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**WILKES COLLEGE
BULLETIN
1988-1989**

CORRESPONDENCE DIRECTORY

Write to these persons for additional information on particular matters:

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President

General institutional policy.

George W. Waldner
**Vice President for
Academic Affairs**

Curriculum and academic
affairs.

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Dean of Admissions

Admission to Wilkes and
visits to the campus for
interviews. Campus tours and
conferences with admissions
counselors should be arranged
in advance, when possible.

Doris Barker
Registrar

Registration matters and
academic records of currently
enrolled or former students.

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Student activities and
readmission of former
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and currently enrolled
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Wilkes-Barre, PA 18766

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Statement of Nondiscrimination

Wilkes College is committed to the policy that all persons shall have equal access to admission, programs, and employment without regard to race, religion, sex, national origin, handicap, age, or status as a disabled or Vietnam-era veteran.

Statement of Disclaimer

The statements set forth in this Bulletin are for informational purposes only, and the College reserves the right to change any provisions or requirements, including tuition and fees, at any time within the student's term of residence.



Wilkes College

1988-89

Bulletin

Baccalaureate Studies

WILKES COLLEGE

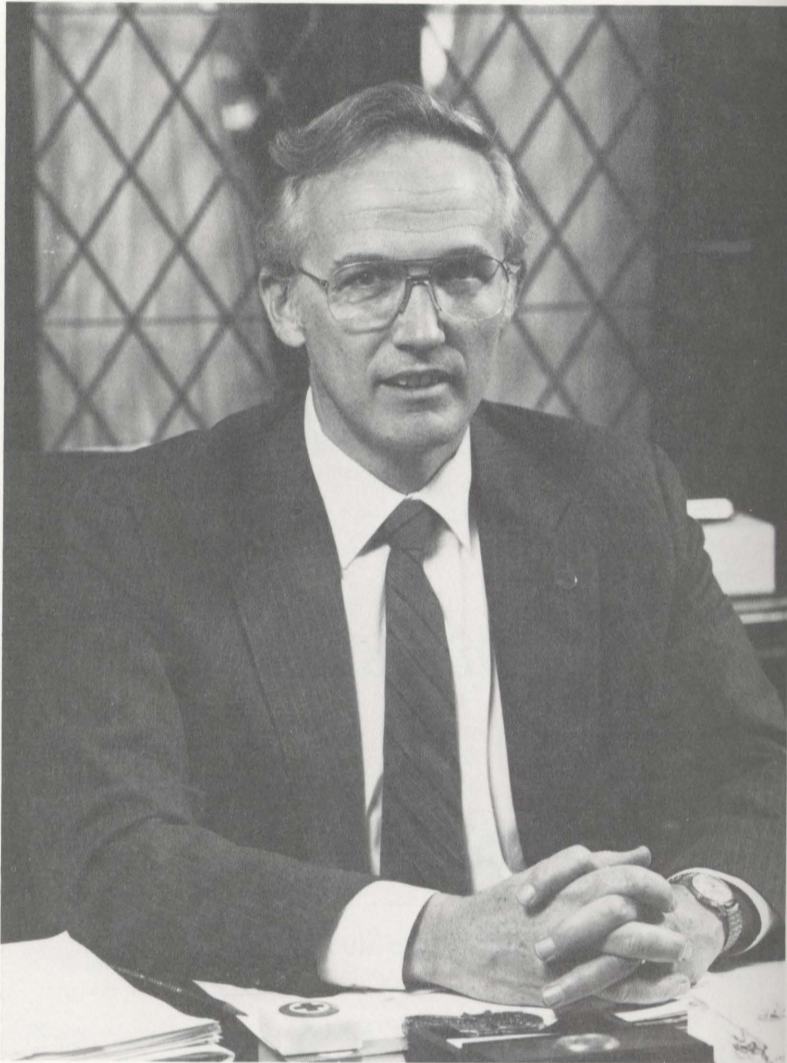
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A Message from the President



Christopher N. Breiseth, President

At Wilkes you will encounter an exciting intellectual and social community. As you define your role in this community of learners and scholars, you will come to know the challenges and joys — as well as the controversies — of the collegiate life that we share and love.

I believe that as you invest your time and talents at Wilkes to prepare to achieve your own definition of success and fulfillment, you will discover that you are becoming part of Wilkes and that Wilkes is becoming part of you.

Page 3

An
Educated
Man or
Woman

seeks truth, for without truth there can be no understanding;

possesses vision, for we know that vision precedes all great attainments;

is aware of the diversity of ideas and beliefs that exists among all people;

has faith in the power of ideals to shape the lives of each of us;

knows that mankind's progress requires intellectual 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, economic, 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.

**—Formulated and adopted by the
Wilkes College faculty as a guide to learning.**

89-177147

Contents

Wilkes College
 History and Organization7
 Mission of the College7
 Accreditation8
 Buildings and Facilities9

Student Life and Services
 Student Activities14
 College Activities15
 Advising and Counseling16
 Other Student Services17

Admissions
 Admission Requirements22
 Admission Procedures23
 Advanced Placement25

Expenses and Financial Assistance
 Tuition and Fees30
 Payment Options31
 Financial Aid34
 Application Procedures34
 Types of Financial Assistance34
 Wilkes College Scholarships37

Academic Information
 The Calendar52
 Part-time, Graduate and Continuing Education52
 The Curriculum55
 The Degrees57
 Academic Policies and Procedures59
 Grades62
 Graduation Requirements65

Academic Courses and Programs
The College of Arts and Sciences
 Aerospace Studies70
 Anthropology75
 Art77
 Biology83
 Chemistry89
 Communications94
 Computer Information Systems107
 Computer Science109
 Education115
 Elementary Education116
 English120
 French125
 German127
 Health Records Administration129
 Health Sciences Programs129
 History134
 Individualized Studies138

Contents

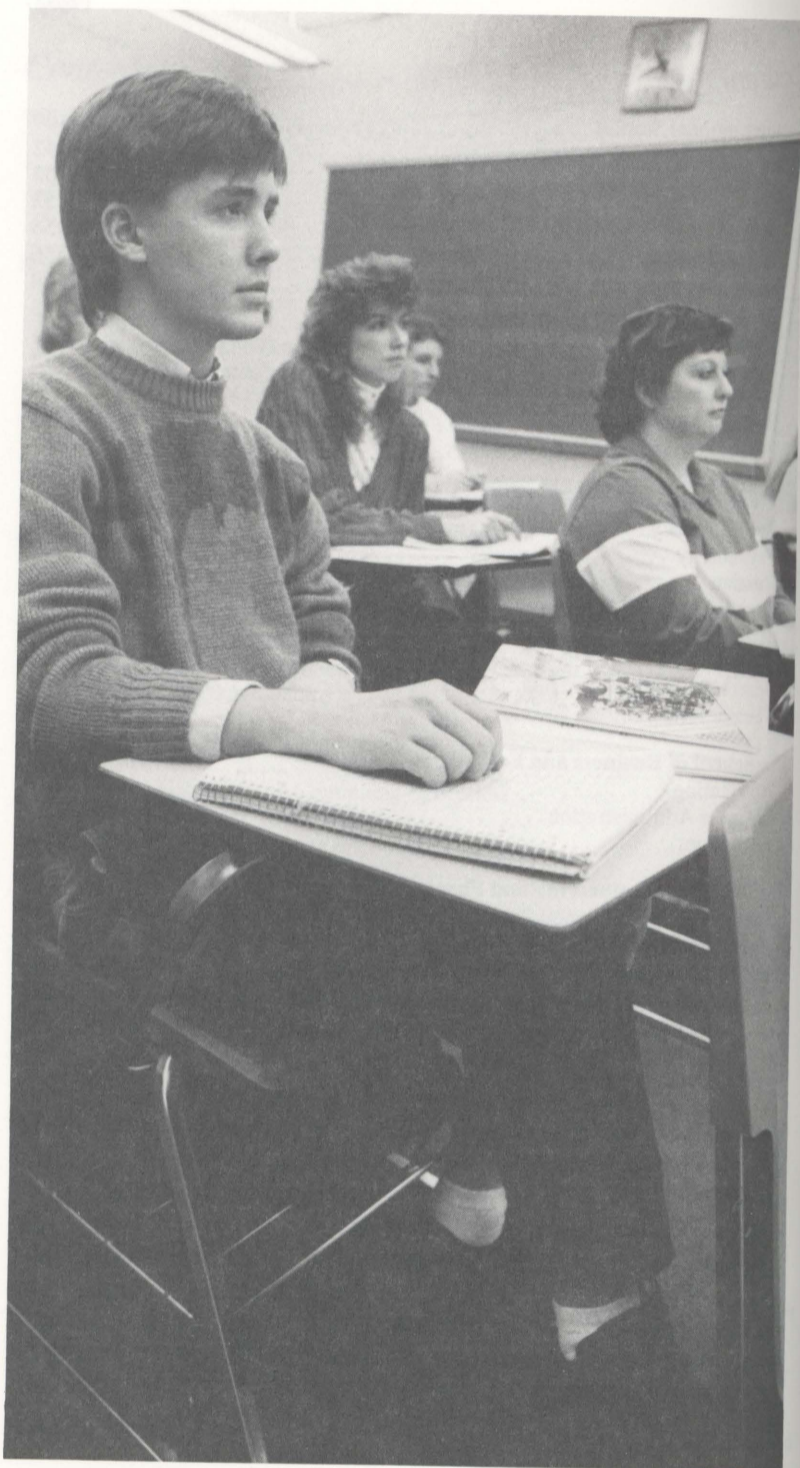
International Studies139
 Mathematics142
 Medical Technology152
 Military Science153
 Music156
 Music Education156
 Nursing168
 Occupational Therapy173
 Optometry173
 Philosophy173
 Physical Education and Health178
 Physical Therapy181
 Political Science182
 Pre-Law188
 Pre-Medicine and Pre-Doctoral Programs189
 Pre-Pharmacy191
 Psychology192
 Russian196
 Sociology197
 Spanish202
 Speech204
 Speech Pathology204
 Theater Arts207

The School of Business and Economics
 Accounting210
 Business Administration214
 Economics221

The School of Engineering and Physical Sciences
 Earth and Environmental Sciences228
 Engineering237
 Two-Year Programs:
 Aerospace Engineering238
 Civil Engineering238
 Mechanical Engineering238
 Chemical Engineering239
 Industrial Engineering239
 Four-Year Programs:
 Electrical Engineering240
 Environmental Engineering241
 Materials Engineering242
 Engineering Management243
 Physics253

Personnel of the College
 Board of Trustees264
 Administration265
 Faculty271

Index283



Wilkes College

Wilkes College was founded in 1933 when Bucknell University established a branch junior college in Wilkes-Barre. In 1947, Bucknell University Junior College became Wilkes College, a four-year, coeducational, liberal arts institution. In 1959, graduate programs were added to the curriculum. With continued expansion, the College reorganized itself in 1986 into a College of Arts and Sciences, a School of Business and Economics, and a School of Engineering and Physical Sciences. This new structure serves approximately 1,700 full-time day students, 600 part-time students, and over 900 graduate students.

Organization

The Chief Executive Officer of Wilkes College is the President. Reporting to the President are the Vice Presidents for Academic Affairs, College Advancement, and Business Affairs and Auxiliary Enterprises. Deans head the College of Arts and Sciences, the School of Business and Economics, the School of Engineering and Physical Sciences, and the office of Student Affairs.

Mission of the College

Wilkes College is an independent, non-denominational college where students can combine a liberal arts and sciences education with professional preparation. Wilkes offers majors in the traditional disciplines of the humanities, social sciences, and natural and physical sciences. In addition, the College has developed strong professional programs in accounting, business, communications, computer science, engineering, music, the health sciences, and nursing. Wilkes prides itself on being an institution where students with varying preparation for college work can receive a quality education that will prepare them for the challenges of a rapidly changing world and make them fully competitive in major graduate and professional schools.

Wilkes brings together motivated students and highly qualified, dedicated faculty and staff in a supportive atmosphere that encourages each student's intellectual and personal development. The challenge of high academic standards is matched by a learning environment that provides students with the personal attention and resources needed for full educational growth.

Wilkes reaffirms its long-standing commitment to a core curriculum designed to help students discover and integrate the intellectual disciplines and to foster critical and creative thought, effective communication, mathematical skills, and computer literacy. Both the core and the total curriculum are periodically reviewed to insure responsiveness to the important changes taking place in higher education and to support a broad but integrative educational experience.

The strength of a Wilkes education is its balance of the theoretical and practical, of liberal learning and professional preparation. Students have the opportunity of applying knowledge to real problems by working in well-equipped laboratories, serving internships, and participating in cooperative education. Beyond balancing theory and practice, a Wilkes education seeks to increase students' capacity to serve others with intelligence, imagination, and integrity.

Extracurricular activities at Wilkes are central to the education of the whole person. Musical performance, athletics, radio and television broadcasting, AFROTC, student government, debate, social service organizations, drama, and a variety of clubs afford a broad range of opportunities for participation in college life. The Wilkes campus, located in the historic district of downtown Wilkes-Barre, brings together residential and community students in an atmosphere that promotes their full social and personal development.

A vital part of the mission of Wilkes College is service to Northeastern Pennsylvania. Wilkes has encouraged the fine arts and the performing arts through the Sordoni Art Gallery, the Dorothy Dickson Darte Center for the Performing Arts, and the outstanding cultural events that the College regularly sponsors. The Eugene Shedden Farley Library serves as a comprehensive information and resource center for the region. In response to the needs of business and industry, the College has become a regional center for engineering, science, and technology. The College also responds to the needs of part-time students by making most of its degree programs available to the nontraditional student through evening and weekend courses. In addition, a growing part of the College's community service is the program for continuing education, which provides courses for learners of all ages.

Building upon solid undergraduate programs, Wilkes also provides an important service by offering graduate degrees for students who wish to acquire advanced education in specific professional fields. Most of the graduate programs at Wilkes are multidisciplinary. The teachers of the region are served by master's degrees in education and in the humanities, social sciences, and sciences. Master's degrees in business administration, electrical engineering, engineering and applied sciences, health administration, and nursing are designed to prepare for professional opportunities.

Wilkes College will continue to offer an education that prepares its students to deal intelligently with the complexities of a rapidly changing society as it approaches the twenty-first century.

Accreditation

Wilkes College is accredited by the Department of Education of the Commonwealth of Pennsylvania and the Commission on Higher Education of the Middle States Association of Colleges and Secondary Schools. Certain aca-

demical programs are also individually accredited by appropriate professional organizations. The Chemistry curriculum is approved by the American Chemical Society. The Electrical and Materials Engineering programs are accredited by the Accreditation Board for Engineering and Technology (ABET). The baccalaureate program in Nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by The National League for Nursing.

Buildings and Facilities

The **E. S. Farley Library**, named for the first president of the College, exists to provide its users with effective access to recorded information. The Library has acquired a substantial collection of carefully selected materials in a variety of formats and media, including nearly 200,000 volumes, 1,220 current journal and newspaper subscriptions, and over 500,000 microforms. Particular subject strengths include English literature, American cultural history, and the history of science. The Farley Library's automated catalog system enables users to search the various collections at Wilkes (books, journals, and audiovisual materials) by author, title, and subject on public access terminals. Online database searching is available to students and faculty through the Reference Department of the Library. Special facilities include a microcomputer lab, special collections rooms, audio/visual resources and microform equipment. Library collections are supplemented by cooperative arrangements with other libraries. Through a variety of printed and online sources, the Library is able to identify and locate virtually any published materials needed by Library users.

The **Dorothy Dickson Darte Center for the Performing Arts**, dedicated in 1965 and the gift of Dorothy Dickson Darte, features a fully-equipped, 500-seat theater on a site deeded to the College by the Wyoming Valley Society of Arts and Sciences. It contains a scene shop, dressing rooms, rehearsal areas, costume rooms, hydraulic lift forestage, patch panel with 246 circuits, and a 10-scene preset with 60 dimmers. The facility is well-equipped for instructional use and regularly used for college and community presentations.

The **Dorothy Dickson Darte Music Building** opened in the summer of 1969 as the second phase of the Center for the Performing Arts. It houses faculty offices, studios, classrooms, practice and rehearsal rooms, and it is the centerpiece for the College's highly regarded music programs. Concerts and recitals are regularly presented in Gies Recital Hall and are open to the public.

The **Sordoni Art Gallery**, given to Wilkes College in 1973 by The Andrew J. Sordoni Foundation, Inc. is located in Stark Learning Center adjacent to the Department of Art. The main purpose of this modern facility is to present art exhibitions to enrich the lives of the College community and the region. Exhibitions are supplemented by lectures, tours, demonstrations, and related arts programs. A growing permanent collection embraces all media but is particularly strong in nineteenth and twentieth century American and European paintings and a print collection which includes old masters as well as contemporary artists. The Gallery is a particularly valuable study facility for students.

Stark Learning Center, named in honor of the late Admiral Harold R. Stark who was an Honorary Chairman of the College's Board of Trustees, opened in 1958 and was expanded in 1973. Stark Learning Center is the major instructional facility on campus, and it provides approximately 85,000 square feet of modern classroom, laboratory, studio and office space. It houses the Departments of Art, Biology, Chemistry, Earth and Environmental Sciences, Education, Engineering, Mathematics and Computer Science, Philosophy, Physics, and Psychology as well as the College's Computer Support Center.

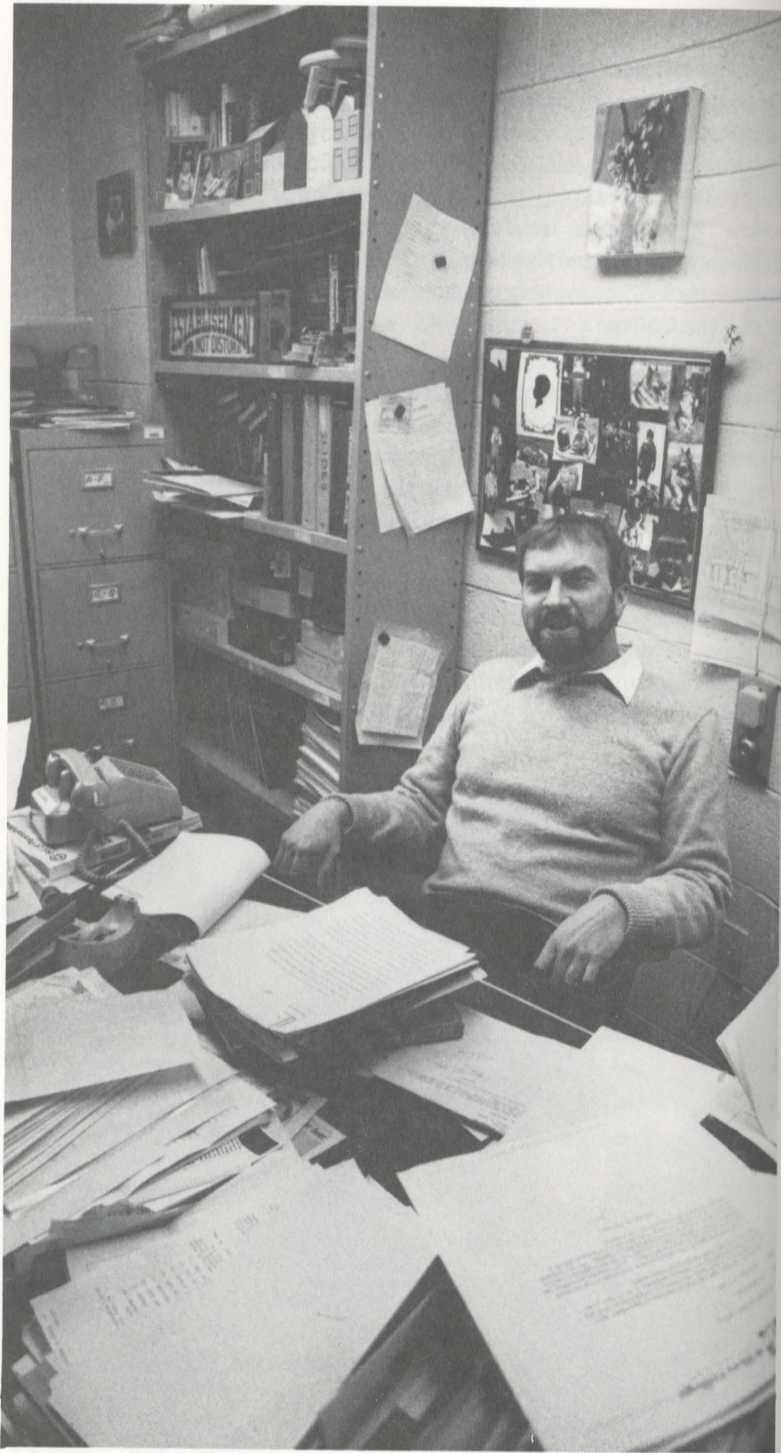
The **Computer Support Center** supports the academic and administrative functions of the College 24 hours a day 7 days a week, including the automation of the College's library operation. Academic support provides assistance to faculty as well as students in the areas of program conversion and development. The Data General MV 10000 with 8-MBytes of main memory and 1.4-GBytes of disc space supports 110 terminals and peripherals used not only for programming but also for word processing (TIPS), engineering (SPICE, ANSYS, SUPREM), statistics (SPSS, MINITAB, BMDP), science (IMSL), simulation (SLAMII), and a variety of applications including CAD. A variety of microcomputers (Apple IIe, Apple Macintosh, and IBM PC) are available to students in clusters throughout Stark Learning Center and in some laboratories. They are available for instructional as well as individual student use during normal college hours; additional hours are posted at the beginning of each term. These units offer a large and growing variety of software including wordprocessing, graphics, CAD, spreadsheet, database management, and simulation. The Hewlett Packard 3000/68 with 5-MBytes of memory and 2.5-GBytes of disc space supports terminals used by all administrative offices in their daily operations.

The **Conyngham Student Center**, refurbished by the Conyngham family and friends, is a multi-functional unit available to individual students and student organizations for activities and relaxation. It includes a snack bar and game room and provides a pleasant meeting place for students and faculty alike. It also houses the offices of the Deans of Student Affairs.

The **Sports and Conference Center and Outdoor Recreational Plant** provide space for organized intramural and intercollegiate athletic events as well as wellness and leisure-time activities for individual students. The new multi-purpose center, scheduled for completion during the 1988-89 academic year, will also provide additional space for academic conferences, lectures, and seminars. In addition to playing fields for baseball, softball, field hockey, soccer, and football, the College has a weight room and asphalt tennis courts. Wilkes actively promotes use of all its facilities by all constituencies of the College.

The College's **Residence Halls** house 900 students in a variety of living arrangements in facilities ranging from stately Victorian and Tudor mansions to the ultra-modern accommodations of Evans Hall. Each residence hall is staffed by graduate or undergraduate Resident Assistants, who provide guidance and supervision and assist in the development of a constructive learning environment. Available to all single full-time students, full-time undergraduate students who are under 18 years of age are **required** to live in college residence halls during their first and second semesters unless they have been granted permission from the Residence Life Office to reside off campus or they commute from the home of their parents or legal guardian. Detailed information regarding residence halls and residence life can be obtained from the Office of Admissions or the Residence Life Office.





Student Life & Services

- Student Activities
- College Activities
- Advising and Counseling
- Other Student Services

Student Life

Wilkes College is a community of learning in which creative scholarship, personal growth, and social relationships are interwoven. Students, faculty and staff work together to promote individual development through a variety of activities, programs, organizations and cultural opportunities which support student life and complement the academic program. All campus organizations are open to all students, and all of them work in close cooperation with faculty advisors and deans.

The information which follows gives a brief sketch of some of these activities and organizations. All new students receive a **Student Handbook** which explains student government, outlines college regulations, and provides a directory of student activities.

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. An Inter-Residence Hall Council and a Commuter Council organize many activities for resident and commuter students, and a Student Programming Board oversees a full schedule of social events at the College.

Students publish the **Beacon**, a weekly newspaper; the **Manuscript**, an annual journal of art, poetry, and fiction; and the **Amnicola**, the College yearbook. The College also maintains an FM radio station, WCLH, which is operated by students and broadcasts daily throughout the Wyoming Valley. Other student activities that provide creative outlets include the theater, the jazz band, choruses, numerous brass, woodwind and percussion ensembles, and an active intercollegiate forensics and debate organization.

Sigma Xi

Sigma Xi, the Scientific Research Society, has established a local affiliate on the Wilkes College campus. The Club serves as a forum for cooperation and exchange of ideas among research-oriented scientists in the area. The Club welcomes as members local collegiate, professional, and industrial researchers engaged in original scientific investigations.

Intramural and Intercollegiate Athletics

Wilkes sponsors an active intramural sports program as well as intercollegiate competition in 14 varsity sports. Varsity programs for women include basketball, field hockey, soccer, softball, tennis and volleyball; men compete at the varsity level in baseball, basketball, cross country, football, golf, soccer, tennis and wrestling. With the exception of wrestling, varsity teams compete at the Division III level; wrestling is a Division I program. The College is a member of the Middle Atlantic Collegiate Athletic Conference

(MAC), the Eastern Collegiate Athletic Conference (ECAC), and the National Collegiate Athletic Association (NCAA).

College Activities

In addition to the curricular and cocurricular activities of particular organizations, a number of all-campus and campus-community events are held each year. Parents' Day, Homecoming, Winter Weekend, and the Cherry Blossom Weekend are typical of the social and cultural events which help to promote an active and involved student body. The College 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 founded by the College and presented each spring. A carefully selected Concert and Lecture series is presented throughout the regular college year at Dorothy Dickson Darte Center for the Performing Arts and is open to the College community and public without charge as are regular concerts and recitals presented by the Music Department.

Student Services

Wilkes College 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 deans, or the department chairmen regarding academic matters. Recognizing that students sometimes need additional guidance in resolving personal, social or academic problems, the College has also institutionalized a variety of programs to assist students, individually and in groups, during their term at the College and afterwards.

New-Student Orientation Program

The transition from the directed work of the high school to the independent and more intensive work of the college is smoothed by introducing new students to the College and its services before classes formally begin. Three 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 the advising system at the College.

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 College and its services. Each freshman is as-

signed to a freshman advisor during the orientation period and will meet with this advisor regularly throughout the freshman year to arrange schedules, discuss academic and career plans, and deal with problems or questions as they arise. At the conclusion of the freshman year, full-time students are re-assigned to advisors within the department or program in which they choose to major or concentrate. These faculty advisors add the special expertise of their disciplines to the advising process and acquaint students with supplemental advising and counseling services available at the College.

International Student Advisor

The International Student Advisor provides immigration and visa information and assistance as well as advice on academic concerns and personal issues. The Advisor provides orientation to life in the United States and the American educational system; serves as the spokesman for international 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 Organization. These services are available to all international students, non-immigrants and immigrants alike.

Part-time Student Advisor

The Director of the Evening, Summer, and Weekend College serves as academic advisor and counselor to all part-time undergraduate students at the College. Part-time students are eligible for all services provided by the College but may need to make appointments with certain offices beyond normal college hours; thus, they are advised to meet regularly with the Director who will assist in these matters as well as refer part-time students to the appropriate offices for particular needs.

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 College has named advisors in special areas of interest. The Dean of Health Sciences functions as a special advisor to all students interested in professional or graduate school opportunities in medical or health-related fields. The Pre-Law Advisor works with students from any discipline who wish to go on to law school. The International Studies Advisor counsels students in matters relating to studying abroad and career and professional opportunities in this field. The Director of Cooperative Education counsels and advises students interested in this program or a variety of other internship possibilities. Information on any of these special services is available virtually anywhere on campus, but the Office of the Dean of Student Affairs serves as a readily accessible and convenient source of information for these and other services provided for students.

The Student Affairs Office

The student affairs staff helps students with their personal or educational problems, handles student emergencies, works with students who have been referred to them by other members of the College community, and provides general information about campus and community resources. The Dean of Student Affairs is generally familiar with all College services and specifically coordinates the activities of the residence-life staff and the Director of Student Activities as well as the College Health Service, the College Counseling Service, the College Testing Service, the Office of Career Services, the Office of Cooperative Education, and the Directors of Athletics and Intramurals.

College Health Service

The Health Service Office is staffed during normal College hours by a registered nurse. Appropriate referrals to area doctors and hospitals are made as necessary. Group Health insurance is available through the College.

College Counseling Service

The Counseling Service is available to individual students during normal college hours and at other times, as necessary, to discuss personal problems or concerns. Referrals to campus and area agencies and professionals are made when appropriate. The Director of College Counseling also works closely with all student groups and College personnel to provide timely workshops and group sessions on areas of interest or concern such as assertiveness training, time management, or health-related topics.

College Testing Service

The College maintains a Testing Center to assist the deans and faculty in their counseling of students. The College Testing Service is also available, at no charge, to all current Wilkes students as well as College alumni and their families. The Center also provides services to business, industry, state and federal agencies for a fee.

Career Services

The Office of Career Services is the liaison between the College and potential employers in business, industry, government, and educational institutions. Students are encouraged to familiarize themselves with the services provided by this Office upon their arrival on campus and to use them regularly in all phases of their career development.

Typical services include career counseling workshops on resume preparation, interviewing skills and job search strategies. In addition, the Career Services Office operates a credentials service for all registered candidates, maintains contact with professional and educational organizations through

an on-campus recruiting program, and shares job information on various full-time and part-time opportunities of interest to students and alumni.

A Career Resource Library is available to identify the variety of career options for students in any major, and Cooperative Education internships for academic credit and institutional work/study jobs are also available to qualified students.

The Office of Career Services participates each Fall Semester, with other area colleges, in Career Day and sponsors Career Exchange each Spring Semester. The former makes over 100 employer and professional/graduate school representatives available to students and the latter gives current students the opportunity to meet with Wilkes alumni to conduct information interviews and to discuss career planning.

Wilkes College Learning Center

The Wilkes College Learning Center provides free tutorial services in all courses to Wilkes College students. Services include individual tutoring in any course, group study sessions, small group supplemental instruction seminars, and assistance in basic skills. During the summer, the Center offers a six-week College Skills Improvement Program designed to help entering students improve their English, reading and study skills, and prepare for college-level courses in Mathematics, Biology and Chemistry.

Writing Laboratory

The Writing Laboratory is available to all Wilkes students who seek personal assistance with particular writing problems or particular writing assignments. Students who experience writing difficulties in courses may be referred to the Laboratory to hone their writing skills.

Act 101 Program

The Act 101 Program at Wilkes College 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.

Project Upward Bound

A federal program at the College since 1967, Project Upward Bound 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.

Day Care Service

Since 1982, the College has provided partially subsidized day care service to students through an arrangement with the Child Development Council of Northeastern Pennsylvania. The service offers regular full- and part-time day care at a reduced fee to students at centers conveniently located near to campus. Children must attend on a regular, scheduled basis to be eligible for the reduced fee.

College Bookstore

The Bookstore sells new and used books, stationery and supplies, and College memorabilia during normal College hours, and it is open for additional hours at the beginning of each term. The bookstore accepts cash, personal checks (with appropriate identification) and Visa or MasterCard.





Admissions

- Admission Requirements
- Admission Procedures
- Advanced Placement

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Admission

Required High School Preparation

A student's secondary school preparation should include a pre-college curriculum with four years of English, three years of mathematics, and a minimum of one year of history and one year of a laboratory science. Additional courses should be elected in academic subjects according to individual interests. Students whose preparation has not followed this pattern may still qualify for admission if there is other strong evidence that they are prepared for college work.

Students intending to major in Biology, Chemistry, Computer Science, Engineering, Mathematics, Medical Technology, or Physics should have at least three years of college preparatory mathematics courses (including algebra II, geometry, and topics in trigonometry) so as to be prepared to take Mth 105 or 111 (calculus) in the first term of the freshman year. The student without such background is advised to take, preferably in the summer preceding entrance, Mth 100 (algebra and trigonometry) offered at Wilkes or an equivalent course at another college or university. Credits in such remedial courses will not exempt the student from any required course in these programs.

Students majoring in Nursing are required to have completed courses in English (four units), Social Studies (three units), Mathematics (two units including algebra), and Science (two units including biology and chemistry) during their secondary school program.

Application for Admission

Applications for admission and instructions regarding secondary school records, recommendations, and entrance examinations may be obtained from the Office of Admissions. The completed applications should be returned directly to the Admissions Office with a non-refundable \$20 application fee.

Admissions Tests

The Scholastic Aptitude Test (SAT) of the College Entrance Examination Board is required of all applicants. Students should plan to take this examination in the fall term of their senior year, although many applicants take the exam in their junior year. 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 College code number 2977.

Acceptance of Admission and Deposit

After receipt of the secondary school record, the secondary school recommendations, and the senior College Board scores, the Admissions Office acts upon all applications. Notification of action is sent immediately. Resident students are required to forward a \$100 tuition and dormitory deposit by May 1 in order to guarantee their entry into the College. Commuting students are required to forward a \$50 tuition deposit by May 1.

Upon their acceptance for admission to the College, music applicants will be required to audition for the music faculty.

The College accepts a limited number of applications for the spring semester. Procedures are similar to those followed in the fall semester.

Campus Visits

Although a personal interview with each student is not required, an interview is strongly recommended. Students and their families are encouraged to visit the College at their convenience. It is advisable to call or write for an appointment so that the appropriate deans may arrange to meet with them.

A number of campus visitation days are held during the academic year. Visitation days include a general meeting with the admissions staff, current students, and administrative personnel; a tour of the campus; a light lunch; and meetings with faculty from the academic departments. Specific information about the dates of the visitation days are available upon request from the Office of Admissions.

Admission of International Students

In order to be considered for admission to Wilkes College, international students must submit the following: completed application, official results of the TOEFL (Test of English as a Foreign Language) or evidence of the successful completion of an accredited intensive English language program, Declaration of Finances Form (which may be obtained from the Wilkes College Office of Admissions), official transcripts of all secondary and/or post-secondary work completed to date, and a copy of the secondary and/or post-secondary diploma or leaving certificate.

Students should apply by June 15 for the fall semester or November 15 for the spring semester.

The form I-20 is issued only when the application is complete and the candidate is judged to be admissible.

Admission of Transfer Students

The College welcomes transfer students from other accredited colleges and universities for both the fall and spring semesters. Transfer students must submit a formal application, a high school transcript, a college transcript from each institution attended, and their Scholastic Aptitude Test scores if they have earned fewer than 30 credits. Applicants must be in good academic standing with a minimum grade point average of 2.00 (C) at the beginning of the semester they first enroll at Wilkes. All courses with a grade of 2.00 (C) or better that are comparable to the curriculum at Wilkes will be accepted for transfer. Students transferring into the nursing program must arrange their schedule and register **after** consultation with the chairman of the Department of Nursing.

All transfer students must complete a minimum of one-half of their major field credits at Wilkes College.

Transfer students from two-year institutions must complete a minimum of 60 credits at baccalaureate degree-granting institutions. The last 30 of these credits, at minimum, must be earned at Wilkes College.

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

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

Readmission to the College

Students who have been enrolled full-time at the College and have terminated their studies, but wish to return as full-time students must meet with one of the deans in the Student Affairs Office as the first step in the readmission process. Former full-time students who wish to return as part-time students will meet with the Director of Evening, Summer, and Weekend College to discuss their readmission.

Admission of Part-time Students

Those who wish to enroll as part-time students should contact the Director of the Evening, Summer, and Weekend College 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 should arrange to have an official high school transcript forwarded in support of their application. All documentation should be sent to the Director of the Evening, Summer, and Weekend College.

Part-time to Full-time

Part-time students who wish to enroll as full-time students must consult with the Director of Evening, Summer, and Weekend College as the first step in this process. Students having completed 30 credits or more and having maintained a grade point average of 2.00 will automatically 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 rendered.

Full-time to Part-time

Students who have been enrolled full-time and wish to become part-time students should meet with one of the deans in the Student Affairs Office as the first step in this process. Normally, these students will retain their major advisor for a period of one year after they make this transition. After one year, the Director of the Evening, Summer, and Weekend College will become their academic advisor.

Advanced Placement Credit

Wilkes College 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 competence beyond that normally associated with graduation from high school. Academic credit may be granted for such demonstrated competence through a variety of channels.

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. 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 Office of Admissions.

College-Level Examination Program

The College grants credits on the basis of satisfactory performance on the Subject Examinations, **not** the General Examinations, of the College-Level Examination Program (CLEP) administered by the College Entrance Examination Board. CLEP credits from an accredited institution are transferable to the College. Although the program is designed primarily for adults, exceptionally well qualified high school seniors may find it advantageous to seek academic credit through the CLEP. The following CLEP Subject Examinations and course equivalencies have been approved by the various academic departments:*

CLEP Subject Examination	Wilkes Course Equivalent	Credit
Intro. to Accounting	Accounting 101	3
General Biology	Biology 103 & 104	3&3
Microbiology	Biology 113	4
Anatomy	Biology 115	4
Physiology	Biology 116	4
Intro. to Marketing	Business Admin. 222	3
Intro. to Business Law	Business Admin. 231	3
Intro. to Management	Business Admin. 251	3
General Chemistry	Chemistry 101	3
Fortran IV	Computer Science 123	3
Intro. Macroeconomics	Economics 101	3
Money & Banking	Economics 201	3
History of American Educ.	Education 201	3
Educational Psychology	Education 202	3
Tests & Measurements	Education 351	3
Freshman English	English 101	3
College Composition	English 101	3
Analy. & Interpret. of Lit.	English 102	3
English Literature	English 253 & 254	3&3
American Literature	English 381 & 382	3&3
College French - Levels 1&2	French 101 & 102	3&3
College German - Levels 1&2	German 101 & 102	3&3
Western Civilization	History 101 & 102	3&3
American History	History 207 & 208	3&3
College Algebra - Trig.	Mathematics 100	4
Calculus w/Elem. Func.	Mathematics 111	4
Statistics	Mathematics 150	3
American Government	Political Science 102	3
General Psychology	Psychology 101	3
Intro. to Sociology	Sociology 101	3
College Spanish - Levels 1&2	Spanish 101 & 102	3&3

*Scores must be at the 50th percentile or above.

Official scores on CLEP Subject Examinations should be forwarded directly to the Evening, Summer, and Weekend College Office for evaluation.

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 course-work. 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 Office of Admissions.

Challenge Examinations

After admission to Wilkes College, students may elect to take examinations demonstrating their competence in a particular course. Advanced placement and/or credit can be earned by successfully passing a Challenge Examination administered by the appropriate department. Interested students should contact the appropriate department chairman to discuss the particulars of the examination.

A fee of \$20 per credit will be assessed for each Challenge Examination. The fee is payable in advance of the examination and a receipt from the Finance Office must be presented before the Challenge Examination will be administered.

RN - Validation of Prior Learning

Registered nurse students and students who are eligible to sit for NCLEX-RN may validate prior learning by successfully completing the Mosby Assess Test (Secured Version). Upon successful completion of this examination and Nursing 299, the student will receive credit for Nursing 202, 203 and 204. Registered nurses should contact the Department of Nursing for more information on this program.

Credit for Life Experience

After admission to Wilkes College and when all other means of securing credit for demonstrated competencies have been exhausted, a student may petition for credit for life experience. Petitions must be submitted through the Director of the Evening, Summer, and Weekend College, though the final decisions on such petitions are made by the Academic Standards Committee on the recommendation of the Subcommittee for Life Experience. Credit awarded on the basis of life experience may not exceed 30 hours, and these credits may not be applied to the Core Requirements or to courses required by the major. Information on the procedures for applying for life experience credit may be obtained from the Office of Evening, Summer, and Weekend College.



Expenses and Financial Assistance

- Tuition and Fees
- Payment of Options
- Financial Aid
- Application Procedures
- Types of Financial Assistance
- Wilkes College Scholarships

Student Expenses

The following chart summarizes student expenses for the 1988-89 academic year which officially begins with the 1988 summer sessions. 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 Financial Management Office.

Student Expenses for 1988-89

Full-time Undergraduate:	Assessment	Each Semester	Total for Year
*Tuition (12-18 Credits)	Per Semester	\$3,465	\$6,930
Room and Board	Per Semester	\$1,645	\$3,290
Room Damage Deposit	One Time	\$ 50	—
General College Fee	Per Semester	\$ 70	\$ 140
Activity Fee	Per Semester	—	\$ 75
Health and Accident Insurance		To be announced	

*Credits above 18 will be assessed at the rate of \$158 per credit hour.

Part-time Undergraduate:

Tuition (1-11 1/2 credits)	Per Credit	\$ 158	—
General College Fee	Per Credit	\$ 4	—

Summer Sessions — Undergraduate:

Tuition	Per Credit	\$ 158	—
General College Fee	Per Credit	\$ 4	—
Summer Board	Per Week	\$47.50	—
Summer Room	Per Week	\$47.50	—
Room Damage Deposit	One Time	\$ 50	—

Other Fees and Charges:

Acceptance Deposit:			
Resident Student	One Time	\$ 100	—
Commuter Student	One Time	\$ 50	—
Application Fee	One Time	\$ 20	—
Applied Music Fee	Per Lesson Series	\$ 160	—
Audit Fee:			
Full-time Students	No Tuition Charge	—	—
Part-time Students	Per Credit	\$ 79	—
Challenge Exam	Per Credit	\$ 20	—
Comprehensive Health Fee		\$ 20	\$ 40
Graduation Fee	One Time	\$ 75	—
Installment Payment Plan (Application Fee)	Each Year	\$ 50	—
Late Registration Fee	Per Semester	\$ 10	—

Other Fees and Charges:	Assessment	Each Semester	Total for Year
Medical Technology Fee (During Clinical Training)	Per Semester	\$ 400	\$ 800
Music Major Fee	Per Semester	\$ 20	\$ 40
New Student Orientation Fee	One Time	\$ 50	—
Nurses Professional Liability Insurance	Per Year	—	\$ 15
Replacement of lost ID cards	Each	\$ 5	—
Returned Check Charge	Each	\$ 10	—
ROTC Uniform Deposit	One Time	\$ 40	—
Sickness Insurance (optional)		To be announced	

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

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. A minimum payment of one-half of the net bill for each semester must be paid before the start of the semester. The net bill is the balance due after financial aid has been deducted from the current semester charges. The remainder of the Fall Semester bill must be paid by November 1; the remainder of the Spring Semester bill must be paid by March 1.

Any indebtedness to the College which becomes past due jeopardizes the student's enrollment and such students shall not be permitted to register for the subsequent semester or summer-school term. Further, students who fail to pay all indebtedness to the College shall not be permitted to receive any degree, certificate, or transcript of grades. Nor shall they participate in Commencement activities.

All payments are made directly to the Financial Management Office. Questions concerning charges or payments should be directed to the Coordinator of Student Accounts in the Financial Management Office.

Monthly Payments

Wilkes College has developed an interest-free, eleven-month installment payment plan (IPP) to help ease the burden of financing an education. Arrangements may be made to finance any amount between \$2,000 and the full cost of tuition and fees. Payments begin in July and end in May of each academic year. IPP applications for the upcoming academic year are available in April of each year.

Two additional extended payment plans are available through the Knight Insurance Company. The **SCHOOL CHEX** plan allows parents to borrow from a prearranged line of credit and use special checks to pay the College bills when they become due. The **EXTENDED REPAYMENT PLAN** is an insured loan program which allows for the payment of educational expenses over a period of 10 years. Parents may use these programs to cover all or part of the costs of education at Wilkes College and can select the annual amount and the number of years of education to finance. For further information, including application procedures, write or call the Knight Tuition Payment Plans, 53 Beacon Street, Boston, Massachusetts 02108. Telephone (617) 742-3911.

VISA/MasterCard

Wilkes College accepts Visa and MasterCard for tuition and fee payments.

Tuition Discounts

Five tuition discounts are available to Wilkes undergraduates who meet eligibility requirements. For application procedures, contact the Financial Aid Office.

Alumni Discount: Wilkes encourages graduates of the College to continue their education. Therefore, alumni qualify for a 25% discount on tuition for undergraduate courses and a \$10 per credit discount on graduate courses. A written request for this discount should be submitted to the Financial Aid Office at the time of registration.

Alumni Dependent Discount: A 10% tuition discount is given to dependent children and spouses of Wilkes College alumni. This discount applies only to those enrolled full-time.

Evening Student Discount: Certain full-time evening school students who are also employed full-time may qualify for this discount.

Multiple Student Discount: When two or more members of the same family attend Wilkes at the same time on a full-time basis, a 15% reduction in net tuition is given to all but the first family member.

Patrolman's Benevolent Association Discount: A 15% tuition discount is provided for children of members of New York's Patrolman's Benevolent Association. An additional 5% is provided for students who graduated in the top 5% of their high school class.

Tuition Exchange

Wilkes College is a member of the Tuition Exchange Plan which provides limited opportunity for faculty children from one college to enjoy tuition remission benefits at another institution. Students who are dependents of

College faculty, administration or staff should consult the Tuition Exchange Liaison Officer at their institution to determine if they qualify for this program.

Refunds

Students who officially withdraw from courses may be eligible for a partial refund of tuition charges. Resident students who withdraw from the College may also qualify for a refund of meal charges. Refunds are based on the official date of withdrawal as noted by the Registrar.

Any reduction in charges may affect financial aid received for that semester. (See Refund of Financial Aid in the **Consumer's Guide to Financial Aid, Costs, and Charges at Wilkes College**, which is available at the Financial Aid Office.)

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

Refunds are available as indicated on the following chart:

Refund Schedule*

Circumstance	Time of Withdrawal	Refund
Academic Year:		
Tuition:		
Total Withdrawal	First Two Weeks	80%
	Third & Fourth Weeks	60%
	Fifth Week	40%
	After Fifth Week	No refund
Full-time to Part-time and Reduction of Part-time Load	Above time-schedule applies for courses dropped	Charges based on the number of credits after the withdrawal
Room and Board:		
Room	Anytime during the 15-week semester	No refund
Board	Anytime during the 15-week semester	Prorated from end of official withdrawal week
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

*Fees are non-refundable.

Financial Aid

Wilkes College 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 College 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.

Students with questions about financial aid or students seeking applications for financial aid should contact the Financial Aid 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 College**, which is also available at the Financial Aid Office.

Application Procedures

1. Submit the Wilkes College Application for Financial Aid to the Wilkes College Financial Aid Office.
2. Complete the PHEAA/Federal Student Aid Application and forward it to PHEAA, Harrisburg, PA. The College code is 010204.
3. Students who are not residents of Pennsylvania but whose home state allows their scholarship/grant funds to be used in Pennsylvania must also complete the appropriate state Financial Aid Form (FAF) and forward it to the College Scholarship Service. The College code is 2977.
4. Students who desire to participate in the Guaranteed Student Loan Program and/or the PLUS/SLS Program must also complete the appropriate loan application.

Renewal of Financial Aid

Financial aid is awarded on an annual basis; therefore, students must re-apply 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. In addition to those scholarships listed on the chart on page 49, Wilkes College is approved to participate in PHEAA's Scholars in Education Program and in the Federal Congressional Teachers' Scholarship. Also, several academic units at the College have scholarships available to qualified students.

These include the Athletic Department (wrestling only); Biology Department, School of Business and Economics, School of Engineering and Physical Sciences, English Department, History and Political Science Department, Music Department, Nursing Department, Sociology Department, and the Speech, Communications and Theater Arts Department.

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/SLS and the PHEAA Alternate Loan begin within a short time after funds are disbursed. Two emergency loan funds have been established at the College to help students meet small financial emergencies. The Florence and Joseph A. Goldman Loan Fund and the Robert W. 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. In addition to on-campus employment, the Office of Career Services operates a JOB LOCATION DEVELOPMENT PROGRAM (JLD) to help students obtain employment opportunities off-campus. The operation of this program is funded jointly by the federal government and the College. Students are paid by the employer for whom they work. For more information, interested students should contact the Office of Career Services.

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 College also has a Veterans Affairs Office to assist students in obtaining these benefits.

Other Non-Institutional Awards

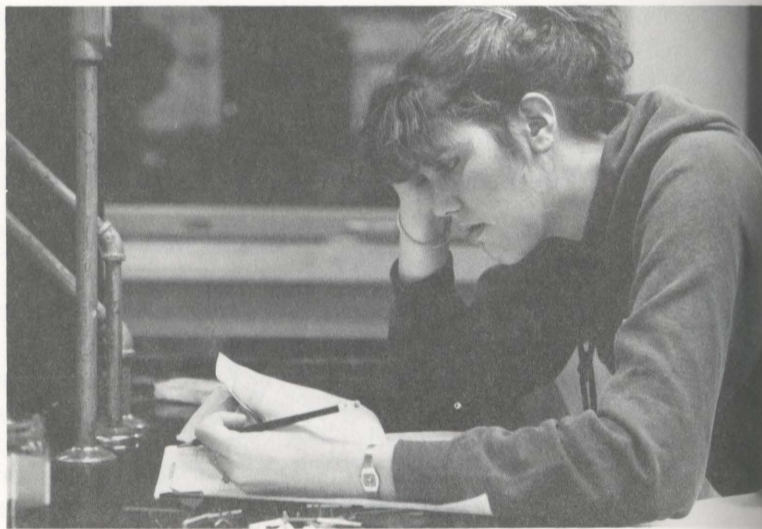
There are literally hundreds of sponsors across the country, each of whom offers scholarships, grants, and/or loans to students pursuing higher education. While it is not possible to list them all here, reference publications are available in college and high school libraries that identify these programs and give application instructions and procedures.

Financial Aid for Part-time Students

The Pell Grant, Guaranteed Student Loan, PLUS/SLS Loan, PHEAA-HELP Guaranteed Student Loan and the PHEAA-HELP Alternate Loan are available to part-time students. Interested students must complete the PHEAA/Federal Student Aid Application and the appropriate loan applications in order to apply for these programs. In addition to financial need, eligibility for the Pell Grant program is based on enrollment status. Students registered for at least 6 credits but less than 9 credits qualify for approximately one-half of the full-time award and those registered for at least 9 credits but less than 12 credits qualify for approximately three-quarters of the full-time award.

Financial Aid for Students Seeking a Second Degree

Only the Guaranteed Student Loan Program, the PLUS/SLS Program, the PHEAA-HELP Guaranteed Student Loan Program and the PHEAA-HELP Alternate Loan Program are available to students seeking a second degree. Both the PHEAA/Federal Student Aid Application and the appropriate loan application(s) must be completed to determine eligibility for these programs.



Wilkes College Scholarships

Founders of Scholarships

Several thousand friends and alumni contribute to the scholarship fund of the College on an annual basis. Many friends have created scholarships which bear the names of the donors or of persons whom they have memorialized by means of a scholarship.

Endowed Named Scholarships

MOHAMAD ABRAHAM SCHOLARSHIP has been created by a gift to the College made by Mohamad Abraham. Its purpose is to assist Palestinian Arabs, or their descendants, to obtain a college education. To qualify, a student must demonstrate the ability to successfully complete the work of the College and must submit evidence of financial need.

THE BALLET SOCIETY OF WYOMING VALLEY SCHOLARSHIP has been established by members of the Ballet Society of Wyoming Valley; income from this fund provides scholarship assistance to one or more students majoring in the performing arts and showing financial need.

KEVIN EDWARD BARKER MEMORIAL SCHOLARSHIP was created in 1972 in memory of a former student of Wilkes College, Kevin Edward Barker, by his family and friends. This fund provides partial scholarship assistance to a male graduate of Wyoming Valley West High School in recognition of high academic achievement and involvement in extracurricular activities.

ETHEL G. AND ALVAN E. BAUM ART SCHOLARSHIP. A scholarship for a creative art student was established in memory of Ethel G. and Alvan E. Baum by Esther and William Davidowitz and friends. Mrs. Baum was an artist and interior designer. Mr. Baum lived his life as an educator. This scholarship in memory of Mrs. Davidowitz's parents is awarded annually.

THE WILLIAM BERNHARD SCHOLARSHIP was established in memory of William Bernhard, a member of the class of 1983, by his family. The scholarship is available to a deserving student(s) pursuing studies in Business. Priority shall be to ROTC student(s), preferably with interest in becoming a pilot. Other desirable characteristics include participation in extra-curricular activities and good academic standing.

THE GENEVIEVE TODD BRENNAN MEMORIAL SCHOLARSHIP was established by her children in recognition of her service to Wilkes College as cafeteria manager from 1938 to 1956. This scholarship provides

an annual partial grant for a capable and deserving student who demonstrates promise of success in his or her chosen field.

THE ROBERT S. CAPIN SCHOLARSHIP IN ACCOUNTING was established by former students of Professor Capin, many of whom have become certified public accountants and partners in major firms. The establishment of the fund honors Professor Capin's abilities as a teacher as well as his years of service as President of Wilkes College. The fund provides annual assistance for students wishing to pursue the study of accounting.

BRUCE R. CARDON AND CHARLOTTE J. CARDON MEMORIAL SCHOLARSHIP is funded by a trust established for the purpose of providing financial aid to those worthy students seeking such assistance. The allocation of the scholarship shall be at the sole discretion of Wilkes College officials.

WALTER S. CARPENTER SCHOLARSHIP IN ENGINEERING is awarded annually to high school seniors planning on majoring in Electrical Engineering, Engineering Management, Environmental Engineering, or Materials Engineering at Wilkes College. The recipients of these awards are selected by the faculty of the Engineering Department on the basis of the applicants' high school records and Scholastic Aptitude Test scores, without regard to financial need. Scholarships are renewable annually upon recommendation of the Department of Engineering. Interested students should apply in writing to the Chairman, Department of Engineering, Wilkes College. Application deadline in March 15.

CLASS OF 1970 SCHOLARSHIP was established by the Class of 1970 to commemorate their 15th anniversary. To be awarded to a student demonstrating financial need, good character and scholastic aptitude.

CONYNGHAM POST NO. 97, GRAND ARMY OF THE REPUBLIC, DEPARTMENT OF PENNSYLVANIA, SCHOLARSHIP. In 1968, Trustees of Post 97 established a trust at the College, the annual income of which is used to provide partial scholarships for residents of Luzerne County, with preference given to descendants of veterans of the Civil War.

DR. AND MRS. S. M. DAVENPORT SCHOLARSHIP provides partial scholarship assistance to a worthy student enrolled in the medical science field. The scholarship bears the name of Dr. S. M. Davenport, one of the original members of the Wilkes College Board of Trustees and former College physician, and his wife, Mrs. Harriet M. Davenport.

ESTHER AND WILLIAM DAVIDOWITZ SCHOLARSHIP is awarded annually to an outstanding student. The scholarship has been created by Mr. and Mrs. William Davidowitz, long-time friends of the College, who wish to support the endeavors of capable and worthy students.

CHARLES AND SADIE DONIN MEMORIAL SCHOLARSHIP is supported by a substantial endowment created by Mr. Donin. Scholarships are awarded to able and highly motivated students of limited financial means.

THE GEORGE F. ELLIOT MEMORIAL SCHOLARSHIP has been created by faculty, friends, and alumni of the Department of Commerce and Finance in memory of Professor George F. Elliot. Professor Elliot served as a teacher of economics for many years in the Commerce and Finance Department. The award is provided annually to an outstanding student majoring in a field within the Department of Commerce and Finance, preferably economics.

EUGENE S. AND ELEANOR COATES FARLEY SCHOLARSHIP was created by gifts from friends and family in memory of the first president of Wilkes College and his wife, whose dedication and commitment to this College and the community have contributed so much to the development of both. A partial tuition scholarship is awarded annually to a qualified student active in campus athletic or cultural programs.

THE CHLORA FEY SCHOLARSHIP has been established by members of the former Chlora Fey Console Club in honor of the organization's founder and advisor, the late Miss Chlora Fey, who was a prominent organ and piano teacher in the Hazleton area. Students pursuing the study of organ will be required to present themselves for audition, at which time selected faculty of the Music Department will assess their ability and subsequently select one applicant as the recipient of this partial annual scholarship award.

THE FORTINSKY SCHOLARSHIP was established in 1978 by Robert Fortinsky and is awarded annually to a capable student demonstrating promise and ability.

WILLIAM R. GASBARRO SCHOLARSHIP remembers Professor Gasbarro for his service as Chairman and member of the music department extending over three decades. To be awarded to an undergraduate student(s) of music demonstrating financial need and academic ability.

THE MILDRED GITTINS MEMORIAL SCHOLARSHIP was established by the College in 1983. It recognizes a record of service for four decades by Miss Gittins, who served as manager of the College bookstore. This partial scholarship award is provided annually to a student demonstrating scholarship and leadership abilities and financial need.

BRYNLY R. GRIFFITHS SCHOLARSHIP is to be used for the financial aid of deserving students of vocal music.

MARGARET MARY HAGELGANS MEMORIAL SCHOLARSHIP was established by her parents to remember Margaret Mary Hagelgans, a member of the Class of 1986.

KLAUS HOLM SCHOLARSHIP, established by students, colleagues and friends, honors Professor Holm for his service to the Department of Theatre Arts. To be awarded to a student of the dramatic arts demonstrating financial need and scholastic aptitude.

ARTHUR J. HOOVER SCHOLARSHIP was established by friends and family in memory of Dean Hoover, a member of the Class of 1955 and the College Administration for 31 years. To be awarded to a student demonstrating financial need, good character and scholastic aptitude.

JEWELCOR, INC. SCHOLARSHIP was established by the company to offer financial assistance to deserving students. First preference shall be to dependents of employees of Jewelcor, Inc. who are full-time students.

JEWISH WAR VETERANS, WILKES-BARRE POST 212 SCHOLARSHIP is established in honor of B. J. Levin, one of the Post's founders. The purpose of this scholarship is to aid the son or daughter of a local war veteran. The award is made on the basis of need and ability without regard for race or creed.

WILLIAM D. JONATHAN MEMORIAL SCHOLARSHIP has been established by friends of William D. Jonathan in recognition of his selfless courage in the line of duty and his life's interest in improving fiscal management in state and local government. Mr. Jonathan, a senior research associate with the Pennsylvania Economy League for over 20 years and a volunteer firefighter from Nanticoke, Pennsylvania, lost his life in a tragic fire in Nanticoke in December of 1978 as he attempted to save the life of another firefighter. The award is made annually to a student majoring in political science or economics who has exhibited interest in fiscal management and service to the community.

THE GRACE C. KIMBALL SCHOLARSHIP IN BIOLOGY was created in 1985 in memory of Dr. Grace Kimball, a former faculty member of the Department of Biology. The scholarship is awarded to beginning biology majors who have satisfied qualifying criteria established on a competitive basis by the departmental faculty.

