problems, and methods. *Prerequisite: Soc 101 or approval of instructor.*

### SOC 390. SENIOR CAPSTONE THREE CREDITS

This course is intended for senior sociology majors. In this course you will complete an empirical research paper, quantitative or qualitative, and present the results to an audience of faculty and peers. *Prerequisites: Soc 371, Soc 381.*

### SOC 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required. *Prerequisite: By arrangement with an instructor.*

### SOC 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

### SOC 198/298/398/498. TOPICS THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

SOC 491. SEMINAR  
THREE CREDITS

Presentations and discussions of selected themes and issues in sociology. *Prerequisite: Criteria will vary according to content of seminar.*

SPANISH COURSES

SP 101-102. ELEMENTARY SPANISH  
THREE CREDITS EACH

Fundamentals of spoken and written Spanish, and introduction to Spanish culture. Emphasis is placed on communicative proficiency. Work in language laboratory required.

SP 203-204. INTERMEDIATE SPANISH  
THREE CREDITS EACH

Continuation of development of communicative skills in Spanish. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Work in language laboratory required. *Prerequisite: Sp 102 or permission of instructor.*

SP 205. CONVERSATION  
THREE CREDITS

Practice in spoken Spanish, including discussions, oral presentation, and role-playing. Includes written exercises. *Prerequisite: Sp 204 or permission of instructor.*

SP 206. ADVANCED GRAMMAR, STYLISTICS, AND COMPOSITION  
THREE CREDITS

Practice in written and oral skills with an emphasis on the refinement of grammatical and stylistic abilities. *Prerequisite: Sp 204 or permission of instructor.*

SP 208. CULTURE AND CIVILIZATION  
THREE CREDITS

Systematic introduction to the political, social, economic, and cultural characteristics of Spain from the Middle Ages to Modern Times. Readings from a variety of sources including the Spanish press. *Prerequisite: Sp 204 or permission of instructor.*

SP 209. LATIN AMERICAN CULTURE AND CIVILIZATION  
THREE CREDITS

Systematic study of the historical, cultural, economic, and political development of the countries of Latin America (Spanish-speaking countries and Brazil). Pre-Columbian cultures (Maya, Aztec, and Inca) will be examined. Use of audio-visual material and other activities included. *Prerequisite: Sp 204 or permission of instructor.*

SP 210. SPANISH FOR BUSINESS  
THREE CREDITS

Introduction to language use in the contemporary Spanish business world, including practice in reading, understanding, and writing business communications. *Prerequisite: Sp 204 or permission of instructor.*

SP 211. CONVERSATIONAL SPANISH FOR HEALTH AND SOCIAL SERVICES  
THREE CREDITS

Designed to provide the students with the basic terminology and conversational skills in Spanish for the health care field, and the social services area. Work on special problems of grammar and idiomatic expression. *Prerequisite: Sp 204 or permission of instructor.*

SP 212. NON-LITERARY TRANSLATION  
THREE CREDITS

In "Non-literary Translation" students will learn some translation strategies by practicing with actual data taken from documents in a variety of professional fields including medical, commercial and legal. Students will learn how to solve problems in technical translations: terminology, idiomatic expressions, verb usage and false cognates. The course will use a workshop approach and focus on practical issues in various professional fields. Includes a community service component. *Prerequisite: Sp 203-204 or equivalent.*

## Course Descriptions

### SP 220. SPANISH LISTENING AND COMPREHENSION THREE CREDITS

"Listening and Comprehension" develops a better understanding of spoken, colloquial Spanish. Students will work with audio and audio-visual materials that engage cultural topics connected to language use in Hispanic countries. *Prerequisite: SP 204 or permission of instructor.*

### SP 301. INTRODUCTION TO LATIN AMERICAN LITERATURE THREE CREDITS

An examination of literary language, genre conventions, and critical approaches, as well as an introduction to Spanish literary history. *Prerequisite: Sp 204 or permission of instructor.*

### SP 307. SURVEY OF SPANISH LITERATURE I THREE CREDITS

Spanish 307 is a systematic survey of peninsular (Spanish) literature from the Middle Ages through the "Ilustración" or Neoclassicism literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history. *Prerequisite: Sp 203-204 or equivalent.*

### SP 308. SURVEY OF SPANISH LITERATURE II THREE CREDITS

Spanish 308 is a systematic survey of Spanish literature from Romanticism through the contemporary literary periods, including a variety of genres. This course provides an overview of the development of literary movements throughout history. *Prerequisite: Sp 203-204 or equivalent.*

### SP 395-396. INDEPENDENT RESEARCH ONE TO THREE CREDITS

Independent study and research in the field of the major under the direction of a staff member. *Prerequisite: Approval of department chairperson.*

### SP 397. SEMINAR ONE TO THREE CREDITS

Presentations and discussions of selected topics. *Prerequisite: Approval of department chairperson.* Maximum of three credits per student.

### SP 399. COOPERATIVE EDUCATION ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

### SP 198/298/398. TOPICS VARIABLE CREDIT

Examination of a special topic in Spanish language, culture, or literature. Possible topics include literature of exile, pre-and post-Franco literary works, Latin-American twentieth-century writings, Hispanic women writers, literature and art, social-protest literature, Latino issues through Hispanic films, Hispanic literature in translation, aspects of bilingualism, problems in Spanish grammar, and history of the Spanish language.

## STUDY TOUR EXPERIENCE COURSES

### STE 300. STUDY TOUR EXPERIENCE THREE CREDITS

This course, intended for use by all departments, is designed to offer students the opportunity to experience another culture through an intensive period of study and travel abroad under the guidance of a knowledgeable instructor. The Study Tour Experience has four components: a pre-travel orientation, the concentrated group travel experience, a writing emphasis, and a post-travel follow-up session. Students will be expected to keep a journal during the entire experience that will serve as a reference for the post travel discussions and paper or project assignment. The travel itself ranges from ten to fourteen days and is scheduled during winter break intersession, spring break, or

summer sessions. Scheduling is specifically intended to provide expanded travel opportunities for those students who might not otherwise be free to travel abroad within a semester due to the constraints of tightly sequenced courses within their majors. (10 classroom hours, 10–14 days of field work).

## THEATRE ARTS COURSES

### THE 100. APPROACH TO THEATRE THREE CREDITS

Attention will be directed to the importance of the dramatic imagination in reading and viewing plays, with the objective of developing a critical appreciation of the theatre. Lecture, discussion, demonstration, films, college and professional theatre performances.

### THE 111. FUNDAMENTALS OF PLAY STRUCTURE AND CRITICISM THREE CREDITS

A study of critical techniques in interpreting plays and the application of such techniques to evaluating plays for stage presentation. *Prerequisite: Eng 101.*

### THE 112. SCRIPT ANALYSIS THREE CREDITS

The cultivation of interpretative skills as an approach to dramatic literature for the purposes of production. Classical Literature. *Prerequisite: THE 111.*

### THE 121. STAGECRAFT THREE CREDITS

An exploration of the many physical facets of theatrical production by introducing the student to the process of translating the concept of a design into physical actuality and of adapting a production to the requirements of a stage. Class and workshop.

### THE 131. ACTING I THREE CREDITS

Basic acting techniques. Creating a variety of characters for the stage through the use of vocal interpretation, physical movement, improvisation, and theatre games.

### THE 132. SPEECH FOR THE STAGE THREE CREDITS

Instruction and exercises in vocal development for the stage, including diction, delivery, and interpretation. Laboratory sessions.

### THE 141. ORAL INTERPRETATION THREE CREDITS

Instruction in vocal delivery of prose, poetry, drama, and archaic language for the purposes of oral communication of the written text. *Prerequisite: THE 131 or permission of instructor.*

### THE 190. THEATRE LABORATORY ONE TO THREE CREDITS

A study, through the application of various techniques of different facets of theatre such as auditioning, costuming, fencing, make-up, masks, mime, scene study, soliloquy, stage combat, textual analysis, and voice. Guest lecturers, master classes, workshops. Required of all Theatre Arts majors every semester.

### THE 191. DEPARTMENT PRACTICUM IN THEATRE PRODUCTION ONE TO THREE CREDITS

The Department Practicum in theatre production may be taken for one to three credits per semester with the total not to exceed six. Students may earn credit for major roles and positions of major responsibility in cocurricular activities. Credit for participation in these activities is optional, and voluntary participation (without credit) is also encouraged. The department, through the advisor or instructor of the activity, has the authority to approve or reject any contract for credit under this designation. Approval of credit must be by advisor and Department Chairperson.

### THE 211. THEATRE HISTORY I THREE CREDITS

A survey of the historical development and background of theatrical art from ancient times through

## Course Descriptions

the seventeenth century.

THE 221. SCENE DESIGN  
THREE CREDITS

The nature and function of scenic art with emphasis on contemporary theories and techniques.  
*Prerequisite: THE 121.*

THE 223 COSTUME DESIGN  
THREE CREDITS

Introduction to approach, methods and basic techniques for designing costumes for the Theatre.

THE 232. ACTING II  
THREE CREDITS

An introduction to the major theories, aims, and styles of acting through performing various roles and monologues in selected dramatic scenes. *Prerequisite: THE 131.*

THE 234. DIRECTING I  
THREE CREDITS

An introduction to the principles of directing including play selection, composition, casting, blocking, and rehearsing. Class and workshop. *Prerequisite: THE 131 or departmental permission.*

THE 312. THEATRE HISTORY II  
THREE CREDITS

A survey of the historical development and background of theatrical art from the eighteenth century to the present. *Prerequisite: THE 211.*

THE 331. ACTING III  
THREE CREDITS

Attention to special problems in acting in terms of classical style. Continued self-discovery through improvisation, kinesthetic awareness, and other basic acting techniques learned in THE 232 are expanded upon. *Prerequisites: THE 131, 132, 232 or permission of instructor.*

THE 335. DIRECTING II  
THREE CREDITS

A study of special problems in directing. Students will prepare a prompt book, critique productions, and direct a one-act play. *Prerequisite: THE 234.*

THE 393. SENIOR CAPSTONE  
ONE TO THREE CREDITS

Individual performance project intended to inspire students to take on responsibility for self governance and through effort create a meaningful expression of their aesthetic.

THE 394. THE BUSINESS OF THEATRE  
ONE TO THREE CREDITS

Discussion of information and preparation to navigate the theatrical and entertainment industries

THE 395-396. INDEPENDENT RESEARCH  
ONE TO THREE CREDITS

Independent study and research for advanced students in theatre under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

THE 431. ACTING IV  
THREE CREDITS

Scene study, analysis, and development of acting theories for a sophisticated preparation of audition material and rehearsal technique for the working actor. *Prerequisites: THE 131, 132, 232, 331 or permission of instructor.*

THE 198/298/398. TOPICS  
ONE TO THREE CREDITS

A study of topics of special interest not extensively treated in regularly offered courses.

THE 399. COOPERATIVE EDUCATION  
ONE TO SIX CREDITS

Professional cooperative education placement in a private/public organization related to the student's academic objectives and career goals. In addition to their work experience, students are

required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. (See the Cooperative Education section of this Bulletin for placement procedures.) *Prerequisites: Sophomore standing, 2.0 cumulative average, consent of academic advisor, approval of placement by department chairperson.*

### **WOMEN'S STUDIES COURSES**

#### **WS 101. INTRODUCTION TO WOMEN'S STUDIES**

##### **THREE CREDITS**

Introduction to Women's Studies is a lecture/discussion course. It introduces students to the theoretical assumptions and historical development of feminist thought. It examines a variety of contemporary issues related to race, gender, class, culture, sexuality, the family, reproduction, language and discourse in the light of these theoretical assumptions. *Offered every spring semester.*

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Harvard Graduate School of Education

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B.A. Simpson College, M.A. Iowa

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B.A., Alderson-Broaddus College

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B.S. Wilkes, M.S. Binghamton University, C.P.A. State of Pennsylvania

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B.S. University of Puerto Rico, Ph.D. Michigan State University

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B.A. College of Wooster, M.P.A. Princeton, D.B.A. Harvard