THE WILLIAM LANGFELDER SCHOLARSHIP was established in 1986 by his sister, Mrs. Julia Hirsch, to provide scholarship assistance for one or more deserving students. First priority will be to students from Mount Carmel, Pennsylvania, area; second priority to students from North-eastern Pennsylvania.

THE ANNE VANKO LIVA SCHOLARSHIP was established by friends and former students of Mrs. Liva in honor of her many contributions to music and to cultural life in Luzerne and Lackawanna Counties. Scholarship(s) will be awarded to an undergraduate majoring in music, with preference given to students specializing in the study of piano.

THE CHARLOTTE V. LORD SCHOLARSHIP was established by colleagues, friends, and students of Dr. Lord in recognition of her unique career in education, in the arts and literature, and for her contributions to the community. The award is made annually to one or more students majoring in the fine arts and humanities.

THE KATHRYN H. MacAVOY SCHOLARSHIP IN NURSING was established in honor of Kathryn H. MacAvoy, a long-time resident of Wilkes-Barre and a member of the nursing profession, by her nephew, Edwin Mailander. The fund provides at least one, but not more than two, partial scholarship grants annually to a student or students from the Greater Wyoming Valley who demonstrate need and capability in the pursuit of the study of nursing.

THE KATHLEEN HARTZELL MAILANDER SCHOLARSHIP IN NURSING was established in memory of Kathleen Hartzell Mailander, a long-time resident of Wilkes-Barre and a member of the nursing profession, by her son, Edwin Mailander. The fund provides at least one but not more than two partial scholarship grants annually to a student or students who demonstrate need and capability in the study of nursing. Preference for recipients of the scholarship shall be given to residents of the Greater Wyoming Valley.

ARNAUD CARTWRIGHT MARTS SCHOLARSHIP was created by the associates of Dr. Arnaud C. Marts, in the firm of Marts & Lundy, to honor the chairman of their company.

As president of Bucknell University, Dr. Marts was instrumental in the establishment of Bucknell University Junior College, which became Wilkes College in 1947. After Wilkes College became an independent college, he joined its Board of Trustees and was elected vice-chairman of the Board.

The Arnaud C. Marts Scholarship is awarded each year to the outstanding senior who has need of financial aid and who, by high scholarship and participation in college activities, has demonstrated those qualities of leadership that are needed in Wilkes College and in the nation.

FRANCES AND LOUIS MASLOW MEMORIAL SCHOLARSHIP has been established through the generosity of Frances and Louis Maslow, long-time friends and benefactors of Wilkes College, and in cooperation with their son, Richard Maslow, a member of the Wilkes Board of Trustees.

The fund provides for scholarship aid to be awarded annually to a worthy student majoring in engineering or business administration.

ROBERT J. McBRIDE MEMORIAL SCHOLARSHIP was established to honor the memory of Robert J. McBride, an athlete at Wilkes College. Initial funding of the scholarship came from donations received at the time of his death.

This scholarship is awarded to football players from the Greater Wyoming Valley area selected by the football coaches and athletic director of the College.

THE RUTH W. AND JOHN T. McHENRY SCHOLARSHIP IN NURSING has been created by faculty, alumni, and friends of the Nursing Department in recognition of the outstanding leadership exhibited by Ruth McHenry in founding the baccalaureate degree program in nursing at Wilkes College, and in recognition of the personal encouragement of this effort by her husband, John McHenry. A scholarship grant is awarded annually to a student or students selected by the faculty of the Department of Nursing and the Director of Financial Aid in recognition of demonstrated academic, professional, and leadership abilities in the field of nursing. Particular consideration will be given to students who, in the view of the nursing faculty, are potential leaders for the profession of nursing in the Greater Wyoming Valley area.

DR. JAROSLAV G. MORAVEC MEMORIAL SCHOLARSHIP has been established for a student genuinely interested in sociology and anthropology who intends to pursue graduate studies in sociology, anthropology, law, or an allied field. Beginning in 1978-79, this scholarship has been awarded to a student for use during his/her senior year.

MABEL AND JOHN C. MOSTELLER SCHOLARSHIP has been created to provide scholarships for needy and intelligent young men who have insufficient financial resources of their own and who would not have the opportunity to attend college if they were unable to secure financial assistance. The scholarships shall be granted only to young men of good moral character who are in the upper ten percent of their class in academic standing and who have passed a qualifying competitive examination administered by Wilkes College.

THE TAFT ACHILLES ROSENBERG NAPARSTECK SCHOLARSHIP was established by Ruth and Martin Naparsteck, '69, in memory of their son, Taft. Although he died ten days before his second birthday, Taft was already able to do some reading and writing. The scholarship provides assistance for a student who shows promise as a writer of prose fiction, journalism, or poetry. Preference may be given to a veteran of the Viet Nam War or to the son or daughter of a veteran of that war.

THE ELLEN WEBSTER PALMER SCHOLARSHIP was established in memory of Mrs. Palmer, founder of the Boys Industrial Association of Wilkes-Barre. Income from the fund is to be distributed for scholarship purposes. Preference for the award shall be: first, to student(s) whose forebears include one or more "breaker boys" employed in the mining industry; second, to student(s) from Luzerne County; third, to all other Wilkes College students.

PENNSYLVANIA INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS — NORTHEAST CHAPTER has created partial tuition scholarships for accounting students entering the senior year, in recognition of high academic endeavor in the study of accounting.

CRAIG C. PIATT MEMORIAL SCHOLARSHIP was established in 1988 in memory of Craig Piatt, of the class of 1991, a student of business administration and a member of the football team. The scholarship is awarded to a student demonstrating financial need and showing scholastic aptitude.

HENRY BLACKMAN PLUMB AND EDITH PLUMB SCHOLARSHIP has been established to provide scholarships for students of outstanding ability and character majoring in one of the sciences and attending Wilkes College.

KENNETH L. POLLOCK SCHOLARSHIP provides partial scholarships for two seniors from Northwest Area High School who matriculate at the College. The recipients are determined by a selection committee of interested individuals from the Northwest Area. Further information concerning application procedures and eligibility requirements is available from the Director of Guidance, Northwest Area High School.

GEORGE AND HELEN RALSTON SCHOLARSHIP, established by friends and family, honors Dean Ralston for his forty years of service to Wilkes College, and Mrs. Ralston, a member of the Class of 1952. To be awarded to a student demonstrating financial need, good character and scholastic aptitude.

THE CHARLES B. REIF SCHOLARSHIP FOR THE BIOLOGICAL SCIENCES was established by former students of Dr. Reif, many of whom are physicians, dentists, researchers, and teachers. The establishment of the fund recognizes his many years of service as professor of biology and chairman of the Biology Department. Scholarships are provided annually for students who wish to pursue the study of the biological sciences.

THE LILLIAN WILKINS RINEHIMER R.N. SCHOLARSHIP. This Scholarship, established by her sons, remembers Mrs. Rinehimer who was one of the earliest registered nurses in the commonwealth of Pennsylvania and served the Wilkes-Barre area for many years as a visiting nurse. Preference shall be to a student demonstrating financial need and scholastic aptitude.

THE DR. SAMUEL A. ROSENBERG MEMORIAL SCHOLARSHIP has been created in memory of Samuel Rosenberg, who served as professor of economics and chairman of the Department of Commerce & Finance at Wilkes for many years. Dr. Rosenberg was respected as teacher, administrator, and labor-relations specialist. His work in the latter field related not only to recognition in the community, but also to distinguished service with agencies of the United States government. The award is provided annually to an outstanding student majoring in a field within the Department of Commerce & Finance.

THE SIDNEY AND THEODORE ROSENBERG SCHOLARSHIP created by Sidney and Theodore Rosenberg of California, provides annual income to be distributed to capable and deserving students who elect to study at Wilkes College.

AMEDEO OBICI AND THOMAS P. SANGIULIANO SCHOLARSHIP is awarded to a member of the sophomore class who is a student in drama with an interest in English classical theater. The recipient must demonstrate financial need as well as an aptitude for scholarship.

WILLIAM B. SCHAEFFER MEMORIAL SCHOLARSHIP. In 1951 a substantial bequest was left to the College by Mr. Schaeffer to advance the interests of the College and the students. By action of the Board of Trustees a considerable portion of the income from his bequest has been set aside for scholarships.

ROBERT MARC SCHUB MEMORIAL SCHOLARSHIP was established by Mr. and Mrs. Marvin Schub in memory of their son. This scholarship is to be awarded to a local student, preferably studying in the area of the humanities or sciences, who otherwise could not attend college. The scholarship is awarded annually to a worthy student of high potential.

THE FRANCES D. SHOTWELL MEMORIAL SCHOLARSHIP was established by the bequest of Mrs. Shotwell and by designation by her daughter Sandra H. Shotwell, a member of the Class of 1979. The scholarship will be awarded annually to a student demonstrating financial need and studying music, with preference to a student majoring in voice.

THE SAMUEL H. SHOTWELL MEMORIAL SCHOLARSHIP was established by a bequest of his wife, Frances D. Shotwell. The scholarship is awarded annually to a student demonstrating financial need and pursuing the study of engineering.

THE MARK SLOWOWITZ MEMORIAL SCHOLARSHIP was established by Mr. and Mrs. A. David Fried in memory of their grandson. The scholarship is awarded to a student exhibiting outstanding academic promise and majoring in the social sciences, preferably economics, a field of study which interested Mark.

MERRITT W. AND MARJORY R. SORBER SCHOLARSHIP was established with gifts from the children of Mr. and Mrs. Sorber. First preference shall be to graduates of Northwest High School, second to students from Hanover Township High School, third to those from other Luzerne County High Schools.

SURDNA FOUNDATION SCHOLARSHIP was established in 1987 as a result of the Alumni of Wilkes College successfully meeting a challenge giving goal offered by the Foundation. To be awarded to a student who demonstrates financial need, good character and academic aptitude and is also the son or daughter of a member of the alumni body.

THE CROMWELL E. THOMAS OUTSTANDING FRESHMAN SCHOLARSHIP was established by friends and former students of Professor Thomas in recognition of his dedicated service to Wilkes College as wrestling coach, member of the faculty, advisor and friend to many students. To be awarded for the sophomore year to the outstanding freshman wrestler as chosen by the coaching staff and athletic director.

THE REED P. AND DOROTHY TRAVIS MEMORIAL SCHOLARSHIP was established by family and friends in recognition of their outstanding service to the Wilkes-Barre Area Community. This scholarship provides an annual partial grant for a capable and deserving day student from the Greater Wyoming Valley Area who best exemplifies the unselfish and giving spirit of the late Mr. Travis.

FRANCIS A. UMPHRED MEMORIAL SCHOLARSHIP, established in 1973 by members of the College administration, is awarded to a capable student demonstrating leadership and ability during each academic year.

ESTHER WECKESSER WALKER SCHOLARSHIP was created by Mrs. Walker to assist students of outstanding promise and achievement during their junior and/or senior years.

MYVANWY WILLIAMS THEATER SCHOLARSHIP is awarded to a student who has demonstrated outstanding interest and ability in drama.

THE IRA B. ZATCOFF MEMORIAL SCHOLARSHIP was established by Samuel and Joseph Zatcoff, successful businessmen in the Greater Wilkes-Barre area, in memory of their nephew Ira B. Zatcoff, who was a long-time friend of Wilkes College. The fund provides an annual grant to assist a capable and deserving student from the Greater Wyoming Valley area, with preference given to the selection of a student interested in business or economics.

EMORY AND MAMIE ZIEGLER SCHOLARSHIP provides a full-tuition scholarship to a deserving member of the Catholic, Jewish, and Protestant faiths who are residents of Wyoming Valley. Selection is made by a special committee of the counseling deans of Wilkes College.

Annual Named Scholarships

AMERICAN BUSINESS WOMEN'S ASSOCIATION, CROSS VALLEY CHAPTER awards annually a partial scholarship to a deserving full-time woman student in need of financial support. In addition, the student must be a resident of Luzerne County and be interested in accounting, business administration, marketing and/or computer science. While the scholarship is not available to a dependent of an ABWA Cross Valley Chapter member, it may be awarded to the mature woman who returns to Wilkes to pursue her education on a full-time basis.

THE BOSCOV'S AND ALEXANDER W. DICK FOUNDATION SCHOLARSHIP, established by Albert Boscov, president of Boscov's Department Stores, is awarded annually to assist capable and worthy students. The scholarship is funded through direct contributions from Boscov's Department Stores and grants from the Alexander W. Dick Foundation. Mr. Dick was a founder of Fowler, Dick and Walker Stores, predecessor to the Wilkes-Barre and Hazleton Boscov's Stores. Minimum scholarship awards of \$500 will be granted annually to a student or students who demonstrate ability and need. Preference will be given to qualified individuals who are sons or daughters of employees of Boscov's Department Stores. In this case, the parent must have been employed by Boscov's for at least five years and must be employed as of February prior to the fall semester enrollment of the son or daughter. Students wishing consideration for this scholarship must so specify at the Wilkes College Office of Financial Aid.

ELKAY INDUSTRIES, INC. SCHOLARSHIP, established by Elkay Industries, Inc., provides one or more, but no more than three, scholarships for qualified and deserving students of Wilkes College. Preference shall be given to sons, daughters, or spouses of employees of Elkay Industries, Inc. If no qualified applicants are available in any year, the funds shall be used for general scholarship purposes.

FRANKLIN FIRST FEDERAL SAVINGS AND LOAN ASSOCIATION OF WILKES-BARRE awards a partial scholarship to a student of scholastic achievement who is active in campus and community activities.

GREATER WILKES-BARRE JAYCEES awards a partial scholarship to a deserving student who without financial assistance could not attend college.

THE HAZLETON NATIONAL BANK ANNUAL SCHOLARSHIP IN NURSING has been created by the Hazleton National Bank and is awarded annually to an outstanding student or students pursuing studies in the Wilkes College Nursing Program: Hazleton.

INTERMETRO INDUSTRIES provides scholarship funds for sons or daughters of its employees. To qualify for candidacy, a student must apply through the regular admissions channels of the College and be accepted by Wilkes College for full-time enrollment. Interested students should contact the administrative office of InterMetro Industries.

LAVENTHOL & HORWATH SCHOLARSHIP is presented annually to a senior accounting major by the firm of Laventhol & Horwath in recognition of high academic endeavor.

THE LESLIE FAY SCHOLARSHIP is granted each year to sons or daughters of employees of the company who present outstanding credentials and demonstrate need. Recipients of the scholarship will be selected by the director of Financial Aid of Wilkes College. The scholarship will be retained by the student for the four years in college provided his or her achievement is consistent with College standards; the amount of the scholarship will vary according to the number of recipients in any given year as well as the resources available.

LETTERWOMEN'S CLUB annually awards a partial scholarship to a Letterwoman selected by the organization.

PENNSYLVANIA MILLER'S MUTUAL INSURANCE COMPANY awards a partial tuition scholarship to a student who has demonstrated outstanding ability in studies and in student activities.

THE POLISH ROOM COMMITTEE SCHOLARSHIP was established in 1972 to express appreciation of services rendered to Wilkes College and the community of Northeastern Pennsylvania by Dr. and Mrs. Joseph J. Kocyan. Several scholarships are awarded annually to Wilkes College upperclassmen of Polish descent with exceptionally high cumulative grade point averages. The Director of Financial Aid, Dean of Admissions, and a member of the Scholarship Committee shall select qualified students and award the scholarships.

PRUDENTIAL BACHE awards a partial tuition scholarship to a worthy junior or senior of outstanding ability majoring in business or finance.

A. RIFKIN AND COMPANY awards a partial tuition scholarship to a worthy young man or woman of outstanding scholastic ability.

WILKES-BARRE ROTARY CLUB SCHOLARSHIP, established in memory of Willits Coleman, a member of the Wilkes-Barre Rotary Club, is awarded to a senior who has demonstrated ability in the classroom and in student activities.

WILKES COLLEGE FACULTY WOMEN'S CLUB SCHOLARSHIP is given in memory of Eleanor Coates Farley and awarded annually to a female student in need of financial support.

M. W. WOOD SCHOLARSHIP, a partial scholarship, is awarded annually to a student of high scholastic ability and financial need.



Summary of Financial Assistance Programs*

Program	Average Annual Award	Application(s) Required	Filing Deadline
SCHOLARSHIPS			
Trustee Scholarships	\$5,596	PHEAA/Federal Student Aid Application and Wilkes College Financial Aid Application	Upperclass student deadline — May 1, 1988 Incoming student deadline varies — Contact Wilkes College Admissions Office
Presidential Scholarships	\$1,147		
Dean's Scholarships	\$ 556		
Achievement Scholarships	\$ 908		
Leadership Scholarships	\$1,443		
Room & Board Scholarships	\$2,833		
Wilkes Named Scholarships	\$ 932		
Transfer Student Scholarships	\$ 550		
ROTC Scholarships	\$6,430	Contact the Wilkes College ROTC Office	Contact ROTC Office
GRANTS			
Pell Grant	\$1,362	PHEAA/Federal Student Aid Application or CSS's FAF or Federal Student Aid Application	May 1, 1989
PHEAA Grant	\$1,474	PHEAA/Federal Student Aid Application	May 1, 1988
SEOG Grant	\$ 855	PHEAA/Federal Student Aid Application and Wilkes College Financial Aid Application	Upperclass student deadline — May 1, 1988 Incoming student deadline — Rolling basis as long as funds are available
Wilkes Need-Based Grant	\$1,163		
Wilkes Act 101 Grant	\$1,708	Contact the Office of Vocational Rehabilitation	Contact Office of Vocational Rehabilitation
Office of Vocational Rehabilitation Grant	\$3,207		
LOANS			
Carl Perkins Loan (NDSL)	\$1,290	PHEAA/Federal Student Aid Application and Wilkes College Financial Aid Application	Upperclass student deadline — May 1, 1988 Incoming student deadline — Rolling basis as long as funds are available
Nursing Student Loan	\$2,200		
Gulf Oil Loan	\$1,000	Guaranteed Student Loan Application and PHEAA/Federal Student Aid Application	Six to eight weeks prior to need for loan proceeds
Rulison Evans Loan	\$1,000		
Guaranteed Student Loan	\$2,441		
PHEAA-HELP Guaranteed Student Loan	\$1,944		
PLUS/Supplemental Loan	\$4,000		
PHEAA-HELP Alternate Loan	\$3,192		
EMPLOYMENT			
Federal College Work-Study Program	\$1,200	PHEAA/Federal Student Aid Application, Wilkes College Financial Aid Application, and Wilkes College Application for Student Employment	Prior to beginning work on campus
Institutional Employment	\$1,964	Wilkes College Application for Student Employment	Prior to beginning work on campus

*Detailed information on all financial assistance programs is available in the Consumer's Guide to Financial Aid, Costs, and Charges at Wilkes College.

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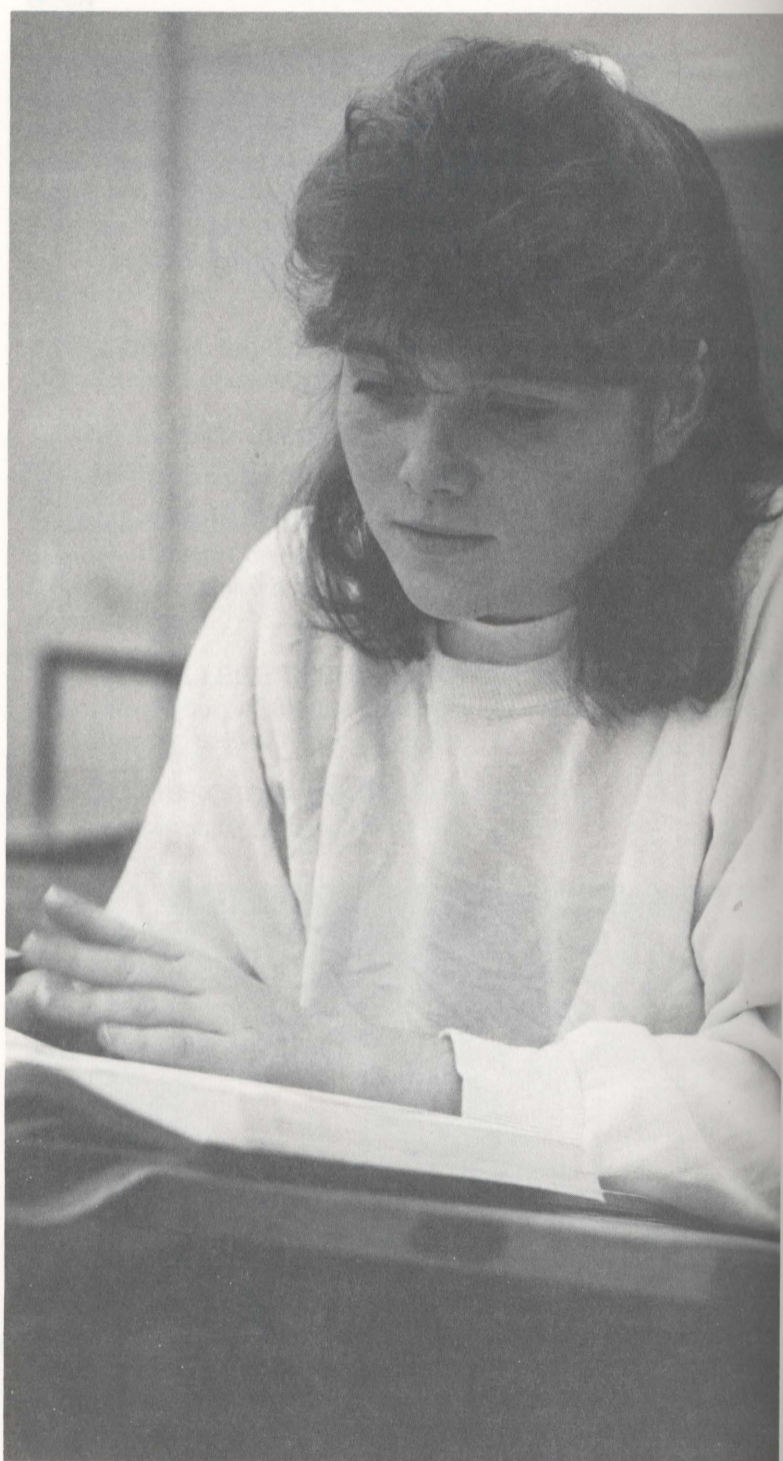
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Academic Information

- The Calendar
- Part-time, Graduate and Continuing Education
- The Curriculum
- The Degrees
- Academic Policies and Procedures
- Academic Requirements
- Graduation Requirements

Academic Information

Calendar

The academic year at Wilkes College consists of two semesters. The Fall Semester normally begins in early September and always concludes with final examinations before the holidays in December. The Spring Semester begins in early to mid-January and closes with a final examination period in May. Commencement exercises are scheduled later in May, at the conclusion of the academic year.

The College 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. An eight-week evening session complements these two day-school summer sessions; the evening session begins in early June and ends in early August.

Part-time, Graduate and Continuing Education

Part-time Studies

The College welcomes part-time undergraduate students into all of its regular sessions. It has also established the Evening College and the Weekend College to maximize scheduling possibilities for students who cannot attend day classes. Majors in several disciplines are offered in the Evening College and Weekend College, and students may utilize both options, in addition to day-school, 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 which 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 part-time studies should be directed to the Director of the Evening, Summer, and Weekend College.

Evening College

The Evening College is designed to meet the needs of those students who cannot attend daytime classes but wish to pursue a degree. Courses meet one or two nights per week during the academic year and three nights per week during the eight-week evening summer session. A majority of the degree programs at the College are available in the Evening College. Students interested in the Evening College format should arrange to meet with the Director of the Evening, Summer, and Weekend College to plan courses of study suitable to their needs.

Weekend College

Wilkes' Weekend College provides upper-division courses, enabling graduates of Keystone Junior College and other two-year institutions to complete bachelor's degrees by taking courses only on weekends. Transfer students from other accredited institutions are also welcome. Students beginning as freshmen in the Weekend College apply for admission to Keystone Junior College.

The courses meet every third weekend on the campus of Keystone Junior College, La Plume, Pennsylvania (10 miles west of Scranton on Route 6/11). Residence hall facilities are available on a first-come, first-served basis to students in both the Keystone and Wilkes programs. Students may carry as many as 9 credits in each of three different sessions arranged over the calendar year. Students can complete their upper-division courses in a little more than two calendar years. Weekend College students are eligible for federal financial aid (PELL grants) and veteran's benefits, where applicable. Inquiries about the Weekend College should be directed to the Director of the Evening, Summer, and Weekend College.

Graduate Studies

The Division of Graduate Studies offers a wide range of programs leading to master's degrees. Degree programs are available in the fields of Business Administration, Biology, Chemistry, Earth and Environmental Sciences, Education, Engineering, Health Service Administration, Mathematics, Nursing, and Physics. Inquiries about graduate studies should be addressed to the Office of Graduate Studies. A separate Graduate Bulletin, which describes graduate programs in detail, is available on request.

Continuing Education

In addition to courses for credit, Wilkes College provides a non-degree Continuing Education program to respond to the needs and interests of the community. This program provides training and development service to business, industry, government, associations, professionals, and individuals. Through the use of public seminars, in-house presentations and conferences, the Continuing Education Division offers programs in supervisory training, management development, executive development, research and continuing professional education. Many of the programs sponsored by the division provide Continuing Education Units (CEU's) for students who want or need formal documentation of their work. Inquiries about the offerings of the Continuing Education Division should be addressed to the Office of Continuing Education.

Degree Programs

Wilkes College offers undergraduate programs leading to the Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, and Bachelor of Music 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.

Goals of the Educational Program at Wilkes College

Wilkes College is committed to the liberal education of men and women who value learning for its own sake throughout their lives and participate responsibly as enlightened members of society. The institution's curriculum is designed to stimulate the intellectual, emotional, social, and physical development of each student. Our principal goals are to familiarize students with the content of the various realms of human inquiry, facilitate the integration of their knowledge into a unified whole, provide opportunities for them to acquire a depth of understanding in at least one field of study, and develop their unique capabilities. We believe that every liberally educated person:

- thinks critically, analytically, and creatively;
- communicates effectively;
- cultivates aesthetic sensibilities;
- explores ethical, intellectual, and social values;
- makes ethical judgments based upon a consciously developed moral value system;
- understands and appreciates cultural diversity from historical and contemporary perspectives;
- appreciates the dynamics of an individual functioning within a complex society;
- understands scientific principles and their relationship to technology and culture;
- applies quantitative reasoning in the presentation and interpretation of data;
- pursues life-long recreational activities, acknowledging the importance of physical well-being;
- correlates these goals of liberal learning with career and professional perspectives.

The Curriculum

The Wilkes Curriculum has three components. The first is called the Core Curriculum because it provides the common foundation in the liberal arts and sciences of all of the bachelor's degrees awarded by the College. Through the Core, all students are introduced to the common life of learning, reflection, and discussion in which they are expected to share during their college years.

A second component of the Wilkes Curriculum is the major. This component provides for in-depth study of a field of specialization. The requirements for each major are found in this Bulletin under the departmental listing.

The third component of the Wilkes Curriculum enables the student to pursue personal interests, to explore new areas of learning, or to pursue a minor or a second major. This component is composed of elective courses, which are usually taken during the student's junior or senior years.

The Core Curriculum: The First Curricular Component

The General Core Requirements consist of a broad spectrum of courses in the arts and sciences designed to enhance intellectual, social, and physical development. These courses, which are central to a general education, are required of all Wilkes College students in the B.A., B.F.A. and B.S. programs except the B.S. programs in Engineering and Medical Technology. Students in the Bachelor of Music Program take 18 credits in the Humanities, including English 101-102; 12 credits in the Social Sciences, including Psychology 101; and 6 credits in Mathematics/Science.

The General Core Requirements for all programs follow. Students are urged to use this outline of the Core Requirements as an explanation of the **Recommended Course Sequence** provided for each major in this Bulletin. With the exception of English 101-102 and Physical Education, which are specifically designated, the designation "Core Requirements" in the **Recommended Course Sequence** for each major is a reference back to this statement of the Core.

It is the student's responsibility to insure that **all** College requirements, including the Core Requirements, are satisfied.

Core Requirements

Skills

English 101-102 (or competency) 0-6 credits
Students who demonstrate competency in writing may be exempted from English 101 and 102.

Mathematics (or competency) 0-4 credits
Students who scored less than 450 in mathematics on the SAT must take mathematics unless they scored 50% or higher on the Wilkes Mathematics Placement Test.

Computer Literacy 0-6 credits
All Wilkes graduates are required to have some experience in the use of a computer as a problem-solving tool. This requirement may be fulfilled by:
a. passing any credit course in computer science, or
b. passing Mth 101-102, or
c. petitioning the Department of Mathematics and Computer Science for a waiver on the basis of previous work with the computer. The student may be required to write a program in a language of his/her choice before the waiver is granted.

Physical Education 0 credits
This involves a four-semester requirement in physical education. Students will participate in different learning experiences each semester.

Humanities 18 credits

Any three of the following:

two courses in literature
English 151-152 are the core requirements. Students may substitute other courses, but must respect prerequisites or secure departmental permission.

two courses in a foreign language
Students with two years of high school study in a foreign language should begin at 203 or higher. Students may elect Foreign Language 101-102, but must complete a sequence in a single language through at least the 204 level if using language to fulfill the humanities requirement.

two courses in history
Normally, the 101-102 sequence will fulfill the core requirements in history. However, students may substitute advanced courses with the written approval of the instructor, or the chairman of the History and Political Science Department.

two courses in philosophy

Arts 3 credits

Any three credits in Art, Theater Arts, or Music

Social Sciences 12 credits

Any four courses in Economics, Political Science, Psychology, Sociology or Anthropology with no more than two in any one discipline.

Mathematics/Science 12-16 credits

Any two of the following (at least 12 credits):

- two courses in Mathematics or Computer Science except that
 - Mth 100 must be followed by Mth 105, Mth 111, or Mth 150.
 - only one of CS 115 (Survey of Computers and Data Processing), CS 123 (Fortran), and CS 124 (Cobol) may be counted in this requirement.
- two courses in biology
- two courses in chemistry
- two courses in earth and environmental sciences
- two courses in physics

Total 45-65 credits

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 from Wilkes College. Specific requirements for each major are described in detail in the departmental listing in this Bulletin.

Bachelor of Arts Degree — Majors

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

Art	English	Philosophy
Biology	French	Physics
Chemistry	German	Political Science
Communication Arts	History	Psychology
Computer Science	Individualized Studies	Sociology
Earth and Environmental Sciences	International Studies	Spanish
Economics	Mathematics	Speech Pathology

Bachelor of Science Degree — Majors

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

Accounting	Electrical Engineering
Biology	Engineering Management
Business Administration	Environmental Engineering
Chemistry	Individualized Studies
Computer Information Systems	Materials Engineering
Computer Science	Mathematics
Earth and Environmental Sciences	Medical Technology
	Nursing
	Physics

Bachelor of Fine Arts Degree

Students in the Bachelor of Fine Arts program may pursue more concentrated study in specific studio disciplines in the visual arts.

Bachelor of Music Degree

Students in the Bachelor of Music program choose a major in either performance or music education. Students may elect to complete both majors with additional course work and one additional semester for the completion of student teaching.

Elective Credits: The Third Curricular Component

The third component of the Wilkes Curriculum, after the Core Requirements and the Major Requirements, is composed of elective courses. Students choose elective courses for a variety of reasons: to pursue an interest or to meet requirements for admission to graduate or professional schools or to hone particular skills.

Selection of a Minor

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 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 Registrar's Office, should they decide to complete a minor.

Teacher Education

Students who wish to prepare for a teaching career select an appropriate major and use their elective credits to meet teacher-certification requirements. A list of the courses needed for certification is provided in the departmental description of the Education Department in this Bulletin. Students planning a teaching career are urged to seek counseling in the Education Department early in their first semester at the College.

Cooperative Education

Cooperative Education, another possible use of elective credits, 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 Director of Cooperative Education as soon as possible after their arrival on campus.

Study Abroad Program

The Study Abroad Program, a part of the International Studies major and an elective option to students from many other majors, enables students in good academic standing to earn academic credits at overseas institutions which can be applied toward the requirements for a bachelor's degree at Wilkes College. Overseas study may be for a period of a year, a semester, or a summer and is generally undertaken by students who have achieved junior standing at Wilkes. A wide variety of curricular offerings, international internships, cultural settings, and living situations are available in over 30 countries throughout the world. Students interested in this option should contact the Study Abroad Coordinator in the Department of Sociology and Anthropology.

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 Registrar's Office. It is the student's responsibility to secure the approval of the chairmen 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 be awarded a second baccalaureate degree in another discipline. Candidates for this second degree must earn at least thirty credits at Wilkes College beyond those required for the first degree.

A candidate for a second degree must complete all requirements for the degree at Wilkes College. For this purpose credits may be transferred from the institution which granted the first degree. However, approval of transfer credit for any course required by the proposed major and of the overall program to be followed must be obtained from the Dean of Admissions and, also, from the chairman of the proposed major department.

Academic Policies and Procedures

Wilkes College has adopted a number of policies and procedures governing its academic programs. Many of these standards are generally described in this Bulletin. Students are advised to consult with their advisors regularly to obtain more specific information on particular policies or procedures or to clarify matters that are unclear.

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 College Calendar; late registrants will be assessed a late fee. Additional information on registration procedures and the exact dates of the orientation sessions can be obtained from the Office of Admissions.

Attendance

Attendance at all classes is expected. Repeated absence is a sufficient cause for failure.

After five consecutive absences from a class, a student may be readmitted to the class only by action of the appropriate counseling dean and the department chairman concerned.

Student Load

Students may register for as many as 18 credits in a semester. No students shall be allowed to carry an overload (i.e. credits in excess of 18) without the written approval of their advisor and the appropriate counseling dean. An overload will be permitted only for students with a minimum grade point average of 3.00 or for those with special need.

Wilkes/King's Cross-Registration

Wilkes College and King's College offer their students an opportunity to cross-register for courses at either institution. The intention is to broaden the range of courses available to the student; only courses not offered at the college where the student is enrolled are open for cross-registration. Courses carry full credit and grade value and are considered as part of the student's regular course load; no additional tuition charge is made. Students register through the Registrar at the College where they are enrolled as degree candidates. Interested students should confer with their Registrar for further details.

Auditing Courses

Auditing courses is a practice designed primarily for the purpose of allowing students to expand their educational opportunities beyond the limitations imposed by courses taken in fulfillment of graduation requirements.

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 chairman. The student shall satisfy the curriculum requirements of the Bulletin in force at the time of transfer. Change-of-major forms are available in the Registrar's Office and the Student Affairs Office.

Transfer of Credits into Wilkes College

Wilkes students desiring to take courses at another college during any academic term must secure prior approval from the Director of the Evening, Summer, and Weekend College. The student must earn a grade of 2.00 or higher for the work to be credited toward graduation. All students must complete the last 30 credits in residence at the College.

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

Withdrawals

Students may withdraw from a course through the sixth week of instruction by notifying their instructor and academic advisors. This process must be completed and all necessary paperwork placed in the hands of the Registrar prior to the completion of the sixth week of instruction. After the sixth week, students may withdraw only with the written approval of the course instructor and faculty advisor. Students who do not fulfill these requirements and do not satisfactorily complete the course will receive a grade of "0".

No student who has been advised to withdraw from the College for academic reasons will be permitted to register in the Evening, Summer or Weekend College. The Academic Standards Committee will review appeals under this policy.

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 their evaluative records which have been established by Wilkes College. Such records might typically include those maintained by the Office of Career Services, the Health Services Office, the Registrar's, and the Deans' Offices. These records will be open to inspection in the presence of the appropriate college official. Students wishing to review their files must make an appointment at least one day in advance.

Academic Requirements

Grades

The primary purpose of any grading system is to inform the students of their achievement. Grades also aid in evaluating students for the purpose of recommendation. Grade reports are sent to students at the end of each term. Mid-term reports are sent if the work is unsatisfactory.

Eight numerical grades are given for academic work:

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

"X," "Inc.," 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. If the incomplete is not removed within this time, or an extension of time granted by the instructor who gave the grade or by some other authorized person, and the Registrar's Office so notified, the grade will be changed to a zero on the student's record.

Course Credits and Grade Point Average

Each course at the College is assigned a specific number of credits. For example, English 101 is a 3-credit course and Chemistry 115 is a 4-credit course. Usually, credits assigned to the course are determined by the number of hours that the class meets per week. The number of credits carried by each course is a major factor in the calculation of a student's grade point average.

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

Course	Credit Hrs. Carried	Grade	Quality Points	Credit Hrs. Passed
Bio 103	3	4.00	12	3
Eng 101	3	0.00	0	0
Fr 101	3	2.50	7.5	3
Hst 101	3	1.50	4.5	3
Mus 101	3	3.00	9	3
Total credit hours carried				15
Total credit hours passed				12
Total quality points earned			33	
Average $33 \div 15 = 2.20$				

Notice that the student has accumulated 12 credits toward graduation. The zero grade in English means that the student must repeat that course.

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.

Dean's List

The faculty gives recognition for high quality work. Students on the Dean's List, published at the end of each term, must obtain a grade point average of 3.25 or higher for all courses taken. Students taking fewer than twelve credit hours will not be eligible for the Dean's List.

Academic Probation and Ineligibility

Freshmen, defined as students who have attempted fewer than thirty-six credits, must maintain a 1.70 in both their major and cumulative grade point averages. All other students must maintain a minimum 2.00 in both their major and cumulative grade point averages. Any student who falls below the minimum average required will automatically be placed on academic probation. At the end of the first semester, a student whose grade point average is less than 0.5 may be declared academically ineligible.

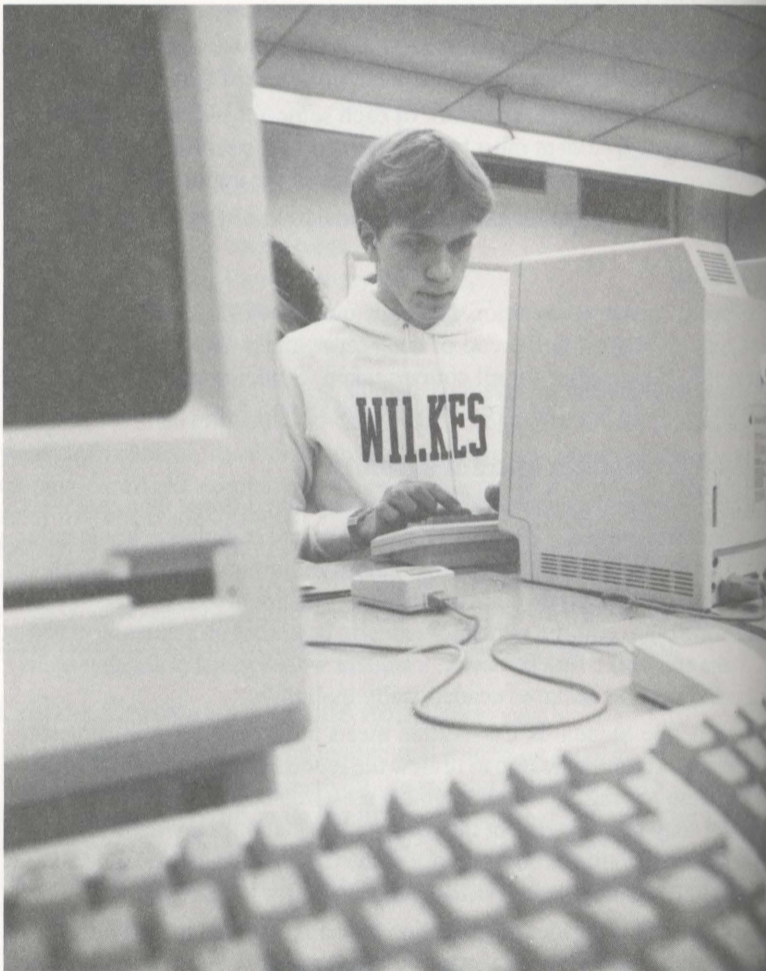
The Academic Standards Committee meets at the end of each semester and the second summer session to review the record of any student who does not meet these averages, which have been established by the faculty. The Committee may place a student on academic probation; may declare a student ineligible to continue course work at the College; or may declare a student ineligible to continue unless the student's major is changed.

Students placed on academic probation may be restricted in the number of credits they take the following semester. The Academic Standards Commit-

tee may impose additional restrictions and requirements in individual cases when it determines such restrictions and requirements are in the best interest of the student and the College. Such restrictions may include the student's participation in extracurricular activities.

Students who have been declared academically ineligible are not allowed to enroll in course work at the College for a period of one year. To be considered for readmission such students need to apply for readmission through the Office of the Dean of Student Affairs and be approved for readmission on a probationary status by the Academic Standards Committee.

Any decision of the Academic Standards Committee may be appealed by the student. Appeals must be presented to the Committee either in person or by letter, and should include good and sufficient reasons for appealing.



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 Dean of Student Affairs for permission to take the degree or certificate *in absentia*.

The faculty has approved the following requirements which students must satisfy in order to be eligible for graduation:

1. They must successfully complete a *minimum* of 120 credit hours.
2. They must satisfy all requirements in their 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. They must 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. **All students must complete the last 30 credits in residence at the College.**
4. They must obtain a minimum cumulative average of 2.00 for all courses.
5. They must obtain a minimum cumulative average of 2.00 for all subjects within their major.
6. They must obtain a minimum cumulative average of 2.00 for all subjects within the chosen minor(s).
7. They must satisfy all requirements pertaining to the physical education program.
8. They must demonstrate competence in written and spoken English.
9. They must demonstrate competence in Mathematics and computer literacy.

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

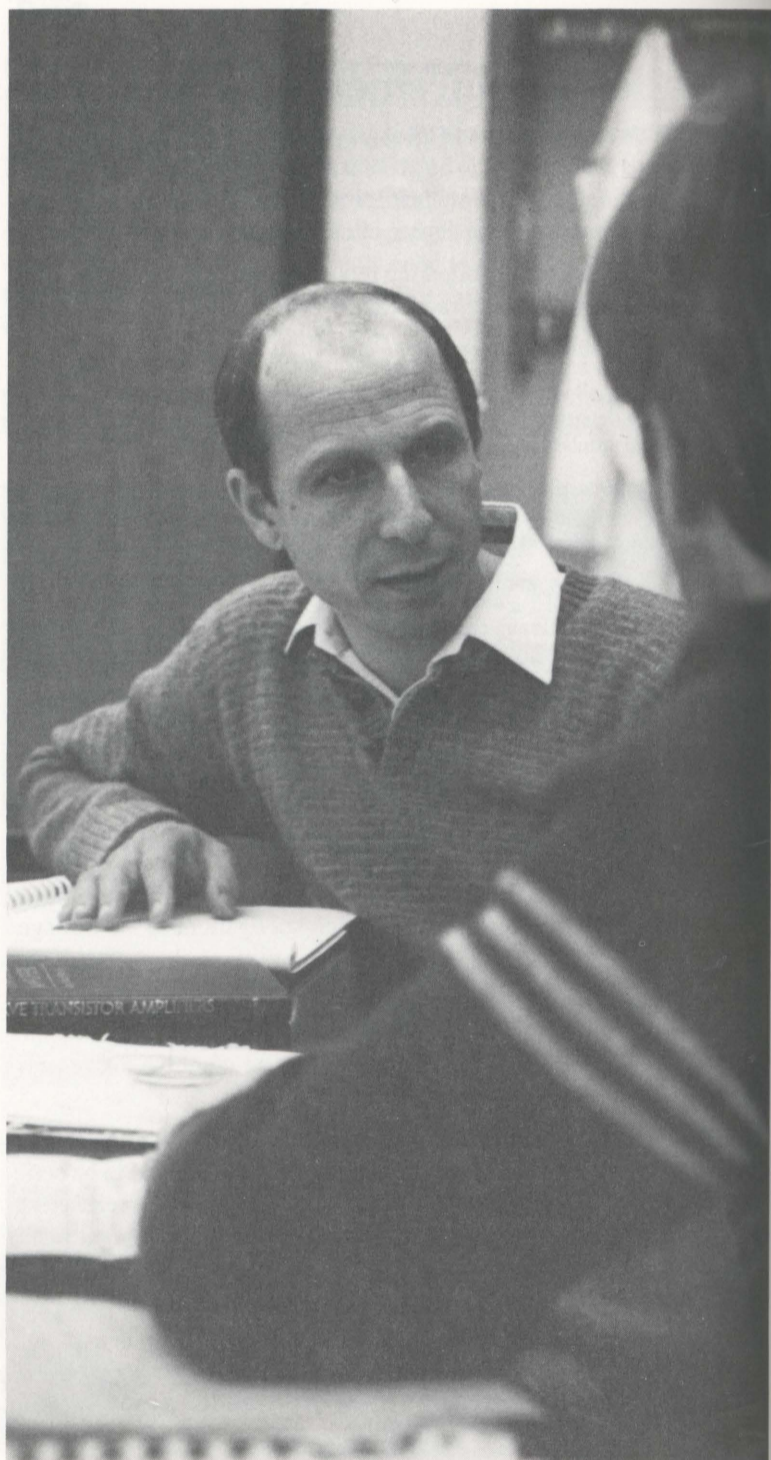
Honors

The granting of honors at Commencement is based upon the entire academic record achieved by the student.

Transfer students must have completed a minimum of 60 credits at Wilkes College with the cumulative average equal to the honors received to be considered for honors. The entire academic record, including grades earned at Wilkes College and any other institution attended, is used to compute the final cumulative average for honors.

Requirements for Honors are:

Summa Cum Laude	3.80
Magna Cum Laude	3.50
Cum Laude	3.25



Academic Programs

Offered by

The College of Arts and Sciences

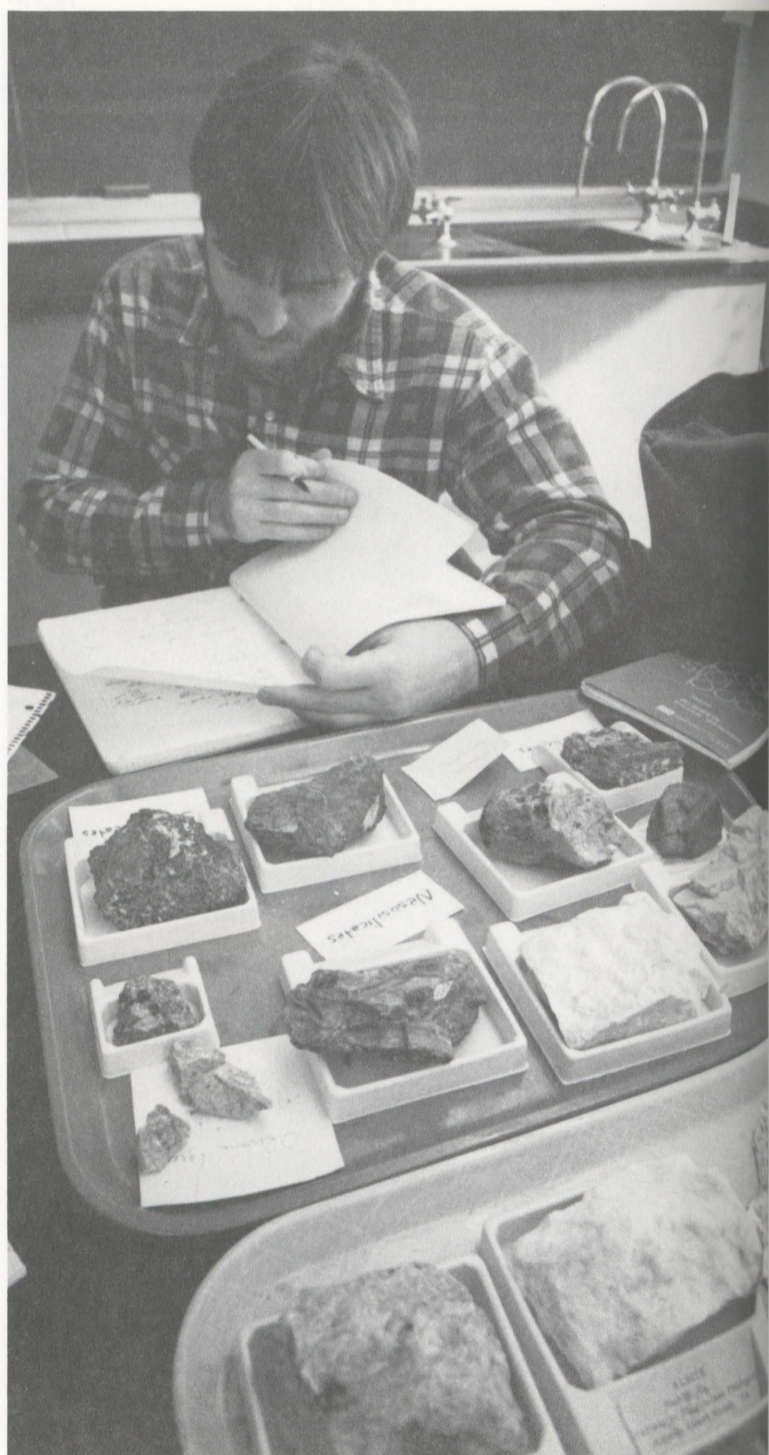
Aerospace Studies	Music
Art	Nursing
Biology	Philosophy
Chemistry	Physical Education and Health
Education	Psychology
History and Political Science	Sociology and Anthropology
Language and Literature	Speech, Communications, and Theater Arts
Mathematics and Computer Science	

The School of Business and Economics

Accounting
Business Administration
Economics

The School of Engineering and Physical Sciences

Earth and Environmental Sciences
Engineering
Physics



The College of Arts and Sciences

James P. Rodechko, Ph.D.
Dean of the College

The College of Arts and Sciences includes fifteen departments. The academic departments within the College assume responsibility for the curricula of the humanities, the social sciences, and mathematics and the natural sciences. All students at Wilkes College will complete some course-work in these disciplines, since study in the arts and sciences provides many of the basic learning skills which enable one to write and speak effectively, to think critically, and to understand one's place in a complex and changing society. The general education or Core Curriculum, which provides a common educational experience for students preparing for a wide variety of academic as well as vocational goals, is a primary interest of the faculty within the College of Arts and Sciences. In addition, its departments provide programs for students majoring in the various arts and sciences, as they prepare for careers in the sciences, business and industry, government, the arts, and education.

The College of Arts and Sciences includes the following departments:

- | | |
|-------------------------------|-------------------------------|
| Aerospace Studies | Music |
| Art | Nursing |
| Biology | Philosophy |
| Chemistry | Physical Education and Health |
| Education | Psychology |
| History and Political Science | Sociology and Anthropology |
| Language and Literature | Speech, Communications, and |
| Mathematics and | Theater Arts |
| Computer Science | |

AEROSPACE STUDIES (Air Force ROTC)

Lieutenant Colonel Billings, Professor, Chairman; Assistant Professors Major Newton, Captain Lynn, Captain Zimmerman.

The Air Force ROTC program at Wilkes College allows students to earn commissions as Air Force officers while they obtain a college degree. Students may choose to enroll in either the four-year or two-year program or any variation thereof. A four-year cadet enrolls in the General Military Course (GMC) during the first two years of school and the Professional Officer Course (POC) during the last two years. The GMC is open to all incoming freshmen; sophomores who can program all four GMC courses in their sophomore year (the dual-enrollee program); or those who have four years of college remaining. GMC STUDENTS INCUR NO MILITARY OBLIGATION UNLESS THEY RECEIVE AN AFROTC SCHOLARSHIP. The POC is available to students with at least two academic years remaining at either the undergraduate or graduate level or a combination of the two. Students interested in the POC program must apply for entry EARLY IN THEIR SOPHOMORE YEAR. To enter the POC, students must pass a physical, an officer qualification test, and have an acceptable academic rating. Four-year cadets must complete a four-week field training program; two-year applicants must complete a six-week field training program during the summer before POC entry. Four semester hours of credit may be earned in the GMC and twelve semester hours in the POC. There is also a one-semester-hour course for pilot and navigator candidates. POC cadets earn a \$100-per-month, tax-free subsistence allowance during the academic year and incur a military obligation. STUDENTS MAY ALSO COMPETE FOR FULL-TUITION AFROTC SCHOLARSHIPS. WILKES COLLEGE OFFERS FREE ROOM AND BOARD TO ALL FOUR-YEAR AFROTC SCHOLARSHIP WINNERS, AS WELL AS TO STUDENTS FROM OTHER COLLEGES WHO WIN AFROTC SCHOLARSHIPS AND WHO CHOOSE TO TRANSFER TO WILKES. Students who complete the POC and graduate are commissioned as Second Lieutenants in the USAF Reserve. They serve on active duty in a specialty they have chosen, consistent with Air Force needs. Qualified students can compete for jobs as pilots, navigators, nurses, engineers, missile officers, and in many other fields. Regardless of your degree area, the Air Force can find a place for you. For more information on the Air Force ROTC program at Wilkes, call, toll-free, 1-800-572-4444, ext. 371 (in state) or 1-800-537-4444, ext. 371 in adjacent states.

Supplemental Requirements

To enhance the career utility and officer performance of students commissioned through AFROTC, all POC cadets and GMC scholarship cadets must successfully complete the following supplemental courses in addition to all Aerospace Studies courses:

All scholarship cadets must take two semesters of a foreign language or have two years of a foreign language in high school.

GMC scholarship cadets must successfully complete a course in English composition prior to POC entry. They are also encouraged to take a course in speech. Nonscholarship GMC cadets are not required to take the supplemental courses; however, these courses may enhance their chances for POC selection.

POC cadets must successfully complete a course in mathematical reasoning prior to commissioning.

Uniforms

Uniforms, equipment, and textbooks for AFROTC are supplied by Wilkes College and the U.S. Air Force. All new GMC cadets are required to pay an initial deposit of \$40.00. All new POC cadets are required to pay an initial deposit of \$105.00. Of the initial deposit, \$15.00 will be kept to pay for new shoes and socks, which are nonreturnable and considered purchased. If other uniform items are returned in an unsatisfactory condition, part of the deposit will be used to pay for the unsatisfactory items. If the cadet returns the items in a satisfactory condition, the remaining deposit money will be returned.

Light Aircraft Training for ROTC (LATR)

(mandatory for pilot candidates)

The LATR is designed primarily for cadets in the POC who intend to enter Air Force pilot training upon graduation and who do not possess an FAA pilot rating of Private Pilot or higher. It identifies applicants who possess the qualifications necessary to fly high-performance aircraft. The program consists of a ground phase given by officers of the detachment and a flying phase with dual and solo flight instruction conducted near San Antonio, Texas, or at Embry-Riddle Aeronautical University, Daytona Beach, FL. The LATR is normally conducted during the summer between the junior and senior years. Pilot candidates must attend LATR prior to receiving their commissions.

Advanced Training Program (optional)

This program allows POC members to visit a USAF base for three weeks and work with an active duty officer in the student's chosen career area during the summer between the junior and senior years. Transportation from the legal residence of the cadet to the advanced training base and return, food, lodging, and medical and dental care are provided by the Air Force in addition to a weekly salary.

Leadership Laboratory (mandatory)

AFROTC cadets must participate in Leadership Laboratory two hours every other week during each semester. This program involves a progression of experience designed to develop each student's leadership potential in a supervised training laboratory. Areas examined are Air Force customs and courtesies, drill and ceremonies, career opportunities, and the life and work of an Air Force junior officer.

Field Training (mandatory)

Candidates for enrollment in the POC will attend AFROTC field training during one summer. The training, conducted at selected Air Force bases, gives students an opportunity to observe Air Force units and people at work and at home; participate in marksmanship, survival, athletics, and leadership training activities; take aircraft orientation flights; and 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. The cadet receives approximately \$400 for the four-week field training program or \$600 for the six-week field training program.

Recommended Course Sequence Leading to a Commission in the United States Air Force

General Military Course (GMC) — Consists of four one-credit courses which are introductory in nature and open to freshmen or sophomores. Nonscholarship students incur no military obligation by enrolling in these courses.

First Semester		Second Semester	
AS 101 U.S. Military Forces in the Contemporary World I	1	AS 102 U.S. Military Forces in the Contemporary World II	1
AS 000 Leadership Laboratory	0	AS 000 Leadership Laboratory	0
	<u>1</u>		<u>1</u>
Third Semester		Fourth Semester	
AS 201 The Development of Air Power I	1	AS 202 The Development of Air Power II	1
AS 000 Leadership Laboratory	0	AS 000 Leadership Laboratory	0
	<u>1</u>		<u>1</u>

AS 000 Leadership Laboratory is mandatory for all cadets who enroll in Air Force ROTC. Lab meets for two hours, twice per month, usually at the Kingston Armory.

Variations in the above schedule are possible. Sophomores with no AFROTC experience can enroll in both the one-credit freshman and sophomore classes (the dual-enrollee program). Students with no GMC experience may still apply for POC entry, but they must apply as soon as possible in the sophomore year. For further information, call (717) 829-0194 or 1-800-572-4444, ext. 371, within state or 1-800-537-4444, ext. 371, from adjacent states.

Summer Field Training (Four Weeks)

Professional Officer Course (POC) — Consists of four three-credit courses open to students who have at least two full-time years of college remaining. Students enrolled in the POC receive \$100 per month and are under military obligation.

Fifth Semester		Sixth Semester	
AS 301 Concepts of Management	3	AS 302 Concepts of Leadership	3
AS 000 Leadership Laboratory	0	AS 000 Leadership Laboratory	0
	<u>3</u>		<u>3</u>
Seventh Semester		Eighth Semester	
AS 311 National Security Forces in American Society I	3	AS 312 National Security Forces in American Society II	3
AS 000 Leadership Laboratory	0	AS 000 Leadership Laboratory	0
	<u>3</u>		<u>3</u>

AS 000 Leadership Laboratory is mandatory for all cadets who enroll in Air Force ROTC. Lab meets for two hours, twice per month, usually at the Kingston Armory.

Variations in the above schedule are possible. Sophomores with no AFROTC experience can enroll in both the one-credit freshman and sophomore classes (the dual-enrollee program). Students with no GMC experience may still apply for POC entry, but they must apply as soon as possible in the sophomore year. For further information, call (717) 829-0194 or 1-800-572-4444, ext. 371, within state or 1-800-537-4444, ext. 371, from adjacent states.

General Military Courses

The General Military Courses (GMC) constitute a two-year program for freshmen and sophomores and are designed to provide a general knowledge of the role, organization, missions, and historical development of U.S. air power. Students enrolled in the GMC who are not on Air Force scholarships incur no military obligations. **Note: AS 101-102-201-202 may be substituted for PE 100 series.**

AS 000. LEADERSHIP LABORATORY **No credit**
 Involves a progression of experience designed to develop each student's leadership potential in a supervised training laboratory. Examines Air Force customs and courtesies, drill and ceremonies, career opportunities, life and work of an Air Force junior officer. There are two sections offered. One section meets every other Thursday for two hours. **All AFROTC students must elect this section.** A second section is for students who are dual-enrolled in the GMC (concurrently enrolled in an AS 100 and an AS 200 course). This second section meets on Tuesday afternoons. All dual-enrolled students must elect both sections.

AS 101. U.S. MILITARY FORCES IN THE CONTEMPORARY WORLD I **Fall — One credit**
 Background, missions, and functions of U.S. military forces, with emphasis on U.S. Air Force organization, doctrine, and strategic forces.

AS 102. U.S. MILITARY FORCES IN THE CONTEMPORARY WORLD II **Spring — One credit**
 U.S. general purpose military forces; insurgency and counter-insurgency; aerospace support forces and organizations.

AS 201. THE DEVELOPMENT OF AIR POWER I **Fall — One credit**
Air power development in historical perspective through the end of World War II; evolution of missions, concepts, doctrine, and employment, with emphasis on changes in conflict and factors which have prompted technological developments.

AS 202. THE DEVELOPMENT OF AIR POWER II **Spring — One credit**
Air power development from the end of World War II to the present; changing missions and employment of air power in support of national objectives.
Prerequisite: AS 201 or permission of instructor.

AS 251. FLIGHT PROGRAM GROUND TRAINING **Spring — One credit**
Prepares AFROTC cadets and others for FAA private pilot examination through study of general regulations, air traffic rules, accident reporting, air navigation, weather, safety, principles of flight, basic operations, flight computer. Limited spaces beyond AFROTC requirements are available to Wilkes juniors or seniors. Two hours of class/laboratory per week.

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 an Air Force officer. The POC concentrates on concepts and practices of management, concepts and practices of leadership, national defense policy, and communicative skills.

AS 301. CONCEPTS OF MANAGEMENT **Fall — Three credits**
General theory and practice of management with special reference to the Air Force. Covers evolution of management thought including classical, behavioral, and management science schools; study of information systems; quantitative approach to decision-making; policy formulation, principles and practices in planning, organizing, staffing, actuating, directing, and controlling business and Air Force activities; resource control techniques; social and ethical issues within the management process; development of communicative skills.
Prerequisite: POC membership. **Note: AFROTC cadets may substitute AS 301 for BA 251.**

AS 302. CONCEPTS OF LEADERSHIP **Spring — Three credits**
Air Force leadership at the junior officer level, including its theoretical, professional, and legal aspects; practical experience in influencing people, individually and in groups, to accomplish organizational missions effectively; development of communicative skills.
Prerequisite: AS 301 or permission of instructor.

AS 311. NATIONAL SECURITY FORCES IN AMERICAN SOCIETY I **Fall — Three credits**
The role and functions of the professional military officer in a democratic society and civil-military interaction; basic framework of defense policy and formulation of defense strategy; development of individual communicative skills.
Prerequisite: POC membership or permission of instructor. **Note: AFROTC cadets may substitute AS 311 for PS 398 with History and Political Science Department approval.**

AS 312. NATIONAL SECURITY FORCES IN AMERICAN SOCIETY II **Spring — Three credits**
The problems of developing defense strategy in a rapidly changing technological environment; effective deterrent posture and management of conflict; dynamics and agencies of defense policy making, analyzed through case studies.
Prerequisite: AS 311 or permission of instructor.

ANTHROPOLOGY

Assistant Professor Tutwiler.

The Department of Sociology and Anthropology offers a variety of courses in anthropology. The anthropology curriculum is designed to provide students with a solid grounding in the fundamentals of sociocultural anthropology and an opportunity to study cultural diversity. Students may apply anthropology courses towards B.A. degrees with majors in either International Studies or Sociology (see pages 139 and 197). Anthropology courses may also be used in satisfying general college core requirements in the social sciences.

Graduates with a strong background in anthropology have used this preparation in a variety of ways. Some have found employment in business and government upon graduation. Others have taken advanced degrees in the social sciences and regional development at American and British Universities. Still others have pursued careers in secondary education.

The following is a listing of the Anthropology courses offered at Wilkes:

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 204. LANGUAGE AND CULTURE **Three credits**
The study of relationships among language, culture and perception, and patterns of language use. Recent ethnographic approaches to the understanding of culture and cognition.

ANT 250. 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. Fee: \$20.

ANT 270. 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.
Prerequisite: Ant 101, or approval of instructor.

ANT 351. INDIANS OF NORTH AMERICA **Three credits**
The prehistoric development and recent life-ways of native Americans.

ANT 352. PEOPLES AND CULTURES OF THE MIDDLE EAST **Three credits**
An overview of social organization, ethnicity, and cultural development in the Middle East and North Africa. The contributions of ecological, economic, political, and ideological factors to Middle Eastern social systems are examined in regard to present cultural configurations.

ANT 353. PEOPLES AND CULTURES OF AFRICA **Three credits**
An overview of social development in Africa south of the Sahara. Particular attention is paid to Africa's historical relationship to other culture areas, indigenous social patterns, and issues surrounding the push for socioeconomic development in Africa's emergent nations.

ANT 392. SOCIOCULTURAL CHANGE

Three credits

A systematic evaluation of various attempts by social scientists to document and explain the phenomenon of change. A comprehensive survey of the field is presented through selected readings and discussion of major studies from sociology, cultural anthropology, and archaeology.

Prerequisite: Soc 101 or Ant 101, or approval of instructor.

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.

ANT 397. SEMINAR

Three credits

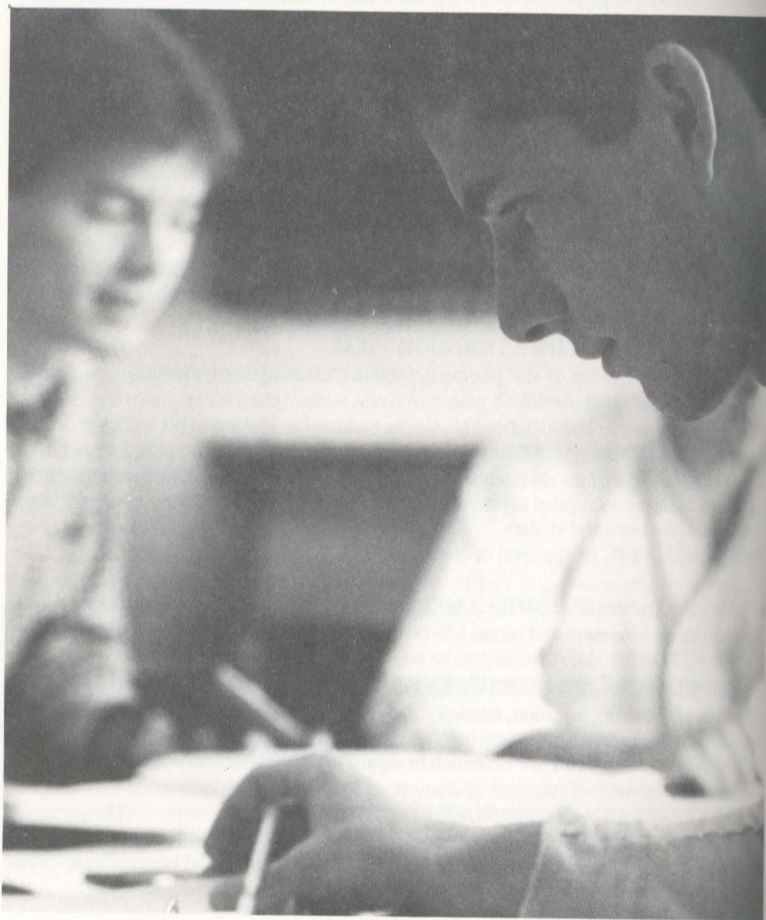
Presentations and discussions of selected themes and issues in anthropology.

Prerequisite: Criteria will vary according to content of seminar.

ANT 398. TOPICS

Three credits

A study of topics of special interest not extensively treated in regularly offered courses.

**ART**

Associate Professor Sterling, Chairman; Professor Simon; Associate Professors D'Vorzon, Fuller; Adjunct Faculty Adams, Cohen.

Total minimum number of credits required for a B.A. degree in Art — 122.

Total minimum number of credits required for a B.A. degree in Art Education — 124.

Total minimum number of credits required for a B.F.A. degree in Art — 122.

Total minimum number of credits required for a B.F.A. degree in Art Education — 145.

Total minimum number of credits required for a minor in Art — 18. (Above Art 101)

The B.A. curriculum requires a minimum of 41 credits in art. An interdisciplinary concentration in Art Management is also offered in the B.A. program (requiring a minimum of 35 credits in art). The B.F.A. curriculum requires a minimum of 62 credits in art, and provides more intensive study in a chosen discipline (Communication Design, Painting, Photography, Printmaking, Sculpture, or Textile Design).

Students seeking teaching certification (K-12) may pursue either degree but the B.F.A. will normally require an additional semester for completion.

Art courses required of all art majors: Art 103, 104, 105, 115, 116, 206, 220, 397, and 499.

Additional courses required in the major, by concentration:

Art (B.A.): Art 217, 221, 225, 233, one course in 243, 248, or 270, one 300-level course (3 credits);

Art Education (B.A.): Art 217, 221, 225, 233, two courses in 243, 248, or 270, Education 101, 102, 201, 202, 203, 204, 371, 380, and Philosophy 216.

Art Management (B.A.): Art 254, 270, art history elective (3 credits), art elective (3 credits), Business Administration minor in Management (administration emphasis) or Marketing (business emphasis), Speech 101 (administration emphasis) or Business Administration 216 (business emphasis), Cooperative Education 301 (internship, 3 credits);

Communication Design (B.F.A.): Art 217, 225, 254, 255, 270, 298/398 (Design Topics, 6 credits), 490 and/or Cooperative Education 301 (6 credits), Art electives (9 credits), Communications 222;

Fine Arts (B.F.A.): Art 217, 221, 223, 225, one course in 243, 248, or 270, 300/400-level course in single discipline (12 credits); art electives (12 credits).

Formal intention to pursue the Fine Arts B.F.A. must be submitted at least one year before graduation. B.F.A. graduates will present a written analysis and photographic survey of their work for graduation.

All students seeking admission to the art major must submit a portfolio of at least 8 works (originals or slides).

Recommended Course Sequences for Art Degrees

First Semester				Second Semester			
	Fine Arts		Com. Design		Fine Arts		Com. Design
	B.A.	B.F.A.			B.A.	B.F.A.	
Art 103 Color & Design I	3	3	3	Art 104 3-D Design	3	3	3
Art 105 Drawing & Composition	3	3	3	Art 206 Color & Design II	3	3	3
Eng 101 Composition I	3	3	3	Eng 102 Composition II	3	3	3
Core Requirements	6	6	6	Core Requirements	6	6	6
PE 100 Activity	0	0	0	PE 100 Activity	0	0	0
	<u>15</u>	<u>15</u>	<u>15</u>		<u>15</u>	<u>15</u>	<u>15</u>

Third Semester				Fourth Semester			
	Fine Arts		Com. Design		Fine Arts		Com. Design
	B.A.	B.F.A.			B.A.	B.F.A.	
Art 115 History of Art I	3	3	3	Art 116 History of Art II	3	3	3
Art 220 Life Drawing	3	3	3	Art 225 Printmaking I	3	3	3
Art 221 Painting I	3	3	—	Art 254 Graphic Design	—	—	3
Art 270 Photography I	—	—	3	Core Requirements	9	9	6
Core Requirements	6	6	9	PE 100 Activity	0	0	0
PE 100 Activity	0	0	0				
	<u>15</u>	<u>15</u>	<u>18</u>		<u>15</u>	<u>15</u>	<u>15</u>

Fifth Semester				Sixth Semester			
	Fine Arts		Com. Design		Fine Arts		Com. Design
	B.A.	B.F.A.			B.A.	B.F.A.	
Art 217 Modern Art	3	3	3	Art 300-Level Elective	3	3	3
Art 233 Sculpture I	3	3	—	Major Elective	—	3	3
Art 243, 248, or 270	3	3	—	Core Requirements	9	9	9
Art 255 Graphic Prod.	—	—	3	Free Elective	3	—	—
SCTA 222 Video Prod.	—	—	3				
Core Requirements	6	6	6		<u>15</u>	<u>15</u>	<u>15</u>
	<u>15</u>	<u>15</u>	<u>15</u>				

Seventh Semester				Eighth Semester			
	Fine Arts		Com. Design		Fine Arts		Com. Design
	B.A.	B.F.A.			B.A.	B.F.A.	
Major Electives	—	9	6	Design Topic	—	—	3
Free Electives	15	6	9	Art 490 Advanced Problems	—	9	6
	<u>15</u>	<u>15</u>	<u>15</u>	Art 397 Sem: Contemp. Issues	2	2	2
				Free Electives	15	6	3
					<u>17</u>	<u>17</u>	<u>14</u>

Recommended Course Sequences for Art Education

First Semester			Second Semester		
	B.A.	B.F.A.		B.A.	B.F.A.
Art 103 Color & Design I	3	3	Art 104 3-D Design	3	3
Art 105 Drawing & Composition	3	3	Art 206 Color & Design II	3	3
Eng 101 Composition I	3	3	Eng 102 Composition II	3	3
Psy 101 General Psychology	3	3	Psychology Elective	3	3
Core Requirements	3	3	Core Requirements	3	3
PE 100 Activity	0	0	PE 100 Activity	0	0
	<u>15</u>	<u>15</u>		<u>15</u>	<u>15</u>

Third Semester			Fourth Semester		
	B.A.	B.F.A.		B.A.	B.F.A.
Art 115 History of Art I	3	3	Art 116 History of Art II	3	3
Art 220 Life Drawing	3	3	Art 225 Printmaking I	3	3
Art 221 Painting I	3	3	Ed 202 Educ. Psych.	3	3
Ed 101 Practicum	1	1	Core Requirements	6	6
Ed 201 Intro. to Educ.	3	3	PE 100 Activity	0	0
Phil 101 Intro. to Phil.	3	3			
PE 100 Activity	0	0			
	<u>16</u>	<u>16</u>		<u>15</u>	<u>15</u>

Fifth Semester			Sixth Semester		
	B.A.	B.F.A.		B.A.	B.F.A.
Art 217 Modern Art	3	3	Art 243 or 248 or 270	3	3
Art 233 Sculpture I	3	3	Art 397 Sem: Contemp. Issues	2	2
Art 243 or 248 or 270	3	3	Art 300-Level Elective	—	3
Phil 216 Phil. of Art	3	3	Ed 102 Practicum	1	1
Core Requirements	3	6	Ed 203 Art Methods	3	3
			Core Requirements	9	6
	<u>15</u>	<u>18</u>		<u>18</u>	<u>18</u>

Seventh Semester			Eighth Semester		
	B.A.	B.F.A.		B.A.	B.F.A.
Ed 204 Art Curricula	3	3	Ed 371 Indiv. in Classroom	3	3
Art 300-Level Elective	3	—	Ed 380 Prof. Semester	15	15
Major Electives	—	6		<u>18</u>	<u>18</u>
Core Requirements	6	6			
	<u>12</u>	<u>15</u>			

Ninth Semester		
	B.A.	B.F.A.
Art 490 Advanced Problems	—	9
Major Electives	—	6
		<u>15</u>

Recommended Course Sequence for a Degree in Art Management

First Semester		Second Semester	
Art 103 Color & Design I	3	Art 104 3-D Design	3
Art 105 Drawing & Composition	3	Art 206 Color & Design II	3
Eng 101 Composition I	3	Eng 102 Composition II	3
Ec 101 Principles of Economics I	3	Ec 102 Principles of Economics II	3
Core Requirements	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
Art 115 History of Art I	3	Art 116 History of Art II	3
Art 220 Life Drawing	3	Art 254 Graphic Design	3
BA 216 Advertising	3	BA 222 Marketing	3
or Acc 101 Elementary Accounting I		or Acc 102 Elementary Accounting II	
Core Requirements	6	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Fifth Semester		Sixth Semester	
Art 270 Photography I	3	Art Elective	3
Art History 200-level	3	BA Elective	3
BA Elective	3	or BA 254 Organizational Design	
or BA 251 Principles of Mgmt.		Core Requirements	9
Core Requirements	6		
	<hr/> 15		<hr/> 15
Seventh Semester		Eighth Semester	
COOP 301 Internship	3	Art 397	2
BA Elective	3	BA Elective	3
Core Requirements	3	Free Elective or SCTA 101 Speech	3
Free Electives	6	Free Electives	9
	<hr/> 15		<hr/> 17

ART 101. EXPERIENCING ART I 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.

ART 103. FUNDAMENTALS OF COLOR AND DESIGN I Three credits
A fundamentals course for all art majors involving the basic elements of design and the study of color systems including their physical, psychological, and sociological properties.

ART 104. THREE DIMENSIONAL DESIGN Three credits
An introductory course in understanding and manipulating form in three dimensions. Students will do a series of space and form projects emphasizing design and employing such materials as paper, wire, sand, plaster, clay, and wood.

ART 105. DRAWING AND COMPOSITION Three credits
An introductory course exploring the organization and potential of line, space, and texture through a variety of media and subject matter, including still life and figure drawing.

ART 115. HISTORY OF ART I Three credits
A survey of the art and architecture of Western Civilization from pre-history through the Middle Ages. Non-western cultures will also be introduced. Slide lectures and discussion will focus on major artworks and trends within their cultural setting.

ART 116. HISTORY OF ART II Three credits
A survey of the art and architecture of Western Civilization from the Renaissance to the present. Slide lectures and discussions will focus on major artists, artworks, and trends within their cultural setting.

ART 206. FUNDAMENTALS OF COLOR AND DESIGN II Three credits
An advanced approach to color and design as applied to two dimensional art, for both the fine arts student and the student wishing to apply color and design to commercial art.
Prerequisite: Art 103.

ART 217. 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 220. LIFE DRAWING Three credits
Advanced study and research for art majors in the development of drawing skills using the live model.
Prerequisite: Art 105 or permission of instructor.

ART 221. PAINTING I Three credits
An introduction to painting methods, techniques, and materials. Emphasis on the organization of composition and painting techniques.

ART 225. PRINTMAKING I Three credits
An introduction of relief, intaglio, and planographic techniques including block printing, etching, lithography, and silk screen.

ART 228. WATER COLOR PAINTING Three credits
An exploration into painting methods of transparent and opaque paints involving still life, landscape, and a wide range of other subject matter.

ART 233. SCULPTURE I Three credits
An introductory course into the basic concepts of three dimensional form and space. Modeling in clay from life; casting and direct building techniques in plaster; basic carving experiences in stone and wood. Fee: \$15.

ART 243. CERAMICS I Three credits
Exploration into the basic methods and techniques of hand building, and wheel work. Experimentation in surfaces decoration, glazing, and kiln firing. Fee: \$25.

ART 245. SURFACE DESIGN I Three credits
An exploration of both traditional and contemporary methods of the fabric enhancement, with emphasis upon Batik. Fee: \$15.

ART 248. FIBER I Three credits
An introduction to the techniques and aesthetic uses of fiber in its single element and basic weaving processes.

ART 254. GRAPHIC DESIGN I Three credits
Familiarization with the tools, design elements, and production processes of the graphic artist. The value and contribution of the graphic arts to society will be discussed. Students will experience methods and techniques currently being practiced in the graphic design field.

ART 255. GRAPHIC ARTS PRODUCTION Three credits
An overview of the graphic arts industry emphasizing production procedures from the mechanical stage to the printed piece. Attention will be given to typography, typesetting, printing processes, paste-up, printing papers, binding and finishing. Visits to printers and publishers will be included.

ART 260. ART IN THE ELEMENTARY CLASSROOM Two credits
An exploration of common situations in elementary education to discover the opportunities for creative work and the methods and materials by which they may be realized. An extension of personal experience with a variety of arts and crafts materials and processes used by children. (same as Ed. 324)

ART 270. PHOTOGRAPHY I Three credits
An introduction to the fundamentals of photography; camera usage, subject consideration, lighting, darkroom techniques, and the preparation of photographs for exhibit. Fee: \$20.

ART 325. PAINTING II Three credits
Increased emphasis on development of style and experimentation in contemporary art methods and techniques.
Prerequisite: Art 221.

ART 328. PRINTMAKING II Three credits
Individual experimentation using plastics, photographic techniques in silk screen, lithography, and intaglio, as well as traditional methods.
Prerequisite: Art 225.

ART 333. SCULPTURE II Three credits
An exploration into metal sculpture employing gas and electric welding processes; plastics. Advanced work in carving, construction, and assemblage in various media. Fee: \$15.
Prerequisite: Art 233 or permission of instructor.

ART 344. CERAMICS II Three credits
Advanced work in both hand-built and wheel-thrown ceramics. Fee: \$25.
Prerequisite: Art 243.

ART 348. FIBER II Three credits
Advanced study of weaving processes using a variety of loom structures.
Prerequisite: Art 248.

ART 370. PHOTOGRAPHY II Three credits
Advanced work in black and white photography, including the zone system; refined darkroom techniques and development of a personal style. Fee: \$20.
Prerequisite: Art 270.

ART 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 chairman is required.

ART 397. SEMINAR: CONTEMPORARY ISSUES Two credits
Ideas and problems in contemporary art and criticism will be discussed, using current literature and exhibitions.
Prerequisite: junior or senior standing.

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 Ceramic Sculpture, Color Photography, and Lettering. Recent art history topics have included Italian Renaissance Art and Modern Architecture.

ART 490. ADVANCED PROBLEMS IN STUDIO One to six credits
Independent work in a selected studio discipline for the advanced student. Periodic consultation with the instructor will be arranged. May be repeated for a maximum of 15 credits in any one discipline. Open only to junior and senior B.F.A. candidates. Fee: variable.
Prerequisite: appropriate 300-level course.

ART 499. SENIOR EXHIBITION No credit
Every senior will prepare an exhibition of his or her work, in consultation with the student's faculty advisor. The exhibition may be presented either in the fall or spring term.

BIOLOGY

Professor Turoczi, Chairman; Professor Houseknecht; Associate Professors Hayes, Klemow; Assistant Professors Long, Pidcock; Professors Emeriti Ogren, Reif; Adjunct Faculty Zehner; Laboratory Preparations Specialist, Steuben.

Total minimum number of credits required for a B.A. degree — 121.

Total minimum number of credits required for a B.S. degree — 121.

Total minimum number of credits required for a minor — 22.

The biology program is a general 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 either in the seventh or eighth semester. In addition, this program provides the opportunity for students to double major and jointly satisfy the requirements of both the Department of Biology as well as those of the other department involved.

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) botanical biology, (2) organismic biology, (3) populational biology, and (4) molecular/cellular biology. The B.A. major is required to take one 300-level course from each of the above named four categories; the B.S. major must take one 300-level course from each of the four categories and additionally select any two courses from those same categories.

Courses within the four categories are constituted as follows:

- (1) Botanical — Bio 319, 320, 385
- (2) Organismic — Bio 303, 304, 305, 310, 313, 318
- (3) Populational — Bio 308, 309, 317, 340, 394
- (4) Molecular/Cellular — Bio 307, 312, 315, 341

Students in majors other than Biology may wish to elect a minor in Biology. The minor in Biology shall consist of 22 credits. Required courses are Bio 121-122, 223-224 plus two 300-level, three-credit biology electives. These upper-level electives (exclusive of Independent Research, Bio 395-396) will be selected after consultation with the department chairman.

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 results either at a national or regional scientific conference or through publication of a research paper. The distinction "Honors in Biology" will be recorded on the student's transcript upon graduation.

Recommended Course Sequences for a Degree in Biology

First Semester			Second Semester		
	B.A.	B.S.		B.A.	B.S.
Bio 121 Principles of Modern Biology I	4	4	Bio 122 Principles of Modern Biology II	4	4
Chm 115 Elements & Compounds	4	4	Chm 116 The Chemical Reaction	4	4
Eng 101 Composition I	3	3	Eng 102 Composition II	3	3
Mth 105 Calculus for Life, Managerial, and Social Sciences I or Mth 111 Calculus I	4	4	Mth 106 Calculus for Life, Managerial, and Social Sciences II or Mth 112 Calculus II	4	4
PE 100 Activity	0	0	PE 100 Activity	0	0
	<u>15</u>	<u>15</u>		<u>15</u>	<u>15</u>

Third Semester

	B.A.	B.S.
Bio 223 Comparative Anatomy	4	4
Chm 231 Organic Chemistry I	4	4
Core Requirements	6	6
PE 100 Activity	0	0
	<u>14</u>	<u>14</u>

Fourth Semester

	B.A.	B.S.
Bio 224 Cellular and Molecular Biology	4	4
Chm 232 Organic Chemistry II	4	4
Core Requirements	6	6
PE 100 Activity	0	0
	<u>14</u>	<u>14</u>

Fifth Semester

	B.A.	B.S.
Bio 397 Seminar*	1	1
Bio Elective/Research	3	3
Phy 105 Introductory Physics I	4	4
Core Requirements	6	6
Free Elective**	3	—
Mth 150 Elementary Statistics	—	3
	<u>16-17</u>	<u>16-17</u>

Sixth Semester

	B.A.	B.S.
Bio 397 Seminar*	1	1
Bio Elective/Research	3	3
Phy 106 Introductory Physics II	4	4
Core Requirements	6	6
Free Elective**	3	—
Computer Science Elective	—	3
	<u>16-17</u>	<u>16-17</u>

Seventh Semester

	B.A.	B.S.
Bio Elective/Research	3	6
Core Requirements	6	6
Free Electives**	6	3
	<u>15</u>	<u>15</u>

Eighth Semester

	B.A.	B.S.
Bio Elective/Research	3	6
Core Requirements	3	3
Free Electives**	9	6
	<u>15</u>	<u>15</u>

*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.

BIO 103. BIOLOGICAL SCIENCE I

Three credits

Biological Science I covers the basic structure and functions of plant and animal cells, taxonomy, plant diversity, and the interrelationships between plants and man. It is open only to non-biology majors. Lecture, two hours a week; laboratory, two hours a week. Laboratory fee: \$25.

BIO 104. BIOLOGICAL SCIENCE II

Three credits

Biological Science II covers diversity of organisms other than plants, form and function in animals, development, genetics, evolution, and behavior. The relationships between animals and man are emphasized. This course is open only to non-biology majors. Lecture, two hours a week; laboratory, two hours a week. Laboratory fee: \$25.

Prerequisite: Bio 103.

BIO 113. MICROBIOLOGY

Four credits

This course presents the basic principles of bacteriology and the relationship of microorganisms 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: \$35.

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. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: \$35 each course.

BIO 121. PRINCIPLES OF MODERN BIOLOGY I

Four credits

An introduction to concepts of modern biological science for students majoring in biology and other sciences. Course will focus on the structure and function of living matter. A heavy emphasis will also be given to the anatomy and physiology of plants. Three hours of lecture, three hours of laboratory, one hour of discussion per week. Laboratory fee: \$35.

Corequisite: Chm 115.

BIO 122. PRINCIPLES OF MODERN BIOLOGY II

Four credits

A continuation of Biology 121. Topics include: the structure and function of the vertebrate animal, the causes and nature of biological diversity and concepts of ecology. Three hours of lecture, three hours of laboratory, one hour of discussion per week. Laboratory fee: \$35.

Prerequisite: Bio 121.

BIO 223. COMPARATIVE 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, and Cat in detail. Lecture three hours per week, laboratory three hours per week, discussion one hour per week. Laboratory fee: \$35.

Prerequisite: Bio 121-122.

BIO 224. CELLULAR AND MOLECULAR BIOLOGY

Four credits

Cell structure in relation to function. Biochemistry and physiology of animal, plant, and bacterial cells and their viruses. The cell in division and development. Three lectures, one discussion, and one three-hour laboratory per week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223.

BIO 303. BACTERIOLOGY

Three credits

Bio 303 is a general introductory course covering the morphology and growth of bacteria, sterilization, and applied uses of bacteria. The laboratory work covers techniques of staining, culturing, and biochemical testing for the identification of bacteria. Lecture, two hours a week; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 304. LIFE OF THE VERTEBRATES

Three credits

This course presents a view of chordate animals with particular emphasis on the natural history, evolution, and classification of these forms. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 305. INVERTEBRATE BIOLOGY

Three credits

This course is a study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology, and ecology. Lecture, two hours a week; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 307. ANALYTICAL CYTOLOGY

Three credits

This course presents an experimental analysis of cell structure, organelles, chemistry, and activities by means of microscopic techniques, and instrumentation. Lecture, two hours a week; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 308. GENETICS

Three credits

Genetics will present a detailed treatment of genetics beyond the introductory level with particular emphasis on populational and molecular aspects of heredity. Topics will include plant and human genetics. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 309. EVOLUTION

Three credits

Evolution is the study of living things with time. Theories relating to the origin of life, natural selection, and speciation as processes of organic evolution are emphasized. Lecture, three hours a week. Field trip fee: \$15.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 310. ANIMAL BEHAVIOR

Three 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, two hours; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 312. COMPARATIVE PHYSIOLOGY

Three 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, two hours; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 313. PARASITOLOGY

Three 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, two hours; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 315. MOLECULAR BIOLOGY

Three credits

Molecular Biology is the study of the energetics, metabolism, and biochemical aspects of living systems. A general biochemical presentation will be provided with reference to proteins, carbohydrates, and lipids with extensive coverage of molecular genetics. Lecture, three hours a week.

Prerequisite: Bio 121-122, 223-224, Chm 231-232, or permission of instructor.

BIO 317. ECOLOGY

Three 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: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 318. DEVELOPMENTAL BIOLOGY

Three credits

A course dealing with principles of organismic development, gametogenesis, fertilization, cleavage, embryogenesis, differentiation, morphogenesis, regeneration. Laboratory work includes vertebrate embryology, microtechnique, and some experimentation. Lecture, two hours; laboratory, three hours a week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 319. PLANT DIVERSITY**Three credits**

A comprehensive survey of bryophytes, vascular plants and plantlike organisms (fungi and algae) emphasizing their structure, reproductive biology, natural history, evolution, and importance to humans. Lecture, two hours per week; laboratory, three hours per week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 320. PLANT FORM AND FUNCTION**Three credits**

An introduction to the morphology, anatomy, cytology and physiology of plants, with emphasis on the vascular plants. Structural and functional aspects of plants will be interpreted in relation to each other and within ecological and evolutionary contexts. Lecture, two hours per week; laboratory, three hours per week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 340. LIMNOLOGY**Three credits**

A study of the chemical, physical, and biological aspects of freshwater systems. Laboratory investigations will consist of in-depth analyses of local lakes and streams. Lecture, two hours; laboratory, three hours. Laboratory fee: \$40.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 341. IMMUNOLOGY AND IMMUNOCHEMISTRY**Three 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. Two lectures and one three-hour laboratory per week. Laboratory fee: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

BIO 385. 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.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

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.

Prerequisite: 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 chairman is required. Candidates for Independent Research must have a minimum GPA of 3.00 and be of upper class standing.

BIO 397. SEMINAR**One credit**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

BIO 198/298/398. TOPICS**Variable credit**

A study of topics of special interest not extensively treated in regularly offered courses.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

CHEMISTRY

Professor Swain, Chairman; Professors Bohning, Faut, Rozelle, Salley, Stine; Instructor Cohen; Laboratory Manager Bianco.

Total minimum number of credits required for a B.S. degree — 125.

Total minimum number of credits required for a B.A. degree — 120.

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, or pharmacy), law, business, engineering, computer science, or other related areas. Utilizing existing courses and programs, it is also possible for a student to achieve a B.A. degree with a double major in chemistry and computer science. In all cases students will choose electives for the various career options after consultation with departmental advisors.

A minor in Chemistry consists of the completion of 22 credits in chemistry, including Chm 115 and Chm 116 (or Chm 118). Selection of other courses must be in keeping with the existing prerequisites as specified in this Bulletin.

Wilkes is approved by the American Chemical Society for the professional training of chemists. Students who complete the B.S. program may be certified for membership eligibility in the Society at graduation.

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. Changes in the order of the courses may be made on an advising basis.

Recommended Course Sequences for a Degree in Chemistry

First Semester			Second Semester		
	B.A.	B.S.		B.A.	B.S.
Chm 115 Elements and Compounds	4	4	Chm 116 The Chemical Reaction	4	4
Eng 101 Composition I	3	3	Eng 102 Composition II	3	3
Mth 111 Calculus I	4	4	Mth 112 Calculus II	4	4
Core Requirements	6	6	CS Elective	3	3
PE 100 Activity	0	0	Free Electives	3	3
			PE 100 Activity	0	0
	17	17		17	17

Third Semester			Fourth Semester		
	B.A.	B.S.		B.A.	B.S.
Chm 231 Organic Chemistry I	4	4	Chm 232 Organic Chemistry II	4	4
Chm 222 Systematic Inorganic Chemistry	3	3	Chm 276 The History and Literature of Chemistry	2	2
Mth 211 Intro. Linear Algebra and Differential Equations	4	4	Mth 212 Multivariable Calculus	—	4
Phy 201 General Physics	4	4	Core Requirements	3	—
PE 100 Activity	0	0	Phy 202 General Physics II	4	4
	15	15	PE 100 Activity	0	0
				13	14

Fifth Semester			Sixth Semester		
	B.A.	B.S.		B.A.	B.S.
Chm 251 Physical Chemistry I	4	4	Chm 252 Physical Chemistry II	4	4
Chm 241 Quantitative Inorganic Analysis	4	4	Chm 274 Chemical Structure Determination	—	3
Core Requirements	3	3	Core Requirements	9	9
Free Electives	3	3	Free Electives	3	—
Chm 397 Seminar	0	0	Chm 397 Seminar	0	0
	14	14		16	16

Seventh Semester			Eighth Semester		
	B.A.	B.S.		B.A.	B.S.
Chm 325 Advanced Inorganic Chemistry	—	4	Major Electives	—	3
Major Electives	3-4	—	Free Electives	6	3
Free Electives	6	6	Core Requirements	6	9
Core Requirements	6	6	Chm 397 Seminar	1	1
Chm 397 Seminar	0	0		13	16
	15-16	16			

Summary of Credit Distribution

	B.A.	B.S.
Chemistry Credits	37-38	44
Mathematics Credits	12	16
Physics Credits	8	8
Core Credits	39	39
Computer Science Credits	3	3
Free Elective Credits	21	15
Total Credits	120	125

B.A. degree students must elect a minimum of two 300-level courses, one of which must be in the chemistry department.

B.S. degree students must elect a minimum of one 300-level chemistry course in addition to the required 300-level courses.

Seminar and Cooperative Education may not be counted as an advanced 300-level chemistry elective.

Independent Research (Chm 395-396) may be counted as one advanced 300-level chemistry elective if six credits are taken.

All chemistry majors must complete three credit-hours of Computer Science courses.

The Chemistry Department strongly recommends that students elect a foreign language to satisfy one of the core humanities requirements. The language of choice should be German, Russian, or French in that order of priority.

The Chemistry Department strongly recommends that students elect SCT 101, Public Speaking.

CHM 99. BASIC MATHEMATICS FOR INTRODUCTORY CHEMISTRY

No credit

A remedial course for students desiring an intensive survey of basic mathematical principles used in beginning chemistry courses. Topics include arithmetical operations, exponential notation, dimensional analysis, the writing and solving of equations, graphing, logarithms, and the use of a calculator.

CHM 101-102. CHEMICAL SCIENCE

Three credits each

Applications of chemistry in daily life, emphasizing nuclear chemistry, agricultural chemistry, and the chemistry of food and drugs. This course is primarily intended for students who take no other chemistry courses. It does **not** provide prerequisite background for any other chemistry course.

Prerequisite for Chm 102, Chm 101.

CHM 111. INTRODUCTION TO CHEMICAL REACTIONS AND PRINCIPLES

Four credits

Three major areas of emphasis will be developed: descriptive inorganic chemistry; acids, bases, and buffers; and radiochemistry. These areas will include gas laws, oxidation-reduction, equilibrium, stoichiometry, the periodic table, and solutions. Not open to chemistry majors. Class, three hours a week; laboratory, three hours a week; problem session, one hour a week. Fee: \$35.

CHM 115. ELEMENTS AND COMPOUNDS

Four credits

Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure. Class, three hours a week; laboratory, three hours a week; problem session, one hour a week. Fee: \$35.

CHM 116. THE CHEMICAL REACTION Four credits
A detailed study of chemical equilibria in aqueous solution. Class, three hours a week; laboratory, three hours a week; problem session, one hour a week. Fee: \$35.
Prerequisite: Chm 115.

CHM 118. CHEMISTRY FOR ENGINEERS Three credits
An introduction to chemical equilibria, electrochemistry, thermodynamics, chemical kinetics, and the chemistry of selected metals and nonmetals. Class, two hours a week; laboratory, three hours a week; problem session, one hour a week. Fee: \$35.
Prerequisite: Chm 115, engineering majors only.

CHM 130. ORGANIC AND BIOLOGICAL CHEMISTRY Four credits
An introduction to the structure and reactions of carbon compounds as a background for the study of interactions of biologically active compounds such as carbohydrates, proteins, and nucleic acids. Not open to chemistry majors. Lecture, three hours a week; laboratory, three hours a week; problem session, one hour a week. Fee: \$35.
Prerequisite: Chm 111 or 115.

CHM 222. SYSTEMATIC INORGANIC CHEMISTRY Three credits
A systematic description of the chemistry of the main group elements based on fundamental chemical principles. Fundamental techniques of inorganic synthesis. Class, three hours a week.
Prerequisite: Chm 116.

CHM 231. ORGANIC CHEMISTRY I Four credits
An introduction to the chemistry of carbon compounds which develops the theoretical principles underlying the mysterious "vital force" from which all organic materials were supposedly derived. These principles will be investigated and applied in the laboratory. Class, three hours a week; laboratory, three hours a week; pre-lab session, one hour a week. Fee: \$35.
Prerequisite: Chm 116 or Chm 118.

CHM 232. ORGANIC CHEMISTRY II Four credits
A continuation of Chm 231 with emphasis on modern organic syntheses. The laboratory integrates syntheses, isolation, analysis, and instrumentation. Class, three hours a week; laboratory, three hours a week; pre-lab session, one hour a week. Fee: \$35.
Prerequisite: Chm 231.

CHM 241. INORGANIC QUANTITATIVE ANALYSIS Four credits
An introduction to the theory and practice of typical analyses: volumetric, gravimetric, and instrumental. Class, two hours a week; laboratory, six hours a week; pre-lab session, one hour a week. Fee: \$45.
Prerequisite: Chm 116.

CHM 251. PHYSICAL CHEMISTRY I Four credits
The first and second laws of thermodynamics are developed, leading to an emphasis on the applications of the free energy concept: electrochemistry, the phase rule, and colligative properties. Chemical kinetics is introduced. Class, three hours a week; laboratory, three hours a week. Fee: \$35.
Prerequisite: Chm 116, Mth 106 or Mth 211, Phy 106 or Phy 202.

CHM 252. PHYSICAL CHEMISTRY II Four credits
Elementary quantum theory, kinetic molecular theory, and nuclear chemistry are studied. The molecular orbital theory and other approximate methods of quantum theory are developed. Statistical mechanics and surface chemistry are introduced. Class, three hours a week; laboratory, three hours a week. Fee: \$35.
Prerequisite: Chm 251.

CHM 274. CHEMICAL STRUCTURE DETERMINATION Three credits
A study of structure determination techniques with emphasis on organic, inorganic, and biochemical molecules. Techniques include nuclear magnetic resonance, infrared, ultraviolet, visible, and mass spectroscopy, with applications of group theory to spectroscopic investigations. Class, one hour a week; laboratory, six hours a week. Fee: \$45.
Prerequisite: Chm 222, 232, 251.

CHM 276. CHEMICAL INFORMATION RETRIEVAL TECHNIQUES Two credits
The nature and use of the important sources of chemical information are developed through retrospective searching methods and current awareness concepts. Emphasis is placed on the study of computer-based systems, access to remote commercial data-bases, the design of personalized data-base computer files. Information search strategies, and supplemental manual search procedures. Literature preparation for Independent Research (Chm 395-396) is included. Class, one hour a week; computer and library laboratory, three hours a week.
Prerequisite: Permission of instructor.

CHM 325. ADVANCED INORGANIC CHEMISTRY Four credits
Introduction to ligand field theory; chemistry of the first transition series, organometallic, and II acceptor compounds; mechanisms of inorganic reactions. Class, three hours a week; laboratory, three hours a week. Fee: \$45.
Prerequisite: Chm 222 and 252.

CHM 346. POLYMER CHEMISTRY Three credits
Introduction to high polymers as an engineering material and the mechanical, electrical, and optical properties of polymers. Class, three hours a week. (same as MaE 332)
Prerequisite: Junior or senior standing.

CHM 361. BIOCHEMISTRY I Three credits
A study of the physical and chemical properties of biological molecules with emphasis on physical methods of biochemistry, proteins, enzyme kinetics, bioenergetics, nucleic acids, and carbohydrates.
Prerequisite: Chm 232.

CHM 362. BIOCHEMISTRY II Three credits
A study of metabolism with emphasis on metabolic regulation.
Prerequisite: Chm 232.

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 at a level significantly beyond a term paper is required. Cannot be taken for credit before the seventh semester but may be a continuation of work begun before the seventh semester. Fee: one credit \$25, two credits \$35, three credits \$45.
Prerequisite: Chm 276.

CHM 397. SEMINAR Zero to one credit
Presentations and discussions of selected topics in chemistry conducted by senior chemistry majors, staff, and visiting lecturers. Freshman and sophomore chemistry majors are encouraged to attend. Junior and Senior Chemistry majors are required to participate.
Prerequisite: Approval of department chairman is required.

CHM 198/298/398. 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, or spectroscopy.

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 chairman.

SPEECH, COMMUNICATIONS, AND THEATER ARTS

Associate Professor Kinney, Chairman; Professor Emeritus Holm; Associate Professor O'Neill; Assistant Professors Elmes-Crahall, Schulman; Endowed Chair, Bigler; Engineer, Brigido.

Total minimum number of credits required for a B.A. degree — 120.
Total minimum number of credits required for a minor — 18.

The Department of Speech, Communications, and Theater Arts has concentrations in Rhetoric and Public Communication; Interpersonal and Organizational Communication; Telecommunications (Broadcasting); Journalism; and Theater Arts. 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. While the program is not highly specialized, there are enough skills and performance courses and co-curricular activities that our graduates will be able to apply their abilities to every-day situations. In addition, the theory, writing and analysis courses should enable that student to advance beyond the entry level in his/her chosen field or even to change fields entirely. We believe the curriculum also affords ample opportunity for the student to explore other disciplines.

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

1. Interpersonal and Organizational Communication Minor

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

Electives: Five of the following:

- SCT 202 Interpersonal Communication
- SCT 203 Small Group Communication
- SCT 206 Business and Professional Speaking
- SCT 301 Persuasion
- SCT 302 Public Relations
- SCT 303 Organizational Communication

2. Rhetoric and Public Communication Minor

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

Electives: Five of the following:

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

3. Telecommunications Minor

Required: SCT 220 Intro. to Telecommunications

Electives: Five of the following:

- SCT 221 Basic Audio Production
- SCT 222 Basic Video Production
- SCT 223 The Art of Film
- SCT 224 Mass Media
- SCT 321 Broadcast Journalism
- SCT 322 Advanced Video Production
- SCT 362 Mass Communications Law

4. Journalism Minor

Required: SCT 260 Basic Newswriting

Electives: Five of the following:

- SCT 224 Mass Media
- SCT 254 Publication Design
- SCT 261 The American Newspaper
- SCT 360 Editing and Advanced Newswriting
- SCT 361 Feature Writing
- SCT 362 Mass Communications Law

5. Theater Arts Minor

Required: SCT 143 Theatrical Production

Electives: Five of the following:

- SCT 142 Speech for the Stage
- SCT 240 Fundamentals of Play Structure and Criticism
- SCT 241 Acting I
- SCT 242 Acting II
- SCT 340 Theater History I
- SCT 341 Theater History II
- SCT 342 Lighting for the Stage
- SCT 344 Scene Design
- SCT 345 Directing I
- SCT 346 Directing II

The Major

Departmental Requirements:

All students choosing to major in Speech, Communications, and Theater Arts must fulfill specific departmental requirements. These courses contain skills, theory, analysis, performance, writing, and research. They are as follows:

- SCT 100 Modes of Expression
- SCT 101 Fundamentals of Speech
- SCT 102 Principles of Communication
(Not required of Theater Arts concentrators.)
- SCT 324 Communication Research Methods
(Not required of Theater Arts concentrators.)
- SCT 397 Senior Seminar

The Department also has a six-hour writing requirement for all communication majors and a dramatic literature requirement for theater majors.

Concentration Requirements:

Each concentration is described and outlined on the following pages.

Interpersonal and 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 Interpersonal and Organizational Communication will choose five courses (15 credits) from the following:

- SCT 202 Interpersonal Communication
- SCT 203 Small Group Communication
- SCT 206 Business and Professional Speaking
- SCT 252 Internship
(Only three credits of internship may count in the concentration.)
- SCT 301 Persuasion
- SCT 302 Public Relations
- SCT 303 Organizational Communication

Writing Requirement (6 credits):

- SCT 260 Basic Newswriting and either
- ENG 201 Advanced Composition or
- ENG 202 Technical Writing

Public Relations Track:

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

Rhetoric and Public Communication

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

All students concentrating in Rhetoric and Public Communication will choose five courses (15 credits) from the following:

- SCT 201 Advanced Public Speaking
- SCT 203 Small Group Communication
- SCT 204 Argumentation and Debate
- SCT 206 Business and Professional Speaking
- SCT 252 Internship
(Only three hours of internship may count in the concentration.)
- SCT 300 Rhetorical Criticism
- SCT 301 Persuasion
- SCT 302 Public Relations

Writing Requirement (6 credits):

- ENG 201 Advanced Composition and
- SCT 260 Basic Newswriting or
- SCT 225 Media Criticism

Political Communication Track:

Students who are interested in careers in political communication must satisfy the fifteen-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.

Recommended Course Sequences for Interpersonal and Organizational Communication and Rhetorical and Public Communication Concentrations

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
SCT 100 Modes of Expression	3	SCT 102 Principles of Communication	3
SCT 101 Fundamentals of Speech	3	Core Requirements	9
Core Requirements	6	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 15		<hr/> 15

Third Semester		Fourth Semester	
Concentration Selection	3	Concentration Selections	6
Writing Requirement	3	Writing Requirement	3
Core Requirements	9	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15

Fifth Semester		Sixth Semester	
Concentration Selection	3	Concentration Selection	3
Core Requirements	6	Internship (See Advisor)	3
Major Elective	3	Core Requirements (If necessary)	3
Free Electives	3	Free Electives	6
	<hr/> 15		<hr/> 15

Seventh Semester		Eighth Semester	
Internship (See Advisor)	3	SCT 324 Communication Research Methods	3
Concentration Selection	3	SCT 397 Senior Seminar	3
Major Electives	3	Free Electives	9
Free Electives	6		
	<hr/> 15		<hr/> 15

Telecommunications

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 Telecommunications must take the following course:
SCT 220 Introduction to Telecommunications

All students concentrating in Telecommunications will then choose five courses (15 credits) from the following:

- SCT 221 Basic Audio Production
- SCT 222 Basic Video Production
- SCT 223 The Art of Film
- SCT 224 Mass Media
- SCT 252 Internship
(Only three credits of internship may count in the concentration.)
- SCT 321 Broadcast Journalism
- SCT 322 Advanced Video Production
- SCT 362 Mass Communications Law

Writing Requirement (6 credits):

- SCT 225 Media Criticism or
- SCT 260 Basic Newswriting and
- ENG 201 Advanced Composition

Recommended Course Sequence for Telecommunications Concentration

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
SCT 100 Modes of Expression	3	SCT 220 Intro. to Telecommunications	3
SCT 101 Fundamentals of Speech	3	Core Requirements	9
Core Requirements	6	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 15		<hr/> 15

Third Semester		Fourth Semester	
SCT 102 Principles of Communications	3	Concentration Selections	6
Concentration Selection	3	Writing Requirement	3
Writing Requirement	3	Core Requirements	6
Core Requirements	6	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 15		<hr/> 15

Fifth Semester		Sixth Semester	
Concentration Selection	3	Concentration Selection	3
Core Requirements	6	Internship (See Advisor)	3
Major Electives	3	Core Requirements (If necessary)	3
Free Electives	3	Free Electives	6
	<hr/> 15		<hr/> 15

Seventh Semester		Eighth Semester	
Internship (See Advisor)	3	SCT 324 Comm. Research Methods	3
Concentration Selection	3	SCT 397 Senior Seminar	3
Major Electives	3	Free Electives	9
Free Electives	6		
	<hr/> 15		<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 choose five courses (15 credits) from the following:

- SCT 224 Mass Media
- SCT 254 Publication Design
- SCT 260 Basic Newswriting (may not be used to fulfill concentration requirement if already used to fulfill writing requirement)
- SCT 261 The American Newspaper
- SCT 360 Editing and Advanced Newswriting
- SCT 361 Feature Writing
- SCT 362 Mass Communications Law

Writing Requirement (6 credits):

- SCT 260 Basic Newswriting
- ENG 201 Advanced Composition

Recommended Course Sequence for Journalism Concentration

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
SCT 100 Modes of Expression	3	SCT 102 Principles of Communication	3
SCT 101 Fundamentals of Speech	3	Core Requirements	9
Core Requirements	6	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 15		<hr/> 15

Third Semester		Fourth Semester	
Concentration Selection	3	Concentration Selections	6
Writing Requirement	3	Writing Requirement	3
Core Requirements	9	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15

Fifth Semester		Sixth Semester	
Concentration Selection	3	Concentration Selection	3
Core Requirements	6	Internship (See Advisor)	3
Major Electives	3	Core Requirement (If necessary)	3
Free Electives	3	Free Electives	6
	<hr/> 15		<hr/> 15

Seventh Semester		Eighth Semester	
Internship (See Advisor)	3	SCT 324 Comm. Research Methods	3
Concentration Selection	3	SCT 397 Senior Seminar	3
Major Electives	3	Free Electives	9
Free Electives	6		
	<hr/> 15		<hr/> 15

Theater Arts

Students who choose to concentrate in Theater Arts are trained in theater practice, dramatic literature, and communication skills. Both through their own theatrical pursuits and through the critical study of theater and its place in our culture, students are urged to discover how the creative process works; they will be provided opportunities for the development of skills in performance, production, design, and criticism. Students are strongly advised to take a foreign language as a part of the Core and to fulfill the fine arts requirement outside of Theater Arts.

- All Theater Arts concentrators must take the following:
- SCT 240 Fundamentals of Play Structure and Criticism
 - SCT 340 Theater History I
 - SCT 341 Theater History II
- and any two of the following:
- SCT 223 The Art of Film or SCT 225 Media Criticism
 - ENG 321 Early English Drama
 - ENG 325 Shakespeare
 - ENG 341 Restoration and Eighteenth Century Drama
 - ENG 374 Modern Drama
 - ENG 384 American Drama

- In addition, all Theater Arts concentrators must take the following courses:
- SCT 141 Theater Laboratory (must be repeated six times)
 - SCT 142 Speech for the Stage
 - SCT 143 Production

- SCT 241 Acting I
- SCT 342 Lighting for the Stage
- SCT 344 Scene Design
- SCT 345 Directing

Finally, students must complete an additional six credits in SCT. Students should select these courses in consultation with an advisor. Students applying for secondary school certification must take SCT 348 and one other course.

Recommended Course Sequence for Theater Arts Concentration

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
SCT 100 Modes of Expression	3	SCT 101 Public Speaking	3
SCT 143 Production	3	SCT 142 Speech for the Stage	3
SCT 241 Acting I or Core Requirement	3	Core Requirements	6
Core Requirements	3	SCT 141 Theater Laboratory	1
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 16

Third Semester		Fourth Semester	
SCT 240 Play Structure and Criticism	3	SCT 334 Scene Design I	3
SCT 241 Acting I or Core Requirement	3	SCT 242 Acting II or Theater Elective	3
SCR 342 Lighting for the Stage	3	ENG 152 World Literature II	3
ENG 151 World Literature I	3	Core Requirements	6
Core Requirements	3	SCT 141 Theater Laboratory	1
SCT 141 Theater Laboratory	1	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 16		<hr/> 16

Fifth Semester		Sixth Semester	
SCT 340 Theater History I	3	SCT 341 Theater History II	3
SCT 345 Directing I	3	SCT 345 Directing II or Theater Elective	3
Dramatic Literature Requirement	3	Core Requirements	9
Core Requirements	6	SCT 141 Theater Laboratory	1
SCT 141 Theater Laboratory	1		
	<hr/> 16		<hr/> 16

Seventh Semester		Eighth Semester	
SCT 397A Senior Seminar	3	SCT 348 Workshop or Theater Elective	3
Dramatic Literature Requirement	3	SCT 252 Internship or Free Elective	3
Core Requirement	3	Free Electives	6
SCT 252 Internship or Free Elective	3		
SCT 141 Theater Laboratory	1		
	<hr/> 13		<hr/> 12

SCT 100. MODES OF EXPRESSION Three credits
An introduction to the methodologies of speech, communications, and theater through an examination of interdisciplinary treatment of a particular topic or issue. Team taught by members of the department. Topic changes yearly. Required of all department majors, course should be taken freshman year. Offered every fall semester.

SCT 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. (Formerly Speech 101)

SCT 102. PRINCIPLES OF COMMUNICATION Three credits
A study of the theory and process of communication. Required of all department majors. Taught every spring semester. (Formerly Communication 101)

SCT 140. APPROACH TO THEATER 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 theater. Lecture, discussion, demonstration, films, college theater performances. (Formerly Th. Arts 101)

SCT 141. THEATER LABORATORY One credit
A study, through the application of various techniques of different facets of theater 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 Theater Arts concentrators every semester. May be repeated for a total of six hours.

SCT 142. SPEECH FOR THE STAGE Three credits
Instruction and exercises in vocal development for the stage, including diction, delivery, and interpretation. Laboratory sessions. (Formerly Th. Arts 131)

SCT 143. THEATRICAL PRODUCTION 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. (Formerly Th. Arts 141)

SCT 144. DEPARTMENT PRACTICUM One to two credits
A - Debate and Forensics, B - Theater Production, C - WCLH Radio, D - The *Beacon*. 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 adviser 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 SCT.

SCT 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. (Formerly Speech 201)
Prerequisite: Sct 101 or consent of instructor. Course taught spring semester, every other year.

SCT 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, listening, interviewing, and the development of relationships. (Formerly Communication 201)
Prerequisite: Sct 102. Course taught every fall semester.

SCT 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. Course taught spring semester, every other year. (Formerly Communication 202)
Prerequisite: Sct 102.

SCT 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. (Formerly Speech 205)
Prerequisite: Sct 101 or consent of instructor.

SCT 205. ORAL INTERPRETATION Three credits
An investigation of literature that combines analysis with interpretive oral performance. Spring semester, every third year. (Formerly Speech 206)

SCT 206. BUSINESS AND PROFESSIONAL SPEAKING 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, every other year. (Formerly Speech 202)

SCT 207. VOICE AND DICTION Three credits
A study of voice production and articulation, analysis of regional speech differences and standards.
Prerequisite: Sct 101.

SCT 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. (Parts of the course were formerly contained in Communication 240 and Communication 245)
Prerequisite: Sct 100 and Sct 102. Taught every spring semester.

SCT 221. BASIC 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. (Parts of this course were formerly contained in Communication 240)
Prerequisite: Sct 220. Taught every second fall semester.

SCT 222. BASIC VIDEO PRODUCTION Three credits
A study of the principles and techniques of video production. A special emphasis is based on the utilization of these techniques in a broadcast setting. Included will be: camerawork, editing, switching, and use of remote recording equipment. Fee: \$20. (Formerly Communication 246)
Taught every fall semester.

SCT 223. THE ART OF FILM Three credits
An introduction to the history, aesthetics, and techniques of cinematic art through a study of representative films by Bergman, Chaplin, Eisenstein, Griffith, Hitchcock, Welles, and others. Screenings.

SCT 224. MASS MEDIA Three credits
A study of the mass media and their role in contemporary society. Course taught every other fall semester. (Formerly Communication 205)
Prerequisite: Sct 100 and Sct 102.

SCT 225. MEDIA CRITICISM Three credits
Students analyze and evaluate all forms of mass media content — visual and verbal. Written analysis of primary texts: plays, scripts, essays, short stories, newspaper, and magazine articles, as well as radio and television programming, speeches, and films. Critical principles will be applied.

SCT 240. 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. (Formerly Th. Arts 201)
Prerequisite: Eng 102 and Sct 100.

SCT 241. 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 theater games. (Formerly Th. Arts 211)

SCT 242. 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. (Formerly Th. Arts 212)
Prerequisite: Sct 241.

SCT 252. INTERNSHIP Three to six credits
A supervised program of work and study in any of the concentrations. Permission of the department is required.

SCT 254. PUBLICATION DESIGN Three credits
Familiarization with the tools, design elements, and production processes of the graphic artist. The value and contribution of the graphic arts to society will be discussed. Students will experience methods and techniques currently being practiced in the graphic design field. It is suggested that students without an art background take Art 103 prior to this course. (Same as Art 254)

SCT 260. BASIC NEWSWRITING Three credits
Fundamentals of newsgathering, news writing, and news judgment for all media; study of news sources; fieldwork, research, and interview techniques. Fee: \$20. (Formerly Communication 211)
Prerequisite: Eng 101-102 and Sct 100. Offered every fall semester.

SCT 261. THE AMERICAN NEWSPAPER Three credits
A survey of contemporary newspapers emphasizing the analysis of their editorial content. Includes an examination of alternative newspapers.
Prerequisite: Sct 100 and Sct 102. Offered every other spring semester.

SCT 300. RHETORICAL CRITICISM Three credits
Theories from classical to contemporary will be applied to the analysis of the spoken word. Emphasis on speech writing and criticism. (Formerly Speech 301)
Prerequisite: Sct 101. Spring semesters, off-numbered years.

SCT 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. (Formerly Speech 302)
Prerequisite: Sct 101. Fall semesters, odd-numbered years.