**DALE A. BRUNS (1991), Dean, College of Science and Engineering**

B.S. Xavier, M.S. Arizona State, Ph.D. Idaho State

**HAROLD E. COX (1963), University Archivist**

B.A. William and Mary, M.A., Ph.D. Virginia

**DARIN E. FIELDS (1993), Dean, College of Arts, Humanities, and Social Sciences**

B.A. Arizona, M.A., Ph.D. Delaware

**ELLEN RENNIE FLINT (1990), Coordinator of the Undergraduate Experience**

B.M. Virginia Commonwealth, M.M. Rice, Ph.D. Maryland

**BERNARD W. GRAHAM (1994), Dean, Nesbitt College of Pharmacy and Nursing and Dean, School of Pharmacy**

B.S. Albany, M.S., Ph.D. Purdue

## University Personnel

**HARVEY A. JACOBS (1996), Assistant Dean, School of Pharmacy**

B.A. Wilkes, B.S., Ph.D. Utah

**SUSAN HRITZAK (1983), Registrar**

B.S., M.B.A. Wilkes

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B.A. Marywood, M.S. Wilkes

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B.A. University of Washington, LL.M. Florida College of Law, J.D. Willamette University College of Law

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B.A. King's, M.S. Wilkes, Ed.D. Lehigh

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B.A. SUNY Albany, M.A. Columbia

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B.A. Wilkes

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B.A. Pennsylvania, M.A., M.S. Indiana

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B.A. King's College, M.B.A. Bloomsburg

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B.S., M.A. SUNY, Oneonta

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B.A. Penn State, M.A. Marywood

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B.S., R.N. Wilkes

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B.A. Wilkes

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B.S. Wilkes, M.S.N. Misericordia

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B.S., M.B.A. Wilkes

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B.S., M.B.A. Scranton

**BRENDA STANLEY (2007), Director, Residence Life**

B.S. Washington, M.Ed. Salisbury

**BARBARA E. KING (1980), Associate Dean of Student Affairs**

B.S. Wilkes

**THOMAS J. THOMAS (1982), Executive Director, University College**

B.S. East Stroudsburg, M.S. Wilkes

**KATY BETNAR (2005), Learning Specialist**

B.A. Penn State, M.A. George Mason

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B.A. Wilkes, M.S. St. John's

**MARGARET ESPADA (2004), Program Director, Upward Bound**

B.A. SUNY, Brockport, M.A. Canisius

**BLAKE MACKESY (2002), Director, University College**

B.A. Russell Sage, M.A. Rollins College

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B.S., Sc.D. Pittsburgh GSPH

**LISA MULVEY (2000), Coordinator, Career Development, Career Services**

B.S. Kings, M.A. Marywood

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B.A. College of Wooster, M.A. Hawaii

**ALBERTO PRADO (2005), Coordinator, Academic Services**

B.S. East Stroudsburg, M.S. McDaniel

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B.S., M.S. Wilkes

**KAREN RILEY (2000), Coordinator, Academic Services**

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B.S. Bloomsburg, M.S. Scranton

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B.A. Elizabethtown, M.S. Scranton, M.A. Wilkes

*Athletics*

**ADELENE MALATESTA (1989), Director of Athletics**

B.S. Slippery Rock, M.Ed. East Stroudsburg

**NEAL BISCALDI (2007), Administrative Staff, Coordinator of Intramural Program, Assistant Coach Men's Basketball**

B.S. Rowan University

**TOM DUNSMUIR (1982), Facilities and Equipment Coordinator**

**RACHAEL EMMERTHAL (2005), Administrative Staff, Women's Basketball Coach**

B.S. DeSales, M.Ed. East Stroudsburg

**KEITH KLAHOLD (2003), Administrative Staff, Fitness Facilities Coordinator**

B.S. Slippery Rock

**JON LAUDENSLAGER (2003), Administrative Staff, Wrestling Coach**

B.S. Wilkes

**CHRISTOPHER LEICHT (2002), Administrative Staff; Manager, Recreational and Athletic Center, Men's and Women's Tennis Coach**

B.S., M.B.A. Bloomsburg

## University Personnel

**WILL LUCA (2008), Administrative Staff, Assistant Football Coach**

B.S. Kutztown

**FRANK MATTHEWS (2000), Administrative Staff, Women's Softball Coach**

B.S. Bloomsburg

**MICHAEL McCREE (2002), Administrative Staff, Assistant Football Coach**

B.S. Wilkes

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B.A. Skidmore, M.S. Ithaca

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B.S. Bloomsburg University

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B.A. Pfeiffer University

**JOHN SUMOSKI (2002), Administrative Staff, Women's Soccer Coach**

B.A. Pittsburgh at Johnstown, M.A. Central Michigan

**PHILIP L. WINGERT (1982), Associate Director of Athletics, Men's Soccer Coach**

SUNY, Cortland, M.S.Ed. Virginia Tech

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B.A. Texas A&M

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B.A. King's College

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**PETRA CARVER (2007), Vice President for Finance and Support Operations**