SCT 302. 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. (Formerly Communication 215)
Prerequisite: Sct 202 and Sct 260. Fall semesters.

SCT 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: Sct 202. Spring semesters, even-numbered years.

SCT 321. BROADCAST JOURNALISM Three credits
A study of the principles and methods of broadcast journalism. (Formerly Communication 241)
Prerequisite: Sct 100. Course taught every other spring semester.

SCT 322. ADVANCED VIDEO PRODUCTION Three credits
A study of the principles and techniques of program production. Scripting, producing, and directing are subjects covered extensively by this course. Each student will produce and direct a half-hour final project.
Prerequisite: Sct 222. Course taught every other spring semester.

SCT 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.
Prerequisite: Sct 100 and 102, completion of departmental writing requirement, and junior/senior standing.

SCT 340. THEATER HISTORY I Three credits
A survey of the historical development and background of theatrical art from ancient times through the seventeenth century. (Formerly Th. Arts 331)

SCT 341. THEATER HISTORY II Three credits
A survey of the historical development and background of theatrical art from the eighteenth century to the present. (Formerly Th. Arts 332)
Prerequisite: Sct 340.

SCT 342. LIGHTING FOR THE STAGE Three credits
Principles of lighting and the use of these principles in either simple or sophisticated lighting systems. Students will work with instruments and equipment of the lighting technician. Class and workshop. (Formerly Th. Arts 343)
Prerequisite: Sct 141.

SCT 344. SCENE DESIGN Three credits
The nature and function of scenic art with emphasis on contemporary theories and techniques. (Formerly Th. Arts 344)
Prerequisite: Sct 141.

SCT 345. DIRECTING I Three credits
An introduction to the principles of directing including play selection, composition, casting, blocking, and rehearsing. Class and workshop. (Formerly Th. Arts 351)
Prerequisite: Sct 141, 201, 211, or departmental permission.

SCT 346. 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. (Formerly Th. Arts 352)
 Prerequisite: Sct 351.

SCT 347. CHILDREN'S THEATER One to three credits
 Methods of interpreting and performing plays for young audiences. Class projects will evolve into theatrical performances for children.
 Prerequisite: Sct 143 and 241, or permission of the department.

SCT 348. THEATER WORKSHOP Three credits
 An opportunity to prepare the full production of a short play for an audience. Working closely with members of the faculty, the student will cast and direct the play and supervise the lighting, design, and construction for the production. Required for certification in education. (Formerly Th. Arts 380)
 Prerequisite: Permission of the department.

SCT 360. JOURNALISM: EDITING AND ADVANCED NEWSWRITING Three credits
 A study of specialized reporting and an introduction to news editing.
 Prerequisite: Sct 260.

SCT 361. FEATURE WRITING Three credits
 A study of feature articles for newspapers, syndicates, magazines, and specialized publications. Practice in research, interviewing, and writing.
 Prerequisite: Sct 160.

SCT 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.
 Prerequisite: Sct 100 and 102.

SCT 395-396. INDEPENDENT RESEARCH One to three credits
 Independent study and research for advanced students in speech, communication, and theater arts programs under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

SCT 397A. SENIOR SEMINAR/THEATER Three credits
 Discussion, research, and exploration of a selected topic in conjunction with a departmental theater production. Presentations and a research project. Required of all Theater Arts concentrators. (Formerly Th. Arts 397)

SCT 397B. SENIOR SEMINAR/COMMUNICATIONS Three credits
 An in-depth investigation of current research and issues in communication. Research paper required. Open to all SCT majors. (Formerly Communication 397)
 Prerequisite: Junior/senior standing.

SCT 398. TOPICS One to three credits
 A study of topics of special interest not extensively treated in regularly offered courses.

COMPUTER INFORMATION SYSTEMS

Professor Merrill, Chairman.

Total minimum number of credits required for a B.S. degree — 122.

Total minimum number of credits required for a minor in Management Information Systems — 21.

An interdisciplinary program leading to the B.S. degree with a major in Computer Information Systems is offered by the Department of Mathematics and Computer Science, in cooperation with the School of Business and Economics. Also available is a minor in Management Information Systems. (Students majoring in Computer Information Systems are **not** permitted to obtain a minor in Management Information Systems.)

Major in Computer Information Systems

The CIS program is concerned mainly with the use of computer systems in business and industrial organizations. Its principal subject matter includes the study of systems analysis, systems design and computer programming, along with other analytical and business areas which are pertinent to the development, implementation, and maintenance of information systems. Required courses for a Computer Information Systems major are indicated in the curriculum outline recommended below.

Minor in Management Information Systems

Required courses:	credit hours
CS 124, 224, 324, 325	12
BA 251	3
Any two among:	
BA 252, 254, 256	6
Total	21

Recommended Course Sequence for a Degree in Computer Information Systems

NOTE: All core requirements should be chosen to satisfy the General Core Requirements listed on pages 55-56.

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
CS 115 Survey of Computers & Data Processing	3	CS 124 COBOL Programming	3
Mth 105 Calculus for Life, Managerial, and Social Sciences I	4	Mth 106 Calculus for Life, Managerial, and Social Sciences II	4
Core Requirements	6	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	16		16

Third Semester		Fourth Semester	
CS 224 Advanced COBOL and File Management	3	CS 123 FORTRAN Programming	3
BA 251 Principles of Management	3	BA 252 Operations and Systems Management	3
Acc 121 Elementary Accounting I	3	Acc 122 Elementary Accounting II	3
Mth 150 Elementary Statistics	3	Core Requirements	6
Core Requirements	3	PE 100 Activity	0
PE 100 Activity	0		
	<u>15</u>		<u>15</u>
Fifth Semester		Sixth Semester	
CS 324 Systems Analysis	3	CS 325 Database Management	3
BA 225 Managerial Finance	3	BA 222 Marketing	3
Core Requirements	9	Core Requirements	9
	<u>15</u>		<u>15</u>
Seventh Semester		Eighth Semester	
CS/Mth Elective*	3	CS/Mth Elective*	3
SCT 101 Public Speaking	3	BA 254 Organizational Design & Behavior (or)	3
Eng 202 Technical Writing	3	BA 256 Business Policies & Corporate Responsibility	3
Free Electives	6	Free Electives	9
	<u>15</u>		<u>15</u>

*CS/Mth electives must include two of the following: CS 260, CS 262, CS 321, CS 335, or Mth 354.

Summary of Minimum Credit Distribution for the CIS Major:

	credit hours
CS 115, 123, 124, 224, 324, and 325	18
Mth/CS Electives	6
Acc 101-102, BA 222, 225, 251, and 252	18
BA 254 or BA 256	3
Mth 105, 106, and 150	11
Eng 101-102	6
Eng 202	3
SCT 101	3
Core Electives	39
Free Electives	15
Total	<u>122</u>

COMPUTER SCIENCE

Professor Merrill, Chairman; Professor Emeritus Richards; Professors Sours, Tillman, Wong; Associate Professors Berard, Decosmo, Earl, Koch, Salsburg; Assistant Professors Kenney, Kugendran; Instructor Plavchak.

Total minimum number of credits required for a B.A. degree — 123.
Total minimum number of credits required for a B.S. degree — 125.
Total minimum number of credits required for a minor — 22.

A broad 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. The Department of Mathematics and Computer Science also offers programs in mathematics and statistics (see page 142), and in computer information systems and management information systems (see page 107).

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. option is intended for those interested in management and social sciences, whereas the B.S. option requires greater concentration in the natural and physical sciences. With appropriate choices of major electives, students can prepare 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 on page 110, which are based on an extensive prerequisite structure.

With the approval of the department, a student may earn credits in a maximum of five mathematics or computer science courses by passing special challenge examinations. Interested students may obtain further details and application forms from the department chairman.

Minor in Computer Science

Required Courses:	credit hours
CS 123, 124, 225, 227	13
Electives: chosen in accordance with either (a) or (b) below:	9
a. CS minor with emphasis on data processing applications — CS 224, 324, 325	
b. general CS minor — CS 230 and any two CS courses numbered above 250	
Total	<u>22</u>

Recommended Course Sequences for a Degree in Computer Science

NOTE: All core requirements should be chosen to satisfy the General Core Requirements listed on pages 55-56, except that science electives must be in accordance with the Department's requirements specified on page 111.

First Semester			Second Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 111 Calculus I	4	4	Mth 112 Calculus II	4	4
Eng 101 Composition I	3	3	Eng 102 Composition II	3	3
CS 123 FORTRAN Programming	3	3	CS 225 Advanced Programming-Pascal	4	4
Core Requirements	6	6	Core Requirements	6	6
PE 100 Activity	0	0	PE 100 Activity	0	0
	<u>16</u>	<u>16</u>		<u>17</u>	<u>17</u>

Third Semester			Fourth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 202 Set Theory and Logic	3	3	Mth 214 Linear Algebra	3	3
CS 227 Computer Data Structures	3	3	CS 230 Machine Language	3	3
CS 124 COBOL Programming	3	3	Science Elective ¹	3	3
Core Requirements	6	6	Core Requirements	6	6
PE 100 Activity	0	0	PE 100 Activity	0	0
	<u>15</u>	<u>15</u>		<u>15</u>	<u>15</u>

Fifth Semester			Sixth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth/CS Electives ²	3	6	Mth/CS Electives ²	3	3
Science Elective ¹	3	4	Science Elective ¹	3	4
Core Requirements	6	6	Core Requirements	3	3
Free Electives	3	—	Free Electives	6	6
	<u>15</u>	<u>16</u>		<u>15</u>	<u>16</u>

Seventh Semester			Eighth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth/CS Electives ²	3	3	Mth/CS Electives ²	3	3
Free Electives	12	12	Free Electives	12	12
	<u>15</u>	<u>15</u>		<u>15</u>	<u>15</u>

¹ See page 111 for the Department's requirements regarding science electives.
² See page 111 for the Department's requirements regarding Mth/CS electives.

Science Electives for Computer Science Majors:

B.A. candidates: Any three courses, including a two-semester sequence, in Biology, Chemistry, Earth and Environmental Sciences, or Physics.

B.S. candidates: Any two courses from one of these departments: Biology, Chemistry, Earth and Environmental Sciences, or Physics,

and

One additional course in Biology, Chemistry, Earth and Environmental Sciences, Physics, EE 342 or any Engineering course not cross-listed in Computer Science. (All three courses must be numbered above 200 except that Bio 121, 122, Chm 115, 116, or 118 are also acceptable in this requirement.)

Mathematics/Computer Science Electives for Computer Science Majors:

B.A. candidates: Two of the following courses: CS 262, 321, or 324; and Any two Mth or CS courses numbered above 200.

B.S. candidates: Two of the following courses: CS 320, 323, 326, 328, or 330; and

Any three Mth or CS courses numbered above 200.

Summary of Minimum Credit Distribution for Computer Science Majors:

	B.A.	B.S.
Mth 111, 112, 202, and 214	14	14
CS 123, 124, 225, 227, and 230	16	16
Mth/CS Electives	12	15
Science Electives	9	11
Eng 101-102	6	6
Core Requirements	33	33
Free Electives	33	30
Total	123	125

CS 115. SURVEY OF COMPUTERS AND DATA PROCESSING Three credits
 Introduction to computers, both large and small, but with emphasis on, and hands-on experience with, personal computers (Apple II, Macintosh, IBM-PC). Includes some BASIC programming and a survey of current commercial software (Multiplan, Minitab, word processing, etc.). Not open to students who have prior credit in any 200-level CS course. Computer science majors will not receive credit in their major for CS 115.

Offered every fall and spring.

- CS 123. FORTRAN PROGRAMMING** Three credits
Structured programming, algorithm design, and introduction to programming using FORTRAN 77. The computer is used to solve problems from a variety of fields. Fee: \$45. (same as Egr 244)
Prerequisite: Secondary mathematics including geometry and algebra II.
Offered every fall, spring, and summer.
- CS 124. COBOL PROGRAMMING** Three credits
Introduction to computer programming using the American National Standard Common Business Oriented Language. The computer is used to solve problems commonly found in a business environment. Fee: \$45.
Offered every fall, spring, and summer.
- CS 224. ADVANCED COBOL AND FILE MANAGEMENT** Three credits
A study of advanced programming techniques using ANS COBOL. Topics include efficiency techniques, modular programming, table searching, indexed, direct, and relative file techniques. Fee: \$45.
Prerequisite: CS 124.
Offered every spring and summer.
- CS 225. ADVANCED PROGRAMMING — PASCAL** Four credits
A study of advanced programming techniques and the Pascal programming language. Topics include basic and user-defined data types, their use and their machine implementation, structured programming, recursion, efficient data organization. Fee: \$45. (same as Egr 245)
Prerequisite: CS 123/Egr 244.
Offered every spring and fall.
- CS 227. COMPUTER DATA STRUCTURES** Three credits
A study of the use of a high-level language to implement complex data structures and their application to sorting and searching. These structures include lists, trees, graphs, networks and storage allocation. Fee: \$45. (same as EE 343)
Prerequisite: CS 225/Egr 245.
Offered every fall.
- CS 230. MACHINE LANGUAGE** Three credits
Basic principles of assembly language programming. Computer organization and representation of numbers, strings, arrays, list structures at the machine level. Examples utilize all levels of computer architecture. Fee: \$45. (same as Egr 342)
Prerequisite: CS 225/Egr 247.
Offered every spring.
- CS 260. 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. (same as Mth 260)
Prerequisite: Mth 106 and CS 123.
Offered in the fall semester of odd years.
- CS 262. 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. (same as Mth 262)
Prerequisite: CS 123; Mth 105-106 or Mth 111-112; and some elementary knowledge of matrices.
Offered every spring.

- CS 320. LOGIC AND SWITCHING CIRCUITS** Three credits
Application of Boolean algebra to the design of Number system logic networks, solid-state switching circuits and devices. Minimization techniques to the synthesis of combinatorial switching circuits including AND-OR and NAND-NOR logic. Analysis and synthesis of sequential switching circuits clocked and asynchronous operation. Effect of microelectronic technology on logic design optimization. Fault masking by redundancy techniques. (see EE 341)
Prerequisite: EE 211.
Offered every fall.
- 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, GPSS, GASP, SIMSCRIPT, and/or SLAM.
Prerequisite: CS 224 or CS 225/Egr 245 and one year of calculus.
Offered in the fall semester of even years.
- CS 323. FORMAL LANGUAGES & AUTOMATA THEORY** 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, turning machines and computability.
Prerequisite: Mth 202 and CS 225/Egr 245.
Offered in the fall semester of even years.
- 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.
Prerequisite: CS 224.
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 324.
Offered every spring.
- 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. (same as EE 344)
Prerequisite: CS 227/EE 343.
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 227/EE 343 and CS 323.
Offered in the spring semester of odd years.
- CS 328. ANALYSIS OF ALGORITHMS** Three credits
Theoretical analysis of various algorithms. Topics are chosen from sorting, searching, selection, matrix multiplication and multiplication of real numbers, and various combinatorial algorithms.
Prerequisite: CS 227/EE 343 and Mth 202.
Offered in the spring semester of even years.

CS 329. 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 hours lecture and one two-hour laboratory per week. Fee: \$45. (see EE 342)

Prerequisite: CS 320/EE 341.

Offered every spring.

CS 330. COMPUTER ARCHITECTURE Three credits
A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers." (same as EE 346)

Prerequisite: CS 230/Egr 342 or CS 329/EE 342.

Offered in the spring semester of odd years.

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 fall semester of even years.

CS 364. NUMERICAL ANALYSIS Three credits
Numerical methods of differentiation, integration, solution of equations and of differential equations with emphasis on problems that lend themselves to solution using computers. (same as Mth 364)

Prerequisite: CS 123/EE 244 and Mth 211 or permission of instructor.

Offered in the spring semester of odd years.

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 227/EE 343.

Offered in the fall semester of even years.

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 301-302-303-304 toward the graduation requirement in the computer science major.

Prerequisite: Senior standing and approval of the department.

CS 198/298/398/498. TOPICS IN COMPUTER SCIENCE Variable credit
Study of one or more special topics in computer science. May be repeated for credit.

Prerequisite: Varies with topics studied.

EDUCATION

Professor J. Bellucci, Chairman; Professors Emeriti Darte, Hammer; Professor Fahmy; Associate Professors Johnson, Placek; Assistant Professors Ginsburgh, G. Meyers, Polacheck.

The Education Department offers programs leading to teacher certification in art, biology, chemistry, communications, early childhood, earth and space science, elementary education, English, French, German, mathematics, music, physics, social studies, and Spanish. Copies of curricula for these programs are available in the appropriate department and in the Education Department office.

The teacher education program at Wilkes College requires students to major in a discipline other than education. Individuals who want teacher certification in elementary education must major in one of the following: Art, Biology, Chemistry, Computer Science, Earth and Environmental Science, Economics, English, Foreign Language, History, Interpersonal and Organizational Communication, Journalism, Mathematics, Philosophy, Physics, Political Science, Psychology, Theater Arts, Sociology, or Telecommunications.

Secondary school teaching certification candidates must major in one of the following: Art, Biology, Chemistry, Earth and Environmental Sciences, English, Foreign Language, Mathematics, Physics, Communication or Social Studies. They must also take Ed 101, 102, 201, 202, 203, 371, and 380.

Social studies certification candidates who major in history must take twelve credits beyond 101-102 in one of the social sciences (anthropology, economics, political science, psychology, or sociology). Those who do not major in history must take twelve credits in history beyond 101-102. All candidates must include the following courses in their program: Ant 101, Ec 101 and 227 or 228, Hst 207 and 208, PS 102, and Soc 101.

Elementary school teaching certification candidates must take the following courses, several of which may be incorporated in the core and major: Mth 103, 104, 232, 243; Psy 221; Bio 103; EES 130; and Ed 101, 102, 201, 202, 301, 302, 321, 322, 323, 324, 371, and 380.

Early childhood teaching candidates complete the elementary school teaching program described above and take Ed 361 and 362.

Teaching candidates in art or music will find their programs described on page 77 (art) or page 156 (music).

Students interested in preparing for teacher certification must have a cumulative G.P.A. of 2.3, recommendation by the major department, recommendation of the Dean of Student Affairs, and recommendation by the Teacher Education Committee. Criteria for admission to student teaching are established by the Teacher Education Committee; and applications are submitted to the Committee for approval.

Interested students are encouraged to seek counseling in the Education Department early in their first semester at the College.

Recommended Course Sequence for Elementary Education

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Psy 101 General Psychology	3	Psy 221 Developmental Psychology	3
Core Requirements	6-8	Core Requirements	6-8
Major Electives	3-4	Major Electives	3-4
PE 100 Activity	0	PE 100 Activity	0
	<u>15-18</u>		<u>15-18</u>

Third Semester		Fourth Semester	
Ed 101 Practicum	1	Ed 102 Practicum	1
Ed 201 Intro. to Education	3	Ed 202 Educational Psychology	3
Ed 301 Health, PE & Safety	2	Ed 302 Children's Literature	2
Mth 103 Math for Elementary School Teachers	3	Mth 104 Math for Elementary Education Teachers	3
Core Requirements	6	Core Requirements	6
Major Electives	3	Major Electives	3
PE 100 Activity	0	PE 100 Activity	0
	<u>18</u>		<u>18</u>

Fifth Semester		Sixth Semester	
Ed 321 Teaching of Reading	3	Ed 322 Teaching of Language Arts and Social Studies	3
Ed 323 Teaching of Math and Science	3	Ed 324 The Arts in Elementary Education	2
Mth 232 Abstract Algebra for Elementary School Teachers	3	Mth 243 Geometry for Elementary School Teachers	3
Core Requirements	3	EES 130 Environmental Awareness	3
Bio 103 Biological Science I	3	Core Requirements	3
Major Electives	3	Major Electives	3
	<u>18</u>		<u>17</u>

Seventh Semester		Eighth Semester	
Core Requirements	3	Ed 371 Individual in the Classroom	3
Major Electives	12	Ed 380 Professional Semester	15
Free Electives	3		
	<u>18</u>		<u>18</u>

Note that students seeking certification in this program must complete an additional six credits in the sciences, over and above their Core Requirements.

Recommended Course Sequence for Secondary Education

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Psy 101 General Psychology	3	Psy 221 Developmental Psychology	3
Core Requirements	6-8	Core Requirements	6-8
Major Electives	3-4	Major Electives	3-4
PE 100 Activity	0	PE 100 Activity	0
	<u>15-18</u>		<u>15-18</u>

Third Semester		Fourth Semester	
Ed 101 Practicum	1	Ed 102 Practicum	1
Ed 201 Intro. to Education	3	Ed 202 Educational Psychology	3
Core Requirements	9-10	Core Requirements	9-10
Major Electives	3	Major Electives	3
PE 100 Activity	0	PE 100 Activity	0
	<u>16-17</u>		<u>16-17</u>

Fifth Semester		Sixth Semester	
Core Requirements	3	Core Requirements	3
Major Electives	6-9	Major Electives	6-9
Free Electives	6	Free Electives	6
	<u>15-18</u>		<u>15-18</u>

Seventh Semester		Eighth Semester	
Core Requirements	3	Ed 371 The Individual in the Classroom	3
Major Electives	6-9	Ed 380 Professional Semester	15
Free Electives	6		
	<u>15-18</u>		<u>18</u>

ED 101-102-103. PRACTICUM IN EDUCATION **One credit each**
 Provides an opportunity for students to gain experience as teachers' aides in school classrooms under supervision. Seminars on campus will provide opportunity to discuss and evaluate practicum experiences. Ed 101 must be taken in conjunction with Ed 201. Ed 102 must be taken in conjunction with Ed 203 or Ed 322.

ED 150. LIFE CAREER PLANNING **Three credits**
 An exploration of the effect of societal norms, historical forces, economic conditions, and psychological factors upon individual career choices.

ED 201. INTRODUCTION TO EDUCATION **Three credits**
 A study of the historical development of American education, the role of the school in American life, educational philosophies, educational organization and administration, school finance, school curricula, school personnel, and current issues in education.
 Prerequisite: Sophomore standing.

ED 202. EDUCATIONAL PSYCHOLOGY Three credits
A study of the principles of learning and the application of psychological principles in the practice of education.
Prerequisite: Psy 101.

ED 203. SPECIAL METHODS OF TEACHING Three credits
A study of instructional methodology in the various disciplines. Attention is given to characteristic problems faced by teachers in these several fields. Reading and other specialized techniques are examined.

- Section A — Art (Grades K-12)
- Section C — Communication/English (Grades 7-12)
- Section F — Foreign Languages (Grades K-12)
- Section G — Mathematics (Grades 7-12)
- Section H — Music (Grades K-12)
- Section I — Sciences (Grades 7-12)
- Section J — Social Studies (Grades 7-12)

ED 204. BASIC EDUCATION CURRICULA Three credits
An examination of curricula in the various disciplines. Programs of study developed by various organizations are examined.

- Section A — Art (Grades K-12)
- Section C — Communication/English (Grades 7-12)
- Section F — Foreign Languages (Grades K-12)
- Section G — Mathematics (Grades 7-12)
- Section H — Music (Grades K-12)
- Section I — Sciences (Grades 7-12)
- Section J — Social Studies (Grades 7-12)

ED 290. ANALYSIS OF RESEARCH Three credits
This course provides instruction designed to help students learn how to locate and evaluate factual information; research procedures are examined; research reports are analyzed; students identify and criticize reports in their field of study.

ED 301. HEALTH, PHYSICAL EDUCATION AND SAFETY IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION Two credits

ED 302. CHILDREN'S LITERATURE Two credits

ED 321. THE TEACHING OF READING Three credits

ED 322. LANGUAGE ARTS AND SOCIAL STUDIES IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION Three credits

ED 323. MATHEMATICS AND SCIENCE IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION Three credits

ED 324. THE ARTS IN EARLY CHILDHOOD AND ELEMENTARY EDUCATION Two credits

ED 351. EDUCATIONAL MEASUREMENTS Three credits
A study of the characteristics, construction, and use of various educational measuring instruments commonly available in schools.
Prerequisite: Ed 202.

ED 352. GUIDANCE Three credits
An introduction to general principles and the techniques employed in guidance programs in public schools.
Prerequisite: Ed 202.

ED 361. EARLY CHILDHOOD EDUCATION Three credits
This course enables the student to understand the purpose for and operation of nursery schools, child care centers, and other pre-school institutions.

ED 362. INSTRUCTION IN EARLY CHILDHOOD EDUCATION Three credits
This course prepares the student to work in a nursery school, child care center, or other pre-school institution.

ED 370. SPECIAL PROJECTS Three credits

ED 371. THE INDIVIDUAL IN THE CLASSROOM Three credits
This course examines instructional strategies that recognize individual differences, including physical and other handicaps, multi-ethnicity, legal obligations and other classroom responsibilities.
Prerequisite: Enrollment in Ed 380.

ED 380. PROFESSIONAL SEMESTER IN EDUCATION Fifteen credits
This course examines professional problems common to all teachers and provides practical experience in classroom teaching. Fee: \$50.
Prerequisite: Approval by the Teacher Education Committee.

Credit will be transcribed as follows:

ED 381. PROFESSIONAL PRACTICUM Four credits
ED 382. INTERN TEACHING Eleven credits

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 chairman is required.

ED 397. SEMINAR (Maximum of three credits per student) One to three credits
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman 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.

ENGLISH

Professor Karpinich, Chairman; Professors Emeriti Lord, Marban, Rizzo; Professors Fiester, Gutin, Kaska, Terry; Associate Professors P. Heaman, R. Heaman; Assistant Professors Bloom, Guggenheim, Jordan; Instructor Hall.

Total minimum number of credits required for a B.A. degree — 120.

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

The Department of Language and Literature offers a variety of programs for students interested in language and the arts: they may major in English, in French, in German, or in Spanish. These programs are broadly based in the values traditionally associated with humane learning, and prepare students for such diverse careers as teaching, law, government service, theater, communications, and business.

Students who major in English are required to take Eng 101 and 102 in their freshman year; and Eng 151, 253, and 254 in their sophomore year. They may choose concentrations as follows:

Literature. The concentration in literature requires 24 credit hours in advanced (above 200-level) literature courses. These must include one course in a major writer, one course in either the novel or drama, one course in American literature, two period courses in English literature before 1900, and one seminar.

Qualified students who concentrate in literature may be invited to participate in an honors program, which may lead to graduation with distinction in English. The program consists of a planned series of seminars and independent research in the junior and senior years, culminating in a thesis and a comprehensive examination.

Writing. The concentration in writing requires 12 credit hours in advanced literature courses; Eng 201 and nine additional credit hours in advanced writing courses; and the submission of a portfolio of the student's work.

Linguistics. The concentration in linguistics requires 12 credit hours in advanced literature and writing courses, and Eng 220, 222, 225, and 226.

Students who choose a minor in English are required to take English 151 and 152 and an additional twelve credits in courses beyond the 100 level.

Students may be certified as public school teachers in English with concentrations in literature or writing. Students who seek certification must be especially careful in selecting courses to meet their professional needs. They are expected to arrange their programs in close consultation with their advisors.

Recommended Course Sequence for a Degree in English

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Core Requirements	12	Core Requirements	12
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15

Third Semester		Fourth Semester	
Eng 151 Western World Literature	3	Eng 254 Survey of English Literature	3
Eng 253 Survey of English Literature	3	Eng 201 Advanced Composition	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15

Fifth Semester		Sixth Semester	
Major Electives*	9	Major Electives*	9
Free Electives	6	Free Electives	6
	<hr/> 15		<hr/> 15

Seventh Semester		Eighth Semester	
Major Electives*	3	Eng 397	3
Free Electives	12	Free Electives	12
	<hr/> 15		<hr/> 15

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

ENG 99. ENGLISH AS A SECOND LANGUAGE **Three credits**
An introduction to English for non-native speakers.

ENG 100. WRITING WORKSHOP **Three credits**
A developmental course concentrating on the fundamentals of writing. Combines extensive practice in the writing of expository prose with systematic study of grammar and rhetoric.

ENG 101. COMPOSITION **Three credits**
Principles of exposition; collateral reading; writing of themes.

ENG 102. COMPOSITION **Three credits**
Principles of exposition continued; introduction to literature; writing of themes; research paper.
Prerequisite: Eng 101 or Eng 100.

- ENG 151. WESTERN WORLD LITERATURE** Three credits
Study of western world literature to the beginning of the eighteenth century; lectures, quizzes, conferences.
Prerequisite: Eng 102, or equivalent in composition.
- ENG 152. WESTERN WORLD LITERATURE** Three credits
Survey of western world literature from the eighteenth century to the present.
Prerequisite: Eng 151.
- ENG 201. ADVANCED COMPOSITION** Three credits
A study of rhetorical types and strategies. Reading and intensive practice.
Prerequisite: Eng 102.
- ENG 202. TECHNICAL WRITING** Three credits
A study of the types and strategies of technical writing. Reading and intensive practice.
Prerequisite: Eng 102.
- ENG 203. CREATIVE WRITING** Three credits
Training in the selection and use of materials for writing the short story; attention is also given to some poetic forms and to the writing of short plays.
Prerequisite: Eng 102.
- ENG 220. HISTORY OF THE ENGLISH LANGUAGE** Three credits
Study of the origins of the English language and of the principal phenomena of later development.
Prerequisite: Eng 152 or 254.
- ENG 222. INTRODUCTION TO LINGUISTICS** Three credits
An introduction to the methods and materials of linguistic analysis.
Prerequisite: Eng 152 or 254 and 220 or consent of instructor.
- ENG 225. COMPARATIVE GRAMMAR** Three credits
A comparative and critical study of traditional and structural English grammar.
Prerequisite: Eng 152 or 254 and 220 or consent of instructor.
- ENG 226. TRANSFORMATIONAL GRAMMAR** Three credits
Intensive study of the principles of generative-transformational grammar and their applications in the analysis of English.
Prerequisite: Eng 152 or 254 and 220 or consent of instructor.
- ENG 253. SURVEY OF ENGLISH LITERATURE** Three credits
A study of the works and movements in English literature from Anglo-Saxon period through the eighteenth century.
Prerequisite: Eng 102.
- ENG 254. SURVEY OF ENGLISH LITERATURE** Three credits
A study of the works and movements in English literature from the Romantic movement to the present.
Prerequisite: Eng 253.
- ENG 301. LITERARY CRITICISM** Three credits
A study of literary theory and the techniques of analysis.
Prerequisite: Eng 152 or 254.

- ENG 305-306. THE TEACHING OF ENGLISH** Six credits
A study of the problems of teaching the language arts in the secondary schools.
Prerequisite: Eng 152 or 254 and permission of department chairperson.
- ENG 310. MEDIEVAL ENGLISH LITERATURE** Three credits
A study of English literature to 1500, exclusive of Chaucer and the drama.
Prerequisite: Eng 152 or 254.
- ENG 312. CHAUCER** Three credits
Study of Chaucer's life and major works, including "The Canterbury Tales" and "Troilus and Criseyde."
Prerequisite: Eng 152 or 254.
- ENG 320. TUDOR PROSE AND POETRY** Three credits
Study of English non-dramatic literature from 1485 to 1603.
Prerequisite: Eng 152 or 254.
- ENG 321. EARLY ENGLISH DRAMA** Three credits
Study of the drama from the tenth century to 1642; reading of plays by pre-Elizabethan and Elizabethan dramatists exclusive of Shakespeare.
Prerequisite: Eng 152 or 254.
- ENG 325. SHAKESPEARE** Three credits
A study of selected plays; written reports on others not studied in class.
Prerequisite: Eng 152 or 254.
- ENG 330. SEVENTEENTH CENTURY PROSE AND POETRY** Three credits
A study of the non-dramatic literature of the period.
Prerequisite: Eng 152 or 254.
- ENG 335. MILTON** Three credits
A study of Milton's poetry and major prose.
Prerequisite: Eng 152 or 254.
- ENG 341. RESTORATION & EIGHTEENTH CENTURY DRAMA** Three credits
Study of the drama from 1600 to 1780.
Prerequisite: Eng 152 or 254.
- ENG 343. THE EIGHTEENTH CENTURY** Three credits
Study of the chief poets and essayists of the eighteenth century.
Prerequisite: Eng 152 or 254.
- ENG 345. EARLY ENGLISH NOVEL** Three credits
Study of English prose fiction of the sixteenth and seventeenth centuries; rise of the novel to the close of the eighteenth century.
Prerequisite: Eng 152 or 254.
- ENG 354. ROMANTIC PROSE AND POETRY** Three credits
Study of Blake, Wordsworth, Coleridge, Shelley, Keats, and Byron, with related prose writers of the Romantic Period.
Prerequisite: Eng 152 or 254.
- ENG 360. VICTORIAN PROSE AND POETRY** Three credits
Readings in Tennyson, Browning, Arnold, and other significant writers of the Victorian Age.
Prerequisite: Eng 152 or 254.

- ENG 366. LATER ENGLISH NOVEL** Three credits
Study of the major novelists of the nineteenth and early twentieth centuries.
Prerequisite: Eng 152 or 254.
- ENG 370. MODERN BRITISH POETRY** Three credits
Study of major British poetry of the twentieth century.
Prerequisite: Eng 152 or 254.
- ENG 372. MODERN NOVEL** Three credits
Study of the major novels of the twentieth century.
Prerequisite: Eng 152 or 254.
- ENG 374. MODERN DRAMA** Three credits
Study of important dramatists, European and American, from the time of Ibsen.
Prerequisite: Eng 152 or 254.
- ENG 381. AMERICAN LITERATURE I** Three credits
A study of American literature to the Civil War.
Prerequisite: Eng 152 or 254.
- ENG 382. AMERICAN LITERATURE II** Three credits
A study of American literature from the Civil War to the present time.
Prerequisite: Eng 152 or 254.
- ENG 383. AMERICAN NOVEL** Three credits
A study of the American novel from its beginning to the present.
Prerequisite: Eng 152 or 254.
- ENG 384. AMERICAN DRAMA** Three credits
A study of the American drama from the colonial period to the present.
Prerequisite: Eng 152 or 254.
- ENG 386. MODERN AMERICAN POETRY** Three credits
Study of major movements and representative figures in modern American poetry.
Prerequisite: Eng 152 or 254.
- ENG 391-392. PROJECTS IN WRITING** One to three credits
Independent projects in writing for advanced students.
Prerequisite: Six credits in advanced writing, and permission of department.
- 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 chairman is required.
- ENG 397. SEMINAR (Maximum of three credits per student)** One to three credits
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman is required.
- ENG 198/298/398. TOPICS** Variable credit
The study of a special topic in language, literature, or criticism. Possible topics include literature and science, Black literature, semiotics, children's literature, literature and film, literature and religion, etc.
Prerequisite: Eng 152 or 254.

FRENCH

Associate Professor Karpnich.

Total minimum number of credits required for a B.A. degree — 120.

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

A major in French consists of twenty-four credit hours in advanced language courses beyond the 204 course. These twenty-four credits must normally include 301-302. Students seeking public school certification must also take 205, 206, 207, 208 and 350; and in addition to the required twenty-four credit hours, 390 and English 222. In order to enhance their command of language and their understanding of culture, majors are urged to spend a summer or semester abroad.

Students majoring in French may elect a five-year program of study leading to a Master of Business Administration Degree. Information about this program and about career possibilities may be obtained in the office of the Department of Language and Literature, Room 201, Kirby Hall.

A minor in French shall consist of eighteen credit hours beyond 102.

Recommended Course Sequence for a Degree in French

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Fr 101 Elementary I	3	Fr 102 Elementary II	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
Fr 203 Intermediate I	3	Fr 204 Intermediate II	3
Core Requirements	12	Core Requirements	12
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Fifth Semester		Sixth Semester	
Fr 205 Conversation	3	Fr 206 Advanced Conversation	3
Major Electives	3	Major Electives	3
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15
Seventh Semester		Eighth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15

FR 101-102. ELEMENTARY FRENCH Three credits each
Fundamentals of spoken and written French, and introduction to French culture. Includes systematic coverage of basic French grammar. Work in language laboratory required. Not recommended for students having completed two or more years of high school French.

FR 203-204. INTERMEDIATE FRENCH Three credits each
Emphasis on development of proficiency in spoken and written French. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Work in language laboratory required.
Prerequisite: Fr 102 or two years of high school French or permission of instructor.

FR 205. CONVERSATION Three credits
Practice in spoken French with emphasis on mastery of idiomatic expression. Informal discussions, reports, debates, and written compositions. Work in language laboratory.
Prerequisite: Fr 204 or permission of instructor.

FR 206. ADVANCED CONVERSATION Three credits
Advanced practice in spoken French with emphasis on special problems of idiomatic expression. Discussions, reports, debates, and written compositions on topics of current interest in the French-speaking world.
Prerequisite: Fr 205 or permission of instructor.

FR 207. PHONETICS Three credits
A contrastive study of the sound systems of modern French and modern English. Intensive oral and aural practice including work in the language laboratory.
Prerequisite: Fr 204 or permission of instructor.

FR 208. CULTURE AND CIVILIZATION Three credits
Systematic introduction to the political, social, economic, and cultural characteristics of France and the French-speaking world. Readings from a variety of sources including the French press.
Prerequisite: Fr 204 or permission of instructor.

FR 298. STUDIES IN LANGUAGE AND CULTURE Three credits
Development of a particular language skill or investigation of an aspect of French culture. Possible topics include translation, commercial French, French in North America or Africa, the French press, and the Fifth Republic. May be repeated for credit.
Prerequisite: Fr 204 or permission of instructor.

FR 301-302. SURVEY OF FRENCH LITERATURE Three credits each
Survey of representative works from the middle ages to the present. Introduction to major movements, literary traditions, genres, and writers.
Prerequisite: Fr 204 or permission of instructor.

FR 350. ADVANCED GRAMMAR AND COMPOSITION Three credits
Analysis of a variety of French texts and extensive writing practice. Work on special problems of grammar and idiomatic expression.
Prerequisite: Fr 204 or permission of instructor.

FR 390. THE TEACHING OF FRENCH Three credits
Examination of methods and techniques of foreign-language teaching. Practical exercises in preparation and presentation of instructional materials.
Prerequisite: Senior standing and permission of department chairman.

FR 395-396. INDEPENDENT RESEARCH One to three credits each
Independent study and research in the field of the major under the direction of a staff member.
Prerequisite: Approval of department chairman.

FR 397. SEMINAR (Maximum of three credits per student) One to three credits
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman.

FR 198/298/398. TOPICS Variable credit
Examination of special topics in French literature. Possible topics include existentialism, surrealism, symbolism, realism and naturalism, the enlightenment, classical drama, the 19th century novel, the *nouveau roman*, Proust, Baudelaire, and Molière. May be repeated for credit.
Prerequisite: Fr 301-302 or permission of instructor.

GERMAN

Associate Professor Karpinich.

Total minimum number of credits required for a B.A. degree — 120.

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

A major in German consists of twenty-four credit hours in advanced language courses beyond the 204 course. These twenty-four credits must normally include 301-302. Students seeking public school certification must also take 205, 206, 207, 208 and 350; and in addition to the required twenty-four credit hours, 390 and English 222. In order to enhance their command of language and their understanding of culture, majors are urged to spend a summer or semester abroad.

Students majoring in German may elect a five-year program of study leading to a Master of Business Administration Degree. Information about this program and about career possibilities may be obtained in the office of the Department of Language and Literature, Room 201, Kirby Hall.

A minor in German shall consist of eighteen credit hours beyond 102.

Recommended Course Sequence for a Degree in German

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Gr 101 Elementary I	3	Gr 102 Elementary II	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	15		15
Third Semester		Fourth Semester	
Gr 203 Intermediate I	3	Gr 204 Intermediate II	3
Core Requirements	12	Core Requirements	12
PE 100 Activity	0	PE 100 Activity	0
	15		15

Fifth Semester		Sixth Semester	
Gr 205 Conversation	3	Gr 206 Advanced Conversation	3
Major Electives	3	Major Electives	3
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15

Seventh Semester		Eighth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15

GR 101-102. ELEMENTARY GERMAN **Three credits each**
Fundamentals of spoken and written German, and introduction to German culture. Includes systematic coverage of basic German grammar. Work in language laboratory required. Not recommended for students having completed two or more years of high school German.

GR 203-204. INTERMEDIATE GERMAN **Three credits each**
Emphasis on development of proficiency in spoken and written German. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Works in language laboratory required.
Prerequisite: Gr 102 or two years of high school German or permission of instructor.

GR 205. CONVERSATION **Three credits**
Practice in spoken German with emphasis on mastery of idiomatic expression. Informal discussions, reports, debates, and written compositions. Work in language laboratory.
Prerequisite: Gr 204 or permission of instructor.

GR 206. ADVANCED CONVERSATION **Three credits**
Advanced practice in spoken German with emphasis on special problems of idiomatic expression. Discussions, reports, debates, and written compositions on topics of current interest in the German-speaking world.
Prerequisite: Gr 205 or permission of instructor.

GR 207. PHONETICS **Three credits**
A contrastive study of the sound systems of modern German and modern English. Intensive oral and aural practice including work in the language laboratory.
Prerequisite: Gr 204 or permission of instructor.

GR 208. CULTURE AND CIVILIZATION **Three credits**
Systematic introduction to the political, social, economic, and cultural characteristics of the Federal Republic of Germany. Readings from a variety of sources including the German press.
Prerequisite: Gr 204 or permission of instructor.

GR 298. STUDIES IN LANGUAGE AND CULTURE **Three credits**
Development of a particular language skill or investigation of an aspect of German culture. Possible topics include translation, commercial German, the German press BRD and the DDR, and the Third Reich. May be repeated for credit.
Prerequisite: Gr 204 or permission of instructor.

GR 301-302. SURVEY OF GERMAN LITERATURE **Three credits each**
Survey of representative works from the middle ages to the present. Introduction to major movements, literary traditions, genres, and writers.
Prerequisite: Gr 204 or permission of instructor.

GR 350. ADVANCED GRAMMAR AND COMPOSITION **Three credits**
Analysis of a variety of German texts and extensive writing practice. Work on special problems of grammar and idiomatic expression.
Prerequisite: Gr 204 or permission of instructor.

GR 390. THE TEACHING OF GERMAN **Three credits**
Examination of methods and techniques of foreign-language teaching. Practical exercises in preparation and presentation of instructional materials.
Prerequisite: Senior standing and permission of department chairman.

GR 395-396. INDEPENDENT RESEARCH **One to three credits each**
Independent study and research in the field of the major under the direction of a staff member.
Prerequisite: Approval of department chairman.

GR 397. SEMINAR **(Maximum of three credits per student) One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman.

GR 198/298/398. TOPICS **Variable credit**
Examination of special topics in German literature. Possible topics include expressionism, naturalism, romanticism, storm and stress, the *Roman*, the *Novelle*, Goethe, Hauptmann, Rilke, and Kafka. May be repeated for credit.
Prerequisite: Gr 301-302 or permission of instructor.

HEALTH RECORDS ADMINISTRATION

See Health Sciences Programs below.

HEALTH SCIENCES PROGRAMS

Dr. Ralph B. Rozelle, Dean of Health Sciences.

Temple University College of Allied Health Professions and Wilkes College have established affiliated programs to meet the need for increasing numbers of educated, highly skilled health care professionals. The programs are designed to prepare men and women in their respective fields to participate in comprehensive health care, and develop necessary attitudes to become competent professionals.

Affiliated programs are offered in the following five areas:

Physical Therapy (*see pg. 181*)
Occupational Therapy
Health Records Administration
Medical Technology
Nursing

Successful completion of the selected programs, except physical therapy, at the College of Allied Health Professions will lead to the Bachelor of Science degree from Temple University.

The Allied Health Programs, except physical therapy, require four years of study. The first two years of study or the equivalent are done at Wilkes College and the final two years at Temple University College of Allied Health Professions. Academic preparation at Wilkes College as well as admission requirements at Temple will differ somewhat for each program.

The prerequisite courses which are required for admission to Temple in each program are listed below.

Course Requirements for All Students

Temple University Programs	Credits	Wilkes College Equivalents ¹
Humanities	6-8	Eng 101-102 English Composition
Social Science	3-4	Soc 101 Sociology
Psychology	3-4	Psy 232 Human Behavior

Additional Departmental Requirements

Medical Technology

Science	8-9	Bio 121-122 General Biology
	8-9	Chm 115-116 General Chemistry
	8-9	Chm 231-232 Organic Chemistry
	6-8	Mth 101-102 Fundamentals of Mathematics OR
	3-4	Mth 105 Analytical Geometry & Calculus

Health Records Administration

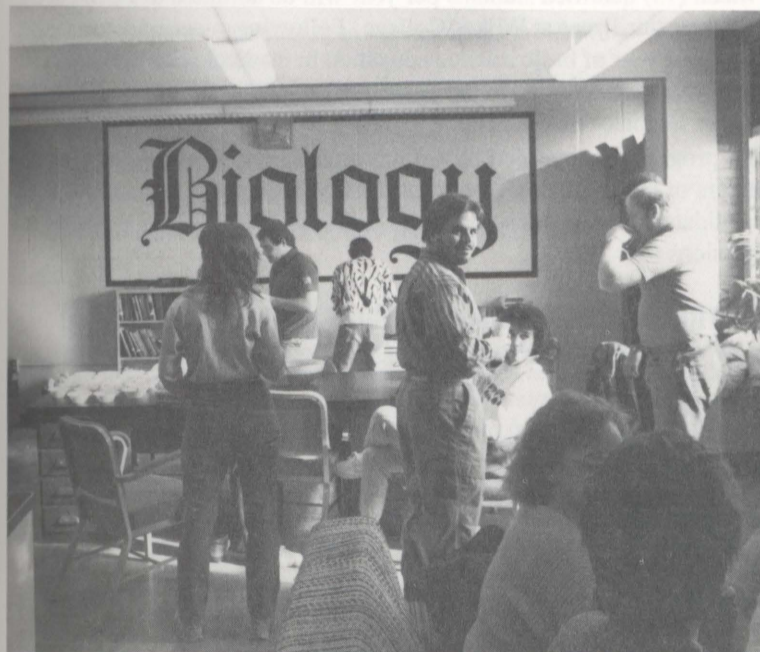
Social Science	3-4	Psy 221 Developmental Psychology
Science	8-9	Bio 121-122 General Biology
	6-8	Bio 115-116 Anatomy & Physiology (with lab)
	3-4	OR Bio 115 Comparative Anatomy & Physiology (with lab)
	3-4	AND Natural Science Elective (Chm, Physics, Adv. Biology)
Math	6-8	Mth 101-102 Fundamentals of Mathematics OR
	3-4	Mth 105 Analytical Geometry & Calculus
Humanities	6-8	Humanities Electives

¹See various departmental sections of the Bulletin for course descriptions.

Temple University Programs	Credits	Wilkes College Equivalents ¹
Occupational Therapy		
Science	8-9	Bio 121-122 General Biology
	3-4	Bio 115 Anatomy & Physiology
	4	Chm 115 Chemistry
Social Sciences	3-4	Psy 221 Developmental Psychology
	3-4	Psy 232 Human Behavior
Nursing		
Science	4	Bio 121 General Biology
	4	Bio 113 Microbiology
	3-4	Mth 150 Statistics
	6-8	Chm 115-116 Chemistry
	6-8	Bio 115-116 Anatomy & Physiology
Social Science	3-4	Psy 221 Developmental Psychology
Humanities	3-4	Language, Philosophy, Literature, History, Religion, or Music/Art Appreciation

¹See various departmental sections of the Bulletin for course descriptions.

STUDENTS ARE STRONGLY URGED TO CONSULT THEIR ACADEMIC ADVISOR TO INSURE THAT THEY ENROLL IN THE APPROPRIATE COURSES.



Special Pre-Professional Degree Program

Four years of undergraduate study ordinarily are required to qualify for the Bachelor's degree. Wilkes College makes an exception in special circumstances to this requirement for doctoral students in medicine, dentistry, podiatric medicine and optometry.

These students may, with the approval of the Academic Standards Committee, satisfy the requirements for the Bachelor's degree by completing three years of successful progress in 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.

Such students must 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 degree rests with the Academic Standards Committee of Wilkes College.**

Seven-Year Medical Program

Wilkes College and the Philadelphia College of Osteopathic Medicine (PCOM) have instituted a Seven-Year Doctoral Program in Medicine.

The overall academic program requires students to complete three years in basic sciences and arts education at Wilkes College and four years of medical education at Philadelphia College of Osteopathic Medicine.

Fifteen (15) qualified students per year will be admitted to PCOM at the end of their third year at Wilkes College. Following successful completion of their first year of basic science education in medical school, Wilkes will transfer thirty-six credits in the basic sciences and confer upon each the degree — Bachelor of Science.

The program is governed by a Joint Admissions Committee of faculty members of both Wilkes College and PCOM who make recommendations of candidates for admission to medical school to the PCOM Committee on Admissions.

Wilkes College/Philadelphia College of Osteopathic Medicine Undergraduate/Medical School Program

First Semester		Second Semester	
Bio 121 Principles of Modern Biology	4	Bio 122 Principles of Modern Biology II	4
Chm 115 Elements of Compounds	4	Chm 116 The Chemical Reaction	4
Mth 105 Calculus for Life, Managerial, and Social Sciences I or		Mth 106 Calculus for Life, Managerial, and Social Sciences II or	
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Eng 101 Composition I	3	Eng 102 Composition II	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15

Third Semester		Fourth Semester	
Chm 231 Organic Chemistry I	4	Chm 232 Organic Chemistry II	4
Free Electives*	9-10	Free Electives*	9-10
Psy 101 General Psychology	3	Psy Elective	3
	<hr/> 16-17		<hr/> 16-17

Fifth Semester		Sixth Semester	
Phy 105 Introductory Physics or		Phy 106 Introductory Physics or	
Phy 201 General Physics I	4	Phy 202 General Physics II	4
Free Electives*	12-13	Free Electives*	12-13
	<hr/> 16-17		<hr/> 16-17

Transfer Credits from Philadelphia College of Osteopathic Medicine

Anatomy	14
Biochemistry	7
Microbiology	6
Physiology	9
	<hr/> 36
Total Credits	132-134
Degree	Bachelor of Science

*Electives include courses to satisfy the broad educational requirements of the Wilkes College Core Curriculum as follows:

A. 18 more credits in humanities to be selected from the following:

1. Two courses in literature (6 credits)
2. Two courses in foreign language (6 credits)
3. Two courses in history (6 credits)
4. Two courses in philosophy (6 credits)
(May include Medical Ethics)

B. Arts

1. Any three credits in Art, Theater Arts, or Music

C. Social Sciences

1. Any two courses in Economics, Political Science, Sociology and Anthropology in addition to the 6 credits in Psychology listed above.

Additional elective credits will be selected from the sciences to extend depth education in disciplines such as Biology and Chemistry. **Chemistry 361, Biochemistry**, is strongly recommended by the Joint Wilkes - PCOM Admissions Committee as an elective.

HISTORY

Professor Berlatsky, Chairman; Professors Emeriti Driscoll, Kaslas, Leach; Professors Cot. Hartdagen, Rodechko, Shao; Assistant Professors Auerbach, Berg, Henehan, Meyers, Tuhy; Adjunct Faculty Thomas.

Total minimum number of credits required for a B.A. degree — 121.
Total minimum number of credits required for a minor — 18.

Wilkes College requires 121 credit hours for the B.A. degree in history. These include 45-65 credit hours in core courses and 30 credit hours in history. History 101-102, History 207-208, and 18 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.

A variety of career options are open to history majors. Since 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 also has a 5-year program leading to a B.A. in History and a Masters in Business Administration.

Normally, History 101-102 will fulfill the core requirement in history. However, students may substitute advanced courses with the written approval of the instructors of the advanced courses or the department chairman.

A minor in history shall consist of 18 credit hours in courses offered by the department. These should include the 101-102 sequence.

Recommended Course Sequence for a Degree in History

First Semester		Second Semester	
Hst 101 World Civilization I	3	Hst 102 World Civilization II	3
Eng 101 Composition I	3	Eng 102 Composition II	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
Hst 207 American History I	3	Hst 208 American History II	3
Core Requirements	12	Core Requirements	9
PE 100 Activity	0	Free Electives	3
	<hr/> 15	PE 100 Activity	0
			<hr/> 15

Fifth Semester		Sixth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15
Seventh Semester		Eighth Semester	
Major Electives	3	Major Electives	3
Free Electives	12	Free Electives	13
	<hr/> 15		<hr/> 16

HST 101-102. WORLD CIVILIZATION **Three credits each**
 This course is designed as a survey of all the basic cultures of the world. The major portion of the course will be devoted to the development of western civilization. Attention will also be given to the part played by America in world history, especially during the expansion of Europe and in the twentieth century.
 Offered every semester.

HST 207-208. AMERICAN HISTORY **Three credits each**
 A general survey of American history from colonial times to the present.
 Offered every year.

HST 315. READINGS IN ANCIENT HISTORY: THE NEAR EAST **Three credits**
 Selected readings on the history of the Ancient Near East, with emphasis on primary sources. Conferences with instructor and paper.
 Offered in alternate years.

HST 316. READINGS IN ANCIENT HISTORY: THE CLASSICAL WORLD **Three credits**
 Selected readings on the history of Greece and Rome, with emphasis on primary sources. Conferences with instructor and paper.
 Offered in alternate years.

HST 321. AMERICAN SOCIAL HISTORY **Three credits**
 This course entails a consideration of the development of American society from the colonial period until present time. Attention will especially focus on the rise of industrialism and its impact on society in the late nineteenth and twentieth centuries.
 Offered every third year.

HST 322. AMERICAN INTELLECTUAL HISTORY **Three credits**
 This course is a survey of the formative ideas which seem most to have influenced American perceptions of the individual, society, and the drift of human affairs. The focus is upon the late nineteenth and early twentieth centuries because this period is the time when seminal ideas were articulated in America.
 Offered every fourth year.

HST 324. AMERICAN ECONOMIC HISTORY **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.
 Offered every third year.

HST 325. AMERICAN ETHNIC HISTORY **Three credits**
A study of the institutions and problems that have characterized various immigrant, black, and Indian communities from colonial times to the present.
Offered every fourth year.

HST 328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES **Three credits**
A selective treatment of major themes in American foreign policy from the founding of the Republic to the present.
Offered in alternate years.

HST 331. COLONIAL AMERICA **Three credits**
Discovery, exploration, and settlement; development of social, political, religious, and intellectual institutions; independence and political reorganization.
Offered in alternate years.

HST 332. THE NATIONAL PERIOD **Three credits**
A study of the political and economic history of the United States from 1783 to 1865. Special attention will be given to the evolution of sectional differences and the culmination of these differences in intersectional warfare.
Offered in alternate years.

HST 333. THE AGE OF BIG BUSINESS, 1865-1914 **Three credits**
A study of the political and economic history of the United States from 1865 to 1914. Special attention will be paid to the period of congressional dominance and the restoration of presidential power at the turn of the century; the economic, social, and political consequences of the industrial revolution; and the rise of urban America.
Offered in alternate years.

HST 334. THE UNITED STATES, 1900-1945 **Three credits**
The emergence of the United States as a world power and the corresponding development of its political, economic, social, and religious institutions.
Offered in alternate years.

HST 335. THE UNITED STATES SINCE 1945 **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.
Offered in alternate years.

HST 341-342. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH **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.
Offered every third year.

HST 348. HISTORY OF RUSSIA **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.
Offered in alternate years.

HST 351. READINGS IN MEDIEVAL EUROPE **Three credits**
Selected readings on the history of Medieval Europe, with emphasis on primary sources. Conferences with instructor and paper.
Offered in alternate years.

HST 352. THE RENAISSANCE AND REFORMATION **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.
Offered every third year.

HST 353. AGE OF ABSOLUTISM **Three credits**
The political, social, economic, intellectual, and cultural development of Europe and dependencies from 1600 to about 1750.
Offered every third year.

HST 354. THE ERA OF THE FRENCH REVOLUTION AND NAPOLEON **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.
Offered every third year.

HST 355. EUROPE IN THE NINETEENTH CENTURY **Three credits**
A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.
Offered in alternate years.

HST 356. EUROPE IN THE TWENTIETH CENTURY **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.
Offered in alternate years.

HST 361-362. HISTORY OF THE FAR EAST **Three credits each**
A study of the history of the civilizations developed in India, China, and Japan with emphasis on their interrelations and distinctive characteristics and on their transformation in response to the penetration of western civilization from the sixteenth century onward. Some attention will be given to similar developments and changes among the countries of Southeast Asia. Fall semester: to c. 1760. Spring semester: 1760 to present.
Offered every third year.

HST 363. HISTORY OF MODERN CHINA **Three credits**
A study of Chinese history since 1840 with special emphasis on social, political, economic, and intellectual developments.
Offered every third year.

HST 364. DIPLOMATIC HISTORY OF THE FAR EAST **Three credits**
A study of the relationship of the states of the Far East with one another and the West in the nineteenth and twentieth centuries.
Offered every third year.

HST 365. HISTORY OF CHINESE COMMUNISM **Three credits**
This course is designed to examine the origins of Chinese Communism, the rise of the Chinese Communist Party to national power, and the essential features of Mao Tse-Tung's strategies and policies.
Offered every third year.

HST 367. HISTORY OF MODERN INDIA **Three credits**
A study of the political, social, and economic development of the Indian sub-continent since 1500.
Offered every third year.

HST 376. WORLD WAR II**Three credits**

Consideration of the causes of the war, military strategy and tactics, diplomatic interests of the participants, and resulting cold war problems.

Offered in alternate years.

HST 391. HISTORIOGRAPHY AND RESEARCH**Three credits**

An introduction to historical research and writing. The writings and ideas of major historians of the past and present are examined. The student is exposed to research methods, particularly in the area of primary sources, and to the construction and criticism of the historical monograph.

Prerequisite: Approval of instructor.

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 chairman.

Offered every semester.

HST 397. SEMINAR (Maximum of three credits per student) One to three credits

Presentations and discussions of selected topics.

Prerequisite: Approval of instructor is required.

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.

INDIVIDUALIZED STUDIES

This program is designed for those capable and motivated students who wish to undertake a course of study that cannot be provided for under any of the normal B.A., B.S. degree programs. The student will be responsible for generating a coherent proposal for a program of studies. This proposal must be selected by the student, approved by an advisor, and then by the Individualized Studies Committee. The program of studies may include courses offered by all departments at Wilkes College. In addition, credit may be assigned for appropriate off-campus study, work, and and/or travel. Credits may be granted for knowledge or experience obtained prior to enrollment, with approval of the appropriate department and the Individualized Studies Committee.

Degree Requirements

The basic requirement for the degree in Individualized Studies is the accumulation of 120 credits. Although there are no specific course requirements, the spirit of the Wilkes College core curriculum is to be respected.

INTERNATIONAL STUDIES

Assistant Professor Tutwiler, International Studies Advisor.

Total minimum number of credits required for a 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 45-65 are the core requirements and 33 are major requirements. For the International Studies major, the following courses at the introductory level are required, all of which can be counted in the core: History 101-102; Economics 101-102; Political Science 105; Anthropology 101; and Foreign Language at 204 competence. Students are also required to take 6 hours of advanced Foreign Language beyond the 204 level. In addition, students must complete 2 courses from among Anthropology 270, Political Science 202, and Economics 229, plus one course from among Economics 224, 225 and 226.

Before completing the International Studies major requirements, students should select the **area of concentration** in which 12 more credits are required. Options for this concentration are one of several culture areas (Asia, Communist Societies, Third World, or Western Europe), or International Economics, or International Politics, or Language. Specific courses contributing to one of these concentrations and the I.S. core requirements will be worked out with the International Studies Advisor and may include courses taken while studying abroad at another institution. Major electives in the areas of concentration are listed below.

Culture Areas:

Asia

Anthropology 270, 352, and/or 392
Economics 224, 225, 228, and/or 229
History 361, 362, 363, 364, 365, and/or 367
Political Science 202 and/or 325, 329

Communist Societies

Economics 224, 225, 227, and/or 229
History 348, 362 (or 363), and/or 365
Philosophy 230
Political Science 202 and/or 324, 329

Third World

Anthropology 270, 352, 353, and/or 392
 Economics 224, 225, 226, and/or 228
 History 363, 365, 367, and/or 382
 Political Science 202 and/or 325, 329
 Sociology 252
 Spanish 209 and/or 309

Western Europe

Economics 224, 227, and/or 229
 French 208, 298, and/or 302
 German 208, 298, and/or 302
 History 342, 356, and/or 376
 Political Science 202 and/or 323, 329
 Sociology 352
 Spanish 208, 298, and/or 302

(NOTE: No more than six hours may be taken in any one discipline listed under individual area concentrations.)

International Economics:

Economics 224, 225, 226, 227, 228, and/or 229

International Politics:

History 328, 348, 364, and/or 376
 Political Science 202, 323, 324, 325, and/or 329

(NOTE: No more than 6 hours in History may be taken in this concentration.)

Modern Foreign Language:

12 hours of advanced foreign language courses beyond International Studies core

Except in unusual circumstances, it is expected that International Studies majors will spend a summer, semester, or year abroad in a suitable program of academic study arranged through the Wilkes College Study Abroad Program Coordinator. Credits earned abroad may be applied towards satisfying International Studies major requirements.

Students in the International Studies major have 35-39 credit hours of free electives. Students are urged to take additional language credits to constitute a language minor or major. It is also possible to use electives to constitute a second major in a discipline such as Economics, History, or Political Science.

Advising for the International Studies major is done in the Sociology and Anthropology Department.

Recommended Course Sequence for International Studies Major

First Semester

Eng 101 Composition I	3
Hst 101 World Civilization I	3
Ec 101 Principles of Economics I	3
Ant 101 Intro. to Anthropology	3
Foreign Language*	3
PE 100 Activity	0
	<hr/>
	15

Second Semester

Eng 102 Composition II	3
Hst 102 World Civilization II	3
Ec 102 Principles of Economics II	3
PS 105 Comparative Government	3
Foreign Language*	3
PE 100 Activity	0
	<hr/>
	15

Third Semester

Ant 270 Cultural Anthropology and/or	
PS 202 International Relations and/or	
Ec 229 Comparative Economic Systems*	6
Foreign Language*	3
Core Requirements	6
PE 100 Activity	0
	<hr/>
	15

Fourth Semester

Ec 224 Economic Development and/or	
Ec 225 International Trade and/or	
Ec 226 International Investment and Finance*	3
Foreign Language*	3
Core Requirements	6
Major Electives	3
PE 100 Activity	0
	<hr/>
	15

Fifth Semester

Study Abroad**

15

Sixth Semester

15

Seventh Semester

Foreign Language	3
Major Electives	6
Core Requirements	6
	<hr/>
	15

Eighth Semester

Foreign Language	3
Major Electives	3
Core Requirements	3
Free Electives	3
Senior Seminar*	3
	<hr/>
	15

*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.

MATHEMATICS

Professor Merrill, Chairman; Professor Emeritus Richards; Professors Sours, Tillman, Wong; Associate Professors Berard, DeCosmo, Earl, Koch, Salsburg; Assistant Professors Kenney, Kugendran; Instructor Plavchak.

- Total minimum number of credits required for a B.A. degree — 125.**
- Total minimum number of credits required for a B.S. degree — 127.**
- Total minimum number of credits required for a minor — 21 or 22.**
- Total minimum number of credits required for a minor in Statistics — 23.**

Programs of study leading to the B.A. or B.S. degree with a major or minor in mathematics or a minor in statistics are offered by the Department of Mathematics and Computer Science. Also available are the M.S. degree in Mathematics and the M.S. degree in Education with a concentration in mathematics. Graduate programs and a combined five-year B.S.-M.S. degree in mathematics are described in a separate graduate bulletin.

The Department of Mathematics and Computer Science also offers B.A. and B.S. programs in computer science (see page 109), and a B.S. program in computer information systems (see page 107).

Major in Mathematics

The Department offers three tracks through which the baccalaureate degree major requirements in mathematics may be met: general mathematics (GM), applied mathematics (AM), and teacher certification (TC). The program in general mathematics provides preparation for graduate study and research in mathematics. The applied mathematics track is designed to provide a background for graduate study in applied mathematics or statistics, and for careers in industry or government service. The teacher certification track provides preparation for secondary school teaching. The GM and AM tracks, when combined with an appropriate second major or minor, will also provide an excellent foundation for graduation or professional study in business and management; economics; law; medicine; actuarial, computing, engineering, environmental and physical sciences. All three tracks share a common background in algebra, analysis, probability, and computer programming.

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. Both B.A. and B.S. programs are available in all three tracks. Required courses for a mathematics major are indicated in the curriculum outlines recommended on pages 143-145, which are based on an extensive prerequisite structure.

With the approval of the department, a student may earn credits in a maximum of five mathematics or computer science courses by passing special challenge examinations in them. Interested students may obtain further details and application forms from the department chairman.

Minor in Mathematics

Required Courses:	credit hours
Mth 111-112; 202; 211 or 212; 214	18
Electives:	
Mth 311 or 314 or 331	<u>3-4</u>
Total	21-22

Minor in Statistics

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 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; CS 123; Mth 351-352; and Mth 354	20
Electives:	
One of the following: Mth/CS 262; CS 321; or a Topics course in statistics	<u>3</u>
Total	23

Recommended Course Sequence for General and Applied Mathematics Tracks

NOTE: All core requirements should be chosen to satisfy the General Core Requirements listed on pages 55-56, except that science electives must be in accordance with the Department's requirements specified on page 146.

	First Semester		Second Semester		
	B.A.	B.S.	B.A.	B.S.	
Mth 111 Calculus I	4	4	Mth 112 Calculus II	4	4
Eng 101 Composition I	3	3	Eng 102 Composition II	3	3
CS 123 FORTRAN Programming (or)	3	3	Core Requirements	9	9
CS 124 COBOL Programming			PE 100 Activity	0	0
Core Requirements	6	6		<u>16</u>	<u>16</u>
PE 100 Activity	0	0			
	<u>16</u>	<u>16</u>			

Third Semester			Fourth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 202 Set Theory and Logic	3	3	Mth 212 Multivariable Calculus	4	4
Mth 211 Intro. to Ordinary Differential Equations	4	4	Mth 214 Linear Algebra	3	3
Phy 201 (B.S.) or Science Elective ¹	—	4	Science Elective ¹	3	4
Core Requirements	6	6	Core Requirements	6	6
PE 100 Activity	0	0	PE 100 Activity	0	0
	<u>16</u>	<u>17</u>		<u>16</u>	<u>17</u>

Fifth Semester			Sixth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 331 ³ Intro. to Abstract Algebra I	4	4	Mth/CS Elective ²	3	6
Mth 351 Probability and Mathematical Statistics I	3	3	Free Electives	12	9
Science Elective ¹	3	3		<u>15</u>	<u>15</u>
Core Requirements	6	6			
	<u>16</u>	<u>16</u>			

Seventh Semester			Eighth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 311 ³ Functions of a Real Variable	4	4	Mth/CS Elective ²	3	3
Mth/CS Elective ²	3	3	Free Electives	11	11
Free Electives	9	9		<u>14</u>	<u>14</u>
	<u>16</u>	<u>16</u>			

¹ See page 146 for the Department's requirements regarding science electives.
² See page 146 for the Department's requirements regarding Mth/CS electives.
³ Mth 311 and Mth 331 are offered in alternate years; one of them should be taken in the junior year, the other in the senior year.

Recommended Course Sequence for Teacher Certification Mathematics Track

NOTE: All core requirements should be chosen to satisfy the General Core Requirements listed on pages 55-56, except that science electives must be in accordance with the Department's requirements specified on page 146.

First Semester			Second Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 111 Calculus I	4	4	Mth 112 Calculus II	4	4
Eng 101 Composition I	3	3	Eng 102 Composition II	3	3
CS 123 FORTRAN Programming (or)	3	3	Psy 101 General Psychology	3	3
CS 124 COBOL Programming	6	6	Core Requirements	6	6
Core Requirements	0	0	PE 100 Activity	0	0
PE 100 Activity	0	0		<u>16</u>	<u>16</u>
	<u>16</u>	<u>16</u>			

Third Semester			Fourth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 202 Set Theory and Logic	3	3	Mth 212 Multivariable Calculus	4	4
Ed 101 Practicum in Education	1	1	Mth 214 Linear Algebra	3	3
Ed 201 Intro. to Education	3	3	Ed 202 Educational Psychology	3	3
Phy 201 General Physics I or Science Elective ¹	—	4	Science Elective ¹	3	4
Core Requirements	6	6	Core Requirements	3	3
PE 100 Activity	0	0	PE 100 Activity	0	0
	<u>16</u>	<u>17</u>		<u>16</u>	<u>17</u>

Fifth Semester			Sixth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 331 ³ Intro. to Abstract Algebra I	4	4	Mth 203 The Teachings of Mathematics in Secondary Schools	3	3
Mth 343 Intro. to Geometry	3	3	Mth/CS Electives ²	3	6
Science Elective ¹	3	3	Ed 102 Practicum in Education	1	1
Core Requirements	3	3	Core Requirements	6	6
	<u>13</u>	<u>13</u>	Free Electives	3	—
				<u>16</u>	<u>16</u>

Seventh Semester			Eighth Semester		
	B.A.	B.S.		B.A.	B.S.
Mth 311 ³ Functions of a Real Variable	4	4	Ed 371 The Individual in the Classroom	3	3
Mth 351 Probability and Mathematical Statistics I	3	3	Ed 380 Professional Semester in Education	15	15
Mth/CS Elective ²	—	3		<u>18</u>	<u>18</u>
Free Electives	7	4			
	<u>14</u>	<u>14</u>			

¹ See page ?? for the Department's requirements regarding science electives.
² See page ?? for the Department's requirements regarding Mth/CS electives.
³ Mth 311 and Mth 331 are offered in alternate years; one of them should be taken in the junior year, the other in the senior year.

Science Electives for Mathematics Majors:

B.A. candidates: Any three courses, including a two-semester sequence, in Biology, Chemistry, Earth and Environmental Sciences, or Physics.

B.S. candidates: Physics 201 and a two-semester sequence in Biology, Chemistry, Earth and Environmental Sciences, or Physics
or

Physics 201-202 and at least three credits in Biology, Chemistry, Earth and Environmental Sciences, Physics, Philosophy 350 or Philosophy 352, EE 342 or any Engineering course not cross-listed in Computer Science. (All eleven credits must be in courses numbered above 200 except that Bio 121, 122, Chm 115, 116, or 118 are also acceptable in this requirement.)

Mathematics/Computer Science Electives for Mathematics Majors:

General Mathematics Track:

One of the following courses: Mth 342, 413, or 432; and
One of the following courses: Mth 262, 314, 352, 361, 362, or 364; and
for B.A. candidates: Any one Mth or CS course numbered above 200.
B.S. candidates: Any two Mth or CS courses numbered above 200.

Applied Mathematics Track:

Two of the following courses: Mth 262, 314, 352, 361, 362, or 364; and
for B.A. candidates: Any one Mth or CS course numbered above 200.
B.S. candidates: Any two Mth or CS courses numbered above 200.

Teacher Certification Mathematics Track:

One of the following courses: Mth 262, 314, 352, 361, 362, or 364; and
for B.S. candidates: Any two Mth or CS courses numbered above 200.

Summary of Minimum Credit Distribution:

General and Applied Mathematics Tracks	B.A.	B.S.
Mth 111, 112, 202, 211, 212, 214, 311, 331, and 351	33	33
Mth/CS Electives	9	12
CS 123 or 124	3	3
Phy 201	—	4
Science Electives	9	7
Eng 101-102	6	6
Core Requirements	33	33
Free Electives	32	29
Total	125	127

Teacher Certification Mathematics Track

	B.A.	B.S.
Mth 111, 112, 202, 203, 212, 214, 311, 331, 343, and 351	35	35
Mth/CS Electives	3	9
CS 123 or 124	3	3
Phy 201	—	4
Science Electives	9	7
Eng 101-102	6	6
Ed 101, 102, 201, 202, 371, and 380	26	26
Psy 101	3	3
Core Requirements	30	30
Free Electives	10	4
Total	125	127

MTH 84. COLLEGE PREPARATORY MATHEMATICS **Four hours/week**
This course provides the basic mathematics skills for students majoring in fields other than science or engineering. It may also be taken by those who need it to prepare themselves for Mth 100, 101 or 103. Topics covered include: review of arithmetic, introductory algebra, and quantitative reasoning. Credits in this course will not be counted in the graduation requirement in any degree program at Wilkes. Only P (passed) or F (failed) grades are given. Fee: \$50.
Offered every fall and summer.

MTH 100. PRE-CALCULUS MATHEMATICS **Four credits**
A remedial course in advanced algebra and trigonometry designed to prepare students for calculus. Content of this course should normally be studied in secondary school. Mathematics and computer science majors will not receive credit in their major for Mth 100.
Prerequisite: Two years of secondary school mathematics in algebra and geometry.
Offered every fall, spring, and summer.

MTH 101. FUNDAMENTALS OF MATHEMATICS I **Three credits**
Basic quantitative and analytic techniques and concepts designed to help the student understand science, technology, and human institutions as they bear on the individual citizen. Topics include: graphical presentation of data, exponential growth and decay, probability and statistics, error analysis, introduction to computing, vectors and matrices, and linear programming. Not open to students with credits in Mth 103, 104, or any course in calculus.
Offered every fall and summer.

MTH 102. FUNDAMENTALS OF MATHEMATICS II **Three credits**
A continuation of Mth 101. Not open to students with credits in Mth 103, 104, or any course in calculus.
Prerequisite: Mth 101.
Offered every spring and summer.

MTH 103. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS I **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. Not open to students with credits in Mth 101, 102, or any course in calculus.
Offered in the fall semester of odd years and every summer.

MTH 104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS II **Three credits**
A continuation of Mth 103. Not open to students with credits in Mth 101, 102, or any course in calculus.
Prerequisite: Mth 103.
Offered in the spring semester of even years and every summer.

**MTH 105. CALCULUS FOR LIFE, MANAGERIAL,
AND SOCIAL SCIENCES I** **Four credits**

Intended primarily for students of social and natural sciences. Topics include: review of algebra, limit, differentiation, integration, sequences and series, partial differentiation, differential equations, and probability. Not open to students with credits in Mth 111 or 112.

Prerequisite: Geometry, Algebra II, and some knowledge of Trigonometry.
Offered every fall and summer.

**MTH 106. CALCULUS FOR LIFE, MANAGERIAL,
AND SOCIAL SCIENCES II** **Four credits**

A continuation of Mth 105. Not open to students with credits in Mth 111 or 112.

Prerequisite: Mth 105.
Offered every spring and summer.

MTH 111. CALCULUS I **Four credits**

Calculus of functions of one variable. Topics include: functions, limits and continuity, differentiation, integration and their applications, infinite sequences and series. Not open to students with credits in Mth 105 or 106.

Prerequisite: Mth 100 or at least three years of secondary school mathematics including Geometry, Algebra II, and topics in Trigonometry.
Offered every fall, spring, and summer.

MTH 112. CALCULUS II **Four credits**

A continuation of Mth 111. Not open to students with credit in Mth 106.

Offered every fall, spring, and summer.

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: Two years of high school algebra.
Offered every fall and spring.

MTH 202. SET THEORY AND LOGIC **Three credits**

Designed to provide the logical and set theoretical prerequisites for the upper-level courses in analysis, algebra, computer science, and topology. Topics include: informal logic and propositional calculus, sets, relations, functions, axiom of choice and its equivalents, cardinal and ordinal numbers. Three hours lecture and one hour problem-discussion per week.

Prerequisite: Mth 112 or consent of department chairman.
Offered every fall.

**MTH 203. THE TEACHING OF MATHEMATICS
IN SECONDARY SCHOOLS** **Three credits**

This course deals with topics and perspectives that are relevant to the teaching of mathematics in secondary schools (7-12). Topics include: history of modern algebra and geometry as deductive, axiomatic systems; recommendations of and material published by the various organizations (CUPM, SMSG, UICSM, etc.) concerned with the improvement of school mathematics curricula; local and national professional organizations, evaluation of instruction. (same as Ed 203G)

Prerequisite: Junior standing in mathematics.
Offered on demand.

**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 methods of solution; the Laplace transform.

Prerequisite: Mth 112.
Offered every fall and summer.

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 and summer.

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 232. ABSTRACT ALGEBRA FOR ELEMENTARY
SCHOOL TEACHERS** **Three credits**

A study of basic concepts of abstract algebra for elementary school teachers. Not open to mathematics or computer science majors or those with credit in Mth 331.

Prerequisite: Mth 104 or consent of instructor.
Offered in the fall semester of even years and every summer.

**MTH 243. GEOMETRY FOR ELEMENTARY
SCHOOL TEACHERS** **Three credits**

A study of topics in informal geometry and measurements for elementary school teachers. Not open to mathematics or computer science majors or those with credit in Mth 343.

Prerequisite: Mth 104 or consent of instructor.
Offered in the spring semester of odd years and every summer.

MTH 260. 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. (same as CS 260)

Prerequisite: Mth 106, CS 123.
Offered in the fall semester of odd years.

MTH 262. 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. (same as CS 262)

Prerequisite: CS 123; Mth 105-106 or Mth 111-112; and some elementary knowledge of matrices.
Offered every spring.

MTH 311. FUNCTIONS OF A REAL VARIABLE **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 odd years.

MTH 314. FUNCTIONS OF A COMPLEX VARIABLE **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 in the fall semester of even years.

MTH 331. INTRODUCTION TO 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 even years.

MTH 342. INTRODUCTION TO TOPOLOGY **Three credits**
Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces.

Prerequisite: Mth 311 or consent of instructor.
Offered in the spring semester of even years.

MTH 343. INTRODUCTION TO GEOMETRY **Three credits**
A study of selected topics from Euclidean geometry, affine geometry, projective geometry, and convexity.

Prerequisite: A year of calculus 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, confidence intervals, hypothesis testing, non-parametric methods, multivariate distributions, introduction to linear models.

Prerequisite: Mth 106 or 112 or permission of instructor.
Offered every fall.

MTH 352. PROBABILITY AND MATHEMATICAL STATISTICS II **Three credits**
A continuation of Mth 351.

Prerequisite: Mth 351 or permission of instructor.
Offered in the spring semester of odd years.

MTH 354. STATISTICAL METHODOLOGY **Three credits**
This course emphasizes applications, using statistical computer packages (SPSS or BMDP) 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 factor analysis.

Prerequisite: Mth 150 or Mth 351 or consent of instructor.
Offered in the spring semester of even years.

MTH 361. INTRODUCTION TO APPLIED MATHEMATICS I **Three credits**

Intended for physical science and engineering students. Topics to be selected from: vector, integral, and differential calculus; power series; differential equations; Fourier series; matrices; determinants; and eigenvalue problems.

Prerequisite: Mth 212.
Offered every fall.

MTH 362. INTRODUCTION TO APPLIED MATHEMATICS II **Three credits**

A continuation of Mth 361.
Prerequisite: Mth 361 or permission of instructor.
Offered every spring.

MTH 364. NUMERICAL ANALYSIS **Three credits**

Numerical methods of differentiation, integration, solution of equations and of differential equations with emphasis on problems that lend themselves to solution using computers. (same as CS 364)
Prerequisite: Mth 211 and CS 123 or consent of instructor.
Offered in the spring semester of odd years.

MTH 397. SEMINAR **One to three credits**

Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman.

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.
Prerequisite: Mth 214 and 311.
Offered when demand warrants.

MTH 432. INTRODUCTION TO 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 470. READING COURSE **One to three credits**

Individual 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.
Prerequisite: Senior standing and consent of department chairman.

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 topics studied.

Additional 500-level graduate courses in mathematics are open to qualified mathematics majors. See the graduate bulletin for complete listing.

MEDICAL TECHNOLOGY

Professor Lester Turoczi.

Total minimum number of credits required for a B.S. degree — 128.

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 College 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' clinical training. Following graduation from the program, the student will receive the B.S. degree in medical technology from the College 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 College has established a formal affiliation with the Allentown Hospital Association in Allentown, Pa., the Robert Packer Hospital in Sayre, Pa., the Scranton Medical Technology Consortium, Scranton, Pa., Somerset Medical Center, Somerville, N.J., and the Wilkes-Barre General Hospital in Wilkes-Barre, Pa. Fulfillment of the fourth year requirement at non-affiliated hospitals requires special permission of the department chairman and of the Academic Standards Committee.

Recommended Course Sequence for a Degree in Medical Technology

First Semester		Second Semester	
Bio 121 Principles of Modern Biology I	4	Bio 122 Principles of Modern Biology II	4
Chm 115 Elements and Compounds	4	Chm 116 The Chemical Reaction	4
Eng 101 Composition I	3	Eng 102 Composition II	3
Mth 105 or 111 Calculus I	4	Mth 106 or 112 Calculus II	4
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
Bio 223 Comparative Anatomy	4	Bio 224 Cellular and Molecular Biology	4
Chm 231 Organic Chemistry I	4	Chm 232 Organic Chemistry II	4
Humanities Core Requirements	6	Humanities Core Requirements	6
Social Science Core Requirements	3	Social Science Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 17		<hr/> 17

Fifth Semester		Sixth Semester	
Bio 303 Bacteriology	3	Biology Elective	3
Bio 397 Seminar*	1	Bio 341 Immunology and Immunochemistry	3
Chm 241 Inorganic Quantitative Analysis	4	Bio 397 Seminar*	1
Computer Science Elective	3	Mth 150 Elementary Statistics	3
Phy 105 Introductory Physics I	4	Phy 106 Introductory Physics II	4
Social Science or Humanities Core Requirements	3	Social Science or Humanities Core Requirements	3
	<hr/> 17-18		<hr/> 16-17

Seventh Semester

Eighth Semester

MEDICAL TECHNOLOGY PROFESSIONAL STUDY YEAR

The 30 credits supplied by the twelve months' clinical training are divided into the following courses:

Bio 398 O-MT Clinical Microbiology	7
Bio 398 P-MT Clinical Chemistry	8
Bio 398 Q-MT Clinical Hematology/Coagulation	5
Bio 398 R-MT Clinical Immunohematology	4
Bio 398 S-MT Clinical Immunology/Serology	3
Bio 398 T-MT Clinical Seminar	3
	<hr/> 30

*Only one semester of Bio 397 is required but it must be taken in either the fifth or sixth semester.

MILITARY SCIENCE (Army ROTC)

Lieutenant Colonel Angeli, Chairman.

The primary objective of the ROTC program is to develop leadership capabilities and to train future officers for both the active and reserve components of the United States Army.

Military Science instruction for Wilkes College students is offered on campus at King's College or the University of Scranton pursuant to an agreement with the Military Science Department at the University of Scranton. A two-year and four-year program are offered, both of which lead to a commission as an officer in the United States Army. To obtain this commission, qualified male and female students must successfully pass an aptitude test, a physical examination, and complete either the two- or four-year program of approved Military Science courses. While enrolled in the Advanced Courses (Military Science III and IV), the student will receive \$100 per month subsistence allowance. Uniforms, equipment, and textbooks required for Army ROTC classes will be supplied by the Army. Students may compete for Army ROTC scholarships while in high school (4-year

awards), or during college (3- and 2-year awards). Scholarships pay full tuition, textbooks, lab and other academic fees, plus an allowance of up to \$1,000 each school year.

Students qualify for advanced ROTC courses (2-year program) in three ways:

(1) **On Campus Courses** — most students take introductory military science courses on campus during their freshman and sophomore years. These courses allow them to learn about the Army and the opportunities and responsibilities of an officer without incurring an obligation. This "basic" program generally involves one course per school term, although students may arrange to compress more than one of the required courses into a single term.

(2) **Summer Programs** — students may also qualify through a paid, six-week, no obligation summer "Basic Camp" which provides intensive military training at Fort Knox, Kentucky. Students may also compress all freshmen and sophomore military science courses during one on-campus summer session.

(3) **Advanced Placement** — students with prior military service, members of the United States Army Reserve or National Guard, or JROTC members may qualify for advanced placement into the advanced Army ROTC courses.

Two-Year Program

Available to qualified students having a minimum of two academic years remaining to degree completion, and meeting criteria set forth in paragraphs (2) or (3) above. Application for this program must be made prior to the end of the Spring Semester of the sophomore year for those not enrolled in previous Military Science instruction. Also available for accepted graduate students.

Four-Year Program

Consists of all eight Military Science courses (commencing no later than the sophomore year). Enrollment in the first four courses of Military Science (MS I & II) is accomplished in the same manner as any other college course and carries no military obligation. Application to enroll in the Advanced Military Science courses (MS III & IV) must be made while enrolled in Military Science 22.

While enrolled in the Advanced Course, each student is required to successfully complete a six-week Advanced Camp at Fort Bragg, North Carolina, normally after completing Military Science 102. Transportation, food, lodging, medical and dental care, and approximately \$800 pay are provided by the Army.

Military Science Courses

MS 11-12. MILITARY SCIENCE I **Two credits**
Military history designed to provide a fundamental understanding of the Army's organization, structure, and components, and to analyze major events and influences of Army History. Examination of the formulation and implementation of national security policy will be made. The student will also gain an acquaintance with the evolution of warfare, military theory, and the military profession, with particular emphasis on leadership. One hour for two semesters.

MS 21-22. MILITARY SCIENCE II **Four credits**
Introduction to land navigation, including use of the compass and topographic maps. First aid, to include CPR (Certification available dependent upon student interest). A survey of leadership theory to include leadership models and group dynamics is held. Two hours for two semesters.

MS 101. MILITARY SCIENCE III **Two credits**
Military skills and professional knowledge subjects designed to instruct the cadet in the principles and techniques of applied leadership, advanced land navigation, and tactics. An introduction to the international agreements governing armed forces, operational planning, and the functions of command and staff. Two hours.
Prerequisite: MS 21-22, or equivalent.

MS 102. MILITARY SCIENCE III **One credit**
Instruction designed to prepare the student for the ROTC Advanced Camp. Emphasis on applied small unit leadership, physical conditioning, practical training on military equipment, tactics and unit drill. Two hours.

MS 121. MILITARY SCIENCE IV **Two credits**
An examination of mid-level management considerations in the Army. The course addresses the Army's personnel, training and logistics management system. In addition, the cadet is given an overview of the American Military Justice system, the Law of War, and both legal and practical considerations in connection with apprehension and search of personnel, seizure of contraband, and individual rights. Two hours.

MS 122. MILITARY SCIENCE IV **One credit**
The Army Officer in Contemporary American Society. An introduction to professionalism and military ethics. Provides the cadet with an introduction to the profession, its characteristics, roles and responsibilities; a basic understanding of the professional soldier's responsibilities to the nation and the armed forces; an understanding of the needs for ethical conduct, sensitivity to ethical issues, and improved ethical decision-making skills. Additionally, the course offers outside presentations in the banking and insurance fields. Moreover, a review of logistics, counseling, and written and oral communication is given. Two hours.

MS 130. MILITARY SCIENCE LAB **No credit**
Required of all Military Science students each semester. Stresses practical application of classroom theory and Army related subjects such as leadership, drill and ceremonies, weapons training, land navigation, first aid, mountaineering, and tactics. Two hours.

NOTE: Students desiring to pursue Military Science studies through to a commission are also required to complete Hst 328, History of the Foreign Policy of the United States (Wilkes); Hst 38, American Foreign Policy (King's); Hst 149, American Military Heritage; or equivalent (University of Scranton). This requirement may be met during any semester.

MUSIC

Associate Professor Campbell, Chairman; Professors Emeriti Chapline, A. Liva; Professor Galos; Associate Professor Emeritus Garber; Associate Professor Santos; Assistant Professor Reiprich; Adjunct Faculty Hannigan, Harrington, Heinze, Hrynkiw, Metzger, Nowak, Rinert, Sanderson, Teubner.

Total minimum number of credits required for a B.M. degree — number varies with program.

Purposes

The Music Program at Wilkes College leads to a Bachelor of Music degree with a major in either applied performance studies or certification in music education (K-12).

The purposes of the degree offering are to:

1. Give students a comprehensive exposure to all aspects of musical training relevant to their degree specialization;
2. Provide for contemporary careers which meet the needs of today's student in today's world;
3. Substantively prepare the student for graduate studies in music.

Objectives

The Department of Music is a professional academic unit for students of superior ability who by virtue of their musical aptitudes and achievements and their general academic background are qualified to pursue work at Wilkes College.

Certain criteria are recognized as basic to any curriculum in music. There is a comprehensive program of critical and evaluative studies. A command of basic skills widely recognized as attributes of the musician is a major part of this curriculum. These skills have relevance to long-term personal and professional goals. Curricula have been designed to meet the competency-based and performance-oriented technical demands of the craft of music. A major portion of the study will be devoted to the development of the student's potential as a performing musician, with simultaneous attention given to one's specialization as a teacher, scholar or whatever. Men and women should be able to express themselves clearly in their language — both in speech and writing, and in the grammar of music. To this end, students should develop skills which demand evidence of critical investigation, analytical thought, and clarity of organization. They should be able to rehearse, perform, criticize, discuss, and analyze music which will provide them a basic command of components considered requisite to success in any part of the field. They should develop familiarity with their musical heritage through constant contact with varied types and styles of literature, and should use this knowledge to illuminate their interpretations. Likewise, all students should have contact with less familiar musical styles and means of music-making, especially 20th century repertoire and practices.

Recommended Course Sequence for Bachelor of Music — Applied Voice

Degree completed with 127 semester credits.

First Semester		Second Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 010 Functional Piano*	0	Mus 010 Functional Piano*	0
Mus 100 Applied Performance	2	Mus 100 Applied Performance	2
Mus 103 Comp. Musicianship I	2	Mus 104 Comp. Musicianship II	2
Mus 105 Harmonic Foundations I	3	Mus 106 Harmonic Foundations II	3
Mus 107 Analysis of Music I	3	Mus 108 Analysis of Music II	3
Mus 121 or 131 Ensemble (Minor)**	0	Mus 121 or 131 Ensemble (Minor)**	1
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Eng 101 Composition	3	Eng 102 Composition	3
Foreign Language***	3	Foreign Language***	3
PE 100 Activity	0	PE 100 Activity	0
	16		18

*Competency must be passed.
**Either one may be chosen.
***Fulfills one component of humanities core requirement.

Third Semester		Fourth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Minor)*	0	Mus 121 or 131 Ensemble (Minor)*	1
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Mus 200 Applied Performance	2	Mus 200 Applied Performance	2
Mus 203 Comp. Musicianship III	2	Mus 204 Comp. Musicianship IV	2
Mus 205 Harmonic Foundations III	3	Mus 206 Harmonic Foundations IV	3
Mus 207 Analysis of Music III	3	Mus 208 Analysis of Music IV	3
Mus 258 Vocal Methods	2	Mus 259 Diction	2
Foreign Language**	3	Foreign Language**	3
PE 100 Activity	0	PE 100 Activity	0
	15		17

*Either may be chosen.
**Equivalent of 6 non-music electives, not additional humanities core.

Fifth Semester		Sixth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 125 Ensemble	0	Mus 125 Ensemble	1
Mus 128 Chamber Performance*	1	Mus 128 Chamber Performance*	1
Mus 260 Conducting I	2	Mus 261 Conducting II	2
Mus 300 Applied Performance	2	Mus 300 Applied Performance	2
Mus 305 Composition/Orchestration	2	Mus 301 Recital	0
Mus 307 Pedagogy (Vocal)	3	Mus 306 20th Century Theory	2
Psy 101 General Psychology	3	Core Requirements	3
Core Requirements	3	Core Requirements	3
	16		14

*Public performance required.

Seventh Semester		Eighth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 125 Ensemble	0	Mus 125 Ensemble	1
Mus 128 Chamber Performance*	1	Mus 400 Applied Performance	2
Mus 400 Applied Performance	2	Mus 401 Recital	0
Mus 407 Music Literature (Voice)	3	Mus 410 Chamber Literature	3
Free Electives	3	Free Electives	4
Core Requirements	6	Core Requirements	6
	<hr/> 15		<hr/> 16

*Public performance required.

Recommended Course Sequence for Bachelor of Music — All Applied Instruments Except Voice and Keyboard

Degree completed with 127 semester credits.

First Semester		Second Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0	Mus 010 Functional Piano	0
Mus 100 Applied Performance	2	Mus 100 Applied Performance	2
Mus 103 Comp. Musicianship I	2	Mus 104 Comp. Musicianship II	2
Mus 105 Harmonic Foundations I	3	Mus 106 Harmonic Foundations II	3
Mus 107 Analysis of Music I	3	Mus 108 Analysis of Music II	3
Mus 121 or 131 Ensemble (Major)*	0	Mus 121 or 131 Ensemble (Major)*	1
Mus 125 Ensemble (Minor)	0	Mus 125 Ensemble (Minor)	1
Eng 101 Composition	3	Eng 102 Composition	3
Core Requirements	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 16		<hr/> 18

*Mus 131, if applied string or music education major (string concentration).

Third Semester		Fourth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	0	Mus 121 or 131 Ensemble (Major)*	1
Mus 125 Ensemble (Minor)	0	Mus 125 Ensemble (Minor)	1
Mus 200 Applied Performance	2	Mus 200 Applied Performance	2
Mus 203 Comp. Musicianship III	2	Mus 204 Comp. Musicianship IV	2
Mus 205 Harmonic Foundations III	3	Mus 206 Harmonic Foundations IV	3
Mus 207 Analysis of Music III	3	Mus 208 Analysis of Music IV	3
Mus 260 Conducting I	2	Mus 261 or 262 Conducting II	2
Psy 101 General Psychology	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 17

*Mus 131, if applied string or music education major (string concentration).

Fifth Semester		Sixth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble*	0	Mus 121 or 131 Ensemble*	1
Mus 128 Chamber Performance**	1	Mus 128 Chamber Performance**	1
Mus 263 or 264 Conducting III	2	Mus 300 Applied Performance	2
Mus 300 Applied Performance	2	Mus 301 Recital	0
Mus 305 Composition/Orchestration	2	Mus 306 20th Century Theory	2
Mus 311-315 Pedagogy	3	Mus 411 Music Literature (Orchestra)	3
Core Requirements	6	Core Requirements	6
	<hr/> 16		<hr/> 15

*Mus 131, if applied string or music education major (string concentration).
**Public performance required.

Seventh Semester		Eighth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble*	0	Mus 121 or 131 Ensemble*	1
Mus 128 Chamber Performance**	1	Mus 400 Applied Performance	2
Mus 400 Applied Performance	2	Mus 401 Recital	0
Mus 407-415 Music Lit. (major idiom)	3	Mus 407-415 Music Literature (Chamber Literature)	3
Free Electives***	6	Free Electives***	6
Core Requirements	3	Core Requirements	3
	<hr/> 15		<hr/> 15

*Mus 131, if applied string or music education major (string concentration).
**Public performance required.
***Six elective credits must be non-music.

Recommended Course Sequence for Bachelor of Music — Applied Keyboard

Degree completed with 127 semester credits.

First Semester		Second Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 100 Applied Performance	2	Mus 100 Applied Performance	2
Mus 103 Comp. Musicianship I	2	Mus 104 Comp. Musicianship II	2
Mus 105 Harmonic Foundations I	3	Mus 106 Harmonic Foundations II	3
Mus 107 Analysis of Music I	3	Mus 108 Analysis of Music II	3
Mus 121 or 131 Ensemble (Minor)*	0	Mus 121 or 131 Ensemble (Minor)*	1
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Eng 101 Composition	3	Eng 102 Composition	3
Core Requirements	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 16		<hr/> 18

*Either one may be chosen.

Third Semester		Fourth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Minor)*	0	Mus 121 or 131 Ensemble (Minor)*	1
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Mus 200 Applied Performance	2	Mus 200 Applied Performance	2
Mus 203 Comp. Musicianship III	2	Mus 204 Comp. Musicianship IV	2
Mus 205 Harmonic Foundations III	3	Mus 206 Harmonic Foundations IV	3
Mus 207 Analysis of Music III	3	Mus 208 Analysis of Music IV	3
Mus 212 Keyboard Accompanying	2	Mus 213 Accompanying Practicum	1
Psy 101 General Psychology	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 16

*Either one may be chosen.

Fifth Semester		Sixth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 125 Ensemble	0	Mus 125 Ensemble	1
Mus 128 Chamber Performance*	1	Mus 128 Chamber Performance*	1
Mus 214 Accompanying Practicum	1	Mus 215 Accompanying Practicum	1
Mus 260 Conducting I	2	Mus 261 or 262 Conducting II	2
Mus 300 Applied Performance	2	Mus 300 Applied Performance	2
Mus 305 Composition & Orchestration	2	Mus 301 Recital	0
Mus 309 Pedagogy (Piano)	3	Mus 306 20th Century Theory	2
Core Requirements	6	Core Requirements	6
	<hr/> 17		<hr/> 15

Seventh Semester		Eighth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 125 Ensemble	0	Mus 125 Ensemble	1
Mus 128 Chamber Performance	1	Mus 400 Applied Performance	2
Mus 400 Applied Performance	2	Mus 401 Recital	0
Mus 409 Keyboard Literature	3	Mus 410 Chamber Literature	3
Core Requirements	3	Core Requirements	3
Free Electives**	6	Free Electives**	6
	<hr/> 15		<hr/> 15

*Public performance required.
**Six elective credits must be non-music.

Recommended Course Sequence for Bachelor of Music — Music Education

Vocal Track (with certification)

Degree completed with 138 semester credits.

First Semester		Second Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0	Mus 010 Functional Piano	0
Mus 100 Applied Performance (Major)	2	Mus 100 Applied Performance (Major)	2
Mus 103 Comp. Musicianship I	2	Mus 104 Comp. Musicianship II	2
Mus 105 Harmonic Foundations I	3	Mus 106 Harmonic Foundations II	3
Mus 107 Analysis of Music I	3	Mus 108 Analysis of Music II	3
Mus 121 or 131 Ensemble (Minor)*	0	Mus 121 or 131 Ensemble (Minor)*	1
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Eng 101 Composition	3	Eng 102 Composition	3
Core Requirements	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 16		<hr/> 18

*Either one may be chosen.

Third Semester		Fourth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 011 Functional Guitar*	0	Mus 011 Functional Guitar*	0
Mus 121 or 131 Ensemble (Minor)**	0	Mus 121 or 131 Ensemble (Minor)**	1
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Mus 200 Applied Performance (Major)	1	Mus 200 Applied Performance (Major)	1
Mus 200 Applied Performance (Minor)	1	Mus 200 Applied Performance (Minor)	1
Mus 203 Comp. Musicianship III	2	Mus 204 Comp. Musicianship IV	2
Mus 205 Harmonic Foundations III	3	Mus 206 Harmonic Foundations IV	3
Mus 207 Analysis of Music III	3	Mus 208 Analysis of Music IV	3
Mus 258 Vocal Methods	2	Mus 259 Voice Diction	2
Mus 260 Conducting I	2	Core Requirements	3
Psy 101 General Psychology	3	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 17		<hr/> 17

*If choral, elementary, or general music concentration.
**Either one may be chosen.

Fifth Semester		Sixth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Mus 250 Teaching of Elementary Music	2	Mus 252 Teaching of General Music	2
Mus 254-257 Instrumental Methods*	2	Mus 263 Adv. Choral Conducting III	2
Mus 261 Conducting II	2	Mus 300 Applied Performance (Major)	1
Mus 300 Applied Performance (Major)	1	Mus 300 Applied Performance (Minor)	1
Mus 300 Applied Performance (Minor)	1	Ed 102 Practicum in Education	1
Ed 101 Practicum in Education	1	Ed 202 Educational Psychology	3
Ed 201 Introduction to Education	3	Core Requirements	6
Core Requirements	6		17
	18		

*Student elects two of four instrumental methods courses.

Seventh Semester		Eighth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 125 Ensemble (Major)	0	Mus 125 Ensemble (Major)	1
Mus 351 Teaching of Sec. Choral Music**	2	Mus 254-257 Instrumental Methods*	2
Mus 352 Teaching of Sec. Instr. Music	2	Mus 400 Applied Performance (Major)	2
Mus 400 Applied Performance (Major)	2	Mus 401 Recital	0
Ed 382 Intern Teaching	11	Ed 381 Professional Practicum***	4
	17	Core Requirements	9
			18

*Student elects two of four instrumental methods courses.

**Accelerated courses.

***Credited from seventh semester.

Recommended Course Sequence for Bachelor of Music — Music Education Instrumental Track (with certification)

Degree completed with 138 semester credits.

First Semester		Second Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0	Mus 010 Functional Piano	0
Mus 100 Applied Performance (Major)	2	Mus 100 Applied Performance (Major)	2
Mus 103 Comp. Musicianship I	2	Mus 104 Comp. Musicianship II	2
Mus 105 Harmonic Foundations I	3	Mus 106 Harmonic Foundations II	3
Mus 107 Analysis of Music I	3	Mus 108 Analysis of Music	3
Mus 121 or 131 Ensemble (Major)*	0	Mus 121 or 131 Ensemble (Major)*	1
Mus 125 Ensemble (Minor)	0	Mus 125 Ensemble (Minor)	1
Eng 101 Composition	3	Eng 102 Composition	3
Core Requirements	3	Core Requirements	3
PE 100 Activity	0	PE 100 Activity	0
	16		18

*Mus 131, if applied string or music education major (string concentration).

Third Semester		Fourth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 011 Functional Guitar**	0	Mus 011 Functional Guitar**	0
Mus 121 or 131 Ensemble (Major)*	0	Mus 121 or 131 Ensemble (Major)*	1
Mus 125 Ensemble (Minor)	0	Mus 125 Ensemble (Minor)	1
Mus 200 Applied Performance (Major)	1	Mus 200 Applied Performance (Major)	1
Mus 200 Applied Performance (Minor)	1	Mus 200 Applied Performance (Minor)	1
Mus 203 Comp. Musicianship III	2	Mus 204 Comp. Musicianship IV	2
Mus 205 Harmonic Foundations III	3	Mus 206 Harmonic Foundations IV	3
Mus 207 Analysis of Music III	3	Mus 208 Analysis of Music IV	3
Mus 254 Instrumental Methods	2	Mus 255 Instrumental Methods	2
Mus 260 Conducting I	2	Core Requirements	3
Psy 101 General Psychology	3	PE 100 Activity	0
PE 100 Activity	0		17
	17		17

Fifth Semester		Sixth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	0	Mus 121 or 131 Ensemble (Major)*	1
Mus 250 Teaching of Elementary Music	2	Mus 257 Instrumental Methods	2
Mus 256 Instrumental Methods	2	Mus 264 Adv. Conducting III	2
Mus 261 or 262 Conducting II	2	Mus 300 Applied Performance (Major)	1
Mus 300 Applied Performance (Major)	1	Mus 300 Applied Performance (Minor)	1
Mus 300 Applied Performance (Minor)	1	Ed 102 Practicum in Education	1
Ed 101 Practicum in Education	1	Ed 202 Educational Psychology	3
Ed 201 Introduction to Education	3	Core Requirements	6
Core Requirements	6		17
	18		17

*Mus 131, if applied string or music education major (string concentration).

**If elementary or general music concentration.

Seventh Semester		Eighth Semester	
Mus 000 Recital Attendance	0	Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	0	Mus 121 or 131 Ensemble (Major)*	1
Mus 351 Teaching of Sec. Choral Music**	2	Mus 252 Teaching of General Music	2
Mus 352 Teaching of Sec. Instr. Music**	2	Mus 400 Applied Performance (Major)	2
Mus 400 Applied Performance (Major)	2	Mus 401 Recital	0
Ed 382 Intern Teaching	11	Ed 381 Professional Practicum***	4
	17	Core Requirements	9
			18

*Mus 131, if applied string or music education major (string concentration).

**Accelerated courses.

***Accredited from seventh semester.

Core electives must include 18 credits in humanities, including English 101 and 102; 6 in mathematics/sciences; 12 in social sciences, including Psychology 101.

MUS 000. RECITAL ATTENDANCE No credit
This course is required each semester for all music majors. Degree requirement for graduation.

MUS 010. FUNCTIONAL PIANO No credit
Class instruction in piano for music majors. Competency must be passed through examination before eligibility to upperclass status. Class meets two hours per week.
Prerequisite: none.

MUS 011. FUNCTIONAL GUITAR No credit
Class instruction in guitar. Required for all choral, elementary, or general music specialists. Competency must be passed through examination before eligibility to upperclass status. Class meets two hours per week.

MUS 100-400. APPLIED PERFORMANCE One credit or two credits
Instruction offered in all keyboard, band and orchestral instruments, guitar and voice. Individual instruction. For non-music and music majors. Each area conducts a weekly master class for discussion and performance. Participation is required.
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

Section A	Flute	Section M	Violin
Section B	Clarinet	Section N	Viola
Section C	Oboe	Section O, U, V, W	Piano
Section D	Bassoon	Section P	Cello
Section F	Saxophone	Section Q	Bass
Section G	Trumpet	Section R	Percussion
Section H	French Horn	Section S, T	Voice
Section I	Baritone Horn	Section X	Organ
Section J	Trombone	Section Y	Guitar
Section L	Tuba	Section Z	Harp

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 102. INTRODUCTION TO MUSIC II Three credits
A survey of performance literature extending from the 17th century to the present. Directed listening of various idioms, forms, and styles characteristic of each period. The purpose is to stimulate critical judgment.
Prerequisite: Mus 101 or consent of instructor.

MUS 103-104, 203-204 COMPREHENSIVE MUSICIANSHIP I-IV Two credits
A degree requirement. Intensive training in basic skills through ear-training, rhythmic, melodic and harmonic dictation, keyboard harmony, and aural analysis using modal, tonal and post-tonal compositions. Competency must be demonstrated before entrance into the junior class.
Corequisite: To be taken in sequence with Harmonic Foundations and the Analysis of Music.

MUS 105-106, 205-206. HARMONIC FOUNDATIONS I-IV Three credits
A degree requirement. A study of the functions, structures, and elements of music, modal through post-tonal styles. Written exercises and in-depth examination of musical examples.
Corequisite: To be taken in sequence with Comprehensive Musicianship and the Analysis of Music.

MUS 107-108, 207-208. ANALYSIS OF MUSIC I-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.

MUS 111-112. CLASS PIANO I-II Two credits
Class instruction in piano. A two-semester sequence designed to provide non-music majors with a rudimentary study of piano performance. The classes will be divided into small sections according to proficiency level.
Prerequisite: None.

MUS 121. WIND ENSEMBLE One-half credit
Open to all members of the College community, by audition. A select organization of wind, brass, and percussion players that performs the best of the tradition Concert Band repertory, along with contemporary music for wind ensemble.

MUS 125. CHORUS One-half credit
The Chorus offers students the opportunity to learn and perform a wide range of sacred and secular choral music. Open to all college students. Anyone desiring to sing in the chorus should consult with the director. Participation required of all music majors.

MUS 126. CAP AND BELL 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 One-half credit
Open to all members of the College community, by audition. The ensemble rehearses and presents frequent 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.
Prerequisite: Mus 200, junior standing, or consent of instructor.

MUS 131. COLLEGE ORCHESTRA One-half credit
Open to all members of the College community, by audition. The orchestra performs concerts throughout the year of chamber and symphonic literature. Participation is required of all string applied performance and string music education majors.

MUS 203-204. See Mus 103-104.

MUS 205-206. See Mus 105-106.

MUS 207-208. See Mus 107-108.

MUS 212. KEYBOARD ACCOMPANYING Two credits
A study of the techniques concerned with solo, chamber, and group accompanying. Required of all keyboard applied performance majors.
Prerequisite: Mus 101, 103-106.

MUS 213-215. ACCOMPANYING PRACTICUM I-III One credit
Practical accompanying experience, as assigned. Minimum time allotment is five hours per week of studio, chamber, or group accompanying, plus public performance accompanying when required.
Prerequisite: Mus 212.

MUS 250. TEACHING OF ELEMENTARY MUSIC Two credits

A study of the newer practices in elementary music — Suzuki, Orff, Kodaly, and Dalcroze. Emphasis on the development of skills and techniques of physical movement, improvisation, solfeggio, tone-bar and mallet technique, recorder playing, folk dancing, composition of suitable materials for classroom use, arranging and adapting existing music for the Orff instrumentarium. A survey and evaluation of appropriate resource materials.

MUS 252. TEACHING OF GENERAL MUSIC Two credits

A study of the contemporary approaches to teaching of general music in junior and senior high schools, such as creativeness and musical skill concepts through an extension of Orff, Kodaly, and others.

Prerequisite: Mus 250.

MUS 254-258. MUSIC METHODS Two credits

An examination, discussion and practical application of the methodology necessary for the students to learn the techniques of group performance in the principal instrumental and vocal areas. This sequence of courses provides the student with a minimum competency in the group performance techniques of each instrumental idiom. This exposure reinforces the technical concentration beyond the student's major applied instrument. Required of all music education students.

MUS 254. Woodwinds Methods

MUS 255. Brass Methods

MUS 256. String Methods

MUS 257. Percussion Methods

MUS 258. Vocal Methods

Prerequisite: Mus 100, 103-106, sophomore standing, or consent of instructor.

MUS 259. VOICE DICTION Two credits

An intensive study of the phonics of English, French, German, and Italian languages, based upon the International Phonetic Alphabet. Practical application is achieved through song literature selected from all historical periods. Required of all voice performance and choral music education majors.

MUS 260-264. CONDUCTING I-III Two credits

Through class lectures, demonstrations and laboratory performances, students learn and practice the fundamental techniques of conducting. Score reading and preparation, basic conducting patterns, gestures, and rehearsal methodology will be studied. The emphasis will be on actual laboratory experience.

MUS 260. Introduction to Conducting

MUS 261. Choral Conducting II

MUS 262. Instrumental Conducting II

MUS 263. Advanced Choral Conducting III

MUS 264. Advanced Instrumental Conducting III

Prerequisite: Mus 103-108, sophomore standing, or consent of instructor.

MUS 298. TOPICS Three credits

A study in topics of special interest not extensively treated in regularly offered courses.

MUS 305. COMPOSITION AND ORCHESTRATION Two credits

Practical exercises in composition, orchestration, and arranging for instruments and voices in all combinations, including orchestral, wind, jazz, and chamber ensembles.

Prerequisite: Mus 206 and 208.

MUS 306. 20th CENTURY THEORY Two credits

A survey of twentieth-century theoretical systems emerging from post-romantic and impressionistic to post-serial and avant-garde styles of the contemporary times. Emphasis will be on compositional techniques. Works and writings of Schoenberg, Stravinsky, Hindemith, Babbitt, Sessions, Messaien, Boulez, and others will be examined. Listening and analysis.

Prerequisite: Mus 204, 206, and 208, junior standing, or consent of instructor.

MUS 307-316. MUSIC PEDAGOGY Three credits

A survey of the techniques and methodology concerned with individual teaching of each applied idiom. Required of all applied performance majors. Sections are offered in the following areas:

MUS 307. Voice Pedagogy

MUS 309. Piano Pedagogy

MUS 311. Woodwind Pedagogy

MUS 313. Brass Pedagogy

MUS 315. String Pedagogy

MUS 316. Percussion Pedagogy

Prerequisite: Mus 200, junior standing, or consent of instructor.

MUS 351. TEACHING OF SECONDARY CHORAL MUSIC Two credits

An examination of the administration and logistics of a secondary choral music program. A systematic development of teaching and rehearsal techniques, planning, and evaluation.

Prerequisite: Mus 250, 252, 260 and 261, junior standing, or consent of instructor.

MUS 352. TEACHING OF SECONDARY INSTRUMENTAL MUSIC Two credits

An examination of the administration and logistics of a secondary instrumental music program. A systematic development of teaching and rehearsal techniques, planning, and evaluation.

Prerequisite: Mus 250, 252, 260 and 262, junior standing, or consent of instructor.

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 chairman.

MUS 397. SEMINAR One to three credits

Presentation and discussion of selected topics.

Prerequisite: Approval of department chairman.

MUS 407-415. MUSIC LITERATURE Three credits

An examination of the literature, its style and technical problems, studied through performance coaching. These courses are designed to give the student a comprehensive knowledge of the literature for each respective major area of performance. They will provide a necessary foundation for performance practice requirements beyond the scope of only a lecture approach. Sections are offered in the following areas:

MUS 407. Voice Literature

MUS 408. Choral Literature

MUS 409. Keyboard Literature

MUS 410. Chamber Literature

MUS 411. Orchestral Literature

MUS 412. Woodwind Literature

MUS 413. Brass Literature

MUS 414. String Literature

MUS 415. Percussion Literature

Prerequisite: Mus 205-208, senior standing in music, or consent of instructor.

NURSING

Associate Professor Kolanowski, Chairperson; Associate Professors Castor, Druffner, Grabo, Telban; Assistant Professors Crowley, Fulton, Gunderman, Kaminski, Merrigan, Notarianni, Saueraker, Schreiber, Sheer, Steelman, Wolak, Zack, Zielinski; Adjunct Faculty Babcock, Burns, Craig; Russin, Director of Nursing Learning Laboratory.

Total minimum number of credits required for a B.S. degree — 129.

Philosophy and Curriculum

The practice of professional nursing is a deliberative process of assessing, analyzing, planning, implementing, and evaluating care with clients which 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 core requirements. 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. Cooperating agencies which are used for student practice are listed in the Nursing Student Handbook. **(STUDENTS ARE RESPONSIBLE FOR THEIR OWN TRANSPORTATION TO ASSIGNED CLINICAL AREAS.)**

In addition, opportunities for learning are provided in the Nursing Learning Center, which is equipped with electronic study carrels and audio-visual instructional materials. A simulated hospital 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 credit examinations 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 registered nurse students are required to have a personal interview with the department chairman or her designee to plan their program before they can be accepted into the Wilkes nursing program.

Registered nurse students and students who have completed a program of study and are eligible to sit for NCLEX-RN are required to complete N299 and successfully pass a comprehensive examination for validation of prior learning. When these two requirements are met, credit will be awarded for N202, N203 and N204.

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 the above items may be obtained at the Department of Nursing.

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. Students should read the form carefully and be sure it is completed before returning it. Failure to have all examinations completed and documented by August 1st results in a \$25 late fee.

A student may be required to submit, at any time, to a health evaluation by the College physician, or nurse practitioner, if evident limitations interfere with the student's practice or learning.

In addition to fulfilling the academic requirements of the College, students majoring in nursing are required to successfully complete the comprehensive examination administered by the Department of Nursing before being eligible to graduate.

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 included in any legal action or legal proceedings, either civil or criminal.

Any candidate for licensure who has been convicted of, pleaded guilty to, or entered a plea of nolo contendere to a felonious act prohibited by the act of April 17, 1972 (P.L. 233, No. 64), known as "The Controlled Substance, Drug, Device and Cosmetic Act" shall not sit for the licensing examination for a period of 10 years from the time of conviction and may need to satisfy other requirements as specified by the State Board of Nursing in Pennsylvania. Students should also note that a person convicted of any felonious act may be prohibited from licensure by the Board of Nursing at any time.

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.

Recommended Course Sequence for a Degree in Nursing

First Semester		Second Semester	
Bio 115 Human Anatomy and Physiology I	4	Bio 116 Human Anatomy and Physiology II	4
Chm 111 Intro. to Chemical Reactions and Principles	4	Chm 130 Organic and Biological Chemistry	4
Eng 101 Composition I	3	Eng 102 Composition II	3
Psy 101 General Psychology	3	Psychology Elective	3
Soc 101 Intro. to Sociology or Ant 101 Intro. to Anthropology	3	Soc 275 Sociology of Minorities	3
PE 100 Activity	0	Mth competency*	0
	<hr/>	PE 100 Activity	0
	17		<hr/>
			17
Third Semester		Fourth Semester	
Bio 113 Microbiology	4	Nsg 202 Nursing Care of the Young Client	8
Nsg 200 Nutrition	3	Core Requirements	3
Nsg 201 Introduction to Nursing	6	Mth 150 or Core Requirements	3
Core Requirements or Mth 150	3	Free Electives	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/>		<hr/>
	16		17
Fifth Semester		Sixth Semester	
Nsg 203 Nursing Care of the Adult Client	8	Nsg 204 Nursing Care of the Adult Client II	8
Core Requirements	3	Core Requirements	3
Free Electives	3	Free Electives	3
	<hr/>		<hr/>
	14		14
Seventh Semester		Eighth Semester	
Nsg 301 Nursing Care of the Older Client	8	Nsg 302 Senior Practicum	8
Nsg 303 Contemporary Issues in Nursing or Free Electives	3	Nsg 303 Contemporary Issues in Nursing or Free Electives	3
Nsg 305 Research in Nursing	3	Core Requirements	3
Core Requirements	3	Free Electives	3
	<hr/>		<hr/>
	17		17

*Math competency must be obtained during the freshman year. It is a prerequisite to the sophomore Nsg 201.

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.

Prerequisite: Chm 130.

Corequisite: Nsg 201.