B.S., M.B.A. St. Martin's University

**THOMAS MESSINGER (2008), Executive Director of Facilities**

**ANN M. RUSNAK NOON, C.P.A. (2004), Controller**

B.S., M.B.A. Scranton

**JOHN PESTA (1981), Director for Capital Planning and Projects**

B.A. East Stroudsburg

**MICHAEL L. SALEM (2005), Chief Information Officer**

B.S., M.S. Long Island, M.S. Nova Southeastern University

#### OFFICE OF THE VICE PRESIDENT FOR ENROLLMENT AND MARKETING

**MICHAEL J. FRANTZ (1998), Vice President for Enrollment and Marketing**

B.A., Simpson College, M.A., Iowa

**MELANIE O'DONNELL MICKELSON (1995), Director of Admissions**

B.A. Wilkes, M.A. S.U.N.Y.–Binghamton

**ALFONSO ESPADA (2005), Assistant Director of Admissions**

B.S. Maryland

**MICHAEL FOX (2006), Assistant Director of Admissions**

B.A., Wilkes

**CHERYL GIBSON (1999), Associate Director of Admissions**

B.A., M.S. Wilkes

**MATTHEW MCCAFFREY (2003), Associate Director of Admissions**

B.A., M.S. Wilkes

**JULIAN MORALES (2007), Assistant Director of Admissions**

B.A. Wilkes

**AMY PATTON (2002), Associate Director for Transfer Students**

B.S. King's College, M.B.A. Wilkes

**HENRY STEUBEN (1974), Director of Part-Time Programs**

B.S. Penn State, M.S. Wilkes

**MICHELE ZALNO (2004), Assistant Director of Admissions**

B.S. St. Francis

**Janine Becker (2008), Director, Student Services Center**

B.S. Toledo, M.B.A. Wilkes

**Pamela Hoffman, Director, Financial Aid, Student Services Center**

B.S. Penn State, M.B.A. Lebanon Valley

**SUSAN A. HRITZAK (1983), Registrar, Student Services Center**

B.S., M.B.A. Wilkes

**MARGARET ZELLNER (1993), Enrollment Specialist, Student Services Center**

B.A. Wilkes

#### OFFICE OF THE VICE PRESIDENT FOR HUMAN AND ORGANIZATIONAL DEVELOPMENT

**MAGGIE A. LUND (2007), Vice President for Human and Organization  
Development**

B.S., M.S., M.S. Scranton

**JOSEPH HOUSENICK (2008), Director of Human Resources**

B.S. King's College

#### ACADEMIC STRUCTURE

JOSEPH E. GILMOUR                      President

C. REYNOLD VERRET                    Provost

## University Personnel

### THE COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

DARIN E. FIELDS Dean

#### *Chairpersons/Directors*

ROBERT C. TUTTLE

MARK D. STINE

LAWRENCE T. KUCHAR

JOSEPH DAWSON

#### *Departments/Divisions*

Behavioral and Social Sciences

Communication Studies

Humanities

Visual and Performing Arts

#### *Coordinators/Directors*

TBA

CARL N. BRIGIDO

THERESA ANN KINTZ

GRETCHEN YENINAS

SHELLEY PEARCE

BRUCE E. PHAIR

ERIC A. RUGGIERO

Director of the Sordani Art Gallery

Chief Engineer and Manager of The Thomas P. Shelburne Telecommunications Center

Director of Women's Studies

Coordinator for Advising

Director of the Wilkes Community Conservatory

Director of the Dorothy Dickson Darte Center for Performing Arts

Director of Integrative Media

### THE COLLEGE OF SCIENCE AND ENGINEERING

DALE A. BRUNS

JOHN W. HARRISON

#### *Chairpersons/Directors*

MARK KASTER

MICHAEL A. STEELE

THERESE M. WIGNOT

THYAGARAJAN SRINIVASAN

MARLEEN A. TROY

V. MING LEW

Dean

Faculty Coordinator for Advising

#### *Departments/Divisions*

Aerospace Studies

Biology and Health Science Programs

Chemistry

Engineering and Physics

Environmental Engineering and Earth Sciences

Math and Computer Science

#### *Coordinators/Managers*

JAMAL GHOREISHI

MARYBETH MULLEN

BRIAN F. ORAM

EILEEN M. SHARP

Study Abroad Coordinator

Coordinator for Advising

Manager of the Environmental Quality Center

Coordinator for Health Sciences and Professional Programs

### THE JAY S. SIDHU SCHOOL OF BUSINESS AND LEADERSHIP

PAUL C. BROWNE

#### *Business and Leadership*

##### *Chairperson*

JUSTIN C. MATUS

##### *Directors*

TROY ADAIR

JEFFREY R. ALVES

RUTH HUGHES

ANTHONY L. LIUZZO

Dean

##### *Academic Programs*

Accounting, Business Administration and Entrepreneurship

Director of Educational Initiatives

Director of The Allan P. Kirby Center for Free Enterprise and Entrepreneurship

Director of the Small Business Development Center

Director of the Master of Business Administration Program

MATTHEW J. SOWCIK            Director of Leadership Programs

THE NESBITT COLLEGE OF PHARMACY AND NURSING

BERNARD W. GRAHAM        Dean

*School of Pharmacy*

BERNARD W. GRAHAM        Dean

HARVEY A. JACOBS         Assistant Dean

*Department Chairs*

ARTHUR H. KIBBE            Pharmaceutical Science

EDWARD F. FOOTE          Pharmacy Practice

*Professional Staff*

BARBARA NANSTIEL         Pharmacy Librarian

SHELLI HOLT-MACEY        Director of Experiential Programs

KRISTEN BILLEK            Experiential Coordinator

*Department of Nursing*

*Department Chair*

MARY ANN MERRIGAN        Nursing

*Directors*

JOYCE CHMIL                Director of Nursing Simulation Center

LORI DROZDIS                Director of Experiential Learning

## FACULTY

*In alphabetical order, with date of appointment following the name.*

- C. REYNOLD VERRET (2007), Provost**  
B.A. Columbia College, Columbia University, Ph.D. Massachusetts Institute of Technology, MDP  
Harvard Graduate School of Education
- JEFFREY R. ALVES (1997), Allan P. Kirby, Jr., Distinguished Professor of Free Enterprise and Entrepreneurship**  
B.S. Air Force Academy, M.B.A. Southern Illinois, Ph.D. Massachusetts (Amherst)
- MISCHELLE B. ANTHONY (2003), Assistant Professor of English**  
B.A. Central State University, M.A. Central Oklahoma, Ph.D. Oklahoma State
- VIJAY K. ARORA (1985), Professor of Electrical Engineering**  
B.Sc., M.Sc. Kurukshetra University (India), M.S. Western Michigan, M.S., Ph.D. Colorado
- NAOMI HATSFELT BAKER (2006), Assistant Professor of Acting**  
B.A. McNeese State, M.F.A. Ohio State University
- THOMAS J. BALDINO (1991), Professor of Political Science**  
B.A. La Salle, M.A. Illinois, Ph.D. Pennsylvania
- ANNE HEINEMAN BATORY (1987), Professor of Marketing**  
B.A. Wilkes, M.S., Ph.D. Maryland
- BARBARA N. BELLUCCI (1996), Assistant Professor of Education and Director of Student Teaching**  
B.S., M.S., M.S. Wilkes, Ed. D. Temple
- LOUISE McNERTNEY BERARD (1980), Professor of Mathematics/ Computer Science**  
B.S. King's, Ph.D. Brown
- KRISTIN C. BEWICK (2000), Associate Professor of Education and Special Education Coordinator**  
B.S., M.S., Ph.D. Marywood
- PAOLA BIANCO (1996), Associate Professor of Spanish**  
B.A. Wilkes, M.A. SUNY-Binghamton, Ph.D. North Carolina (Chapel Hill)
- WILLIAM J. BIGGERS (2003), Assistant Professor of Biology**  
B.S., M.S. North Carolina State, Ph.D. Connecticut
- KAREN BETH H. BOHAN (2003), Assistant Professor of Pharmacy Practice**  
B.C.P.S. Maryland (Baltimore County), Pharm. D. Maryland
- ROBERT W. BOHLANDER (1979), Professor of Psychology**  
B.A. Lebanon Valley, M.A., Ph.D. Rochester
- SCOTT BOLESTA (2005), Assistant Professor of Pharmacy Practice**  
B.S., Pharm. D. Wilkes
- SHARON BOWAR (1990), Associate Professor of Art**  
B.A. Shepherd College, B.F.A., M.A., M.F.A. New Mexico
- BARBARA BRACKEN (1998), Associate Professor of Computer Science**  
B.S., M.S., Ph.D. SUNY-Binghamton
- AMY L. BRADLEY (2004), Assistant Professor of Chemistry**  
B.A., Ph.D. University of New Orleans
- PAUL C. BROWNE (2004), Dean, Jay S. Sidhu School of Business and Leadership**  
B.A. College of Wooster, M.P.A. Princeton, D.B.A. Harvard
- DALE A. BRUNS (1991), Professor of Earth and Environmental Sciences/Dean, College of Science and Engineering**  
B.S. Xavier, M.S. Arizona State, Ph.D. Idaho State
- GENE A. CAMONI (2007), Assistant Professor of Education**  
B.A. Wilkes College, M.S. Scranton, Ed.D. Widener