NSG 201. INTRODUCTION TO NURSING Six credits

This course introduces the concepts of client, basic human needs, accountability, development, health status, nursing process, nursing leadership, and research. Use of the nursing process is emphasized in meeting the basic health care needs of clients. Instruction in the Nursing Learning Center and selected clinical agencies constitutes the laboratory component. Hours weekly: 4 hours class, 1 hour discussion, 3 hours clinical practice. Placement: third semester. Fee: \$75.

Prerequisite: Bio 116, Chm 130, Psy 101, Soc 275, Mth competency.

Corequisite: Nsg 200, Bio 113.

NSG 202. NURSING CARE OF THE YOUNG CLIENT Eight credits

Basic concepts introduced in Nsg 201 are utilized in assisting young clients to meet their health needs during childbearing and childrearing years. Theory is concurrent with practice in select health care settings including community agencies. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$75.

Prerequisite: Nsg 201, Nsg 200 and Bio 113.

NSG 203. NURSING CARE OF THE ADULT CLIENT I Eight credits

The nursing process is utilized in assisting adult clients to maintain optimum wellness and to resolve selected health problems. Nursing theory as related to the bio-psychosocial aspects of adult care is correlated with clinical practice in a variety of health care settings. Continuity of care is emphasized in the clinical component. Relevant findings from nursing research are incorporated. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$75.

Prerequisite: Nsg 202.

NSG 204. NURSING CARE OF THE ADULT CLIENT II Eight credits

The nursing process is utilized in assisting adult clients to maintain optimum wellness and to resolve selected medical, surgical, and mental health problems. Nursing theory as related to the biopsychosocial aspects of adult care is correlated with clinical practice in a variety of health care settings. Continuity of care is emphasized in the clinical component. Relevant findings from nursing research are incorporated. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$75.

Prerequisite: Nsg 203.

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 271. HEALTH CARE TERMINOLOGY One credit

Word derivations, roots, prefixes, and suffixes are studied in an attempt to enable students to understand and communicate in terminology common to the health care professions. The emphasis will be on understanding the language in context rather than memorization of unrelated terms.

NSG 272. CLINICAL APPLICATION OF PHARMACOLOGY Three credits

This elective course is designed to expand the student's knowledge of pharmacology. It includes the pharmacologic effect of drugs on body systems, as well as the interaction of multiple drugs and environmental factors.

Prerequisite: Junior and Senior Nursing students and Registered Nurses.

NSG 299. NURSING FORUM I

Six credits

This course is designed to facilitate the transition of Registered Nurse students from other educational routes into baccalaureate nursing education. The course explores the concepts of client basic human needs, development, accountability, health status, nursing process, nursing leadership and research. Use of the nursing process is emphasized in assisting a variety of clients to maintain optimum level wellness. Nursing theory as related to the bio-psychosocial aspects of client health is correlated with clinical practice in a variety of health care settings. Hours weekly: 5 hours class, 3 hours clinical practice. Fee: \$75.

Prerequisite: RN status or NCLEX eligibility.

NSG 301. NURSING CARE OF THE OLDER CLIENT

Eight credits

The nursing process is utilized in the care of the older adult client. Topics have been chosen which reflect the normative changes accompanying the aging process as well as the interactive effects of multiple biopsychosocial problems. Clinical practice, emphasizing disease prevention, health promotion, maintenance and restoration, in long-term care settings, is correlated with theory presentation. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$75.

Prerequisite: Nsg 204.

NSG 302. SENIOR PRACTICUM

Eight credits

Explores current nursing theories and models of practice, and develops the concepts of leadership, management, and organizational change. The student synthesizes knowledge from all previous nursing and supportive courses in an area of clinical practice consistent with career goals and contingent upon availability of clinical placement and approval of the Level Coordinator. Hours weekly: 2 hours class, 18 hours clinical practice in a variety of settings. Fee: \$75.

Prerequisite: Nsg 301 and Nsg 305.

NSG 303. CONTEMPORARY ISSUES IN NURSING

Three credits

Explores current issues and trends in nursing and health care within a seminar format. Hours weekly: 3 hours class.

Prerequisite: Nsg 204.

NSG 305. INTRODUCTION TO RESEARCH

Three credits

This course is a foundation for the study of nursing problems. It will be useful in planning and implementing small research studies, critically reading research reports, and applying research findings to practice.

Prerequisite: Nsg 204, Mth 150.

NSG 307. 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. The evaluation of the health status of individuals is expanded to include more complex assessment skills as well as modifications for the elderly and pediatric client.

Prerequisite: Junior and Senior Nursing majors or RN students.

NSG 395-396. INDEPENDENT STUDY

One to three credits

Independent study for advanced students in nursing under the direction of a staff member.

Prerequisite: By arrangement with an instructor. Candidates for independent study must have a minimum cumulative and nursing G.P.A. of 3.00 and be of senior class standing.

NSG 198/298/398. TOPICS IN NURSING

Variable credit

A study in topics of special interest that are not exclusively treated in regularly offered courses.

OCCUPATIONAL THERAPY

See Health Sciences Programs, page 129.

OPTOMETRY

See Health Sciences Programs, page 129.

PHARMACY

See Pre-Pharmacy, page 191.

PHILOSOPHY

Associate Professor Henson, Chairman; Professor Kay.

Total minimum number of credits required for a B.A. degree — 121.

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

The study of philosophy, whether by those who pursue a major in philosophy or by those who elect only a few courses of special interest, contributes to the development of the most basic skills and habits of mind which are characteristic of 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 defend one's own views with force and imagination. Students who develop these skills through the study of philosophy are prepared for a variety of professional careers in law, medicine, teaching, and the ministry. In addition, they are the beneficiaries of the traditional liberal arts education as a preparation for numerous careers in government, business, and industry.

Since students may elect to pursue a double major in philosophy and a related area of interest, philosophy majors are invited to design their own majors in consultation with their advisors and with the approval of the department chairman. The typical program consists of 30 credit hours in philosophy, including either Phl 101 or Phl 201, and Phl 152.

The minor in philosophy consists of 18 credit hours, including Phl 101 (3 credit hours), Phl 152 (3 credit hours), and at least one course from Phl 201 through Phl 206 (3 credit hours).

Recommended Course Sequence for a Degree in Philosophy

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Core Requirements	12	Core Requirements	12
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
Phl 101 Introduction to Philosophy	3	Phl 152 Introduction to Logic	3
Core Requirements	9	Core Requirements	6
Free Electives	3	Free Electives	6
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Fifth Semester		Sixth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15
Seventh Semester		Eighth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	<hr/> 15		<hr/> 15

PHL 101. INTRODUCTION TO PHILOSOPHY Three credits
An introduction to the major figures, problems, and concerns of Western 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; fatalism, freedom, and responsibility; skepticism and the nature of knowledge; and theories of reality.

PHL 152. INTRODUCTION TO LOGIC Three credits
An introduction to the principles of deductive reasoning. The recognition of fallacies; general rules of inference; distinguishing good and bad arguments; the use and abuse of language; and the application of logical principles to related disciplines.

PHL 201. ORIGINS OF WESTERN THOUGHT: SOCRATES TO AUGUSTINE Three credits
The development of Western philosophical thought from its beginnings in the Greek world to Christian thought in the Middle Ages. Special attention will be focused upon the writings of the Pre-Socratics, Plato, Aristotle, Plotinus, Aquinas, Duns Scotus, William of Ockham, and Augustine.

PHL 202. MODERN PHILOSOPHY: DESCARTES TO KANT Three credits
Western philosophical thought from the Renaissance to the end of the eighteenth century, including the writings of Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant.
Prerequisite: Phl 101 or 201.

PHL 203. NINETEENTH CENTURY PHILOSOPHY Three credits
An examination of the writings of the major English and European philosophers in the nineteenth century, including the works of Fichte, Schopenhauer, Mill, Kierkegaard, Nietzsche, McTaggart, Bradley, and Marx.
Prerequisite: Phl 101 or 201.

PHL 204. TWENTIETH CENTURY PHILOSOPHY Three credits
Major figures and movements in contemporary philosophical thought, with special emphasis upon English philosophy since 1900. Major philosophers to be studied include Moore, Russell, Ayer, Wittgenstein, Bergson, Husserl, Heidegger, and Sartre.
Prerequisite: Phl 101 or 201.

PHL 206. AMERICAN PHILOSOPHY Three credits
A survey of the distinctively American contributions to philosophical thought, from Jonathan Edwards to the present. Included in the course is an examination of major influences in American thought, such as realism, idealism, and pragmatism, as well as a study of major figures such as Santayana, Royce, Peirce, James, Dewey, Whitehead, Hocking, Quine, and others.
Prerequisite: Phl 101 or 201.

PHL 210. ETHICS Three credits
A study of the values, ideals, and ideologies which comprise the foundations of human conduct. Several major ethical theories will be examined, e.g., egoism, altruism, and utilitarianism, along with a number of ethical problems such as moral skepticism, relativism, the concept of authority, and the role of facts in ethical theory. The application of ethical theory to specific human problems such as racism and sexism, homosexuality, political corruption, punishment, violence, and drug abuse is also examined.
Prerequisite: Phl 101 or 201.

PHL 214. MEDICAL ETHICS Three credits
An inquiry into the ethical issues which underlie the practice of medicine. Classical ethical theories such as those of Plato, Hume, Kant, and Mill are examined in a context involving such medical problems as: patients' rights, genetic counseling, abortion, human experimentation, elective death, birth defects, and the limits of lifesaving therapy.
Prerequisite: Phl 101 or 201.

PHL 216. PHILOSOPHY OF ART Three credits
An examination of the nature of artistic creativity, imagination, perception, and expression as such notions arise in the literary arts of fiction and poetry, the visual arts of painting, photography, motion pictures, and television, and the performing arts of drama, music, and dance. Emphasis will also be placed upon the development of at least one major theory of art, such as that of Plato, Aristotle, Kant, Dewey, or Collingwood.
Prerequisite: Phl 101 or 201.

PHL 220. 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 201.

PHL 225. LITERATURE OF THE OLD TESTAMENT Three credits
The course aims at giving students an insight into the books of the Old Testament and the range and depth of the religious heritage received from Israel. The biblical message is studied in its dynamic context of the culture, geography, and history of the ancient Near East.
Prerequisite: Phl 101 or 201.

PHL 226. LITERATURE OF THE NEW TESTAMENT **Three credits**

An examination of the form and content of the books of the New Testament as literary products and as records of the faith that gave rise to the Christian Church. The teachings of Jesus and the Apostolic Church are studied against the background of their own time and examined in their significance for contemporary life.

Prerequisite: Phl 101 or 201.

PHL 228. CONTEMPORARY RELIGIOUS THOUGHT **Three credits**

A study of the development of religious thought from neoorthodoxy to the "Death of God" theologies. The impact of scientism, linguistic philosophies, and ecumenism on modern theologizing; the thinkers whose views will be considered include Barth, Brunner, the Niebuhrs, Bultmann, Farmer, Weiman, Maritain, Buber, Sartre, Heidegger, Tillich, Rahner, Rubenstein, Altizer, Cox, Brown, and Weigel.

Prerequisite: Phl 101 or 201.

PHL 230. SOCIAL AND POLITICAL PHILOSOPHY **Three credits**

Social and political institutions as seen by such classical critics as Plato, Aristotle, Hobbes, Hume, Burke, Bentham, and others. Special attention to analysis of the problems of censorship, relation of church and state, prejudice, aims and methods of democratic institutions.

Prerequisite: Phl 101 or 201.

PHL 232. PHILOSOPHY OF HISTORY **Three credits**

A study of the various interpretations of history. The views of Augustine, Vico, Rousseau, Kant, Hegel, Marx, Comte, Spengler, Schweitzer, Toynbee, Sorokin, Niebuhr, and others on the meaning of historical events.

Prerequisite: Phl 101 or 201.

PHL 240. PROBLEMS IN METAPHYSICS **Three credits**

A critical examination of one or more problems of ontology and cosmology as dealt with by both classical and contemporary metaphysicians. Problems to be considered may include the concepts of substance, existence, causality, God, space and time, the problem of change and motion, free will and causal determinism, fatalism, the relationship between mind and body, and the nature of universals.

Prerequisite: Phl 101 or 201.

PHL 298. TOPICS **Three credits**

The study of a topic of special interest not extensively treated in other courses. Possible topics include philosophy of law; philosophy of biology; technology and value; philosophy of death; philosophy of literature; etc.

Prerequisite: Phl 101 or 201.

PHL 301. STUDIES IN GREEK PHILOSOPHY **Three credits**

A critical examination of a single major philosopher or text in the period of classical Greek philosophy. Variable content: this course may be repeated for credit. Normally preceded by Phl 201.

Prerequisite: Phl 101 or 201.

PHL 302. STUDIES IN MODERN PHILOSOPHY **Three credits**

A critical examination of a single major philosopher or text in the modern period from Descartes to Kant. Variable content: this course may be repeated for credit. Normally preceded by Phl 202.

Prerequisite: Phl 101 or 201.

PHL 310. STUDIES IN MORAL PHILOSOPHY **Three credits**

A critical inquiry into the development of a rational ethical theory. The ethics of Plato, Aristotle, Hume, Kant, and Mill are examined along with the analytical, existential, and normative

extensions of these theories in contemporary ethical thinking. The role which such important ethical concepts as virtue, justice, responsibility, and happiness play in structuring a sensible moral philosophy is examined in depth. Normally preceded by Phl 210.

Prerequisite: Phl 101 or 201.

PHL 320. ADVANCED PHILOSOPHY OF RELIGION **Three credits**

An intensive examination of a major problem or figure in the philosophy of religion. Variable content: course may be repeated for credit. Normally preceded by Phl 220.

Prerequisite: Phl 101 or 201.

PHL 350. PHILOSOPHY OF SCIENCE **Three credits**

A critical examination of the nature of science; meaning, verifiability, and experimentation in the sciences; the principle of verifiability in physics and psychology; induction and the various interpretations of probability; causality and laws of nature; and the nature of explanation and justification.

Prerequisite: Phl 101 or 201.

PHL 352. SYMBOLIC LOGIC **Three credits**

A review of the propositional calculus and a thorough examination of the predicate calculus, including identity, definite descriptions, and relations. Emphasis will be placed upon the concept of a formal system and axiomatization, as well as properties of deductive systems such as consistency, completeness, independence of axioms, and other formal properties.

Prerequisite: Phl 152 or Mth 202 or permission of instructor.

PHL 360. EXISTENTIALISM **Three credits**

A close examination of the literature of the major existentialist writers, both theistic and atheistic, together with a consideration of its impact upon philosophy, religion, psychology, and art. Special attention will be given to the thought of Kierkegaard, Nietzsche, Jaspers, Heidegger, Marcel, and Sartre.

Prerequisite: Phl 101 or 201.

PHL 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 chairman is required.

PHL 397. SEMINAR **One to three credits**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.



PHYSICAL EDUCATION AND HEALTH

Assistant Professor Wingert, Chairman; Professor Reese; Associate Professors Saracino, Schmidt; Assistant Professor Meyers; Coaches Kest, Rainey, Unsworth; Trainer, Aed.

Physical education is an integrated part of the total educational program at Wilkes College. It is designed to help the student understand and practice knowledge of body movement. The aim of the Physical Education Program is to provide each student with opportunities to participate in physical activities that will satisfy his needs, interests, and physical fitness goals.

Students are required to complete four semesters of Physical Education, each semester being a different learning experience. It is recommended that students fulfill their four semesters of Physical Education in the first two years of their program. The only exceptions to this requirement are made to veterans of the military service and to students who have medical excuses which are submitted to and verified by the College Infirmary and the Registrar. Veterans should submit a copy of their honorable discharge from the service to the Registrar's Office.

Students enrolled in AFROTC may substitute AS 101-102-201-212 for the PE 100 series.

PE 101. INTERCOLLEGIATE ATHLETICS No credit
This course is limited to students participating in intercollegiate athletics, cheerleaders, major-ettes, and strutters during their sport season. This course may be repeated.

PE 115. BODY MECHANICS AND WEIGHT TRAINING - WOMEN No credit
Individual weight training programs are developed. Body form and fitness levels are evaluated. This course provides instruction in the basic techniques of free weights.

PE 116. WEIGHT TRAINING No credit
Individual weight training programs are developed. This course provides instruction in techniques of free weights.

PE 120. BEGINNING BOWLING No credit
Designed to teach the basic techniques of bowling; grip, stance, footwork, delivery, and approach to foul line, release and follow through, rules and scorekeeping procedures.

PE 121. ADVANCED BOWLING No credit
Designed for students who have developed fundamental bowling skills and now want to develop style of delivery, methods of aiming, rules, and team concepts.
Prerequisite: PE 120 or approval of instructor.

PE 125. BEGINNING BADMINTON No credit
This course provides instruction in the fundamental skills of badminton with emphasis on play, rules, and strategy.

PE 126. ADVANCED BADMINTON No credit
Designed for students who have developed the fundamental skills of the sport. The student should be able to apply the rules and basic strategy to tournament competition.
Prerequisite: PE 125 or approval of instructor.

PE 130. AEROBIC DANCE No credit
This course is designed to develop cardiorespiratory conditioning, muscle tone, and other elements of fitness through dance and exercise movements performed to music.

PE 131. MODERN DANCE No credit
This course is a study of contemporary dance technique and composition. Students will have experience in basic or axial and locomotive movement and explore movement in space, time, and energy-release.

PE 132. FOLK & SOCIAL DANCE No credit
This course presents a variety of folk and social dances enjoyed by people of all cultures. Preservation of cultural heritage and social interaction are provided through participation.

PE 135. AEROBIC FITNESS No credit
Group program for students to achieve aerobic fitness.

PE 136. FITNESS ACTIVITIES - JOGGING No credit
This course is designed to develop a self-styled jogging program. Emphasis on warm-up, individual jogging, and cool-down.

PE 140. BEGINNING GOLF No credit
An appreciation of golf as a lifetime activity is stressed. Instruction of swing mechanics, rules, terminology, and safety practices taught. Weather permitting, outdoor practice of skills will be provided.

PE 145. INDOOR HOCKEY No credit
Designed to teach fundamental skills of indoor hockey and to apply these skills in game situations.

PE 146. INDOOR SOCCER No credit
Designed to teach the fundamental skills of soccer and to apply these skills in game situations.

PE 147. TEAM HANDBALL - MEN No credit
Consists of six field players and a goalie. An aggressive game of throwing, jumping, running, offensive, and defensive moves that develop athletic skills and improve physical fitness.

PE 148. VOLLEYBALL & BASKETBALL - MEN No credit
Elementary skills, terminology, mechanics of offensive and defensive movement, strategy, and rules are developed within team games.

PE 150. LEISURE-TIME GAMES No credit
This course offers a variety of games for leisure-time enjoyment.

PE 155. TEAM SPORTS No credit
Designed for group participation in team sports activities. Such activities as volleyball, basketball, touch football, or other sports activities may be included.

PE 160. RACQUETBALL No credit
This course teaches fundamental skills of racquetball, strategy, and rules of play. Fee for course.

PE 165. SWIM INSTRUCTION No credit
Water skills, safety, self-reliance, precautions are developed along with swimming stroke instruction.

PE 166. ADVANCED LIFE SAVING

No credit

This course will be taught under the American Red Cross guidelines for lifeguard certification. All lifesaving water skills will be taught and all written and textbook work will be completed in the course.

Those completing and passing the course will not only receive PE credit but lifeguard certification as well. If students prefer only to learn lifesaving skills, they will not have to do the testing for certification. Also through this course the Advanced Life Saving Renewal Program is available.

PE 167. RECREATIONAL SWIM

No credit

This course gives the skilled swimmers the opportunity to swim. Lap swimming and recreational water games are included. Fitness through swimming will be stressed.

PE 170. SKIING

No credit

This course is designed to give students the opportunity to learn to ski and/or improve their skiing skills. Ski school lessons will be available for all levels of skiing ability. Fee for course.

PE 175. TENNIS INSTRUCTION

No credit

Designed to teach fundamental skills, terminology, mechanics of offensive and defensive movements, strategy, and rules of play.

PE 180. BEGINNING VOLLEYBALL

No credit

This course teaches the basic skills of volleyball. Serves, sets, bump passes, spikes, and rules of play are emphasized.

PE 181. ADVANCED VOLLEYBALL

No credit

This course is designed for students who have developed fundamental skills for power volleyball. Offensive and defensive team play are stressed.

Prerequisite: PE 180 or approval of instructor.

PE 198. TOPICS IN PHYSICAL EDUCATION

No credit

These courses are designed to meet specific needs of groups of students. The courses will be offered on a trial basis in order to determine demand and value of introducing them as part of the college curriculum.

PE 210. CONTEMPORARY HEALTH CONCEPTS

Two credits

A study of present-day health concepts. The course undertakes to help students enjoy maximum health and happiness through a better understanding of themselves, their relationships with other people, and their functions within today's environment. Topics covered: chemical use and abuse, consumer health, diet and weight control, diseases, emotional and mental disorders, exercise and physical fitness, human sexuality, etc.

PE 310. TREATING ATHLETIC INJURIES

Three credits

A course designed to provide experiences in application of various methods in treatment of athletic injuries. A study of preventive measures and medical management of athletic injuries. Experience in use of exercise techniques and physical modalities.

PE 315. EMERGENCY CARE TECHNIQUES

Three credits

A course designed to provide experiences (both practical and theoretical) in the application of advanced first aid and emergency care techniques. The successful completion of the course will enable the student to render such care.

Prerequisite: student must possess a current Cardiopulmonary Resuscitation (CPR) Card.

PE 298/398. TOPICS IN HEALTH AND/OR PHYSICAL EDUCATION

Variable credit

A study in topics of special interest not extensively treated in regularly offered courses. This course will be offered from time to time when interest and demand justify it.

PHYSICAL THERAPY

Dr. Ralph B. Rozelle, Dean of Health Sciences.

The affiliated physical therapy program requires three years of study at Wilkes College and three years at Temple University. Students who enter the professional three years of study at Temple will be granted the Bachelor of Arts degree in Psychology by Wilkes College following successful completion of their first year at Temple and the Master of Physical Therapy degree following completion of three years at Temple.

The undergraduate program at Wilkes is outlined below:

First Semester		Second Semester	
Psy 101 General Psychology	3	Psy Elective*	3
Bio 121 Principles of Modern Biology I	4	Bio 122 Principles of Modern Biology II	4
Chm 115 Elements and Compounds	4	Chm 116 The Chemical Reaction	4
Eng 101 Composition I	3	Eng 102 Composition II	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/>		<hr/>
	14		14

Third Semester		Fourth Semester	
Psy (Q.M.) 215 Research Design and Analysis	3	Psy Elective*	3
Core Requirements	9	Core Requirements	12
Mth 105 Calculus for Life, Managerial, and Social Sciences I	4	PE 100 Activity	0
PE 100 Activity	0		15
	<hr/>		<hr/>
	16		

Fifth Semester		Sixth Semester	
Phy 105 Introductory Physics	4	Phy 106 Introductory Physics	4
Core Requirements	3	Core Requirements	3
Psy 211 Experimental Psychology	3	Psy 212 Experimental Psychology	3
Psy Electives*	6	Psy Electives*	6
	<hr/>		<hr/>
	16		16

Required	Psychology 221	Developmental
Psychology	Psychology 213	Physiological
Electives*	Psychology 214	Sensory and Perceptual Processes
	Psychology 245	Clinical
	Psychology 398	Neuro
	Psychology 398	Internship

Transfer Credits from Temple University — 30.

Degree: B.A. in Psychology (Behavioral Medicine Track)

POLITICAL SCIENCE

Professor Berlatsky, Chairman; Professors Emeritii Driscoll, Kaslas, Leach; Professors Cox, Hartdagen, Rodechko, Shao; Assistant Professors Auerbach, Berg, Henehan, Meyers, Tuby; Adjunct Faculty Thomas.

- Total minimum number of credits for a B.A. degree — 120.**
- Total minimum number of credits for a minor — 18.**
- Total minimum number of credits for a concentration in Public Administration — 33.**

A major in Political Science requires 120 hours. These include 45-65 hours in the Core and 33 hours in Political Science. All students must take PS 102, 105, 201, 202 and 238 plus 18 advanced hours.

Students may choose to concentrate in Public Administration by taking 33 hours. Students must take the departmental requirements (PS 102, 105, 201, 202 and 238) and then choose 18 additional hours from PS 218, 314, 316, 318, 319, 354, 398. Students must take 6 hours of cognate courses (see semester by semester program). PS 394 is recommended but not required.

A minor in Political Science requires PS 102 and 105 plus 12 hours of advanced courses. Students must take a concentration of 9 hours in one area chosen from American Government, Comparative/International Politics, or Public Administration.

Students who major in Political Science have a wide variety of career options in government, law, education, social service and business.

See Pre-Law for information on law school admission.

Recommended Course Sequence for a Degree in Political Science

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
PS 102 American Government or PS 105 Comparative Government	3	PS 102 American Government or PS 105 Comparative Government	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>15</u>

Third Semester		Fourth Semester	
PS 201 Political Theory	3	PS 202 International Relations	3
Core Requirements	12	PS 238 Concepts and Methods	3
PE 100 Activity	0	Core Requirements	9
	<u>15</u>	PE 100 Activity	0
			<u>15</u>

Fifth Semester		Sixth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	<u>15</u>		<u>15</u>

Seventh Semester		Eighth Semester	
Major Electives	3	Major Electives	3
Free Electives	12	Free Electives	12
	<u>15</u>		<u>15</u>

Recommended Course Sequence for Concentration in Public Administration

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
PS 102 American Government or PS 105 Comparative Government	3	PS 102 American Government or PS 105 Comparative Government	3
Ec 101 Principles of Economics	3	Mth 150 Statistics	3
Core Requirements	6	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>15</u>

Third Semester		Fourth Semester	
PS 201 Political Theory	3	PS 202 International Relations	3
Major Electives	3	PS 238 Concepts and Methods	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>15</u>

Fifth Semester		Sixth Semester	
Public Administration Electives (Two Courses from PS 218, 314, 316, 318, 319, 354, or 398)	6	Public Administration Electives (Two Courses from PS 218, 314, 316, 318, 319, 354, or 398)	6
Core Requirements	3	Free Electives	9
Free Electives	6		
	<u>15</u>		<u>15</u>

Seventh Semester		Eighth Semester	
Public Administration Electives (One course from PS 218, 314, 316, 318, 319, 354, or 398)	3	PS 354 Practicum*	6
Free Electives	12	Free Electives	9
	<u>15</u>		<u>15</u>

*Recommended

PS 102. 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 105. COMPARATIVE GOVERNMENT **Three credits**
An introductory survey of political systems and processes. Emphasis will be placed on categories and methods of comparison, as well as on issues and problems confronted by selected countries of Europe, Asia, Africa, and Latin America.
Offered every semester.

PS 201. INTRODUCTION TO POLITICAL THEORY **Three credits**
An introductory survey of Western political theory from the ancient Greeks to Karl Marx. Students will be exposed to classic political theory by reading primary rather than secondary sources. The course will emphasize the examination and evaluation of political concepts.
Offered every fall.

PS 202. INTRODUCTION TO INTERNATIONAL RELATIONS **Three credits**
A survey of major issues and problems underlying the relations among nations. The domestic, ideological, and international determinants of foreign policy will be explored, and some of the dominant theories and assumptions in the study of international relations will be analyzed.
Offered every spring.

PS 218. 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.
Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 238. CONCEPTS AND METHODS IN POLITICAL SCIENCE **Three credits**
Survey of the major concepts, theories, and methods of current political science as a discipline. Some attention to research design and techniques.
Prerequisite: PS 102 or 105.
Offered in alternate years.

PS 301. POLITICAL DYNAMICS **Three credits**
A study of the various modes of citizen political participation in the United States. The role of public opinion, voting, political parties, interest groups, and political movements will be examined and evaluated. Case studies will be introduced throughout.
Prerequisite: PS 102.
Offered in alternate semesters.

PS 307. THE AMERICAN PRESIDENCY **Three credits**
An exploration and analysis of the development and changing role of the American President as political leader, decision-maker, world leader. Examines the selection and election process and the effect of this process on the Presidency.
Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 312. INTERGOVERNMENTAL RELATIONS **Three credits**
Analysis of the process by which multiple public jurisdictions interact in the United States Federal System, and the impact of this process on public policy.
Prerequisite: PS 102.
Offered in alternate years.

PS 314. PLANNING IN URBAN DEVELOPMENT **Three credits**
Origins and evolution of city planning, influences of urban growth, legal and institutional framework, and scientific and philosophical premises. Survey of city planning as it has evolved in the United States since 1800 in response to physical, social, and economic problems.
Prerequisite: PS 102.
Offered in alternate years.

PS 316. GOVERNMENT BUDGETING **Three credits**
An examination of the political and administrative aspects of the government budgeting process, including the possibilities and consequences of recent budgetary reforms.
Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 318. PUBLIC PERSONNEL ADMINISTRATION **Three credits**
Description and analysis of public personnel; methods of recruitment, assignment, promotion; the relation of the personnel function to its environment; the public service character of government employees.
Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 323. DEMOCRATIC SYSTEMS **Three credits**
Comparison of the development, institutions, problems, and prospects of democratic systems in the modern world and their relation to capitalist-industrial society. Focus is on Great Britain, France, West Germany, and Japan with some attention to the Scandinavian democracies, Italy, and British Commonwealth nations.
Prerequisite: PS 102 and 105 or consent of instructor.
Offered in alternate years.

PS 324. COMMUNIST SYSTEMS **Three credits**
Analysis of the social and political conditions out of which the major Communist systems in the Soviet Union and in China developed. Marxism, Leninism, Maoism. Examines the common elements, the differing elements, problems and prospects of the two nations and their interrelationship with each other and other countries of the world. Some attention to Communism in Eastern Europe, and the Third World.
Prerequisite: PS 105 or consent of instructor.
Offered in alternate years.

PS 325. POLITICS OF DEVELOPING AREAS **Three credits**
The political process in the lesser-developed areas of the world: Asia, Africa, and Latin America. Examines the problems of economic and political change and the relations of these areas to the Western world and the Communist states.
Prerequisite: PS 105 or consent of instructor.
Offered in alternate years.

HST 328. U.S. FOREIGN POLICY **Three credits**
See description under History.

PS 329. INTERNATIONAL LAW AND ORGANIZATION **Three credits**
A study of the nature, application, and sources of public 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 actors.

Prerequisite: PS 202 or permission of instructor.
Offered in alternate years.

PS 331. CONSTITUTIONAL LAW I **Three credits**
Study of growth and change of the American Constitution through analysis of the 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 102 or consent of instructor.
Offered in alternate fall semesters.

PS 332. CONSTITUTIONAL LAW II **Three credits**
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 crime, equal protection of the laws, voting rights.

Prerequisite: PS 102 or consent of instructor.
Offered in alternate spring semesters.

PS 335. AMERICAN POLITICAL THOUGHT **Three credits**
Study of the political ideas, ideals, and ideologies as they contributed to and developed from the American experience. Analysis of the ways of thought which underlie our political institutions and practices.

Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 353. POLICY FORMATION IN THE LEGISLATURE **Three credits**
Analysis of the policy-making process in the legislature, focusing on case studies of the process in the U.S. Congress. Internal processes and external influences.

Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 354. ADMINISTRATIVE LAW AND POLICY **Three credits**
Analysis of the ways in which public policy is made and effected in administrative agencies, of the ways in which the public administrator operates and the linkage between administrative organizations and other policy-makers and influencers of policy.

Prerequisite: PS 102 and 218 or consent of instructor.
Offered in alternate years.

PS 394. PRACTICUM **Three to six credits**
Internship or similar experience in administrative office, community agency, election campaign, or work related to administration or politics.

Prerequisite: At least 4 courses in PS or in Urban Studies, or in a field in which internship will be served, such as Earth and Environmental Sciences. Student must consult with department before registering.
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.

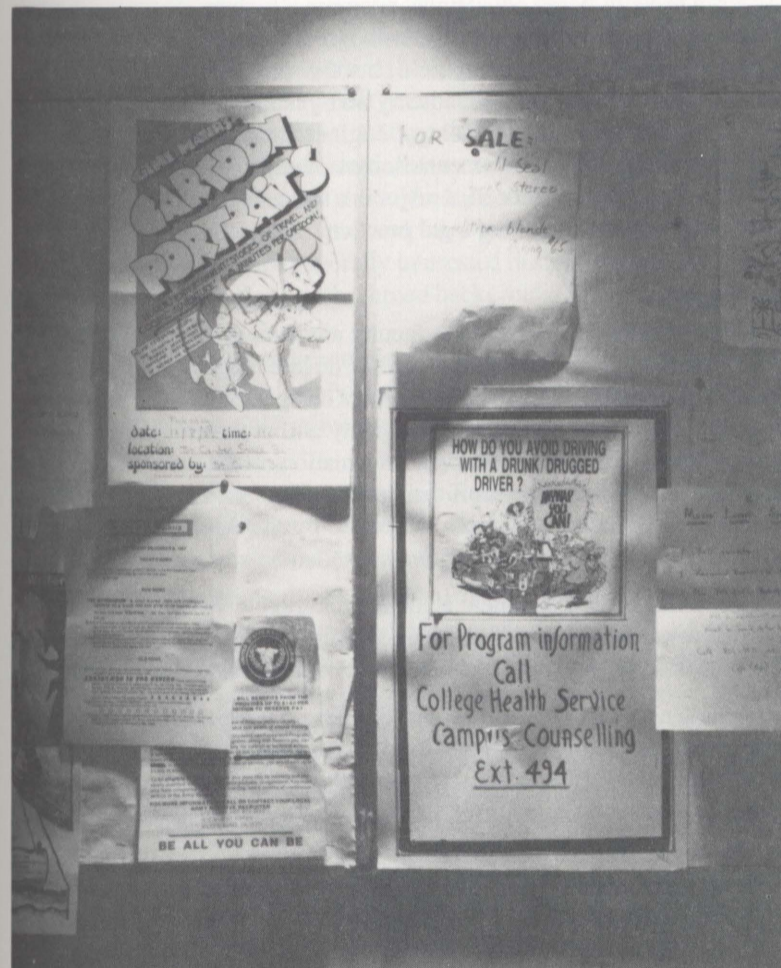
Prerequisite: Approval of department.
Offered every semester.

PS 397. SEMINAR **Three credits**
Presentations and discussions of selected topics by students.

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: leadership in Congress; minorities in the political process; women and power; urban design; the First Amendment in law and practice; equality at law in an unequal society; Marxism, etc. May be repeated when topics differ. A topics course in a specific field of public policy, such as Energy, Environmental Science, Mental Health and Retardation, etc., may be offered also.

Prerequisite: Permission of department, criterion depending on topic.



PRE-LAW

Wilkes College 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 College 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 which 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. Areas such as sociology, nursing, biology, engineering, computer science, psychology, or earth and environmental science also provide appropriate preparation for legal studies. Indeed, a major in a technical field may be especially useful in particular aspects of legal practice.

Advising

Wilkes students are assigned to faculty advisors in the areas of their majors. These advisors guide them regarding degree requirements in particular fields. Pre-law students also consult with a designated pre-law advisor, who acquaints them with aspects of legal study and practice. Pre-law advisors have available law school catalogs, information on the Law School Admission Test (LSAT) and copies of the *Pre-law Handbook*, which contains information about all law schools accredited by the American Bar Association.

Each Wilkes pre-law student is included in regularly scheduled activities such as seminars on legal practice, briefings on law school admissions, workshops on application preparation and interviews, and law school visits.

As the senior year approaches, pre-law advisors provide suggestions as to which law schools are most likely to admit students with particular academic records and LSAT scores. Most importantly, pre-law advisors help to overcome the myths which too often affect student thinking about law schools.

PRE-MEDICAL AND PRE-DOCTORAL PROGRAMS

Dr. Ralph B. Rozelle, Dean of Health Sciences.

Wilkes College offers pre-professional programs in Medicine, Dentistry, Podiatric Medicine, Optometry and Veterinary Medicine.

The Pre-Medical Program at Wilkes College offers a variety of opportunities for students to prepare for medical school. Wilkes enjoys an enviable record of placement of students in medical school, with acceptance rates of over 90%. Allopathic medical schools accepting Wilkes-prepared students include Thomas Jefferson University, Hahnemann University, Medical College of Pennsylvania, Pennsylvania State University, Temple University, University of Pennsylvania, and the University of Pittsburgh in Pennsylvania, as well as such nationally recognized medical schools as Harvard, Stanford, George Washington, Georgetown, Tulane and Yale to cite a few. A number of Wilkes College students also enter Osteopathic Medical schools, such as the Philadelphia College of Osteopathic Medicine.

The pre-medical curriculum at Wilkes College offers a broad range of choice of academic majors to students. Many major in biology, chemistry or one of the other basic sciences although students have majored in mathematics, engineering, English, etc. and have gained admission to medical school. Medical schools are generally interested in students who have depth training in the sciences along with a broad background in the humanities and social sciences.

The core basic science requirements for most medical schools as well as other doctoral professional schools such as dentistry, podiatric medicine, optometry, and veterinary medicine are as follows:

- 2 courses in biology
- 4 courses in chemistry (including organic chemistry)
- 2 courses in physics
- 2 courses in mathematics (calculus)

The program of study in the pre-medical or other pre-doctoral programs follows the semester by semester breakdown given in other parts of this Bulletin and is listed under the academic majors such as biology or chemistry. Any pre-doctoral baccalaureate program of study, however, must include the above basic science prerequisites.

A truly unique feature of Wilkes College for pre-doctoral health science students is an elaborate counselling system. Students are advised by faculty in academic departments, the pre-professional advisor and clinical psychologists. It is the function of these faculty overseers in the advisory system to assure that students are entering a professional field for which they are well-suited and well-prepared, and which they have investigated thoroughly in a professional environment such as a hospital or professional office.

In addition to the ordinary four-year, pre-professional undergraduate programs, Wilkes College has developed distinctive affiliated undergraduate-professional school programs with the following:

- Philadelphia College of Osteopathic Medicine (see pg. 132)
- Temple University School of Dentistry
- Pennsylvania College of Podiatric Medicine
- Pennsylvania College of Optometry

These four programs require only three (3) years of study at Wilkes College before entering professional school. Decisions on admission to the professional school are made by action of a joint selection committee of Wilkes College Faculty and Professional School Faculty following three years of study at Wilkes College. Students enrolling in the affiliated programs will generally follow a program of study which is shown below.

Wilkes College Affiliated Programs in Dentistry/Optometry/Podiatric Medicine

First Semester		Second Semester	
Bio 121 Principles of Modern Biology I	4	Bio 122 Principles of Modern Biology II	4
Chm 115 Elements and Compounds	4	Chm 116 The Chemical Reaction	4
Eng 101 Composition I	3	Eng 102 Composition II	3
Mth 105 Calculus for Life, Managerial, and Social Sciences I or		Mth 106 Calculus for Life, Managerial, and Social Sciences II or	
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Free Electives	0-3	Free Electives	0-3
PE 100 Activity	0	PE 100 Activity	0
	<u>15-18</u>		<u>15-18</u>

Third Semester		Fourth Semester	
Chm 231 Organic Chemistry I	4	Chm 232 Organic Chemistry II	4
Psy 101 General Psychology	3	Free Electives	11-14
Free Electives	8-11	PE 100 Activity	0
PE 100 Activity	0	Health Profession Orientation	0
	<u>15-18</u>		<u>15-18</u>

Fifth Semester		Sixth Semester	
Phy 105 Introductory Physics or		Phy 106 Introductory Physics or	
Phy 201 General Physics I	4	Phy 202 General Physics II	4
Free Electives	12-14	Free Electives	12-14
	<u>16-18</u>		<u>16-18</u>

Total electives available ^{1, 2} 40-56 credits

Following successful completion of the three-year program along with one year of basic sciences education at the professional school, Wilkes College will award the Bachelor of Science degree.

¹Students in the optometry program must take Mth 150 — statistics.
² Must include the core educational requirements.

PRE-PHARMACY PROGRAM

Dr. Ralph B. Rozelle, Dean of Health Sciences.

Wilkes College is affiliated by contract with the Temple University School of Pharmacy. The pharmacy program is a five-year program leading to a degree in pharmacy at Temple University. The first two years are offered at Wilkes College and contain coursework listed below.

Two Years at Wilkes College

First Semester		Second Semester	
Bio 121 Principles of Modern Biology I	4	Bio 122 Principles of Modern Biology II	4
Chm 115 Elements and Compounds	4	Chm 115 The Chemical Reaction	4
Eng 101 Composition I	3	Eng 102 Composition II	3
Mth 105 Calculus for Life, Managerial, and Social Sciences I or		Mth 106 Calculus for Life, Managerial, and Social Sciences II or	
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Free Electives	0-3	Free Electives	0-3
	<u>15-18</u>		<u>15-18</u>

Third Semester		Fourth Semester	
Chm 231 Organic Chemistry I	4	Chm 232 Organic Chemistry II	4
Phy 105 Introductory Physics or		Phy 106 Introductory Physics or	
Phy 201 General Physics I	4	Phy 202 General Physics II	4
Ec 101 Principles of Economics I	3	Free Electives	8-10
Free Electives	5-7		
	<u>16-18</u>		<u>16-18</u>

Following completion of these two years successfully, students are eligible to be admitted to the final three years of pharmacy school at Temple University. All prerequisite courses listed above, e.g. Bio 121, Chm 115, etc., must be completed with a grade of at least 2.0.



PSYCHOLOGY

Associate Professor Charnetski, Chairman; Professors Bellucci, Riley; Associate Professors Bohlander, Stetten; Adjunct Faculty Kanner.

Total minimum number of credits for a B.A. degree — 121.

Total minimum number of credits for a minor — 18.

Psy 101 is the starting point for the psychology program and must be taken by all psychology majors. This course does not count toward the 27 credit hours of psychology required of majors. In addition to Psy 101, the psychology major must take Psy 215 (Research Design and Analysis). It is strongly recommended that Psy 211-212 (Experimental Psychology) be taken if the student is planning graduate study. The General Core Requirements must be satisfied by the Psychology major.

It is required that the student take at least one course from each of the Interest Areas below.

Interest Area I – Research

- Psy 211-212 Experimental Psychology
- Psy 213 Physiological Psychology
- Psy 214 Sensory and Perceptual Processes

Interest Area II – Theoretical

- Psy 203 Contemporary Psychological Theories
- Psy 206 History of Psychology
- Psy 221 Developmental Psychology
- Psy 232 Human Behavior
- Psy 255 Social Psychology
- Psy 311 Comparative Psychology
- Psy 331 Abnormal Psychology

Interest Area III – Applied

- Psy 242 Psychological Tests
- Psy 243 Industrial Psychology
- Psy 245 Clinical Psychology
- Psy 325 The Exceptional Individual

Students who choose to minor in psychology are required to take psychology 101 and psychology 215 and an additional twelve credits in advanced psychology courses.

First Semester

Psy 101 General Psychology*	3
Eng 101 Composition I	3
Core Requirements	9
PE 100 Activity	0
	<hr/>
	15

Second Semester

Major Electives	3
Eng 102 Composition II	3
Core Requirements	9
PE 100 Activity	0
	<hr/>
	15

Third Semester

Psy 215 Research and Design*	3
Core Requirements	12
PE 100 Activity	0
	<hr/>
	15

Fourth Semester

Major Electives	3
Core Requirements	9
Free Electives	3
PE 100 Activity	0
	<hr/>
	15

Fifth Semester

Psy 211 Experimental Psychology I †	3
Major Electives	3
Free Electives	9
	<hr/>
	15

Sixth Semester

Psy 212 Experimental Psychology II †	3
Major Electives	3
Free Electives	9
	<hr/>
	15

Seventh Semester

Psy 395 Independent Research †	3
Cooperative Education †	6
Free Electives	6
	<hr/>
	15

Eighth Semester

Psy 396 Independent Research †	3
Free Electives	13
	<hr/>
	16

*Required
†Recommended

PSY 101. GENERAL PSYCHOLOGY

An introduction to the field of psychology with emphasis on objective and systematic methods of inquiry. Extensive treatment of major psychological topics such as sensation, perception, learning, motivation, intelligence, and personality development. Frustration, conflict, and mental health also receive attention.

Three credits each

PSY 201. ADVANCED GENERAL PSYCHOLOGY

A more detailed study of topics treated only superficially in the introductory course. There will be emphasis on contemporary readings.

Three credits

PSY 203. CONTEMPORARY PSYCHOLOGICAL THEORIES

An examination of current theories in psychology, with emphasis upon the major systematic and "miniature" learning theories.

Three credits

Prerequisite: Psy 101.

PSY 206. 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 211-212. EXPERIMENTAL PSYCHOLOGY **Three credits each**
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: \$35 each semester.
Prerequisite: Psy 215.

PSY 213. PHYSIOLOGICAL PSYCHOLOGY **Four credits**
A study of the physiological mechanisms mediating behavior. Emphasis on the structure and function of the nervous system and the neurophysiological bases of sensory processes, emotion, abnormal behavior, sleep, learning and memory. Laboratory experience includes brain dissection, small animal experimentation, and demonstrations of neurosurgical technique. Fee: \$15.
Prerequisite: Psy 101; junior or senior standing.

PSY 214. SENSORY AND PERCEPTUAL PROCESSES **Three 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.

PSY 215. RESEARCH DESIGN AND ANALYSIS **Three credits**
An introduction to the use of scientific methods as a means of studying behavior. This course is required of all majors.

PSY 221. DEVELOPMENTAL PSYCHOLOGY **Three credits**
The course provides a general view of human growth and development from conception through infancy, childhood, and adolescence. It focuses on innate characteristics and the manner in which they are modified by the environment during the developmental process. Psychosocial development as well as physical, language, and intellectual development are considered.
Prerequisite: Psy 101.

PSY 232. HUMAN BEHAVIOR **Three credits**
Human adjustment and maladjustment to life situations with emphasis on motivation, emotional control, personality formation, and the treatment of the lesser personality disorders.
Prerequisite: Psy 101.

PSY 242. PSYCHOLOGICAL TESTS **Three credits**
A survey of the functions measured by psychological tests with emphasis on intelligence and personality. A variety of the group and individual tests which measure these functions are studied. This course is a prerequisite for Psy 245.
Prerequisite: Psy 101.

PSY 243. INDUSTRIAL PSYCHOLOGY **Three credits**
A survey of the applied areas of personnel, organizational, human factors, and consumer psychology.
Prerequisite: Psy 101.

PSY 245. CLINICAL PSYCHOLOGY **Three credits**
A survey of the clinical method in psychology with consideration of diagnostic and treatment techniques and the role of the professional psychologist in various settings.
Prerequisite: Psy 242 and Psy 331.

PSY 255. 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.
Prerequisite: Soc 101 or Ant 101 or Psy 101, or approval of instructor.

PSY 311. 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 325. THE EXCEPTIONAL INDIVIDUAL **Three credits**
A study of the psychological, physical, and social problems and needs of exceptional individuals. Major emphasis is placed on the diagnosis, psychological assessment, and clinical observation of three types of exceptionality: the mentally defective, gifted, and sensory-motor impaired.
Prerequisite: Psy 101 and Psy 221.

PSY 331. ABNORMAL PSYCHOLOGY **Three credits**
A general survey of the principle forms of mental abnormalities, with emphasis on causes, symptoms, course, and treatment.
Prerequisite: Psy 232.

PSY 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 chairman is required.

PSY 397. SEMINAR (Maximum of three credits per student) **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman 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.

RUSSIAN AND OTHER LANGUAGES

Associate Professor Karpinich.

The Department of Language and Literature offers a two-year program in Russian.

Languages not included in the regular curriculum may be offered as demand arises and as circumstances permit. Languages that may be offered include Polish, Ukrainian, Hebrew, Italian, and Latin. Interested students should contact the department chairman.

RUS 101-102. ELEMENTARY RUSSIAN Three credits each
Fundamentals of spoken and written Russian, and introduction to Russian culture. Includes systematic coverage of basic Russian grammar. Work in language laboratory required. Not recommended for students having completed two or more years of high school Russian.

RUS 203-204. INTERMEDIATE RUSSIAN Three credits each
Emphasis on development of proficiency in spoken and written Russian. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Work in language laboratory required.

Prerequisite: Rus 102 or two years of high school Russian or permission of instructor.

RUS 198/298. TOPICS Three credits
Investigation of an aspect of the language, literature or culture. May be repeated for credit.

Prerequisite: Permission of instructor.

OTHER LANGUAGES (As described above)

101-102. Three credits each
Designed to develop fundamental skills in the selected language and to introduce students to the culture. Includes systematic coverage of basic grammar supplemented with work in language laboratory where appropriate.

203-204. Three credits each
Continued study of grammar and development of proficiency in basic language skills. Exercises based on short cultural and literary texts.

Prerequisite: 102 or permission of instructor.

198/298. STUDIES IN LANGUAGE AND CULTURE Three credits
Investigation of an aspect of the selected language and culture. May be repeated for credit.

Prerequisite: Permission of instructor.

SOCIOLOGY

Associate Professor Natzke, Chairman; Associate Professor Brown; Assistant Professors Garr and Tutwiler; Adjunct Faculty Loftus-Vergari, Tomkiewicz.

Total minimum number of credits required for a B.A. degree — 121.

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

The Department of Sociology and Anthropology offers a comprehensive program of studies which is very competitive with most departments of its size in the country. We have a high quality faculty, all of whom hold the Ph.D., excellent learning and research facilities, on-going interdisciplinary programs with other departments in the College, a wide variety of opportunities for internships in professional settings which integrate a student's academic studies with productive work experiences, and an active Study Abroad program. The curriculum is committed to offering a complete program of studies within the major, with balanced attention to a wide range of interests within the general field of sociology. The department is noted for its commitment to training students who will pursue advanced study in sociology, anthropology, social work, education, law, criminal justice, the health professions and related fields.

One of the unique features of the curriculum is the possibility of seeking dual-majors in two programs. Utilizing existing programs and courses, it is possible for students to achieve a B.A. degree with a double major in sociology and psychology, criminal justice, or other related disciplines. Career counseling is readily available within the department for students making such program commitments.

The formal requirements for the major in sociology are: (1) Soc 101 and Ant 101 (required but not accepted as credit hours toward the major); (2) twenty-four hours, including Soc 255, 370, and 380. All anthropology courses beyond anthropology 101 may be taken for credit toward the major or minor in sociology. Also Phl 230 and/or 350 may be taken toward the major. Soc Analysis 394 and/or Mth 150 is strongly recommended for students planning graduate study. Courses required in one's major such as Soc 101 and Ant 101 may also be used to fulfill core requirements. The department offers Practicum 399, a supervised practical field experience, designed for sociology majors, that involves work in a professional setting. The six hours earned in Practicum may not be applied toward the twenty-four hours required for the major. Approval of the department chairman is required before registering for Practicum.

Sociology Minor

A minor in Sociology consists of 18 hours, including Soc 101. At least one of the following courses is required. Social Psychology 255; Sociological Methods 370; Sociological Theory 380.

The department offers Practicum 399, a supervised practical field experience, designed for sociology minors, in a professional setting. The six hours earned in Practicum may not be applied toward the eighteen hours required for the minor. Approval of the department chairman is required before registering for Practicum.

Social Work/Human Services

Students who intend to work or pursue advanced study in the field of Social Work and/or Human Services 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. The latter requirement may be completed through the auspices of the Cooperative Education Program.

Certification in Education

Sociology majors seeking certification in education must complete the Social Studies Certification Program. A description of the program is given on page 115.

Recommended Course Sequence for Sociology Majors

First Semester		Second Semester	
Soc 101 Intro. to Sociology	3	Ant 101 Intro. to Anthropology	3
Eng 101 Composition I	3	Eng 102 Composition II	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>15</u>
Third Semester		Fourth Semester	
Core Requirements	9	Core Requirements	9
Major Electives	3	Major Electives	3
Free Electives	3	Free Electives	3
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>15</u>
Fifth Semester		Sixth Semester	
Soc 255 Social Psychology	3	Major Electives	6
Major Electives	3	Free Electives	9
Core Requirements	3		
Free Electives	6		
	<u>15</u>		<u>15</u>

Seventh Semester		Eighth Semester	
Soc 370 Methods*	3	Soc 380 Sociological Theory*	3
Free Electives	12	Soc 396 Independent Research	1
	<u>15</u>	Free Electives	12
			<u>16</u>

*Students with educational aspirations beyond the bachelor's degree and/or full-time internship commitments during the eighth semester (e.g. Soc 399 Practicum 6cr, Cooperative Education 9cr, and Soc 396 Independent Research 1cr) should plan to take Soc 370 and Soc 380 in their fifth and sixth semester respectively.

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 200. 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 approval of instructor.

SOC 202. FAMILY DYNAMICS **Three credits**
Family life education orientation. Presentation of the current major ideas concerning skills necessary for effective family life is emphasized. Dating and married couples are encouraged to take this course together. Enrollment limited to 20 students.
Prerequisite: Soc 101, Ant 101, or approval of instructor.

SOC 204. 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.
Prerequisite: Soc 101, Ant 101, or approval of instructor.

SOC 206. 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.
Prerequisite: Soc 101, Ant 101, or approval of instructor.

SOC 230. SOCIAL PROBLEMS **Three credits**
A survey of most pressing contemporary social problems and an examination of current theories of social disorganization.
Prerequisite: Soc 101 or Ant 101, or approval of instructor.

SOC 235. CRIME AND JUVENILE DELINQUENCY **Three credits**
Evaluation of current theories and research into causative factors and sociological implications of criminal and delinquent behavior. Examination of problems, programs, and issues in prevention and treatment of deviant behavior.
Prerequisite: Soc 101 or Ant 101, or approval of instructor.

SOC 240. 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.
Prerequisite: Soc 101, Ant 101, or permission of the instructor.

SOC 241. THE SOCIOLOGY OF MENTAL DISORDERS **Three credits**

Reviews major sociological approaches to the generation and treatment of psychiatric disorders. Attention is given to anti-psychiatric theories of mental disorders which construe 'mental disorders' as primarily social phenomena.

Prerequisite: Soc 101, Ant 101, or permission of the instructor.

SOC 242. 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.

Prerequisite: Soc 101, Ant 101, or permission of the instructor.

SOC 250. 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.

Prerequisite: Soc 101, Ant 101, or permission of instructor.

SOC 251. 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 Psy 101-102, or approval of instructor.

SOC 252. COMPARATIVE SOCIAL WELFARE SYSTEMS **Three credits**

Examination of the social welfare institution within a societal and cultural context. Exploration of historical and conflicting views on responsibility for developing measures to cope with social problems in North American, European, Asiatic, and African countries.

Prerequisite: Soc 101 or Ant 101, or approval of instructor.

SOC 253. INTERVENTIVE STRATEGIES IN SOCIAL WORK **Three credits**

A survey of the strategies used by social workers, and other professionals in human services, to intervene in the problems manifested by their clients, such as drug and alcohol abuse, child abuse, family violence, mental disorders, mental retardation, poverty, and the crises of the elderly.

SOC 255. 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.

Prerequisite: Soc 101 or Ant 101 or Psy 101-102, or approval of instructor.

SOC 260. PERSONALITY, CULTURE, AND SOCIETY **Three credits**

Examination of current theories and research bearing upon the relationship among personality, culture, and society; contributions and convergent development in psychology, anthropology, and sociology.

Prerequisite: Soc 101 or Ant 101 or Psy 101-102, or approval of instructor.

SOC 265. THE SOCIOLOGY OF WORK **Three credits**

An examination of varieties of work with particular emphasis on the industrial and service sectors and the professions. Included is a consideration of labor markets, occupational control, the social division of labor, and the nature of work.

Prerequisite: Soc 101 or Ant 101, or approval of instructor.

SOC 275. 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 approval of instructor.

SOC 370. 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 380. 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 391. SOCIAL SOUNDNESS ANALYSIS I **One credit**

Objectives, method, and design for assessing the societal impact of technological innovations and development projects. The economic, political, and cultural assumptions of project planners and social impact implications of project designs are considered. Students select specific projects for analysis and submit detailed plans for implementing their own social soundness analysis.

Prerequisite: Approval of instructor.

SOC 392. SOCIAL SOUNDNESS ANALYSIS II **Two credits**

Continuation of SOC 391. Implementing social soundness analysis under direction of instructor for projects selected in previous semester. A completed professional quality social soundness report presented and discussed in an open forum is required.

Prerequisite: Successful completion of Soc 391.

SOC 394. SOCIOLOGICAL ANALYSIS **Three credits**

The systematic critical evaluation of data by means of concepts and methods consistent with the principles of sociology. Both quantitative and qualitative procedures will be employed.

Prerequisite: Soc 101 or Ant 101, or approval of instructor.

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 397. SEMINAR **Three credits**

Presentations and discussions of selected themes and issues in sociology.

Prerequisite: Criteria will vary according to content of seminar.

SOC 198/298/398. TOPICS **Variable credit**

A study of topics of special interest not extensively treated in regularly offered courses.

SOC 399. PRACTICUM **Six credits**

A supervised practical field experience designed for sociology majors that involves work in a professional setting.

SPANISH

Associate Professor Karpnich.

Total minimum number of credits required for a B.A. degree — 120.

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

A major in Spanish consists of twenty-four credit hours in advanced language courses beyond the 204 course. These twenty-four credits must normally include 301-302. Students seeking public school certification must also take 205, 206, 207, 208 or 209, and 350; and in addition to the required twenty-four credit hours, 390 and English 222. In order to enhance their command of language and their understanding of culture, majors are urged to spend a summer or semester abroad.

Students majoring in Spanish may elect a five-year program of study leading to a Master of Business Administration Degree. Information about this program and about career possibilities may be obtained in the office of the Department of Language and Literature, Room 201 Kirby Hall.

A minor in Spanish shall consist of eighteen credit hours beyond 102.

Recommended Course Sequence for a Degree in Spanish

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Sp 101 Elementary I	3	Sp 102 Elementary II	3
Core Requirements	9	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	15		15
Third Semester		Fourth Semester	
Sp 203 Intermediate I	3	Sp 204 Intermediate II	3
Core Requirements	12	Core Requirements	12
PE 100 Activity	0	PE 100 Activity	0
	15		15
Fifth Semester		Sixth Semester	
Sp 205 Conversation	3	Sp 206 Advanced Conversation	3
Major Electives	3	Major Electives	3
Free Electives	9	Free Electives	9
	15		15
Seventh Semester		Eighth Semester	
Major Electives	6	Major Electives	6
Free Electives	9	Free Electives	9
	15		15

SP 101-102. ELEMENTARY SPANISH **Three credits each**
 Fundamentals of spoken and written Spanish, and introduction to Spanish culture. Includes systematic coverage of basic Spanish grammar. Work in language laboratory required. Not recommended for students having completed two or more years of high school Spanish.