- JAMES MICHAEL CASE (1978), Professor of Earth and Environmental Sciences/Biology**  
B.S. Duke, M.S., Ph.D. Dalhousie, Halifax
- HENRY J. CASTEJON (2003), Associate Professor of Chemistry**  
B.S., M.S. Simon Bolivar, Ph.D. Yale
- CARL J. CHARNETSKI (1976), Professor of Psychology**  
B.A. Wilkes, M.A., Ph.D. Temple
- CYNTHIA J. CHISARICK (1981), Associate Professor of Accounting**  
B.S. Wilkes, C.P.A. State of Pennsylvania, M.B.A. Scranton
- BONNIE CULVER (1990), Associate Professor of English**  
B.A. Waynesburg, M.A., Ph.D. SUNY, Binghamton
- EBONIE CUNNINGHAM-STRINGER (2006), Assistant Professor of Sociology/Criminology**  
B.A. Missouri-Columbia, M.A., Ph.D. Purdue
- SUSAN BENSINGER DARBY (2005), Assistant Professor of Nursing**  
B.S. Lycoming, M.S. Syracuse
- NANDITA DAS (2005), Assistant Professor of Finance**  
B.S. Gujarat Agricultural University, M.B.A. University of Saskatchewan, M.S., Ph.D. Lehigh
- MICHAEL R. DAVIDSON (2007), Assistant Professor of History**  
B.S. Bates, Ph.D. Edinburgh
- HELEN HOLTZCLAW DAVIS (2008), Assistant Professor of English**  
B.A. Duke, M.A. Wake Forest, Ph.D. CUNY
- JOSEPH DAWSON (1994), Associate Professor of Theatre**  
B.A. Seton Hill, M.F.A. Catholic
- KRISTIN DEGNAN (1999), Director of Dance**  
B.A. Point Park College
- JENNIFER EDMONDS (2004), Assistant Professor of Business Administration**  
B.S. Michigan, M.B.A., Ph.D. Rutgers
- JANE M. ELMES-CRAHALL (1985), Professor of Communication Studies**  
B.A. Bloomsburg, Ph.D. Pittsburgh
- THEODORE J. ENGEL (1966), Associate Professor of Business Administration**  
B.B.A., M.A. Miami
- EVE S. A. ESTWICK (2005), Assistant Professor of Communication Studies**  
B.A., M.A. Howard, Ph.D. Temple
- TERESA FALLON (2004), Director of Theatre**  
B.A. Scranton, M.F.A. Marywood
- MARCIA FARRELL (2006), Assistant Professor of English**  
B.A. Mercyhurst, M.A. Gannon, Ph.D. Tulsa
- DARIN E. FIELDS (1993), Associate Professor of English/Dean, College of Arts, Humanities, and Social Sciences**  
B.A. Arizona, M.A., Ph.D. Delaware
- ELLEN RENNIE FLINT (1990), Associate Professor of Music/Coordinator of the Undergraduate Experience**  
B.M. Virginia Commonwealth, M.M. Rice, Ph.D. Maryland at College Park
- EDWARD F. FOOTE (2000), Professor of Pharmacy Practice**  
B.S., Pharm.D. University of the Sciences of Philadelphia
- ANDREA FRANTZ (2001), Associate Professor of Communication Studies**  
B.A. Simpson Collge, Ph.D. Iowa State
- DEAN FREAR, SR. (2006), Assistant Professor of Business Administration**  
B.A. Bloomsburg, M.B.A. Scranton, Ph.D. Capella
- ROBERT S. GARDNER (2007), Assistant Professor of Education**  
B.A., M.S. Wilkes, Ed.D. Temple

## University Personnel

**MICHAEL S. GARR (1984), Professor of Sociology/Anthropology**

B.A., M.A. Ohio, Ph.D. Indiana

**JAMAL GHORIESHI (1984), Professor of Mechanical Engineering**

B.S., M.S., Ph.D. SUNY, Buffalo

**JOHN B. GILMER, JR. (1991), Professor of Electrical Engineering**

B.S. United States Naval Academy, M.S.E.E., Ph.D. Virginia Polytechnic Institute

**GARY GORDON (2008), Assistant Professor of Business Administration**

B.A. Loyola College (Montreal, Canada), M.B.A. Syracuse, Ph.D. Syracuse

**BERNARD W. GRAHAM (1994), Professor and Dean, Nesbitt College of Pharmacy and Nursing and School of Pharmacy**

B.S. Albany, M.S., Ph.D. Purdue

**JACK B. GRIER (2002), Instructor of English**

B.A. Penn State, M.S. Wilkes

**LINDA S. GUTIERREZ (2002), Assistant Professor of Biology**

M.D. Universidad de Carabobo, Venezuela

**ROBERT B. HAINES (2007), Professor of Military Science (Army)**

B.S. Columbus State, M.S. Webster University

**SID HALSOR (1987), Professor of Geology**

B.S. Oregon, M.S., Ph.D. Michigan Technological University

**THOMAS A. HAMILL (2002), Assistant Professor of English**

B.A. Loyola College (Maryland), M.A., Ph.D. Delaware

**QIAN HAO (2007), Assistant Professor of Accounting**

B.S. Xi'an Institute of Posts & Telecommunications, M.S., B.A. Washington University in St. Louis, Ph.D. Southern Illinois

**MARK HARRIS (2006), Visiting Instructor of Spanish**

B.A. Penn State, M.A. Binghamton

**JOHN W. HARRISON (1994), Associate Professor of Mathematics and Computer Science**

B.S. Wilkes, M.A., Ph.D. SUNY, Binghamton

**EMILY SISCO HAVRILLA (2006), Assistant Professor of Nursing**

B.S., M.S.N. Misericordia

**JOHN HEPP (1999), Associate Professor of History**

B.A. Temple, M.A., Ph.D. North Carolina-Chapel Hill, J.D. Pennsylvania

**DENNIS P. HUPCHICK (1990), Professor of History**

B.A., M.A., Ph.D. Pittsburgh

**RITA KRYZNESKI IVES (2004), Assistant Professor of Nursing**

B.S., M.S. Wilkes

**HARVEY JACOBS (1996), Associate Professor of Pharmaceutical Sciences/Assistant Dean, School of Pharmacy**

B.A. Wilkes College, B.S., R.Ph., Ph.D. University of Utah

**JOHN J. JANECEK (1982), Assistant Professor of Materials Engineering**

B.S. Wisconsin, M.S. Illinois

**LISA KADLEC (2005), Assistant Professor of Biology**

B.A. Haverford, Ph.D. Duke

**S. M. PERWEZ KALIM (1988), Professor of Mechanical Engineering**

B.S. Mamachi, M.S., Ph.D. Kansas

**VALERIE G. KALTER (1991), Associate Professor of Biology**

B.A. Northwestern, Ph.D. University of Iowa

**M. ANTHONY KAPOLKA, III (1996), Associate Professor of Computer Science**

B.S. Lebanon Valley, M.S., Ph.D. Pittsburgh

**MARK KASTER (2006), Professor of Air and Space Studies**

B.S. Iowa State, M.S. Troy University, M.S. St. Louis University

- SEAN J. KELLY (2008), Assistant Professor of English**  
B.A. Tennessee, M.A. Pittsburgh, Ph.D. SUNY, Buffalo
- ARTHUR H. KIBBE (1994), Professor of Pharmaceutical Sciences**  
B.S., R.Ph. Columbia, M.S., Ph.D. Florida
- BRADFORD L. KINNEY (1973), Professor of Communication Studies**  
B.A. Florida Southern, M.A. Indiana, Ph.D. Pittsburgh
- KENNETH M. KLEMOW (1982), Professor of Biology/GeoEnvironmental Sciences and Engineering**  
B.S. Miami, M.S., Ph.D. SUNY, Syracuse
- JOHN A. KOCH (1976), Professor of Computer Science**  
B.S. Bucknell, M.S., Ph.D. Illinois
- FANHUI KONG (2005), Assistant Professor of Statistics**  
B.S., M.A. Northeast Normal University, P.R. China, Ph.D. Binghamton University
- KYLE L. KREIDER (2004), Assistant Professor of Political Science**  
B.A., Millersville, M.A., Ph.D. Temple
- JUDITH KRISTELLER (2002), Associate Professor of Pharmacy Practice**  
B.S., Pharm.D. Kentucky
- MARY KROPIEWNICKI (2003), Associate Professor of Education**  
B.S. Bloomsburg, M.S. Scranton, Ed.D. Temple
- LAWRENCE T. KUCHAR (1989), Associate Professor of English**  
B.A., M.A. Duquesne, Ph.D. Maryland
- V. MING LEW (1993), Associate Professor of Mathematics**  
B.S. UC Santa Barbara, M.S., Ph.D. Cornell
- ANTHONY L. LIUZZO (1990), Professor of Business and Economics**  
B.S. Fordham, J. D. St. John's, M.B.A., M.Phil., Ph.D. New York University
- DANIEL S. LONGYHORE (2004), Assistant Professor of Pharmacy Practice**  
Pharm. D. Wilkes
- SUSAN SOWA MALKEMES (2003), Assistant Professor of Nursing**  
B.S. Misericordia, M.S. Wilkes
- JENNIFER MALINOWSKI (1998), Assistant Professor of Pharmacy Practice**  
B.S., R.Ph. Philadelphia College of Pharmacy and Science, Pharm.D. Temple
- JIN MAO (2008), Assistant Professor of Education**  
B.S. Xi'an Foreign Language University, M.S., Ph.D. Pennsylvania State University
- GREGORY MARSH (2005), Assistant Professor of Air and Space Studies**  
B.S. Indiana University of Pennsylvania, M.A. Eastern Washington
- JUSTIN C. MATUS (2005), Assistant Professor of Business Administration**  
B.S. King's, M.B.A. Golden Gate University, Ph.D. Old Dominion
- DAN F. McCUNE (2004), Assistant Professor of Pharmaceutical Sciences**  
B.S. Butler, Ph.D. Kentucky
- MARY F. McMANUS (2000), Associate Professor of Pharmaceutical Sciences**  
B.S., Ph.D. St. John's
- CHRISTINE E. MELLON (2008), Visiting Instructor of Communication Studies**  
B.A. Scranton, M.S. Neumann
- DONALD E. MENCER, Jr. (2001), Associate Professor of Chemistry**  
B.S. Frostburg State, Ph.D. Texas A&M University
- MARY ANN MERRIGAN (1987), Associate Professor of Nursing**  
B.S. SUNY, Binghamton, M.S. Pennsylvania State University, Ph.D. Adelphi
- JAMES L. MERRYMAN (1989), Professor of Anthropology**  
B.A. Nebraska Wesleyan, M.A. SUNY-Binghamton, Ph.D. Northwestern
- ANDREW MILLER (2005), Assistant Professor of Political Science**  
B.A. Illinois College, M.A. Illinois State, Ph.D. Purdue
- GINA ZANOLINI MORRISON (1996), Associate Professor of Education**

## University Personnel

B.S. Kutztown, Ph.D. Marywood

**SUZANNE MURRAY-GALELLA (2004), Instructor of Education**

B.A. Scranton, M.S. Marywood

**PRAHLAD N. MURTHY (1993), Associate Professor of Environmental Engineering**

B.E. Bangalore University, India, M.E. Anna University, India, Ph.D. Texas A&M, P.E., QEP