SP 203-204. INTERMEDIATE SPANISH **Three credits each**
 Emphasis on development of proficiency in spoken and written 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 two years of high school Spanish or permission of instructor.

SP 205. CONVERSATION **Three credits**
 Practice in spoken Spanish with emphasis on mastery of idiomatic expression. Informal discussions, reports, debates, and written compositions. Work in language laboratory.
 Prerequisite: Sp 204 or permission of instructor.

SP 206. ADVANCED CONVERSATION **Three credits**
 Advanced practice in spoken Spanish with emphasis on special problems of idiomatic expression. Discussions, reports, debates, and written compositions on topics of current interest in the Spanish-speaking world.
 Prerequisite: Sp 205 or permission of instructor.

SP 207. PHONETICS **Three credits**
 A contrastive study of the sound system of modern Spanish and modern English. Intensive oral and aural practice including work in the language laboratory.
 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 and the Spanish-speaking world. 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-Columbus 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 298. STUDIES IN LANGUAGE AND CULTURE **Three credits**
 Development of a particular language skill or investigation of an aspect of Spanish culture. Possible topics include translation, commercial Spanish, Spanish for Health Science Careers, Spanish Folklore, Spanish-American Folklore, and others. May be repeated for credit.
 Prerequisite: Sp 204 or permission of instructor.

SP 301-302. SURVEY OF SPANISH LITERATURE **Three credits each**
 Survey of representative works from the middle ages to the present. Introduction to major movements, literary traditions, genres, and writers.
 Prerequisite: Sp 204 or permission of instructor.

SP 308-309. SURVEY OF SPANISH-AMERICAN LITERATURE **Three credits each**
 A survey of the evolution of Spanish-American literature from the discovery to the present. Readings from outstanding works from different periods and regions.
 Prerequisite: Sp 204 or permission of instructor.

SP 350. ADVANCED GRAMMAR AND COMPOSITION Three credits
Analysis of a variety of Spanish texts and extensive writing practice. Work on special problems of grammar and idiomatic expression.

Prerequisite: Sp 204 or permission of instructor.

SP 390. THE TEACHING OF SPANISH Three credits
Examination of methods and techniques of foreign-language teaching. Practical exercises in preparation and presentation of instructional materials.

Prerequisite: Senior standing and permission of department chairman.

SP 395-396. INDEPENDENT RESEARCH One to three credits each
Independent study and research in the field of the major under the direction of a staff member.

Prerequisite: Approval of department chairman.

SP 397. SEMINAR (Maximum of three credits per student) One to three credits
Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman.

SP 198/298/398. TOPICS Variable credit
Examination of special topics in Spanish literature. Possible topics include the drama of the Golden Age, the nineteenth century Spanish novel, Cervantes and Don Quixote, modernism, and the novel of the Mexican Revolution. May be repeated for credit.

Prerequisite: Sp 301-302 or permission of instructor.

SPEECH

See Speech, Communications, and Theater Arts, page 94.

SPEECH PATHOLOGY

Professor J. Bellucci, Chairman; Professors Emeriti Darte, Hammer; Professor Fahmy; Associate Professors Johnson, Placek; Assistant Professors Ginsburgh, G. Meyers, Polachek, R. Williams.

Total minimum number of credits required for a B.A. degree — 125.

The Bachelor's Degree in Speech-Language Pathology provides a firm foundation for understanding pathologies of speech-language and their remediation. Upon completion of the program, students will be eligible for a Pennsylvania State Department of Education teaching certificate. The Speech-Language Pathology curriculum at Wilkes College is designed to prepare students for intensive study on the graduate level.

Recommended Course Sequence for a Degree in Speech Pathology

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Psy 101 General Psychology	3	Core Requirements	9
Core Requirements	9	CS 115 Survey of Computing & Data Processing	3
PE 100 Activity	0	PE 100 Activity	0
	15		15

Third Semester		Fourth Semester	
Ed 101 Practicum	1	Ed 102 Practicum	1
Ed 201 Intro. to Education	3	Ed 202 Educational Psychology	3
Spl 201 Speech-Language Pathology	3	Spl 202 Speech & Language Development	3
Core Requirements	6	Core Requirements	6
Psy 325 Exceptional Individual	3	Psy 221 Developmental Psychology	3
PE 100 Activity	0	PE 100 Activity	0
	16		16

Fifth Semester		Sixth Semester	
Spl 301 Speech Science	3	Spl 304 Advanced Speech Language Pathology	3
Spl 303 Phonetics	3	Spl 306 Auditory Habilitation & Rehabilitation	3
Spl 305 Audiology & Hearing Science	3	Spl 308 Language Disorders in Children	3
Core Requirements	3	Spl 310 Principles of Case Management	3
Mth 150 Elementary Statistics	3	Free Electives	3
Ed 325 Methods & Materials of Instruction Techniques for Exceptional Children	3		15
	18		

Seventh or Eighth Semester		Seventh or Eighth Semester	
Spl 401 Intro. to Linguistics & Psycholinguistics	3	Spl 380 Professional Semester	15
Sp 101 Fundamentals of Speech	3		
Ed 321 The Teaching of Reading	3		
Free Electives	6		
	15		

SPL 201. INTRODUCTION TO SPEECH-LANGUAGE PATHOLOGY **Three credits**
Introduction to the field of speech and hearing. Includes overview of speech/language/hearing disorders, their etiologies, treatment, and psychological and social foundations of speech-language pathology.

SPL 202. SPEECH AND LANGUAGE DEVELOPMENT **Three credits**
Study of the pattern of speech and language development and consideration of theoretical explanations of this development.

SPL 301. SPEECH SCIENCE **Three credits**
Anatomy and physiology of systems basic to speech/language/hearing functions and introduction to electronic instrumentation used in clinical practice.

SPL 303. PHONETICS **Three credits**
Introduction to phonology, intensive study of the International Phonetic Alphabet, and transcription training.

SPL 304. ADVANCED SPEECH-LANGUAGE PATHOLOGY **Three credits**
Comprehensive study of disorders of speech/language/hearing, their causes, and remediations.

SPL 305. AUDIOLOGY AND HEARING SCIENCE **Three credits**
Study of audiology and hearing science, audiometrics, and consideration of topics such as hearing conservation and industrial audiology.

SPL 306. AUDITORY HABILITATION AND REHABILITATION **Three credits**
Study of methods of habilitation and rehabilitation for hearing-impaired persons and alternative modes of communication; consideration of hearing impairment as it affects the educational process and educational decisions.

SPL 308. LANGUAGE DISORDERS IN CHILDREN **Three credits**
Study of language impaired populations including mentally retarded, autistic, linguistically and developmentally delayed, aphasic, and learning disabled, the patterns of their language impairments, and remediation.

SPL 310. PRINCIPLES OF CASE MANAGEMENT **Three credits**
Identification of disorders, testing, diagnosis, and theory of delivery of treatment services; consideration of counseling parents and communication with other professionals; consideration of the effects of communication disorders on a student's total educational program.

SPL 325. METHODS AND MATERIALS OF INSTRUCTIONAL TECHNIQUES FOR EXCEPTIONAL CHILDREN **Three credits**
Examination of instructional materials for use with exceptional children and study of instructional techniques for providing effective educational experiences.

SPL 353. DIAGNOSIS OF MENTALLY AND PHYSICALLY HANDICAPPED **Three credits**
Study of mental and physical handicaps and in-depth exploration of diagnostic techniques used in educational planning for these individuals.

SPL 380. PROFESSIONAL SEMESTER IN SPEECH-LANGUAGE PATHOLOGY **Fifteen credits**
Examination of professional problems common to all teachers; provides observation and practice of treatment methods for speech-language disorders and practice in development of IEPs for speech-language disorders.

SPL 381. FIELD PRACTICUM **Three credits**
Supervised field observation of individuals with speech and language disorders and experience in therapeutic planning; field assignments will be made in public schools, clinics, and hospitals.

SPL 401. INTRODUCTION TO LINGUISTICS AND PSYCHOLINGUISTICS **Three credits**
Study of syntax, semantics, and pragmatics, and consideration of issues in psycholinguistics, particularly with reference to applications in speech-language disorders.

THEATER ARTS

See *Speech, Communications, and Theater Arts*, page 94.





The School of Business and Economics

Theodore J. Engel, M.A.
Dean of the School

The School of Business and Economics offers a variety of programs leading to a B.S. in Accounting or Business Administration, and a B.A. in Economics. Minors in all three areas also are available. The various courses of study prepare students for management positions in business, industry, the nonprofit sector, and government, as well as professional licensings and graduate education. Interdisciplinary ventures, such as the Computer Information Systems and Engineering Management programs, provide opportunities for students to create individual educational experiences. The School also offers the Master of Business Administration Degree and Master of Health Administration Degree.

The School of Business and Economics includes the following:

- Accounting
- Business Administration
- Economics

ACCOUNTING

Associate Professor Broadt, Assistant Professors Chisarick, Cordora, Croop, Feeney.

Total minimum number of credits required for a B.S. degree — 126.
Total minimum number of credits required for a minor — 24.

The School of Business and Economics 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/or chartered management accountants. Those choosing a career in administration receive the managerial training necessary for success in a full range of leadership roles.

The accounting curriculum parallels that of business administration and consists of three tiers or levels. It begins with a comprehensive study of the arts, sciences, mathematics, communications, and humanities. This liberal arts core, which is a common experience to all majors, provides the basis for a broadly educated individual. The second level 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 computer science. The final level of basic educational skills relates to the field of financial and managerial accounting. A rigorous thirty credit hours are devoted to current accounting theory and applications through the use of texts, cases, and practical experience. This sequence begins with introductory level accounting and progresses through intermediate, tax, cost, auditing, and system components. A fourth level also is available. Students with the classroom background described may participate in a practical experience through an accounting internship. Most students are placed with public accounting firms where it is possible to experience a broad range of business problems in a short time-span. However, for students with a more specialized interest, accounting internships are also available in banking, industry, and with the government. The internship program has been available at Wilkes College for the past thirty years, and most qualifying applicants have been placed in positions of their choice, including the large international accounting firms.

The accounting curriculum is a demanding and comprehensive educational experience. It does not allow much flexibility in the selection of elective courses outside the basic core. However, both communication and computer skills are now an integral part of each accounting course offering. The individual completing this program is educationally qualified to meet every state's legal requirements for the certified public accounting examination.

Students from other disciplines, even those unrelated to business or economics, have been inclined to select an accounting minor, along with their major field of study. The minor provides the student with enough back-

ground to begin with professional entry-level employment while developing a background in his chosen field of study. The minor program is composed of Acc 121-122, Acc 211-212, and twelve additional credits in accounting.

Accounting alumni can be found in firms ranging in size from those of individual practitioners to international organizations. Many of our graduates who began their careers with such firms have since moved into leadership positions with governments or private industry. The accounting major in the School of Business and Economics at Wilkes College will provide an individual with the combined educational skills to be a future success as a leader in the accounting profession, industry, or government.

Recommended Course Sequence for a Degree in Accounting

Major in Accounting

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Core Requirements*	12	CS 115 Survey of Computers	3
PE 100 Activity	0	Core Requirements	9
		PE 100 Activity	0
	<hr/>		<hr/>
	15		15
Third Semester		Fourth Semester	
Acc 121 Accounting I	3	Acc 122 Accounting II	3
Ec 101 Economics I	3	Ec 102 Economics II	3
SCT 101 Public Speaking	3	Core Requirements	9
Core Requirements	9	PE 100 Activity	0
PE 100 Activity	0		
	<hr/>		<hr/>
	18		15
Fifth Semester		Sixth Semester	
Acc 211 Intermediate Acc I	3	Acc 212 Intermediate Acc II	3
Acc 221 Taxes	3	Acc 224 Advanced Taxes**	3
Ec 231 Statistics I	3	Ec 232 Statistics II	3
BA 209 Business Correspondence	3	BA 226 Investments	3
BA 225 Finance	3	BA 232 Business Law II	3
BA 231 Business Law I	3	Free Elective	3
	<hr/>		<hr/>
	18		18
Seventh Semester		Eighth Semester	
Acc 231 Auditing	3	Acc 234 Accounting Systems**	3
Acc 233 Cost Accounting	3	Acc 244 Advanced Accounting	3
Acc 251 Senior Seminar** (prerequisite for Acc 252)	3	Acc 252 Internship**	3
Ec 201 Money and Banking	3	Free Elective	3
BA 251 Management	3		
	<hr/>		<hr/>
	15		12

*With 101 and 102 or a higher sequence required of all accounting majors.

**Accounting electives.

ACC 121. INTRODUCTORY FINANCIAL ACCOUNTING **Three credits**
Introduction and development of the overall accounting function from analysis of business transactions and their systematic recording to the interpretation of the resulting financial statements. Fee: \$20.

Prerequisite: Sophomore standing or permission of instructor.

ACC 122. INTRODUCTORY MANAGERIAL ACCOUNTING **Three credits**
Introduction to the accounting requirements necessary in a management environment and the uses of accounting data for planning and control of business and non-profit activities. Fee: \$20.

Prerequisite: Acc 121.

ACC 211. INTERMEDIATE ACCOUNTING I **Three credits**
A comprehensive analysis of the accounting process and the financial statements. Intermediate problems pertaining to cash, receivables, inventories, current liabilities, and investments in stocks.

Prerequisite: Acc 122.

ACC 212. INTERMEDIATE ACCOUNTING II **Three credits**
A continuation of Intermediate Accounting I. Intermediate problems pertaining to investments in bonds and funds, plant and equipment, intangibles, long-term liabilities, and stockholders equity; financial statement analysis and fund and cash flow reporting.

Prerequisite: Acc 122.

ACC 221. TAXES **Three credits**
The preparation of federal income tax returns for individuals and businesses based on the current law, regulations, and current decisions; research of tax law, regulations, and current decisions; research of tax law using various tax reference services and computer data-base access.

Prerequisite: Acc 122.

ACC 224. ADVANCED TAXES **Three credits**
Tax accounting for corporations, partnerships, and fiduciaries, including corporate organization, reorganization, distributions and liquidation. Preparation of federal corporate, partnership, and fiduciary returns.

Prerequisite: Acc 221.

ACC 231. AUDITING **Three credits**
An analysis of modern auditing concepts involving staff organization, professional ethics and legal responsibility, internal control, audit programs and working papers, and original record examination.

Prerequisite: Acc 212.

ACC 233. COST ACCOUNTING **Three credits**
Principles and practices of cost accounting including a study of job, process, and standard cost systems. Informative systems design, budgeting, variance analysis, and direct costing concepts are covered.

Prerequisite: Acc 212.

ACC 234. FINANCIAL AND MANAGERIAL ACCOUNTING SYSTEMS **Three credits**
Review of the systems used to accumulate and report accounting information with emphasis on computer applications.

Prerequisite: Acc 212.

ACC 244. ADVANCED FINANCIAL ACCOUNTING **Three credits**
A comprehensive review and analysis of various accounting problems relating to corporate consolidations, partnerships, governmental units, non-profit organizations, estates, trusts, and bankruptcies.

Prerequisite: Acc 212.

ACC 251. SENIOR SEMINAR IN FINANCIAL ACCOUNTING **Three credits**
Current topics in financial accounting and corporate reporting are reviewed. Case studies requiring generally accepted accounting principle applications will be an integral part of the topics covered.

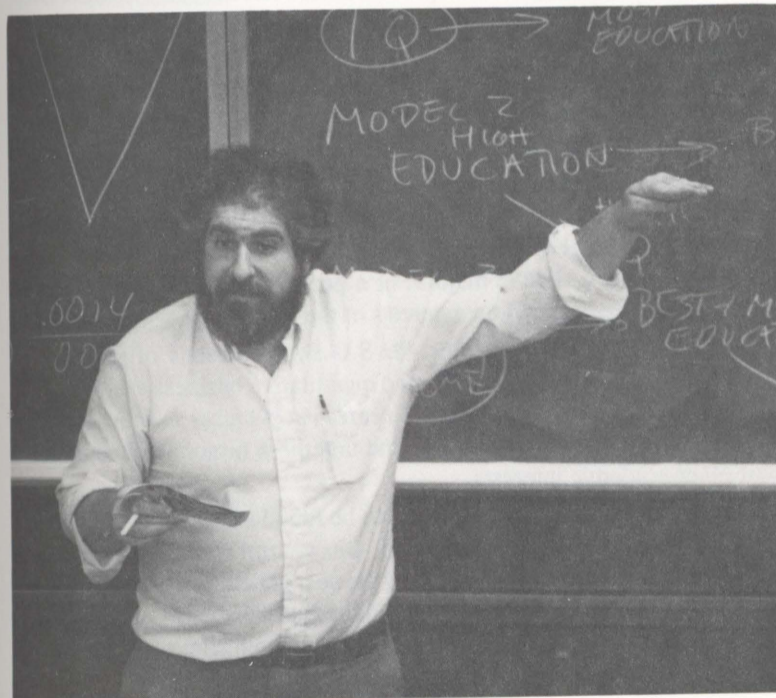
Prerequisite: Acc 212.

ACC 252. ACCOUNTING INTERNSHIP **Three credits**
This course provides on-the-job accounting experience for accounting majors. A minimum of 240 hours is provided with either certified accounting firms, government agencies, or private industry. Internships are offered on a competitive basis following student interviews with interested firms and agencies. Students not obtaining an internship must substitute a 200- or 300-level course in the School of Business and Economics. (All courses listed through the seventh semester should be taken prior to this course.)

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.



BUSINESS ADMINISTRATION

Professors Basu, Farrar; Associate Professor Engel, Gera; Assistant Professors Batory, Cordora, Gurdin, Penugonda, Raspen, Rodins.

Total minimum number of credits required for a B.S. degree — 126.

Total minimum number of credits required for a minor — 24.

The School of Business and Economics (S.O.B.E.) offers a variety of business administration tracks leading to executive careers in business, industry, and government. Students interested in pursuing graduate degrees, attending professional schools, or seeking professional licensings will find that the S.O.B.E. curriculum will prepare them for such challenges.

The business administration curriculum is composed of three tiers or steps intended to combine simultaneously a rigorous education with the flexibility of individualized program design. The first sequential tier is the liberal arts core. If business administration majors are to become effective leaders and self-fulfilled individuals, they must possess the skills and knowledge acquired through a demanding exposure to the arts, sciences, mathematics, and humanities. The next tier of the curriculum is the business administration core. This core transmits a common educational experience to all majors by addressing topics believed necessary for effective managers to possess. Subjects studied include such disciplines as finance, marketing, economics, management, and computer science. The third and final tier is represented by what is known as a "concentration". Each student must take at least six courses from a menu of offerings in at least one concentration. This is the stage at which students can select the concentration and courses that focus upon their own personal career goals and ambitions. Choices include such areas as international business, marketing, and finance.

The business administration curriculum also allows for a number of free electives for further customization of one's education. A student who wishes to declare a minor, perhaps in computer science or communications, readily can do so. Minors, double majors, or a personalized package of electives can be constructed around the interests of the student.

For majors in other disciplines, the S.O.B.E. currently offers minors in finance, marketing, management, and quantitative business analysis. Thus, students who may be contemplating a career in business as a means of fully utilizing their major of choice will find that these minors will complement their other academic interests.

Business administration alumni are to be found in positions of leadership in organizations throughout the world. Our alumni staff the faculty of colleges and universities nationwide. For the next generation of executives and professionals seeking such realization of ambitions, the S.O.B.E. Business Administration Program at Wilkes will prepare them admirably for their demanding future.

Recommended Course Sequence for a Degree in Business Administration

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Core Requirements	6	Core Requirements	6
Mth 101 Fundamentals*	3	Mth 102 Fundamentals*	3
CS 115 Survey of Computers	3	SCT 101 Public Speaking	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
Acc 121 Accounting I	3	Acc 122 Accounting II	3
BA 231 Business Law I	3	BA 232 Business Law II	3
Ec 101 Economics I	3	Ec 102 Economics II	3
Core Requirements	6	Core Requirements	9
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 18
Fifth Semester		Sixth Semester	
BA 209 Business Correspondence	3	BA 222 Marketing	3
BA 251 Management	3	BA 252 Operations Management	3
Ec 201 Money and Banking	3	or BA 254 Organizational Design	
Ec 231 Statistics I	3	Ec 232 Statistics II	3
Core Requirements	3	Core Requirements	6
Free Electives	3		
	<hr/> 18		<hr/> 15
Seventh Semester		Eighth Semester	
BA 225 Finance	3	SOBE Electives	12
SOBE Electives	6	Free Electives	3
Free Electives	6		
	<hr/> 15		<hr/> 15

*Students will enroll in a higher mathematics sequence, if work similar to 101-102 was taken in high school.

B.A. CONCENTRATIONS

Students who major in business administration must take at least six courses from one of the following concentrations:

BANKING AND FINANCE

- | | |
|--|---|
| Acc 204 Managerial Accounting | Ec 224 Economic Development |
| BA 220 Real Estate | Ec 225 International Trade |
| BA 226 Investments | Ec 226 International Investment and Finance |
| BA 240 Property Insurance | Ec 236 Public Finance |
| BA 241 Life Insurance | Ec 241 Microeconomics I |
| BA 395-396 Independent Research | Ec 251 Macroeconomics I |
| BA 398 Topics | Ec 252 Macroeconomics II |
| CS 115 Survey of Computers and Data Processing or | Mth 105 Introductory Calculus I |
| CS 124 COBOL Programming* | Mth 106 Introductory Calculus II |
| | PS 316 Government Budgeting |
| | SCT 206 Business and Professional Speaking |

ECONOMICS

- | | |
|--|--|
| BA 212 Government and Business | Ec 228 Economic Geography of Asia, Africa, and Latin America |
| CS 115 Survey of Computers and Data Processing or | Ec 229 Comparative Economic Systems |
| CS 123 FORTRAN Programming* | Ec 230 Business Cycles |
| Ec 222 American Labor Movement | Ec 236 Public Finance |
| Ec 223 Collective Bargaining | Ec 241 Microeconomics I |
| Ec 224 Economic Development | Ec 245 Consumer Economics |
| Ec 225 International Trade | Ec 251 Macroeconomics I |
| Ec 226 International Investment and Finance | Ec 252 Macroeconomics II |
| Ec 227 Economic Geography of North America, Europe, and the Soviet Union | Ec 395-396 Independent Research |
| | Ec 397 Seminar |
| | Ec 398 Topics |
| | Mth 105 Introductory Calculus I |
| | Mth 106 Introductory Calculus II |

MANAGEMENT AND INDUSTRIAL RELATIONS

- | | |
|---|--|
| Acc 201 Cost Accounting | CS 115 Survey of Computers and Data Processing or |
| Acc 204 Managerial Accounting | CS 124 COBOL Programming* |
| BA 217 Logistics and Distribution Management | Ec 222 American Labor Movement |
| BA 240 Property Insurance | Ec 223 Collective Bargaining |
| BA 241 Life Insurance | Mth 105 Introductory Calculus I |
| BA 252 Operations and System Management or | Mth 106 Introductory Calculus II |
| BA 254 Organizational Design and Behavior** | Mth 262 Operations Research |
| BA 256 Business Policies and Corporate Responsibility | PS 218 Public Administration |
| BA 271 Human Resources Management | PS 318 Public Personnel Administration |
| BA 395-396 Independent Research | Psy 232 Human Behavior |
| BA 398 Topics | Psy 243 Industrial Psychology |
| | Soc 265 Sociology of Work |
| | SCT 202 Interpersonal Communication |
| | SCT 206 Business and Professional Speaking |
| | SCT 303 Organizational Communication |

MARKETING

- | | |
|--|---|
| BA 114 Salesmanship | CS 124 COBOL Programming* |
| BA 216 Advertising | Ec 224 Economic Development |
| BA 217 Logistics and Distribution Management | Ec 225 International Trade |
| | Ec 226 International Investment and Finance |
| BA 240 Property Insurance | Ec 245 Consumer Economics |
| BA 241 Life Insurance | Mth 105 Introductory Calculus I |
| BA 261 Principles of Retailing | Mth 106 Introductory Calculus II |
| BA 264 Retail Buying | Psy 232 Human Behavior |
| BA 395-396 Independent Research | SCT 202 Interpersonal Communication |
| BA 398 Topics | SCT 206 Business and Professional Speaking |
| CS 115 Survey of Computers and Data Processing or | SCT 302 Public Relations |
| CS 123 FORTRAN Programming or | |

INTERNATIONAL BUSINESS

- | | |
|--|--|
| Ec 224 Economic Development | Any of the following History courses, to a maximum of six credits: |
| Ec 225 International Trade | Hst 328 United States Foreign Policy |
| Ec 226 International Investment and Finance | Hst 356 Europe in the Twentieth Century |
| Ec 227 Economic Geography of North America, Europe, and the Soviet Union | Hst 361-362 History of the Far East |
| Ec 228 Economic Geography of Asia, Africa, and Latin America | Hst 382 History of Latin America |
| Ec 229 Comparative Economic Systems | Hst 348 History of Russia |
| BA 252 Operations and Systems Management or | Any of the following Political Science courses, to a maximum of six credits: |
| BA 254 Organizational Design and Behavior** | PS 105 Comparative Government |
| BA 256 Business Policies and Corporate Responsibilities | PS 202 International Relations |
| BA 395-396 Independent Research | PS 323 Democratic Systems |
| BA 398 Topics | PS 324 Communist Systems |
| Ant 270 Cultural Anthropology | PS 325 Politics of Developing Areas |
| Two semesters of a Foreign Language at the 204 competency. | |

*A Computer Science course may not be used to satisfy both the Business Administration core and serve as a concentration elective.
 **BA 252 or BA 254 may not be used to satisfy both the Business Administration core and serve as a concentration elective.

Business Administration Minor (Prerequisite: Ec 101, 102)
(24 credits, including Ec 101, 102)

1. Finance

Required: Acc 121 Elementary Acc I BA 225 Managerial Finance
Acc 122 Elementary Acc II BA 226 Investments

Electives: Two of the following:

Ec 201 Money and Banking Ec 236 Public Finance
Ec 226 International Investment and Finance BA 241 Life Insurance

2. Marketing

Required: BA 222 Principles of Marketing

Electives: Five of the following:

BA 114 Salesmanship BA 261 Principles of Retailing
BA 216 Advertising BA 264 Retail Buying
BA 217 Logistics SCT 302 Public Relations
BA 231 Intro. to Contracts & Sales

3. Management

Required: Acc 121 Elementary Acc I BA 251 Principles of Management
Acc 122 Elementary Acc II BA 254 Organiz. Design & Behavior

Electives: Two of the following:

BA 225 Managerial Finance BA 271 Human Resources Management
BA 252 Op. Sys. & Mgmt. Ec 223 Collective Bargaining
BA 256 Bus. Pol. & Corp. Responsibility

4. Quantitative Business Analysis. If this area is chosen, the student is advised to take Mth 105-106, or Mth 111-112 as a sequence in the Math/Science core.

Required: BA 252 Op. Sys. & Mgmt. Ec 231 Statistics I
Ec 232 Statistics II

Electives: Three of the following:

BA 217 Logistics Ec 242 Advanced Microeconomics
Ec 241 Microeconomics Mth 262 Operations Research

BA 101. INTRODUCTION TO BUSINESS

Three credits

Designed to orient students to the framework within which business enterprises function in the economy. Stress is placed on organization and management of the enterprise, decision-making within the enterprise, small business operations, and problems of financial resources.

BA 114. SALESMANSHIP

Three credits

The role of salesmanship in the economic system and motives behind all buying. The principles and art of selling with emphasis on industrial selling; the techniques of prospecting, presentation, handling objections, closing, follow-through including sales demonstration.

BA 209. 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 212. GOVERNMENT AND BUSINESS

Three credits

A study of the relationship of government to economic enterprises with special attention to conditions in the United States; the regulatory activities of government agencies; administrative methods, objectives, and results of governmental control. Reference is made to monopoly and quasi-monopoly situations, public utilities, trusts, transportation, extractive industries, and public enterprise.

BA 216. ADVERTISING

Three credits

Social and economic impacts of advertising; ethics and truth in advertising; analysis of current advertising; a study of the elements of product and market analysis; the elements of advertising layout, appeals, copy, art, display, trademarks, and various media.

BA 217. LOGISTICS AND DISTRIBUTION MANAGEMENT

Three credits

Development and organization of the domestic and international transportation system; regulatory considerations. Distribution management practices; e.g., rates, routes, scheduling, services, insurance, materials handling, warehousing.

BA 220. REAL ESTATE

Three credits

Economic theories of value applied to real estate, valuation as a guide to decisions, market analysis, real estate, finance, property development and management, locational theory and site selection.

BA 222. MARKETING

Three credits

The fundamentals and functions of the marketing system, its institutions and their importance in the economy are studied; marketing pricing policies and practices are investigated; reference is made to marketing activities and government participation.

BA 225. 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.

BA 226. INVESTMENTS

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.

BA 231. BUSINESS LAW — INTRODUCTION, CONTRACTS, AND SALES

Three credits

The foundation for all subjects in the field of business law. The nature, classification, and sources of law. Examination of the essential elements of a contract and the nature of contract rights under both the common law and the Uniform Commercial Code. A study of the law of sales of goods: the transfer of title and risk of loss, warranties and product liability, and secured transactions.

BA 232. BUSINESS LAW — AGENCY, PARTNERSHIPS, CORPORATIONS, AND REAL PROPERTY

Three credits

A study of the principles of law governing partnerships and corporations, with respect to formation, operation, internal relationships, and dissolution, as well as the advantages and disadvantages of these forms of business association. A survey of the law of real property, nature and types of interests in land. A discussion of deeds and their prerequisites.

BA 234. BUSINESS LAW — PROPERTY

Three credits

The law of real property, nature and types of interests in land. A discussion of deeds and their prerequisites. The rights and duties of the landowner to the public. Rights of the government versus rights of the landowner. The landlord-tenant relationship, the mortgagor-mortgagee relationship.

BA 240. PROPERTY INSURANCE Three credits
This course is a study of the fundamentals of fire, casualty, and marine insurance.

BA 241. LIFE INSURANCE Three credits
This course is a study of the principles, practices, and uses of life insurance from the overall viewpoint of the product, cost, market, and industry.

BA 251. PRINCIPLES OF MANAGEMENT Three credits
Nature and evolution of management thought. Fundamental universal concepts covered: decision-making, policy formulation, planning, organizing, staffing, actuating, communication, directing, controlling, etc. Views management as process of integrating knowledge developed by many disciplines. Social and ethical dimensions of the management process summarized.

BA 252. OPERATIONS AND SYSTEMS MANAGEMENT Three credits
Principles of decision-making, systems design, introduction to quantitative tools of analysis; fundamentals of production, inventory, financial, and distribution management.

BA 254. ORGANIZATIONAL DESIGN AND 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.

BA 256. BUSINESS POLICIES AND CORPORATE RESPONSIBILITY Three credits
Integration of background acquired by the student to policy issues. Study of current ideologies and ethics within the institutional framework of the capitalist tradition. Discussion of actual cases.

BA 261. PRINCIPLES OF 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.

BA 264. RETAIL BUYING Three credits
A study of the principles of what, when, and how much to buy; a study of customer demand. Special attention is given to the technique of buying; markups, markdowns, stock turns, and other factors that are necessary to keep lines complete.
Prerequisite: BA 261.

BA 271. HUMAN RESOURCES MANAGEMENT Three credits
A survey of the activities and decision-making functions of the human resources manager, including manpower planning, employee rights, EEOC dealings, training and development, employee evaluation techniques, compensation packages, and personnel recruitment.

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 397. SEMINAR (Maximum of three credits per student) One to three credits
Presentation and discussions of selected topics.

BA 198/298/398. TOPICS Variable credit
Lectures on subjects of special current interest in business which are not covered in other courses.

ECONOMICS

Professor Emeritus Werner; Professors Farrar, Taylor; Associate Professors DeYoung, Williams; Assistant Professor Cordora.

Total minimum number of credits required for a B.A. degree — 122.
Total minimum number of credits required for a minor — 24.

The School of Business and Economics offers both a major and minor in economics. The major program is designed for those students seeking a rigorous exposure to the theoretical explanations of the behavior of an economic system, and the economic decisions and policies which flow from the theories. It is a major with the inherent flexibility which allows a student to design an educational program tailored to his or her needs and interests.

The economics curriculum is quite quantitative. Consequently, a student majoring in economics should ensure that his or her liberal arts core includes mathematical preparation through at least introductory calculus (Math 105-106). It is also recommended that an economics major choose a foreign language from the humanities electives.

All economics majors must take Economics 101-102. This gives them the opportunities to experience the full range of the discipline and to consider where economists may bring to bear their unique expertise. In addition, all majors must take Money and Banking, Economic Statistics, Intermediate Macroeconomics, and Intermediate Microeconomics. Beyond these requirements, majors are encouraged to explore specializations which might be of particular interest to them and best prepare them for their prospective careers.

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 history, pre-law, music, or engineering make it a valuable educational asset.

Economists find that opportunities to apply their skill and knowledge exist in all sectors of the economy. Businesses of every description have economists on their staffs. Governmental bodies and not-for-profit organizations also are major employers of economists. However, a career in higher education often is the one chosen by economists majors.

In all of the above cases, further study at the graduate level is virtually a necessity. Because Wilkes graduates have had ready access to the most prestigious graduate schools, our alumni are to be found in a variety of meaningful careers where they are making significant contributions.

Minor in Economics

Students choosing to minor in Economics must choose one of the following four areas and must take Ec 101-102 as prerequisites.

1. Quantitative Economics

- Ec 231 Applied Economic Statistics I — Univariate Analysis
- Ec 232 Applied Economic Statistics II — Multivariate Analysis
- Ec 241 Microeconomics I
- Ec 242 Microeconomics II
- Ec 251 Macroeconomics I
- Ec 252 Macroeconomics II

2. Economic Finance

- BA 225 Managerial Finance
- Ec 201 Money and Banking
- Ec 226 International Investment and Finance
- Ec 230 Business Cycles
- Ec 231 Applied Economic Statistics I — Univariate Analysis
- Ec 232 Applied Economic Statistics II — Multivariate Analysis

3. International Economics

- Ec 224 Economic Development
- Ec 225 International Trade
- Ec 226 International Investment and Finance
- Ec 227 Economic Geography of North America, Europe, and the Soviet Union
- Ec 228 Economic Geography of Asia, Africa, and Latin American
- Ec 229 Comparative Economic Systems

4. Economic Policy

- BA 212 Government and Business
- Ec 201 Money and Banking
- Ec 222 The American Labor Movement
- Ec 229 Comparative Economic Systems
- Ec 230 Business Cycles
- Ec 236 Public Finance

Recommended Course Sequence for a Degree in Economics

First Semester		Second Semester	
Eng 101 Composition I	3	Eng 102 Composition II	3
Mth 105 Calculus I	4	Mth 106 Calculus II	4
Core Requirements	6	Core Requirements	9
CS 115 Survey of Computers	3	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 16		<hr/> 16

Third Semester		Fourth Semester	
Ec 101 Economics I	3	Ec 102 Economics II	3
Core Requirements	9	Core Requirements	9
Free Electives	3	Free Electives	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 15

Fifth Semester		Sixth Semester	
Ec 231 Statistics I	3	Ec 232 Statistics II	3
Ec 201 Money and Banking	3	Major Electives	3
Ec 241 Microeconomics I or	3	Free Electives	9
Ec 251 Macroeconomics I			<hr/> 15
Free Electives	6		
	<hr/> 15		

Seventh Semester		Eighth Semester	
Ec 241 Microeconomics I or	3	Major Electives	3
Ec 251 Macroeconomics I		Free Electives	12
Major Electives	3		<hr/> 15
Free Electives	9		
	<hr/> 15		

EC 101. PRINCIPLES OF ECONOMICS I **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 201. MONEY AND BANKING **Three credits**
 A study of money, credit, and banking operations. Monetary standards, development of the American monetary and banking system. Recent development in other financial institutions. Central banking and the Federal Reserve System; instruments of monetary control; international monetary relationships.

EC 222. THE AMERICAN LABOR MOVEMENT **Three credits**
 A study of the evolving American labor movement and its ideology. This course deals with the development of American labor ideology and psychology in comparison with other labor movements. The relationship of the American labor movement to other political, social, and economic institutions is investigated.

EC 223. COLLECTIVE BARGAINING**Three credits**

An introduction to labor problems and an analysis of major issues in the field of labor. This course deals with collective bargaining, employment, wages, hours, and union policies. Governmental participation in labor relations and collective bargaining are also investigated. Reference is made to social welfare devices such as social security, unemployment compensation, and workmen's compensation.

EC 224. ECONOMIC DEVELOPMENT**Three credits**

A study of the problems of development and growth in developed and less developed countries and how they can achieve growth and development. Topics stressed include population, financing development, planning and programming development, as well as theories of economic development.

EC 225. INTERNATIONAL TRADE**Three credits**

Classical and Neo-classical theories of trade; qualifications of the pure theory; new theories of trade; the transfer of international payments and the determination of foreign exchange rates; the balance of international payments; tariffs and other trade barriers; United States commercial policy and the gatt; current issues.

EC 226. INTERNATIONAL INVESTMENT AND FINANCE**Three credits**

Theories of direct foreign investment; the nature and scope of multinational enterprise; international payments adjustments under alternative monetary systems; the collapse of the Bretton Woods System; the contemporary international monetary system; proposals for monetary reform; U.S. balance of payments problems and the status of the dollar.

EC 227. ECONOMIC GEOGRAPHY OF NORTH AMERICA, EUROPE, AND THE SOVIET UNION**Three credits**

A study and analysis of the characteristics, potentials, and problems of the more advanced nations of the Northern Hemisphere.

EC 228. ECONOMIC GEOGRAPHY OF ASIA, AFRICA, AND LATIN AMERICA**Three credits**

A study and analysis of the characteristics, potentials, and problems of the less developed nations of the world.

EC 229. COMPARATIVE ECONOMIC SYSTEMS**Three credits**

The institutions of a market economy are analyzed as a foundation for purposes of comparisons. Marxist theory of prices, wages, and the demise of capitalism is studied in order to establish the theoretical basis of Socialism and Communism. Particular stress is placed on the performance of the Soviet economy. Attention is also given to important operational aspects of the Chinese, British, and Swedish systems.

EC 230. BUSINESS CYCLES**Three credits**

Historical analysis of major business cycles. Contemporary theories and a critical examination of public policy toward business cycles.

EC 231. APPLIED ECONOMIC STATISTICS I — UNIVARIATE ANALYSIS**Three credits**

An introduction to the primary tools of research in economics and business. The major topics are estimation and test design using sample means and proportions with applications in economics, accounting, finance, marketing and management. The three hours of lecture per week are complemented by a mandatory two-hour laboratory emphasizing problem solving. Fee: \$20.

Prerequisite: Ec 101, 102 and 6 hours of mathematics.

EC 232. APPLIED ECONOMIC STATISTICS II — MULTIVARIATE ANALYSIS**Three credits**

An introduction to those aspects of research in economics and business in which information on two or more variables is utilized. The major topics are Chi Square Tests, One-Way and Two-Way Analysis of Variance, General Regression and Correlation, Time Series Analysis and Forecasting. A mandatory two-hour laboratory accompanies the three hours of lecture per week. Fee: \$20.

Prerequisite: Ec 231 or permission of instructor.

EC 234. ECONOMIC RESEARCH**Three credits**

The purpose of this course is to provide an introduction to the methods and logic of linear programming, input output analysis, queuing theory, index numbers, and other techniques of research in economics. Students are advised to take Ec 101 and 102 to obtain the theoretical background for this course.

EC 236. 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.

EC 241. MICROECONOMICS I**Three credits**

The study of the interaction between households and businesses in product and resource markets. Topics covered include consumer preferences, production theory, cost analysis, market structures and the determination of wages and prices.

EC 242. MICROECONOMICS II**Three credits**

The study of the market system as a whole, through welfare economics and general equilibrium analysis with emphasis on social preferences, market failure, and policy alternatives.

Prerequisite: Ec 241 or permission of instructor.

EC 245. CONSUMER ECONOMICS**Three credits**

The place of the consumer in the economic system. Theories of consumption; problems of the individual consumer as affected by income and taxes; consumer habits and standard of living; trends in consumption, income disposition, marketing and pricing of consumer products. Relationships between government activities and the consumer are emphasized.

EC 251. MACROECONOMICS I**Three credits**

The study of behavior of the important economic aggregates; national income, consumption, investment, public spending, and taxes. Special emphasis is on the problems of inflation and unemployment and the post-Keynesian search for their causes and solutions.

EC 252. MACROECONOMICS II**Three credits**

An introduction to the Keynesian and Neoclassical growth theory and the various explanations of behavior of consumption, investment, unemployment, and inflation. The course is designed to present an alternative treatment of some topics covered in Macroeconomics I and to extend the student's knowledge into areas not covered.

EC 395-396. INDEPENDENT RESEARCH**One to three credits**

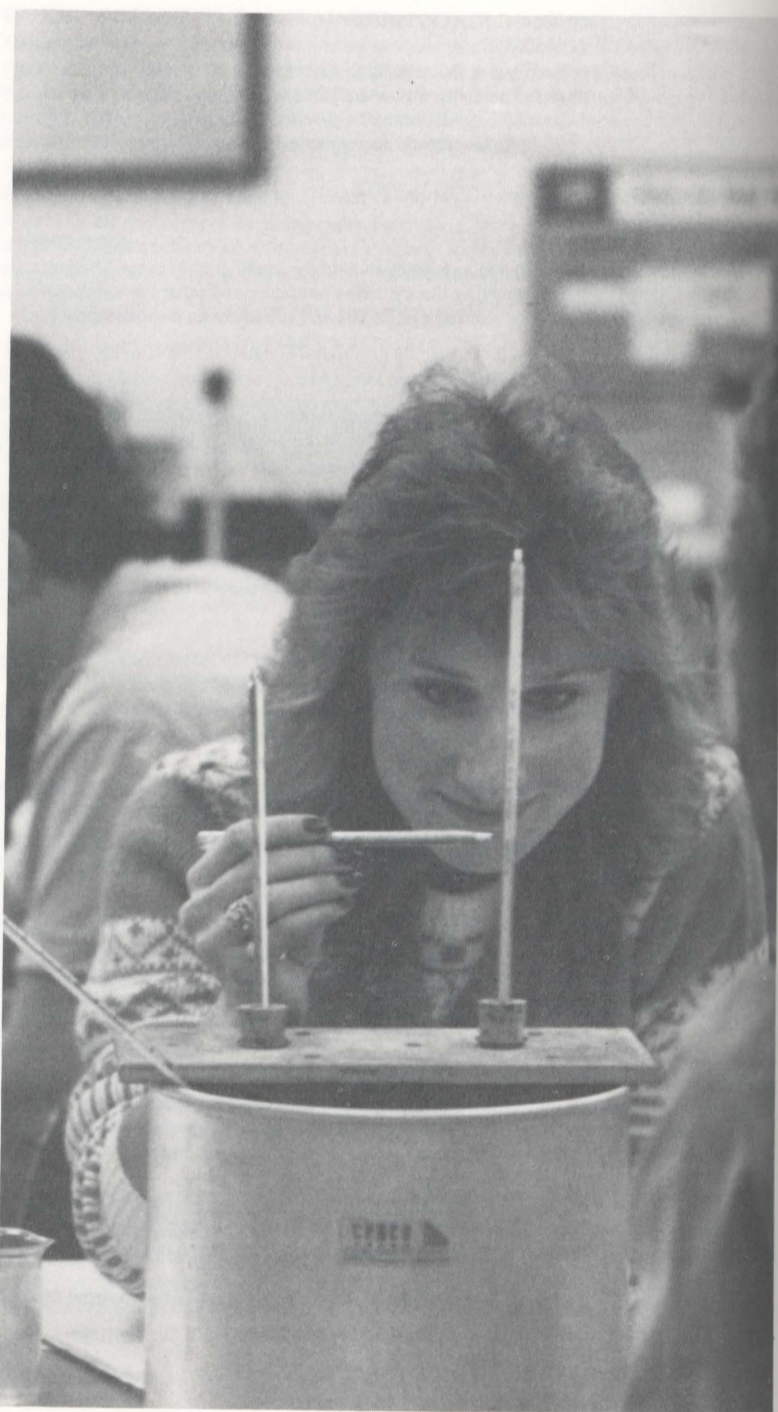
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

EC 397. SEMINAR**(Maximum of three credits per student) One to three credits**

Presentations and discussions of selected topics.

EC 198/298/398. TOPICS**Variable credit**

Lectures on current issues and developments in economics.



The School of Engineering and Physical Sciences

Umid R. Nejb, Ph.D.
Dean of the School

The School of Engineering and Physical Sciences includes three departments. The School offers a wide variety of programs and degrees, which provide strong engineering and scientific experience with advanced techniques heavily integrated into the curriculum. This philosophy encompasses the graduate, the undergraduate, and the two-year programs offered by the Departments of Earth and Environmental Sciences, Engineering, and Physics. All of the programs offered by the School are available to the part-time and evening student.

The strength of the programs offered by the School is their balance of the theoretical and practical, of liberal learning and professional preparation. Students have the opportunity to apply knowledge to real problems by working in state-of-the-art laboratories instructed by highly qualified faculty. Beyond balancing theory and practice, the faculty seeks to increase the student's capacity to serve others with intelligence, imagination, and integrity. This effort is directed toward preparing students for positions in industry, government, and the non-profit sector as well as graduate schools.

In the scientific outreach effort stressed by the School, there has been a strong affiliation with the community to aid in research and development, education, and technology training and transfer. Funding of joint college-industry projects has underscored the high level of scientific and technological expertise, and has included relationships not only with local firms but with world leaders in industry.

The School has entered into transfer articulation agreements with local and national two-year colleges as well as four-year colleges and universities.

The College of Engineering and Physical Sciences includes the following Departments:

Earth and Environmental Sciences
Engineering
Physics

EARTH AND ENVIRONMENTAL SCIENCES

Professor Bohning, Chairman; Professor Cox; Associate Professors M. Case, Klemow, Pindzola, Redmond; Assistant Professor S. Halsor; Adjunct Faculty Smith, Toothill, Winsor; Lab Assistants A. Case, C. Halsor.

Total minimum number of credits required for a B.A. — 128.

Total minimum number of credits required for a B.S. — 130.

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

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

The Department of Earth and Environmental Sciences has two degree programs, both of which incorporate a strong background in all of the sciences and include extensive laboratory and field experience. The interdisciplinary nature of the department 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 B.S. degree program 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 Science. A related degree in Environmental Engineering is offered by the Engineering Department in conjunction with the EES department.

The B.A. degree program emphasizes human interactions with the Earth and Environmental Sciences and as such, while still requiring an extensive background in the sciences, includes additional coursework in the social sciences and political science. The student is required to choose an appropriate minor so as to acquire an expertise in areas such as technical writing, business administration, or political science. Students with this degree would be trained to work in Environmental Science policy-making and administration. Another option in the B.A. degree is to satisfy the requirements leading to a Pennsylvania Secondary Teaching Certificate with certification in Earth and Space Science.

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 can be met by students who have completed 18 credits in EES (at least 12 credits at the 200-level or above) but only those course credits for which a student has achieved a grade of 2.0 or higher will count toward this minimum. Courses counted toward the proposed 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.

Recommended Course Sequences for a B.A. Degree in Earth and Environmental Sciences

First Semester	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
Eng 101 Composition	3	3	3	3
Mth 105 Intro. to Calculus I	4	4	4	4
EES 121 Technological Survival	3	3	3	3
PE 100 Activity	0	0	0	0
Bio 121 Modern Biology I	4	4	4	—
Ec 101 Economics I	—	—	3	—
PS 102 Intro. to American Politics	—	3	—	—
Ed 101 Practicum in Education	—	—	—	1
Psy 101 General Psychology I	—	—	—	3
Core Requirements	3	—	—	3
	17	17	17	17

Second Semester

Eng 102 Composition	3	3	3	3
EES 240 Principles of Environmental Sci.	4	4	4	4
PE 100 Activity	0	0	0	0
Bio 122 Modern Biology II	4	4	4	—
Ec 102 Economics II	—	—	3	—
PS 105 Comparative Government	—	3	—	—
Ed 102 Practicum in Education	—	—	—	1
Psy 221 Developmental Psychology	—	—	—	3
Core Requirements	6	3	3	6
	17	17	17	17

Third Semester

EES 211 Physical Geology	4	4	4	4
Egr 181 CADD Lab	1	1	1	—
Phy 105 Introductory Physics	4	4	4	4
PE 100 Activity	0	0	0	0
Acc 121 Introductory Financial Accounting	—	—	3	—
Eng 151 Western World Literature I	3	—	—	—
Ed 201 Intro. to Education	—	—	—	3
PS 218 Intro. to Public Administration	—	3	—	—
Core Requirements	3	3	3	3
	15	15	15	14

	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
Fourth Semester				
EES 230 Ocean Science	4	4	4	4
EES 212 Historical Geology	—	—	—	3
Phy 106 Introductory Physics	4	4	4	4
PE 100 Activity	0	0	0	0
Acc 122 Intro. to Managerial Accounting	—	—	3	—
Ed 202 Educational Psychology	—	—	—	3
Ed 203i Special Methods of Teaching in the Sciences	—	—	—	3
Eng 152 Western World Literature II	3	—	—	—
Statistics or Computer Science Elective	3	3	3	—
Core Requirements	3	6	3	—
	17	17	17	17

	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
Fifth Semester				
Chm 115 Elements & Compounds	4	4	4	4
EES 251 Synoptic Meteorology	4	4	4	4
BA 251 Principles of Management	—	—	3	—
Eng 201 Advanced Composition	3	—	—	—
Statistics or Computer Science Elective	—	—	—	3
PS Elective	—	3	—	—
Core Requirements	6	6	6	6
	17	17	17	17

	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
Sixth Semester				
EES Electives	6	6	6	6
EES 194 Field Study	1	1	1	1
EES 252 Climatology	—	—	—	3
BA 254 Organizational Design & Behavior	—	—	3	—
Eng 202 Technical Writing	3	—	—	—
PS 354 Administrative Law & Policy	—	3	—	—
Core Requirements	6	6	6	6
	16	16	16	16

	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
Seventh Semester				
EES 391 Senior Projects I	1	1	1	—
Ed 371 The Individual in the Classroom	—	—	—	3
Ed 380 Professional Semester in Education	—	—	—	15
Eng 203 Creative Writing	3	—	—	—
SCT 101 Fundamentals of Public Speaking	3	3	—	—
PS Elective	—	3	—	—
BA Elective	—	—	3	—
EES Elective	3	3	3	—
English Elective	3	—	—	—
Free Elective	3	3	3	—
Core Requirements	—	3	6	—
	16	16	16	18

	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
Eighth Semester				
EES 392 Senior Projects II	2	2	2	2
EES 280 Principles of Astronomy	—	—	—	4
PS Elective	—	3	—	—
BA Elective	—	—	3	—
EES Elective	3	3	3	3
Eng 391 Projects in Writing	3	—	—	—
Free Elective	3	3	3	—
Statistics or Computer Science Elective	3	3	3	3
Core Requirements	—	—	—	3
	14	14	14	15

Total Minimum Credits for B.A. 128 128 128 131

NOTE — All B.A. degree candidates are required to complete an appropriate minor or teaching certification as above (others may be considered by the department). The Earth & Space Science Teaching Certification program has additional non-course requirements.



Recommended Course Sequence for a B.S. Degree in Earth and Environmental Sciences

First Semester		Second Semester	
Eng 101 Composition I	3	Core Requirements	3
Bio 121 Modern Biology I	4	Bio 122 Modern Biology II	4
Mth 111 Calculus I	4	Mth 112 Calculus II	4
EES 121 Technological Survival	3	EES 240 Environmental Science	4
Egr 181 CADD Lab	1	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 15		<hr/> 15
Third Semester		Fourth Semester	
EES 211 Physical Geology	4	EES 230 Ocean Science	4
Statistics or Computer Science Elective	3	Statistics or Computer Science Elective	3
Phy 105/201 Introductory Physics	4	Phy 106/202 Introductory Physics	4
Core Requirements	6	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 17		<hr/> 17
Fifth Semester		Sixth Semester	
Chm 115 Elements & Compounds	4	Chm 116 Chemical Reaction	4
EES 251 Synoptic Meteorology	4	EES Electives	6
Phy 221 Instrumentation	3	EES 194/394 Field Study	1
Free Electives	3	Eng 102 Composition II	3
Core Requirements	3	Core Requirements	3
	<hr/> 17		<hr/> 17
Seventh Semester		Eighth Semester	
EES 391 Senior Projects I	1	EES 392 Senior Projects II	2
EES Electives	3	EES Electives	5
Core Requirements	6	Core Requirements	6
Free Electives	6	Free Electives	3
	<hr/> 16		<hr/> 16

NOTE — B.S. candidates are encouraged to complete a science minor. For example, a Physics minor includes 18 credits of Physics above the 200 level which can be met by taking the PHY 201, 202, 203 introductory sequence instead of PHY 105, 106 and by taking the required PHY 221 and PHY 225 (EES 251). Candidates are also encouraged to have relevant Co-op experience, 6 credits of which may count as EES electives.

EES 110. SURVEY OF ASTRONOMY **Three credits**
Topics covered include stars, constellations, galaxies, sun, planets, and satellites. Intended for non-science majors. Two hours lecture and two hours laboratory/recitation. Fee: \$35.

EES 115. SURVEY OF GEOLOGY **Three credits**
Topics covered include origin of earth, rocks and minerals, earthquakes, volcanoes, and continental motion. Intended for non-science majors. Two hours lecture and two hours laboratory/recitation. Fee: \$35.

EES 120. SURVEY OF METEOROLOGY **Three credits**
Topics covered include temperature, precipitation, wind, weather maps, weather phenomena, and climate. Intended for non-science majors. Two hours lecture and two hours laboratory/recitation. Fee: \$35.

EES 121. TECHNOLOGICAL SURVIVAL **Three credits**
An introduction to the techniques of analysis and problem solving in engineering and the sciences. Also a presentation and discussion of scientific and technical world views. Emphasis on visualization with symbolic, verbal, and written communication. Introduction to selected mathematical topics including vectors and matrices. Modeling, examples of physical law, engineering design, and problem solving using computers. Selected current topics with technical merit or likely impact on the future, and a cooperative design project. Three hours lecture/recitation per week.
Prerequisite: Familiarity with Algebra and Geometry.

EES 125. SURVEY OF OCEANOGRAPHY **Three credits**
Topics covered include water properties, currents, waves, marine life, and beaches. Intended for non-science majors. Two hours lecture and two hours laboratory/recitation. Fee: \$35.

EES 130. ENVIRONMENTAL AWARENESS **Three credits**
Topics covered include ecology, natural resources, pollution, and global food, energy, and population problems. Intended for non-science majors. Two hours lecture and two hours laboratory/recitation. Fee: \$35.

EES 194. INTRODUCTION TO FIELD STUDY **One credit**
An introduction to on-site application of field procedures and investigative techniques. One hour lecture, plus field trip. Fee: variable.

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: \$40.

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 two hours laboratory.
Prerequisite: EES 211 or consent 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: \$40.

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: \$40.

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: \$40.

EES 252. CLIMATOLOGY Three credits
Investigation of controls and classification of climatic patterns. Also, study of data handling techniques, scales of climatic change, and practical applications of climatological results. Three hours lecture.

Prerequisite: EES 251.

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: \$40.

EES 305. HAZARDOUS & SOLID WASTE MANAGEMENT Three credits
Assessment of the scope of the hazardous and solid waste problem and engineering and management strategies. Lecture topics will include: case histories; groundwater pollution; regulations; human health effect; chemical, biological, thermal, and physical management strategies; and pollution abatement engineering. Three hours lecture.

Prerequisite: Chm 116 or 118 and EES 240.

EES 315. SOILS SCIENCE Three credits
A 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 a modern perspective on soil; genesis, classification, and physical properties of soils; organic and inorganic nutrient chemistry; soil moisture relationships; and erosion, sedimentation, and land-use management concepts in selected biomes. Measurements are made both in the field and the laboratory. Two hours lecture and three hours laboratory per week. Fee: \$40. Offered every other year.

Prerequisite: Chm 115 and EES 211.

EES 317. ECOLOGY Three 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: \$35.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

EES 320. HYDROLOGY Three credits
The physical elements and processes which constitute the hydrologic cycle are examined. Topics include floods and flood control, water resources, water uses, and ground water pollution problems. Two hours lecture and two hours laboratory. Fee: \$40.

Prerequisite: EES 211.

EES 325. DYNAMIC METEOROLOGY Three credits
Topics include thermodynamics; heat, moisture, and momentum transfer; and atmospheric forces and motion fields. Three hours lecture and one hour discussion.

Prerequisite: EES 251, Mth 105 or 111, or permission of instructor.

EES 330. ADVANCED WATER QUALITY MEASUREMENTS Four credits
A study of sources, transport, and effects of aquatic pollutants and disruptions of natural biogeochemical cycles. Lecture topics include distribution of dissolved substances, carbonate and metal equilibria, eutrophication, wastewater engineering, pesticide and oil pollution, radiochemistry of water, thermal water pollution, aquatic toxicology, and groundwater pollution. Training in instrumentation, analytical techniques, sampling and computer data reduction methods used in monitoring and assessing water and soil pollution. Measurements are made both in the laboratory and the field. Two hours lecture and 6 hours laboratory per week. Fee: \$50.

Prerequisite: Chm 115 and 116 (or 118), EES 240.

EES 331. ADVANCED AIR QUALITY MEASUREMENTS Four credits
A study of atmospheric pollutants, their sources and effects. Lecture topics include primary and secondary pollutants, stability and plume behavior, modeling, monitoring, standards, radiation, and air pollution abatement technology and engineering. Analytical procedures, instrumentation and data analysis used in monitoring and assessing air pollution and environmental health. Measurements are performed in the field and the laboratory. Two hours lecture and 6 hours laboratory per week. Fee: \$50.

Prerequisite: Chm 115 and 116 (or 118), EES 251 and 240.

EES 340. LIMNOLOGY Three credits
A study of the chemical, physical, and biological aspects of freshwater systems. Laboratory investigations will consist of in-depth analyses of local lakes and streams. Two hours lecture and two hours laboratory. Fee: \$40.