**HISHAM NABAA (2005), Instructor of Physics**

B.A. Jordan University of Science and Technology, M.S. Wilkes

**JULIE L. OLENAK (2004), Assistant Professor of Pharmacy Practice**

Pharm.D. Wilkes

**JOHN L. OREHOTSKY (1971), Professor of Physics/Engineering**

B.S. M.I.T., M.S. Polytechnic Institute of Brooklyn, Ph.D. Syracuse

**KRINA PATEL (2006), Assistant Professor of Pharmacy Practice**

B.A. Texas, PharmD. Massachusetts College of Pharmacy

**LINDA M. PAUL (1989), Associate Professor of Philosophy**

B.A. Guilford, Ph.D. Maryland

**R. GREGORY PETERS (2005), Assistant Professor of Chemistry**

B.S. Truman State University, Ph.D. Wyoming

**KENNETH A. PIDCOCK (1988), Associate Professor of Biology**

B.S. Millersville, M.S., Ph.D. Lehigh

**DIANE M. POLACHEK (1986), Associate Professor of Education**

B.A., M.S. Wilkes, M.S. UC Santa Barbara, Ed.D. Lehigh

**STEVEN PRINSTER (2006), Assistant Professor of Pharmaceutical Sciences**

B.S. Brigham Young, Ph.D. Nebraska

**RONALD L. PRYOR (2001), Visiting Assistant Professor of Mathematics and Computer Science**

B.A., M.S. Wilkes, Ph.D. SUNY, Binghamton

**ELLEN RAINERI (2006), Assistant Professor of Entrepreneurship/Marketing**

B.A. Wilkes, M.B.A. Marywood, Ph.D. Capella

**ALI RAZAVI (1984), Professor of Materials Engineering**

B.S. Tehran, Iran, M.S. Manchester, England, Ph.D. Drexel

**BRIAN T. REDMOND (1976), Professor of Geology and Chemistry**

B.S., M.S. Michigan State, Ph.D. Rensselaer Polytechnic, B.A., B.S. Wilkes

**MARK REID (2008), Visiting Assistant Professor of Philosophy**

B.A. William and Mary, Ph.D. Illinois

**MARIANNE M. REXER (1990), Professor of Accounting**

B.S. Wilkes, M.S. Bryant, Ph.D. Drexel, C.P.A. State of Pennsylvania

**MARIE ROKE-THOMAS (2003), Assistant Professor of Pharmaceutical Sciences**

B.S. Wilkes, M.P.A. Seton Hall, Ph.D. Marywood

**LAWRENCE K. ROSENQUIST (2002), Assistant Professor of Nursing**

B.S. Millersville, M.S. Arizona

**ERIC ANTHONY RUGGIERO (2005), Director of Integrative Media**

B.F.A. Syracuse University, M.F.A. Savannah College of Art and Design

**TRICIA RUSSELL (2002), Assistant Professor of Pharmacy Practice**

B.S. Massachusetts College of Pharmacy, Pharm. D. Virginia Commonwealth

**JOSEPH SANFILIPPO (2005), Assistant Professor of Air and Space Studies**

B.S. Park University, M.A. Mountain States

**EDWARD J. SCHICATANO (1999), Associate Professor of Psychology**

B.A. Bloomsburg, M.A., Ph.D. Wake Forest

**ROBERT D. SEELEY (1989), Associate Professor of Economics**

B.A. Franklin and Marshall, Ph.D. Maryland

**MERIDITH P. SELDON (2008)**

B.A. Pacific Lutheran, M.A., Ph.D. Kansas State University

- PHILIP G. SIMON (2003), Instructor of Music, Director of Instrumental Studies**  
 B.M. Boston University, M.Ed. Maryland, D.M.A. University of North Texas
- CHERIE ANN SOPRANO (2005), Assistant Professor of Nursing**  
 B.S., M.S. Wilkes
- JACQUELINE STEWART (2007), Assistant Professor of Nursing**  
 B.S. Cedar Crest, M.S. N. Widener
- THYAGARAJAN SRINIVASAN (1985), Professor of Electrical Engineering**  
 B.E., M.Sc (Engg) India, M.S. Oklahoma State, Ph.D. Pennsylvania State, P.E. (Elec)
- WILLIAM CHAD STANLEY (2005), Assistant Professor of English/Director of the Writing Center**  
 B.A. Syracuse, M.A., Ph.D. Connecticut
- JANET WRIGHT STARNER (1999), Associate Professor of English**  
 B.A. Thiel, M.A. Kutztown, Ph.D. Lehigh
- MICHAEL A. STEELE (1989), Professor of Biology**  
 B.S. Millersville, Ph.D. Wake Forest
- MARK D. STINE (1999), Associate Professor of Communication Studies**  
 B.A. Moravian, M.Ed. East Stroudsburg, Ph.D. Temple
- JEFFREY A. STRATFORD (2006), Assistant Professor of Biology**  
 B.S. Rutgers, M.S. Southeastern Louisiana, Ph.D. Auburn
- FREDERICK J. SULLIVAN (1993), Associate Professor of Mathematics**  
 B.S., M.S., Ph.D. Louisiana State
- WAGIHA-ABDEL-GAWAD TAYLOR (1969), Professor of Business Administration and Economics**  
 B.A. Alexandria, M.A. Brown, Ph.D. Clark
- SHARON G. TELBAN (1975), Associate Professor of Nursing**  
 B.S., M.S. Wilkes, M.S., D.Ed. Pennsylvania State
- WILLIAM B. TERZAGHI (1995), Professor of Biology**  
 B.Sc. University of Waikato, Ph.D. Utah
- JENNIFER THOMAS (2006), Assistant Professor of Psychology**  
 B.S. Bucknell, M.A. Wake Forest, Ph.D. Purdue
- STEVEN L. THOMAS (1999), Associate Professor of Music/Director of Choral Activities**  
 B.A. Harvard, M.M., M.M.A., D.M.A. Yale
- STEPHEN J. TILLMAN (1970), Professor of Mathematics and Computer Science**  
 B.S., Ph.D. Brown, M.S. Lehigh
- DEBORAH R. TINDELL (1998), Associate Professor of Psychology**  
 B.A. California State (Chico), M.S., Ph.D. Texas A & M
- DOMINICK TROMBETTA (2001), Associate Professor of Pharmacy Practice**  
 CGP, B.S. Temple, Pharm.D. Shenandoah
- MARLEEN A. TROY (1997), Associate Professor of Environmental Engineering**  
 B.S., M.S., Drexel, M.S. Rhode Island, Ph.D. Drexel, P.E.
- HERNANDO A. TRUJILLO (2004), Assistant Professor of Chemistry**  
 B.A., Middlebury, Ph.D. Dartmouth
- ROBERT C. TUTTLE (1989), Associate Professor of Sociology**  
 B.A. Kansas, M.A., Ph.D. Notre Dame
- C. REYNOLD VERRET (2007), Professor of Chemistry and Provost**  
 B.A. Columbia College, Columbia University, Ph.D. Massachusetts Institute of Technology, MDP  
 Harvard Graduate School of Education
- ADAM WELCH (2004), Assistant Professor of Pharmacy Practice**  
 Pharm.D. Pittsburgh
- DIANE E. WENGER (2003), Assistant Professor of History**  
 B.A. Lebanon Valley, M.A. Penn State, Ph.D. Delaware

## University Personnel

**BRIAN E. WHITMAN (1997), Associate Professor of Environmental Engineering**

B.S., M.S. Ph.D. Michigan Technological University

**TERESE M. WIGNOT (1989), Associate Professor of Biochemistry**

B.A., Ph.D. Lehigh

**PHILIP WINGERT (1986), Assistant Professor of Physical Education/Assistant Athletic Director**

B.S. SUNY, Cortland, M.E. Virginia Polytechnic

**ZBIGNIEW J. WITCZAK (2000), Professor of Pharmaceutical Sciences**

M.S., Ph.D. Medical Academy, Lodz, Poland

**ERIC WRIGHT (1999), Associate Professor of Pharmacy Practice**

BCPS, R.Ph., Pharm.D. Pittsburgh

**GE (Grace) XIAO (2008), Assistant Professor of Business Administration**

B.A. Yokohama City University (Japan), M.S., M.I.S., Ph.D. Auburn

**WENTI XU (2007), Assistant Professor of Business Administration**

B.E. Beijing University of Aeronautics and Astronautics, M.S., Ph.D. Purdue

**DEBORAH K. ZBEGNER (1994), Associate Professor of Nursing**

B.S.N. Allentown College, M.S.N. Pennsylvania, D.N. Sc. Widener

**BRIDGETTE W. ZIELINSKI (1987), Associate Professor of Nursing**

B.S. Wilkes, M.S.N. SUNY, Binghamton, Ph. D. Adelphi

**MATTHEW J. ZUKOSKI (2002), Associate Professor of Computer Science**

B.S. Wilkes, M.S. Virginia Tech, Ph.D. Lehigh

## PRESIDENTS EMERITI

*(with date of emeritus recognition in parenthesis)*

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## ACADEMIC CALENDAR 2008–2009

### SUMMER 2008

#### **PRE-SESSION**

Classes Commence	Monday, May 19, 2008	8:00 a.m.
Classes End	Friday, June 6, 2008 (INCLUDING FINAL EXAMINATIONS)	12:00 noon

#### **FIRST DAY SESSION**

Classes Commence	Monday, June 9, 2008	8:00 a.m.
Classes End	Friday, July 11, 2008 (INCLUDING FINAL EXAMINATIONS)	12:00 noon

#### **NINE-WEEK EVENING SESSION**

Classes Commence	Monday, June 9, 2008	6:00 p.m.
Classes End	Tuesday, August 12, 2008 (INCLUDING FINAL EXAMINATIONS)	10:00 p.m.

#### **SECOND DAY SESSION**

Classes Commence	Monday, July 14, 2008	8:00 a.m.
Classes End	Friday, August 15, 2008 (INCLUDING FINAL EXAMINATIONS)	12:00 noon

### FALL SEMESTER - 2008

Classes Commence	Monday, August 25, 2008	8:00 a.m.
Labor Day Recess Begins	Friday, August 29, 2008	5:00 p.m.
Classes Resume	Tuesday, September 2, 2008	8:00 a.m.
Summer Commencement	Sunday, September 7, 2008	2:00 p.m.
Fall Recess Begins	Wednesday, October 8, 2008	10:00 p.m.
Classes Resume	Monday, October 13, 2008	8:00 a.m.
FOLLOW THURSDAY CLASS SCHEDULE	Tuesday, November 25, 2008	
Thanksgiving Recess Begins	Tuesday, November 25, 2008	10:00 p.m.
Classes Resume	Monday, December 1, 2008	8:00 a.m.
FOLLOW FRIDAY CLASS SCHEDULE	Monday, December 8, 2008	
Classes End	Monday, December 8, 2008	5:00 p.m.
Final Examinations Begin	Tuesday, December 9, 2008	8:00 a.m.
Final Examinations End	Wednesday, December 17, 2008	4:30 p.m.

### INTERSESSION 2009

Monday, January 5, 2009 to Friday, January 9, 2009

### SPRING SEMESTER - 2009

Classes Commence	Monday, January 12, 2009	8:00 a.m.
Spring Recess Begins	Friday, February 27, 2009	5:00 p.m.
Classes Resume	Monday, March 9, 2009	8:00 a.m.
Holiday Recess Begins	Wednesday, April 8, 2009	10:00 p.m.
Classes Resume	Tuesday, April 14, 2009	8:00 a.m.
FOLLOW THURSDAY CLASS SCHEDULE	Tuesday, April 28, 2009	
Classes End	Wednesday, April 29, 2009	5:00 p.m.
FOLLOW FRIDAY CLASS SCHEDULE		
Final Examinations Begin	Friday, May 1, 2009	8:00 a.m.
Final Examinations End	Saturday, May 9, 2009	4:30 p.m.

### COMMENCEMENT

	Saturday, May 16, 2009	2:00 p.m.
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WEEKEND COLLEGE CALENDAR, 2008–2009

**Summer Session, 2008**

**May–August, 2008**

May 3, 4

May 31, June 1\*

June 21, 22

July 12, 13

August 2, 3

August 9, 10

*(Including Final Examinations)*

**Fall Session, 2008**

**August–December, 2008**

August 23, 24

September 13, 14

October 4, 5

October 25, 26\*

November 22, 23

December 6, 7

*(Including Final Examinations)*

**Spring Session, 2009**

**January–April, 2009**

January 10, 11

January 31, February 1

February 21, 22

March 14, 15

April 4, 5

April 11, 12

*(Including Final Examinations)*

\*Four-week interval between class meetings

## CORRESPONDENCE DIRECTORY

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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, at any time within the student's term of residence. No contract is created or implied. Students must fulfill all prevailing degree or program requirements.*