Prerequisite: Consent of instructor.

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 two hours laboratory. Fee: \$40.

Prerequisite: EES 211 and 320.

EES 375. GEOCHEMISTRY Three credits
Chemical properties of earth materials. Origin and abundance of the chemical elements and their distribution. Mineral equilibria. Stable and radioactive isotope variations due to geologic processes. Two hours lecture and two hours laboratory. Fee: \$40.

Prerequisite: EES 211 and Chm 116, or consent of instructor.

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 two hours laboratory. Fee: \$40.

Prerequisite: EES 211 and Chm 111 or 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 two hours laboratory. Fee: \$40.

Prerequisite: EES 211 and 381.

EES 385. 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.

Prerequisite: Bio 121-122, 223-224, or permission of instructor.

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 393. PROFESSIONAL OFF-CAMPUS STUDY

One to six credits

This course is intended for students affiliated with the Cooperative Education Program. Students will present a written and oral report to the department faculty and guests at the conclusion of their project. Course may be repeated (with a maximum of six credits applied toward graduation).

Prerequisite: Senior standing and approval of department adviser and chairman.

EES 394. ADVANCED 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: variable.

Prerequisite: EES 194 or equivalent experience.

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.

Prerequisite: Upper-class standing and approval of academic adviser, research adviser, and department chairman.

EES 397. SENIOR SEMINAR

One to three credits

Presentations and discussions of selected topics and projects.

Prerequisite: Senior standing.

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.

ENGINEERING

Professor Nejib, Chairman; Professor Emeritus Thomas; Professors Arora, Faut, Hostler, Kaska, Orehotsky; Associate Professors Armand, Case, Koch, Maxwell, Parashar, Pindzola, Yeroushalmi; Assistant Professors Choe, Choudhry, Farooq, Ghorieshi, Janaswamy, Janecek, Kucirka, Lee, Misra, Mohseni, Razavi, Srinivasan; Adjunct Faculty Fredrick, Osadchy; Lecturer Petyak; Technical Support Staff: Chesny, Lennox, Sarnecki, Sickler.

Total minimum number of credits required for a B.S. degree in Electrical Engineering — 134.

Total minimum number of credits required for a B.S. degree in Environmental Engineering — 133.

Total minimum number of credits required for a B.S. degree in Materials Engineering — 133.

Total minimum number of credits required for a B.S. degree in Engineering Management — 133.

The Department of Engineering offers three types of degree programs, which provide strong engineering and scientific experience with advanced techniques heavily integrated into the curriculum. Students intending to major in engineering are encouraged to be well prepared in the sciences and mathematics. The first year of course work is common to all engineering programs.

The four-year programs in Electrical Engineering, Engineering Management, Environmental Engineering, and Materials Engineering leading to the Bachelor of Science degree offer various specializations. Students can choose to concentrate, within these programs, in bioengineering, computer engineering, electronic materials, microelectronics, microwave and antenna systems, or telecommunications. Specialization is achieved through the appropriate selection of the technical electives.

Candidates for the Engineering Management degree must declare a preference area in electrical, environmental, or materials. Graduates of this program, with high academic averages, can attain an M.B.A. degree in one year at Wilkes.

The five-year programs in engineering offer the student the opportunity to obtain broader education in the arts and sciences, while completing the requirements for a degree in engineering. Upon successful completion of this program, the student is awarded a B.S. degree in a particular branch of engineering. A student may elect to enter this program at any time during his or her tenure of study. The timing of this entry is critical due to the sequential nature of the courses in engineering.

The two-year programs in Aeronautical, Chemical, Civil, Industrial, and Mechanical engineering are also offered. These programs are specifically designed to provide a successful transfer of students to the junior year at other accredited engineering schools.

The student professional chapters of the Institute of Electrical and Electronic Engineers (I.E.E.E.), the American Society for Metals (A.S.M.), the Society of Women Engineers (S.W.E.), American Ceramic Society (ACS), Metallurgical Society of A.I.M.E., and the Pennsylvania Society of Professional Engineers (P.S.P.E.), in conjunction with the Department, periodically offer seminars on subjects of a timely nature. Attendance at these seminars is mandatory for the completion of degree requirements.

In 1979 the Engineering Department started the Technology Transfer Program (TTP) to enable the community to draw upon the department's technical expertise and advanced facilities. This effort is directed to assist in the development and expansion of industries, and the establishment of high technology facilities in Northeastern Pennsylvania.

Honors Programs 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 publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.

Two-Year Pre-Engineering Academic Programs

Recommended Course Sequence

**Aerospace Engineering
Civil Engineering
Mechanical Engineering**

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 17
Third Semester		Fourth Semester	
EE 211 Circuit Theory I	3	Egr 232 Strength of Materials or 224 Heat and Mass Transfer	3
Egr 231 Statics & Dynamics	3	Egr 284 Measurement Lab II	1
Egr 283 Measurement Lab I	1	Mth 212 Multivariable Calculus	4
Mth 211 Intro. to Differential Equations	4	BA 252 Operations & Systems Man. or Liberal Studies	3
Phy 202 General Physics II	4	MaE 210 Materials Engineering	3
Liberal Studies	3	Eng 102 Composition II	3
	<hr/> 18		<hr/> 17

Chemical Engineering

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 17
Third Semester		Fourth Semester	
Chm 231 Organic Chemistry I	4	Chm Elective (200 or above)	3-4
EE 211 Circuit Theory I	3	Egr 284 Measurement Lab II	1
Egr 283 Measurement Lab I	1	MaE 210 Materials Engineering	3
Mth 211 Intro. to Differential Equations	4	Mth 212 Multivariable Calculus	4
Phy 202 General Physics II	4	Phy 203 General Physics III	3
Liberal Studies	3	Eng 102 Composition II	3
	<hr/> 19		<hr/> 17-18

Industrial Engineering

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 17
Third Semester		Fourth Semester	
EE 211 Circuit Theory I	3	Egr 232 Strength of Materials or 224 Heat and Mass Transfer	3
Egr 231 Statics & Dynamics	3	Egr 284 Measurement Lab II	1
Egr 283 Measurement Lab I	1	Mth 212 Multivariable Calculus	4
Mth 211 Intro. to Differential Equations	4	BA 252 Operations & Systems Man. or Liberal Studies	3
Phy 202 General Physics II	4	MaE 210 Materials Engineering	3
Liberal Studies	3	Eng 102 Composition II	3
	<hr/> 18		<hr/> 17

Four-Year Engineering Academic Programs Recommended Course Sequence for a B.S. Degree in Electrical Engineering

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 17
Third Semester		Fourth Semester	
EE 211 Circuit Theory I	3	EE 212 Circuit Theory II	3
Mth 211 Intro. to Differential Equations	4	Mth 212 Multivariable Calculus	4
Phy 202 General Physics II	4	Phy 203 General Physics III	3
Egr 231 Statics & Dynamics	3	Egr 232 Strength of Materials	3
Egr 283 Measurement Lab I	1	or 224 Heat and Mass Transfer	1
Liberal Studies	3	Egr 284 Measurement Lab II	3
	<hr/> 18	MaE 210 Materials Engineering	3
			<hr/> 17
Fifth Semester		Sixth Semester	
EE 251 Electronics I	3	EE 252 Electronics II	3
EE 253 Electronic Lab I	1	EE 254 Electronic Lab II	1
EE 331 Electromagnetics I	3	EE 332 Electromagnetics II	3
EE 333 Electromagnetics Lab I	1	EE 334 Electromagnetics Lab II	1
EE Electives	3	EE 272 Solid State Devices	3
Liberal Studies	6	EE Electives	3
	<hr/> 17	Eng 102 Composition II	3
			<hr/> 17
Seventh Semester		Eighth Semester	
EE 321 Electromechanical Energy Conversion	3	EE 382 Adv. Comm. & Antenna Lab	4
EE 323 Electric Machines Lab	1	EE 392 Senior Projects II	2
EE 335 Microwaves & Antenna Systems	3	EE Electives	6
EE 381 Advanced Microelectronics Lab	4	Liberal Studies	3
EE 391 Senior Projects I	1		<hr/> 15
EE Electives	3		
Liberal Studies	3		
	<hr/> 18		

EE electives may be chosen from any mathematics, science, or engineering course numbered 200 or above, with at least six of the credits being in two of the following five engineering areas: Computers; Control; Instrumentation; Power; Communication. Students desiring computer, bioengineering, or other concentrations should consult their advisor for proper EE electives.
Liberal Studies constitute a total of nine credits in the humanities and nine in the social sciences.

Recommended Course Sequence for a B.S. Degree in Environmental Engineering

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 15		<hr/> 17
Third Semester		Fourth Semester	
Mth 211 Intro. to Differential Equations	4	Mth 212 Multivariable Calculus	4
Phy 202 General Physics II	4	Phy 203 General Physics III	3
EES 211 Physical Geology	4	EES 240 Principles of Env. Science	4
Egr 211 Measurement Lab I	1	Egr 284 Measurement Lab II	1
EE 211 Circuit Theory I	3	MaE 210 Materials Engineering	3
	<hr/> 16	Egr 224 Heat and Mass Transfer	3
			<hr/> 18
Fifth Semester		Sixth Semester	
Bio 121 Modern Biology I	4	Bio 122 Modern Biology II	4
or Chm 231 Organic Chemistry I		or Chm 232 Organic Chemistry II	
EES 330 Advanced EQM I	4-3	EES 331 Advanced EQM II	4-3
or 320 Hydrology		or 305 Hazardous Solid Waste	
Egr 231 Statics & Dynamics	3	Egr 232 Strength of Materials	3
Egr 233 Fluid Mechanics	3	MaE 234 Electrochemistry	3
Liberal Studies	3	or 332 Engineering Polymers	
	<hr/> 17-16	Eng 102 Composition II	3
			<hr/> 17-16
Seventh Semester		Eighth Semester	
EES 391 Senior Projects I	1	EES 392 Senior Projects II	2
EES 330 Advanced EQM I	4-3	EES 331 Advanced EQM II	4-3
or 320 Hydrology		or 305 Hazardous Solid Waste	
EES 251 Synoptic Meteorology	4	MaE 234 Electrochemistry	3
Technical Elective	3	or 332 Engineering Polymers	
Liberal Studies	6	Technical Elective	3
	<hr/> 18-17	Liberal Studies	6
			<hr/> 18-17

Technical Electives are to be chosen from engineering courses numbered 200 or above. Consult your advisor for proper biology sequencing or reorganizing the courses.
Liberal Studies constitute a total of nine credits in the humanities and nine in the social sciences, including PS 102 or above.

Recommended Course Sequence for a B.S. Degree in Materials Engineering

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>17</u>

Third Semester		Fourth Semester	
Mth 211 Intro. to Differential Equations	4	Mth 212 Multivariable Calculus	4
Phy 202 General Physics II	4	Phy 203 General Physics III	3
EE 211 Circuit Theory I	3	Egr 224 Heat and Mass Transfer	3
Egr 231 Statics & Dynamics	3	Egr 232 Strength of Materials	3
Egr 283 Measurement Lab I	1	Egr 284 Measurement Lab II	1
Liberal Studies	3	MaE 210 Materials Engineering	3
	<u>18</u>		<u>17</u>

Fifth Semester		Sixth Semester	
Chm 231 Organic Chemistry I	4	Chm Elective (200 or above)	3-4
MaE 311 X-Ray Diffraction	3-4	MaE 332 Engineering Polymers	3
or 321 Thermo & Phase Equilibria I		or 322 Thermo & Phase Equilibria II	
MaE 241 Physical Metallurgy	3	MaE 342 Mechanical Metallurgy	3
or 231 Ceramics		or 234 Electrochemistry	
MaE Elective	3	Eng 102 Composition II	3
Liberal Studies	3	EE 272 Solid State Devices	3
	<u>16-17</u>		<u>15-16</u>

Seventh Semester		Eighth Semester	
MaE 311 X-Ray Diffraction	4-3	MaE 332 Engineering Polymers	3
or 321 Thermo & Phase Equilibria I		or 322 Thermo & Phase Equilibria II	
MaE 241 Physical Metallurgy	3	MaE 342 Mechanical Metallurgy	3
or 231 Ceramics		or 234 Electrochemistry	
MaE 381 Adv. Materials Lab I	3	MaE 392 Senior Projects II	2
MaE 391 Senior Projects I	1	MaE Elective	3
MaE Elective	3	Liberal Studies	6
Liberal Studies	3		
	<u>17-16</u>		<u>17</u>

MaE electives may be chosen from any mathematics, science, or engineering course numbered 200 or above, with at least three of the credits being in engineering. Students desiring electronic materials concentration should select the sequence EE 251, 253, 272, and 381.
 Liberal Studies constitute a total of nine credits in the humanities and nine in the social sciences.

Recommended Course Sequence for a B.S. Degree in Engineering Management

First Semester		Second Semester	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Egr 121 Technological Survival	3	Egr 244 FORTRAN	3
Egr 181 CADD Lab	1	Phy 201 General Physics I	4
Eng 101 Composition I	3	Liberal Studies	3
PE 100 Activity	0	PE 100 Activity	0
	<u>15</u>		<u>17</u>

Third Semester		Fourth Semester	
EE 211 Circuit Theory I	3	MaE 210 Materials Engineering	3
Egr 231 Statics & Dynamics	3	Egr 232 Strength of Materials	3
Phy 202 General Physics I	4	Egr 284 Measurement Lab II	1
Egr 283 Measurement Lab I	1	Mth 150 Statistics	3
Mth 211 Intro. to Differential Equations	4	Ec 102 Economics II	3
Ec 101 Economics I	3	Acc 121 Intro. to Financial Accounting	3
	<u>18</u>		<u>16</u>

Fifth Semester		Sixth Semester	
Egr 371 Analysis & Prog. Methods	3	Egr 376 Engineering & Management	3
BA 225 Managerial Finance	3	Models	
BA 251 Principles of Management	3	BA 231 Business Law — Contracts	3
Technical Electives	6	or 232 Business Law — Corp.	
Liberal Studies	3	Technical Electives	6
	<u>18</u>	Liberal Studies	3
		Eng 102 Composition II	3
			<u>18</u>

Seventh Semester		Eighth Semester	
Egr 391 Senior Projects I	1	Egr 392 Senior Projects II	2
BA 222 Marketing	3	EES 240 Principles of Environmental	4
Technical Electives	6	Science	
Engineering Management Elective	3	Technical Electives	6
Liberal Studies	3	Engineering Management Elective	3
	<u>16</u>		<u>15</u>

Technical Electives must follow the approved engineering and science courses of the declared concentration in Electrical, Environmental, Manufacturing, or Materials. Consult your advisor for advanced program outline.
 Engineering Management Electives are satisfied by engineering management courses, independent research, case studies, or internship.
 Liberal Studies must include at least nine credits in the humanities.

General Engineering

EGR 121. TECHNOLOGICAL SURVIVAL

Three credits

An introduction to the techniques of analysis and problem solving in engineering and the sciences. Also a presentation and discussion of scientific and technical world views. Emphasis on visualization with symbolic, verbal, and written communication. Introduction to selected mathematical topics including vectors and matrices. Modeling, examples of physical law, engineering design, and problem solving using computers. Selected current topics with technical merit or likely impact on the future, and a cooperative design project. Three hours lecture/recitation per week.

Prerequisite: Familiarity with Algebra and Geometry.

EGR 181. 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: \$15.

Prerequisite: To be taken along with or after Egr 121.

EGR 224. 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. Three hours lecture per week.

Prerequisite: Phy 201 and Mth 211.

EGR 231. STATICS AND DYNAMICS

Three credits

Equilibrium of force systems; computation of reactions and internal forces; determination of centroids and moments of inertia. Kinematics and dynamics of particles and rigid bodies; Newton's laws, kinetics and potential energy, linear and angular momentum, impulse, and inertia properties. Three hours lecture per week. (same as Phy 211)

Prerequisite: Phy 201, Mth 112.

EGR 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. Three hours lecture per week.

Prerequisite: Egr 231.

EGR 233. FLUID MECHANICS

Three credits

Thermodynamics and dynamic principles applied to fluid behavior, ideal, viscous, and compressible fluids under internal and external flow conditions.

Prerequisite: Egr 231.

EGR 244. FORTRAN

Three credits

Introduction to computer programming using the FORTRAN language. The computer is used to solve problems geared to the individual interest of the students. Three hours lecture per week. Fee: \$45. (see CS 123)

EGR 247. ADVANCED PROGRAMMING — PASCAL

Four credits

A study of advanced programming techniques and the Pascal programming language. Topics include basic and user-defined data types, their use and their machine implementation, structured programming, recursion, efficient data organization. Fee: \$45. (same as CS 225)

Prerequisite: CS 123/Egr 244.

Offered every spring and fall.

EGR 250. BIOMEDICAL ENGINEERING

Three credits

Engineering principles of biomedical instrumentation relating to circulation, respiration, and motor-neural systems are developed. The relationship between human anatomy, physiological system, and transducers is treated as a man-machine interface phenomenon. Instruments emphasized include X-ray, ultrasonics, and coronary care devices.

Prerequisite: Junior or senior standing in engineering or science.

EGR 283-284. ENGINEERING MEASUREMENT LAB I, II

One credit each

A laboratory for the development of measurement techniques and data gathering. The understanding and the use of instrumentation for the measurement of various electric quantities, displacement, temperature, pressure, and other engineering-related quantities. Two-hour laboratory per week. Fee: \$30 per semester.

EGR 342. MACHINE LANGUAGE

Three credits

Basic principles of machine language programming. Computer organization and representation of numbers, strings, arrays, list structures at the machine level. Examples utilize all levels of computer architecture. Three hours lecture. Fee: \$45. (see CS 322)

Prerequisite: Egr 245/CS 223.

EGR 360. INDUSTRIAL TRAINING

One to six credits

Industrial and/or research experience gained through assignments or jobs with the community, government, business, or industry.

Prerequisite: Approval of the Engineering department.

EGR 371. 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. (same as CS 262)

Prerequisite: Junior standing or consent of instructor.

EGR 372. ENERGY MANAGEMENT ENGINEERING

Three credits

Appraisal of energy conservation management, economic efficiency of energy sources, productivity analysis techniques. Principles of energy balance analysis and the availability of energy sources.

Prerequisite: Junior or senior study in engineering or science.

EGR 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.

EGR 374. MANAGEMENT OF INDUSTRIAL ENGINEERING

Three credits

Systems analysis that will include all types of problems frequently encountered by industrial engineers, their impact on the management of an industrial concern, and an exposure to the industrial engineering techniques available to solve the problems.

Prerequisite: Senior engineering standing.

EGR 375. PROJECT & SYSTEMS MANAGEMENT

Three credits

Description of systems management, systems engineering management and the design process. The role of decision theory, modeling, and methodology in systems management analysis. Project environment and control. Program management, planning, and control.

Prerequisite: Senior engineering standing.

EGR 376. ENGINEERING AND MANAGEMENT MODELS **Three credits**
Discussion of the techniques and arts in modeling practical problems encountered by engineers and managers.

Prerequisite: Egr 371 or consent of instructor.

EGR 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 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 Egr 391. A professional paper to be presented and discussed in an open forum is required.

Prerequisite: Egr 391.

EGR 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 chairman.

EGR 397. SEMINAR **One to three credits**
Presentations and discussions of selected topics and projects.

Prerequisite: Senior engineering standing.

EGR 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: Senior engineering standing.

Electrical Engineering

EE 211. CIRCUIT THEORY I **Three credits**
Definitions. Formulations of circuit equations and theorems. Various techniques for circuit analysis using resistive networks. Characterizations of inductance and capacitance. Sinusoidal steady-state analysis using phasor concept. Average power and r.m.s. values. Reactive power, complex power, and power factor. Three phase circuits and their analysis. Measurement of power.

Prerequisite: Mth 112.

EE 212. CIRCUIT THEORY II **Three credits**
Laplace transformation. Transient and steady-state analysis using Laplace transformation. Complex frequency and transform impedances. Definitions of one-port and two-port networks. Network functions, poles and zeros. Frequency responses of second order functions. Inter-relationship between time domain and frequency domain quantities. Mutual inductance and ideal transformer. Characterizations of two-port networks. Fourier series and integral. Computer methods in analysis.

Prerequisite: EE 211.

EE 214. LINEAR SYSTEMS **Three credits**
Types of Signals and Systems: Discrete, Continuous Deterministic and Stochastic; Application of Laplace and Z Transforms to System Analysis and Design; Fourier and Discrete Transforms and their application to Communications and Digital Signal Processing with strong treatment of sampling, modulation, and aliasing; Modeling of Electrical, Mechanical, Optical Systems and their analysis using State Space Techniques.

Prerequisite: EE 212.

EE 251. ELECTRONICS I **Three credits**
The development of operating principles and terminal characteristics of electronic devices, particularly semiconductor devices, rectifiers, amplifiers, design considerations for small and large signals.

Prerequisite: EE 212.

EE 252. ELECTRONICS II **Three credits**
Application of operational amplifiers. Frequency response of amplifiers and principle of feedback. Oscillators, modulation and detection. Design considerations, Logic gates, Flip-Flop Registers and Counters. Principle of digital filters, D/A and A/D converters.

Prerequisite: EE 251.

EE 253. ELECTRONIC LABORATORY I **One credit**
Familiarization with electronic equipment through experiments. Studying the characteristic of diode and transistor through a series of experiments. Design of power supply and different types of amplifiers. One three-hour laboratory a week. Fee: \$45.

Prerequisite: To be taken along with or after EE 251.

EE 254. ELECTRONIC LABORATORY II **One credit**
Investigating the effect of negative feedback on characteristics of amplifiers. Experiment with operational amplifier and design of electronic circuits using Op-Amps as a building block. Amplifier design using FET. Switching techniques, multivibrators, flip-flop and other major logic circuits. Design of different type oscillators. Modulation and detection. Each lab group is responsible for the design and demonstration of an engineering project. One three-hour laboratory a week. Fee: \$45.

Prerequisite: To be taken along with or after EE 252.

EE 271. PHYSICAL ELECTRONICS **Three credits**
Structure of the solid state, wave mechanics, statistics, band theory of solids, semiconductors and semiconductor electronics. Emission (thermionic, field, and photo-), photoconductivity and luminescence. Diodes, transistors, and other devices. Dielectrics, non-linear optics, piezoelectrics, ferroelectrics, ferro, and ferrimagnetism. Three hours class a week.

Prerequisite: MaE 210, Phy 203.

EE 272. SOLID STATE DEVICES **Three credits**
Basic properties of semiconductors and their conduction processes, with special emphasis on silicon and gallium arsenide. Physics and characterization of p-n junctions. Homojunction and heterojunction bipolar transistors. Unipolar devices including MOS capacitor and MOSFET. Microwave and Photonic devices.

Prerequisite: Basic concepts of Materials Engineering, Modern Physics, including basic quantum and statistical mechanics.

EE 298. TOPICS IN ELECTRICAL ENGINEERING **One to three credits**
Selected topics in the field of electrical engineering.

Prerequisite: Sophomore or junior standing or permission of instructor.

EE 314. CONTROL SYSTEMS**Three credits**

Model of linear systems and general feedback theory. Analysis of closed loop systems using the root locus and frequency response techniques. Stability analysis; the Nyquist stability criterion. Compensating techniques; series and feedback compensation. Sample data system. Introduction to analog computers.

Prerequisite: EE 214.

EE 321. ELECTROMECHANICAL ENERGY CONVERSION**Three credits**

Direct energy conversion: Solar, photovoltaic, thermionic and thermoelectric converters, fuel cells, MHD generators. Electromechanical energy conversion: Magnetic circuits, force and torque in magnetic circuits. Principle of operation, construction and application of transformers, DC machines, synchronous and induction machines. Per unit calculations and power system representation.

Prerequisite: EE 211.

EE 323. ELECTRIC MACHINE LABORATORY**One credit**

Analysis of single and three phase circuits and the concept of power measurement; no load and load tests on Transformers, DC Machines, Synchronous Machines, and Induction Motors. Three Phase Transformer Connections, Parallel operation of alternators. Fee \$40.

Prerequisite: To be taken along with or after EE 320.

EE 331. ELECTROMAGNETICS I**Three credits**

Vector analysis. The concept of fields. Dielectric and magnetic media; fields in conductors; electric and magnetic circuit elements. Maxwell's equations and boundary condition problems in one, two, and three dimensional space. Plane electromagnetic waves and power flow. Three hours lecture a week.

Prerequisite: Mth 211 and Phy 202.

EE 332. ELECTROMAGNETICS II**Three credits**

Development of Maxwell's equations and boundary-value problems. Plane wave propagation and reflection from boundaries; the Poynting Theorem. Transmission lines and strip lines; impedance transformation and Smith Charts. Guided TEM, TE and TM waves. Radiation from dipole antenna. Three hours lecture a week.

Prerequisite: EE 331.

EE 333. ELECTROMAGNETICS LABORATORY I**One credit**

Laboratory experiments are performed which illustrate fundamental electromagnetic field concepts in distributed systems and in lumped element circuits. Experiments are partially planned by the students and reported both formally and informally. One three-hour laboratory a week. Fee: \$40.

Corequisite: EE 331.

EE 334. ELECTROMAGNETICS LABORATORY II**One credit**

A continuation of EE 333 with emphasis on transmission line concepts and the interaction of electromagnetic fields and matter. One three-hour laboratory a week. Fee: \$40.

Prerequisite: EE 331.

EE 335. MICROWAVES AND ANTENNA SYSTEMS**Three credits**

Wave propagation in waveguides, resonant cavities and microwave devices and circuits. Retarded potentials. Relation of radiation fields to source distributions; antenna gain concepts and techniques in antenna design. Characterization and analysis of various types of antennas. Radoms and reflectors. Principles of phased-arrays. Three hours lecture a week.

Prerequisite: EE 332.

EE 341. LOGIC AND SWITCHING CIRCUITS**Three credits**

Application of Boolean algebra to the design of Number system logic networks, solid-state switching circuits and devices. Minimization techniques to the synthesis of combinatorial switching circuits including AND-OR and NAND-NOR logic. Analysis and synthesis of sequential switching circuits clocked and asynchronous operation. Effect of microelectronic technology on logic design optimization. Fault masking by redundancy techniques. Three hours lecture a week. (same as CS 320)

Prerequisite: EE 211.

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 hours lecture and one two-hour laboratory a week. Fee: \$45. (same as CS 329)

Prerequisite: EE 341/CS 320.

EE 343. COMPUTER DATA STRUCTURES**Three credits**

A study of the use of a high-level language to implement complex data structures. These include lists, trees, graphs, networks, storage allocation, file structure and information storage and retrieval. Three hours lecture a week. Fee: \$45. (see CS 227)

Prerequisite: Egr 245.

EE 344. 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. Three hours lecture a week. (see CS 326)

Prerequisite: EE 343/CS 227.

EE 346. COMPUTER ARCHITECTURE**Three credits**

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest "supercomputers." (see CS 330)

Prerequisite: Egr 342 or EE 342.

EE 350. MEDICAL INSTRUMENTATION**Three credits**

Applied medical instruments such as ultrasonic devices and signal processing units for ECG and EEG are discussed. The design principles of electrodes, hemodialysis devices, catheters, clinical instruments, intensive care units (ICU's) and pacemakers are treated. Mechanical and electrical design techniques are developed.

Prerequisite: Junior or senior standing in engineering or science.

EE 361. COMMUNICATION SYSTEMS**Three credits**

Fundamental properties of signals. Principles and techniques of linear signal processing. Modulation and demodulation systems, including pulse. Sampling, channel capacity, and coding. Methods of multiplexing. Modulator and multiplexer design. Noise and its effects on communication. Three hours lecture a week.

Prerequisite: EE 214.

EE 376. OPTO-ELECTRONIC ENGINEERING**Three credits**

Wave optics, diffraction, and interference. Lasers and applications including modulation and detection. Optical components and devices. Fiber optics and couplers. Communication and system design concepts. Three hours lecture a week.

Prerequisite: EE 271 and EE 332.

EE 381. MICROELECTRONICS LAB**Four credits**

The theoretical and practical aspects of techniques utilized in the fabrication of semi-conductor devices. Crystal growth, solid solubility, alloying and diffusion, oxide masking and epitaxy. Thin and thick film techniques. Device fabrication procedures in microelectronics, and the electrical performance of devices based on these techniques. Ion implantation system and method of fabrication. One hour lecture and one six-hour lab a week. Fee: \$45.

Prerequisite: Senior engineering standing.

EE 382. COMMUNICATION AND ANTENNA LAB**Four credits**

Characterization and measurement of microwave components, devices, and systems. Emphasis on testing and design criteria using swept frequency and dynamic techniques. Network and spectrum analyzers. Antenna radiation pattern measurements using the antenna range test facility. Microwave communication link design and testing. CAD utilization in MW systems. Coherent optical wave generation and modulation. Laser communication. One hour lecture and one six-hour laboratory a week. Fee: \$45.

Prerequisite: Senior engineering standing.

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 chairman is required.

EE 397. SENIOR SEMINAR**One to three credits**

Presentations and discussions of selected topics.

Prerequisite: Senior engineering standing.

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. Three hours lecture each week.

Prerequisite: Junior or senior engineering standing.

Materials Engineering**MAE 210. 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. Three hours lecture a week.

Prerequisite: Phy 201, 202.

MAE 231. CERAMICS**Three credits**

Structure and properties of ceramic crystalline solids, glasses, and clays. Defect structure, atom movement, interfaces, and ceramic phase diagrams. Processing and engineering application of ceramics. Three hours lecture a week.

Prerequisite: MaE 210.

MAE 234. ELECTROCHEMISTRY**Three credits**

Fundamentals of electrochemistry and the application of electrochemical concepts to corrosion control, battery development, fuel cells, electroplating, and electrolytic industries. Three hours lecture a week.

Prerequisite: MaE 210.

MAE 241. PHYSICAL METALLURGY**Three credits**

Properties of pure metals, constitution, structure, and properties of alloys. Mechanical and thermal treatments of metals and alloys. Influence of microstructure on properties of metals and alloys. Interaction between microstructure, properties, and engineering design. Three hours lecture a week.

Prerequisite: MaE 210.

MAE 298. TOPICS IN MATERIALS ENGINEERING**One to three credits**

Selected topics in the field of materials engineering.

Prerequisite: Sophomore or junior standing or permission of instructor.

MAE 311. X-RAY DIFFRACTION**Four credits**

Study of structure and composition of solids using X-rays. Effects of annealing, substructures, cold work, preferred orientation, and ordering. Principles of design and applications of X-ray diffraction techniques. Three hours lecture and one three-hour laboratory a week. Fee: \$45.

Prerequisite: MaE 210.

MAE 321. THERMODYNAMICS AND PHASE EQUILIBRIA I**Three credits**

Fundamentals of thermodynamics. Phase and reaction equilibria. Behavior of gases and solutions. Theory of alloy phases. Thermodynamic approach to phase diagrams and electrochemistry. Electron theory of phase formation. Three hours lecture a week.

Prerequisite: MaE 210.

MAE 322. THERMODYNAMICS AND PHASE EQUILIBRIA II**Three credits**

Fundamentals of thermodynamics. Phase reaction equilibria. Behavior of gases and solutions. Theory of alloy phases. Thermodynamic approach to phase diagrams and electrochemistry. Extractive metallurgical application and laboratory experiments. Two hours lecture and two hours laboratory a week. Fee: \$35.

Prerequisite: MaE 321.

MAE 332. POLYMERS**Three credits**

Introduction to high polymers as an engineering material. The mechanical, electrical, and optical properties of polymers and polymer applications. Two hours lecture a week and one two-hour laboratory a week. Fee: \$35. (same as Chm 358)

Prerequisite: MaE 210 and Chm 231.

MAE 342. MECHANICAL METALLURGY **Three credits**

The mechanical properties of materials including: elasticity, plasticity, anelasticity, viscoelasticity, dislocation theory, fracture, fatigue, and deformation of single crystal and polycrystalline materials. Testing and deformation processing of materials. Mechanical properties as engineering design parameters. Two hours lecture and two hours laboratory a week. Fee: \$35.

Prerequisite: MaE 210.

MAE 381-382. ADVANCED ENGINEERING LAB I, II **Three credits each**

Topics of commercial importance in materials science and engineering. Instrumentation, experimental techniques, energy conversion, transformations. Research and development laboratory projects, material process and properties. Fee: \$45 per semester.

Prerequisite: Senior MaE standing.

MAE 384. MATERIALS DIAGNOSTIC LABORATORY **Three credits**

Study the aggregation, size, and microstructure of the products of high temperature thermochemical reactions and equilibria by microscopy technique, study the microhardness determination technique of ceramographic specimens. Qualitative and quantitative analysis of an alloy or a multi-component oxide. Identification of the components of organic compounds by IR and UR, and NMR. Four point probe electrical conductivity and Hall measurements of semi-conducting materials. Magnetic properties study of perovskite and spinel classes of ferromagnetic compounds. Applications. One hour lecture and one four-hour laboratory a week. Fee: \$45.

Prerequisite: MaE 210.

MAE 391. SENIOR PROJECTS I **One credit**

Design and development of selected projects in the fields of materials 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.

MAE 392. SENIOR PROJECTS II **Two credits**

Design and development of selected projects in the field of materials 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 MaE 391. A professional paper to be presented and discussed in an open forum is required.

Prerequisite: MaE 391.

MAE 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 chairman is required.

MAE 397. SENIOR SEMINAR **One to three credits**

Presentations and discussions of selected topics.

Prerequisite: Senior standing in engineering.

MAE 398. TOPICS IN MATERIALS ENGINEERING **Three credits**

Selected topics in the field of materials engineering. These may include one or more of the following: X-ray diffraction, structure analysis, phase equilibria, metallurgy, ceramics, physical, mechanical, or electrical properties of materials. May be repeated for credit. Three hours lecture a week.

Prerequisite: Junior or senior engineering standing.

PHYSICS

Professor Bellas, Chairman; Professor Emeritus Donahoe; Professors Hostler, Orehtsky; Associate Professor Emeritus Bailey; Associate Professors Maxwell, Placek; Assistant Professors Kucirka, Loncoski.

Total minimum number of credits required for a B.A. degree — 127.

Total minimum number of credits required for a B.S. degree — 131.

Total minimum number of credits required for a B.S. degree in Medical & Health Physics — 132.

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

The Department of Physics takes seriously the responsibility of teaching on the undergraduate level. In order to prepare students to move on to graduate level studies or to enter the professional job market, the department offers three distinct curriculum tracks. These include the Bachelor of Science Degree in Physics, the Bachelor of Science Degree in Medical and Health Physics, and the Bachelor of Arts Degree in Physics.

The Bachelor of Science Degree in Physics is a modern program which prepares the student for graduate study in any of the scientific disciplines. The Bachelor of Science Degree in Medical and Health Physics is designed to prepare students for those areas of the medical and health sciences which employ the concepts of the physical sciences.

The Bachelor of Arts Degree in Physics is primarily designed for those students interested in teaching physics on the high school level. However, because of the greater flexibility in the Bachelor of Arts Program it is an excellent opportunity for electing additional courses from other fields such as chemistry, biology, engineering, and earth and environmental science. Consequently, this provides excellent background for advanced study in medicine, dentistry, and other related fields.

A minor can be obtained by students with demonstrated expertise in Physics as determined by the Physics faculty. The minimum requirement can be met by students who have completed 18 Physics credits at the 200-level or above, but only those course credits for which a student has achieved a grade of 2.0 or higher will count toward this minimum.

Recommended Course Sequence for a B.A. Degree in Physics

First Semester		Second Semester	
Eng 101 Composition I	3	Mth 112 Calculus II	4
Mth 111 Calculus I	4	or 106 Intro. to Calculus II	
or 105 Intro. to Calculus I		Free Electives*	3
Phy 121 Technological Survival	3	Core Requirements	9-10
Core Requirements	6-7	PE 100 Activity	0
PE 100 Activity	0		
	<u>16-17</u>		<u>16-17</u>

Third Semester		Fourth Semester	
Chm 115 Elements & Compounds	4	Chm 116 Chemical Reaction	4
Mth 211 Differential Equations	4	Mth 212 Multivariable Calculus	4
or Science Elective		or Science Elective	
Phy 201 General Physics I	4	Phy 202 General Physics II	4
Core Requirements	3-6	Core Requirements	3-6
PE 100 Activity	0	PE 100 Activity	0
	<u>15-18</u>		<u>15-18</u>

Fifth Semester		Sixth Semester	
Phy 203 General Physics III	3	Computer Science Elective	3
Phy 221 Elect. Instrumentation	3	Statistics Elective	3
Core Requirements	6	Core Requirements	3
Free Electives*	4-6	Free Electives*	4-6
	<u>16-18</u>	Eng 102 Composition II	3
			<u>16-18</u>

Seventh Semester		Eighth Semester	
Phy 391 Senior Projects I	1	Phy 392 Senior Projects II	2
Core Requirements	3	Free Electives*	15
Free Electives*	12		
	<u>16</u>		<u>17</u>

*Free Electives — A minimum of 12 credits must be chosen from physics courses numbered 200 or above.

Recommended Course Sequence for a B.S. Degree in Physics

First Semester		Second Semester	
Eng 101 Composition I	3	Mth 112 Calculus II	4
Mth 111 Calculus I	4	Phy 202 General Physics II	4
Phy 121 Technological Survival	3	Computer Science Elective	3
Phy 201 General Physics I	4	Core Requirements	6
Core Requirements	3	PE 100 Activity	0
PE 100 Activity	0		
	<u>17</u>		<u>17</u>

Third Semester		Fourth Semester	
Chm 115 Elements & Compounds	4	Chm 116 Chemical Reaction	4
Mth 211 Differential Equations	4	Mth 212 Multivariable Calculus	4
Phy 211 Statics & Dynamics	3	Phy 203 General Physics III	3
Phy 221 Elect. Instrumentation	3	Phy 340 Thermodynamics	3
Core Requirements	3	or 310 Mechanics	
PE 100 Activity	0	Core Requirements	3
	<u>17</u>	PE 100 Activity	0
			<u>17</u>

Fifth Semester		Sixth Semester	
Phy 301 Math. in Phys. & Sciences	3	Phy 302 Math. in Phys. & Sciences	3
Phy 330 Optics	4	Phy 310 Mechanics	3
Phy 331 E & M I	3	or 340 Thermodynamics	
Phy 333 E & M Lab I	1	Phy 332 E & M II	3
Core Requirements	6	Phy 334 E & M Lab II	1
	<u>17</u>	Phy 380 Nuclear Physics	3
		or 361 Atomic Physics	
		Phy 382 Nuclear Physics Lab	1
		or 363 Atomic Physics Lab	
		Eng 102 Composition II	3
			<u>17</u>

Seventh Semester		Eighth Semester	
Phy 351 Quantum Mechanics	3	Phy 361 Atomic Physics	3
Phy 391 Senior Projects I	1	or 380 Nuclear Physics	
Core Requirements	6	Phy 363 Atomic Physics Lab	1
Science Electives	4-6	or 382 Nuclear Physics Lab	
	<u>14-16</u>	Phy 392 Senior Projects II	2
		Core Requirements	6
		Science Electives	3
			<u>15</u>

Core Requirements — Computer science courses may be substituted for the last two semesters of language with the approval of the Academic Standards Committee.

Science Electives — May be chosen from any mathematics, science, or engineering courses numbered 200 or above. Students contemplating graduate studies should choose 6 of the credits in advanced mathematics.

Recommended Course Sequence for a B.S. Degree in Medical and Health Physics

First Semester		Second Semester	
Eng 101 Composition I	3	Mth 112 Calculus II	4
Mth 111 Calculus I	4	Phy 202 General Physics II	4
Phy 121 Technological Survival	3	Computer Science Elective	3
Phy 201 General Physics I	4	Core Requirements	6
Core Requirements	3	PE 100 Activity	0
PE 100 Activity	0		
	<hr/> 17		<hr/> 17
Third Semester		Fourth Semester	
Chm 115 Elements & Compounds	4	Chm 116 Chemical Reaction	4
Mth 211 Differential Equations	4	Egr 250 Biomedical Engineering	3
Phy 221 Elect. Instrumentation	3	Phy 203 General Physics III	3
Core Requirements	6	Core Requirements	6
PE 100 Activity	0	PE 100 Activity	0
	<hr/> 17		<hr/> 16
Fifth Semester		Sixth Semester	
Bio 115 Human Anat. & Phys. I	4	Bio 116 Human Anat. & Phys. II	4
Chm 231 Organic Chemistry I	4	Chm 232 Organic Chemistry II	4
Phy 323 X-Ray Diffraction or Science Elective	4	Phy 380 Nuclear Physics or 361 Atomic Physics	3
Core Requirements	3	Phy 382 Nuclear Physics Lab or 363 Atomic Physics Lab	1
	<hr/> 15	Core Requirements	3
		Eng 102 Composition II	3
			<hr/> 18
Seventh Semester		Eighth Semester	
Phy 323 X-Ray Diffraction or Science Elective	3	Phy 326 Med. & Health Phys. II	3
Phy 325 Med. & Health Phys. I	3	Phy 361 Atomic Physics or 380 Nuclear Physics	3
Phy 330 Optics	4	Phy 363 Atomic Physics Lab or 382 Nuclear Physics Lab	1
Phy 390 Practicum	3	Phy 390 Practicum	3
Phy 391 Senior Projects I	1	Phy 392 Senior Projects II	2
Core Requirements	3	Core Requirements	3
	<hr/> 17		<hr/> 15

Core Requirements — Computer science courses may be substituted for the last two semesters of language with the approval of the Academic Standards Committee.

Science Electives — May be chosen from any mathematics, science, or engineering courses numbered 200 or above. Students contemplating graduate studies should choose 6 of the credits in advanced mathematics.

Practicum — May be taken during the previous summer.

PHY 101-102. PHYSICAL SCIENCES

Three credits each

A course for the non-science student to enable an understanding and appreciation of the universe in which he/she lives. The methods, concepts, and vocabulary of physics and the applications of some of the outstanding principles to the needs of the individual and the community form the focus of the courses. Also, the manner in which the continually expanding frontiers of science affect our lives in the present and how they may affect our lives in the future are addressed in both courses. The class meets for three periods per week: these include two periods of lecture, and one recitation/laboratory experience provided.

Prerequisite: No previous background in science or mathematics is required for this course.

PHY 105-106. INTRODUCTORY PHYSICS

Four credits each

An introductory course designed to promote an understanding of the more important fundamental laws & methods of the major areas of 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. First semester: mechanics, properties of matter, heat, and thermodynamics. Second semester: sound, light and optics, electricity and magnetism, modern concepts. Demonstration-lecture two hours a week, recitation one hour a week, and one laboratory three hours a week. Fee: \$40 per semester.

PHY 121. TECHNOLOGICAL SURVIVAL

Three credits

An introduction to the techniques of analysis and problem solving in engineering and the sciences. Also a presentation and discussion of scientific and technical world views. Emphasis on visualization with symbolic, verbal, and written communication. Introduction to selected mathematical topics including vectors and matrices. Modeling, examples of physical law, engineering design, and problem solving using computers. Selected current topics with technical merit or likely impact on the future, and a cooperative design project. Three hours lecture/recitation per week.

Prerequisite: Familiarity with Algebra and Geometry.

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 two hours a week, recitation one hour a week, and laboratory three hours a week. Fee: \$40.

Corequisite: Mth 111.

PHY 202. GENERAL PHYSICS II

Four credits

Electricity and magnetism, optics and light. Demonstration-lecture two hours a week, recitation one hour a week, and laboratory three hours a week. Fee: \$40.

Prerequisite: Phy 201 or Phy 105.

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 210. 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. Three hours lecture a week. (same as MaE 210)

Prerequisite: Phy 201, 202.

PHY 211. STATICS & DYNAMICS**Three credits**

This course develops the principles of Newtonian mechanics with applications to the equilibrium of rigid structures as well as to the stable motions of mechanisms. Topics include velocities and accelerations in orthogonal coordinate systems; internal and external forces; inertia forces and the effective potential energy; centroids and moments of inertia; kinetics and kinematics of particles and rigid bodies. (same as Egr 231)

Prerequisite: Phy 201 or Phy 105, Mth 112.

PHY 213. FLUID MECHANICS**Three credits**

Thermodynamics and dynamic principles applied to fluid behavior, ideal, viscous, and compressible fluids under internal and external flow conditions.

Prerequisite: Egr 231 or Phy 211.

PHY 221. ELECTRONIC INSTRUMENTATION**Three credits**

An introduction to the nature and use of standard and specialized electronic instruments. The study of analog and digital circuits with emphasis on the useful functions which can be performed. A two-hour class and one three-hour laboratory a week. Fee: \$35.

Prerequisite: Phy 202 or Phy 106 or junior standing in the sciences.

PHY 225. 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: \$40.

PHY 228. 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: \$40.

PHY 301-302. MATHEMATICAL METHODS IN PHYSICS AND THE SCIENCES**Three credits each**

Study of different areas of mathematics and their applications in physics, engineering, and the sciences. Topics include: ordinary and partial differential equations, Fourier methods, complex variables, matrix methods, Green's functions, tensor analysis, group theoretical methods, and others. Three hours lecture-discussion a week.

Prerequisite: Mth 211, Mth 212.

PHY 310. ANALYTICAL MECHANICS**Three credits**

An intermediate level course designed to develop an understanding of the principles of mechanics based on the Newtonian as well as the Lagrangian and Hamilton formulations. The application of matrices, tensors, and differential equations and advanced techniques to the solution of mechanics problems. Topics include harmonic oscillations, central force problems, rigid body motions, inertia and stress tensors, elastic waves, eigenvalue problems, normal coordinates and finite symmetry groups. Recitation-lecture three hours a week.

Prerequisite: Mth 211; Mth 212, Phy 211.

PHY 323. X-RAY DIFFRACTION**Four credits**

Study of structure and composition of solids using X-rays. Effects of annealing, substructures, cold work, preferred orientation, and ordering. Principles of design and applications of X-ray diffraction techniques. Three hours lecture and one three-hour laboratory a week. Fee: \$45.

Prerequisite: Phy 203.

PHY 325-326. MEDICAL & HEALTH PHYSICS I & II**Three credits each**

A study of the applications of basic physical principles to various problems in the medical and health sciences. These include the effect of ionizing and non-ionizing radiation on living matter and the various techniques of scanning and image formation. Also included will be the topics of dosimetry, lasers in medicine, computer assisted diagnoses and other areas of interest to medical and health physicists. Fee: \$40 per semester.

Prerequisite: Junior standing in the program or approval of instructor.

PHY 330. OPTICS AND LIGHT**Four credits**

The principles of geometrical and physical optics are considered in considerably greater detail than in the introductory course. Image formation, refraction, diffraction, origin of spectra, polarized light, optical activity, etc. Three hours class and one three-hour laboratory a week. Fee: \$40.

Prerequisite: Phy 202.

PHY 331. ELECTRICITY & MAGNETISM I**Three credits**

Vector analysis. The concept of fields. Dielectric and magnetic media; fields in conductors; electric magnetic circuit elements. Maxwell's equations and boundary condition problems in one, two, and three dimensional space. Plane electromagnetic waves and power flow. Three hours lecture a week.

Prerequisite: Mth 211, Phy 202.

PHY 332. ELECTRICITY & MAGNETISM II**Three credits**

Development of Maxwell's equations and boundary-value problems. Plane wave propagation and reflection from boundaries; the Poynting Theorem; Transmission lines and strip lines; impedance transformation and Smith Charts; guided TEM, TE, and TM waves; radiation from dipole antenna. Three hours lecture a week.

Prerequisite: Phy 331.

PHY 333. ELECTRICITY & MAGNETISM LAB I**One credit**

Laboratory experiments are performed which illustrate fundamental electromagnetic field concepts in distributed systems and in lumped element circuits. Experiments are partially planned by the students and reported both formally and informally. One three-hour laboratory a week. Fee: \$40.

Corequisite: Phy 331.

PHY 334. ELECTRICITY & MAGNETISM LAB II**One credit**

A continuation of Phy 333 with emphasis on transmission line concepts and the interaction of electromagnetic fields and matter. One three-hour laboratory a week. Fee: \$40.

Prerequisite: Phy 333.

PHY 340. THERMODYNAMICS**Three credits**

The fundamental concepts and laws of thermodynamics. Carnot cycle, entropy and applications. Kinetic theory, statistical mechanics, and applications to fundamental systems. Lecture-discussion three hours a week.

Prerequisite: Phy 106 or Phy 202, Mth 211 or Mth 212.

PHY 351. QUANTUM MECHANICS**Three credits**

An introduction to Quantum mechanics. Schrodinger's equation and its application to the potential-well, the harmonic oscillator, and the hydrogen atom. Angular momentum perturbation theory. Identical particles; Pauli's exclusion principle. The Dirac relativistic wave equation and the origin of electron spin. Lecture-discussion three hours a week.

Prerequisite: Phy 301 or Mth 361 or Phy 310.

PHY 361. ATOMIC PHYSICS**Three credits**

Planck's theory of cavity radiation, photons, and the particle aspect of radiation, the wavelike properties of particles, Schrodinger's theory of quantum mechanics, one-electron atoms, special functions, use of recursion relations to evaluate selection rules, X-ray and optical excitations of multi-electron atoms, application of group theory to the normal modes of molecules, quantum statistics with simple applications to solids. Three hours lecture-discussion a week.

Prerequisite: Phy 203.

PHY 363. ATOMIC PHYSICS LABORATORY**One credit**

Experiments are chosen to illustrate the practical aspects of atomic theory. Properties of black-body radiation; photoelectric effect; Compton scattering; fine structure, isotope, and Zeeman splitting of spectral lines; X-ray line spectra and Moseley's Law; X-ray diffraction from crystals, etc. One three-hour laboratory a week. Fee: \$40.

Prerequisite: Phy 221.

Corequisite: Phy 361.

PHY 370. INTRODUCTION TO SOLID STATE PHYSICS**Three credits**

Introduction to bonding and crystal structure, symmetry considerations, reciprocal lattice considerations, lattice dynamics, electronic structure of simple metals, insulators, and semiconductors, dielectric, ferroelectric, and magnetic properties of materials. Three-hour lecture.

Prerequisite: Phy 203.

PHY 380. NUCLEAR PHYSICS**Three credits**

Some properties of nuclei: size, density, shape; the nuclear force; models of nuclear structure; unstable nuclei; radioactive decay; alpha decay, Gamow's theory; beta decay; Fermi's theory; gamma decay and the Mössbauer effect; nuclear reactions, the excited states of nuclei; fission and reactors; fusion and reactors; fusion, the origin of the chemical elements; elementary particles; unification. Lecture-discussion three hours a week.

Prerequisite: Phy 203.

PHY 382. NUCLEAR PHYSICS LABORATORY**One credit**

An introduction to some tools and techniques of nuclear physics. Nuclear magnetic resonance; particle counting; vacuum techniques; proton-proton scattering; multi-channel analyzers and beta spectra; dating techniques; field trips to experimental and power reactors, etc. Three hours a week. Fee: \$40.

Prerequisite: Phy 221.

Corequisite: Phy 380.

PHY 390. PRACTICUM**Three credits**

Training assignment under the direct supervision of a working professional in a specialty appropriate to the student's curriculum. Participating institutions such as hospitals, laboratories, and industrial or academic facilities will cooperate in this training. Can be repeated for credit.

Prerequisite: Department approval.

PHY 391. SENIOR PROJECTS I**One credit**

Design and development of selected projects in physics and other related fields 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 physics.

PHY 392. SENIOR PROJECTS II**Two credits**

Design and development of selected projects in physics and other related fields 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: Senior standing in physics.

PHY 393-394. ADVANCED LABORATORY**One to three credits each**

Laboratory projects in fundamental or applied physics. A topic must be chosen in consultation with a faculty supervisor. Fee: \$45.

Prerequisite: Phy 221.

Junior or senior standing in the sciences.

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.

Prerequisite: Senior standing and approval of department chairman.

PHY 397. SENIOR SEMINAR**One to three credits**

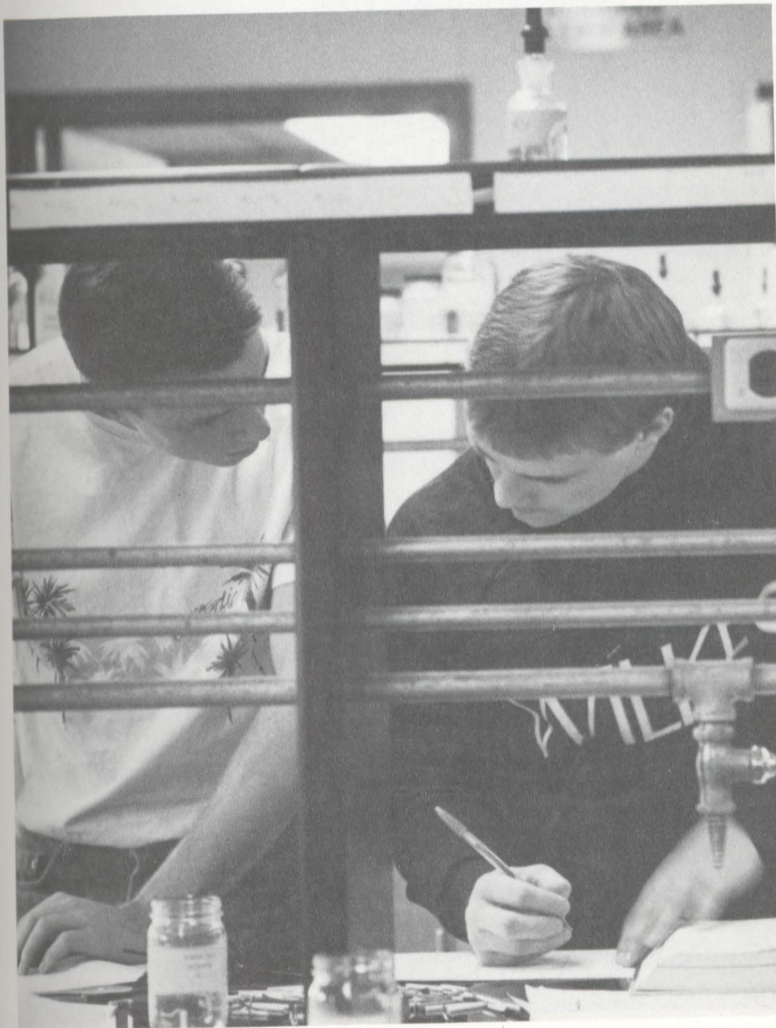
Presentations and discussion of selected topics.

Prerequisite: Senior standing or by special departmental permission.

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; semiconductors; cryogenics; health physics. May be repeated for credit.

Prerequisite: Varies with topic studied.

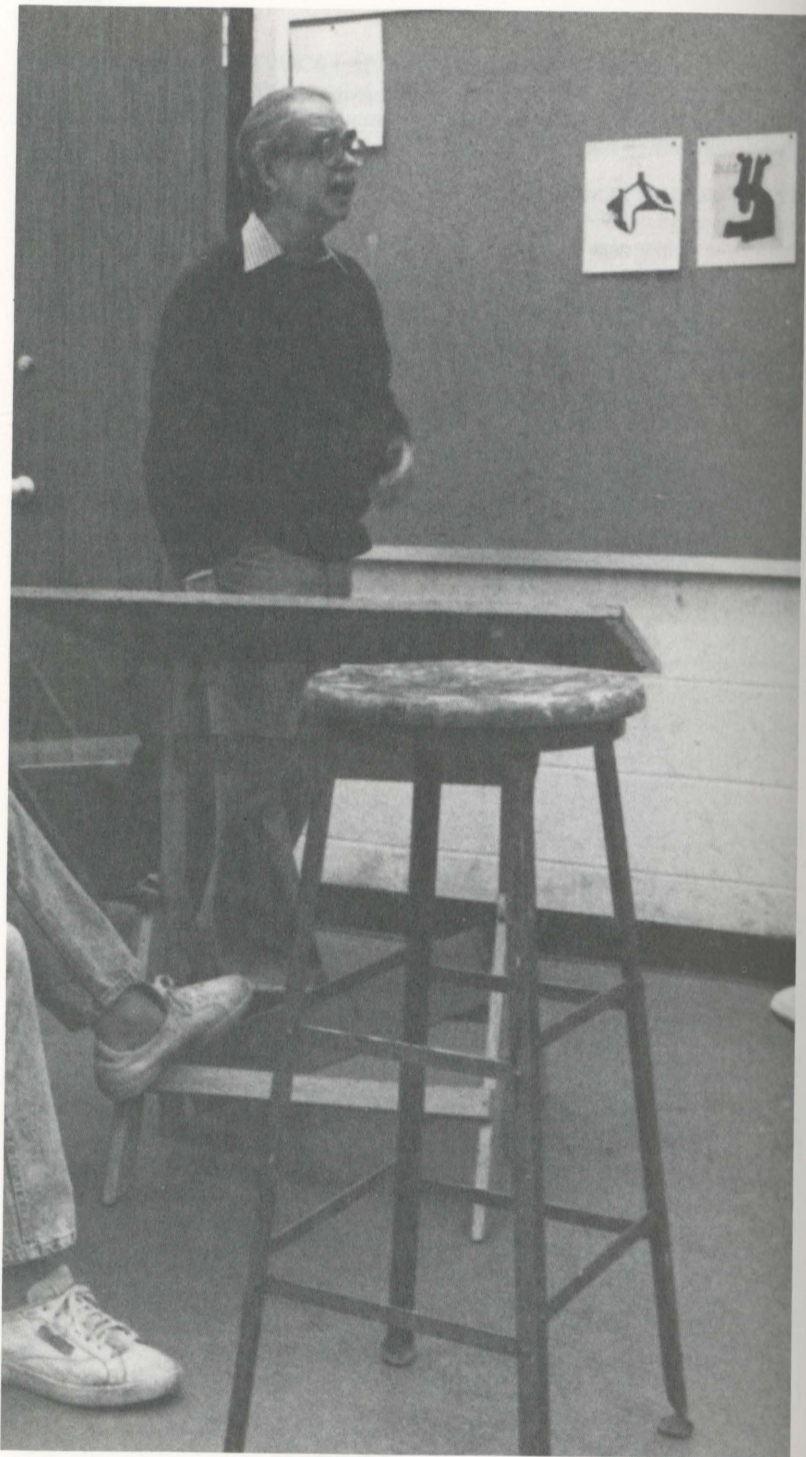


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 B.A., M.S. Wilkes

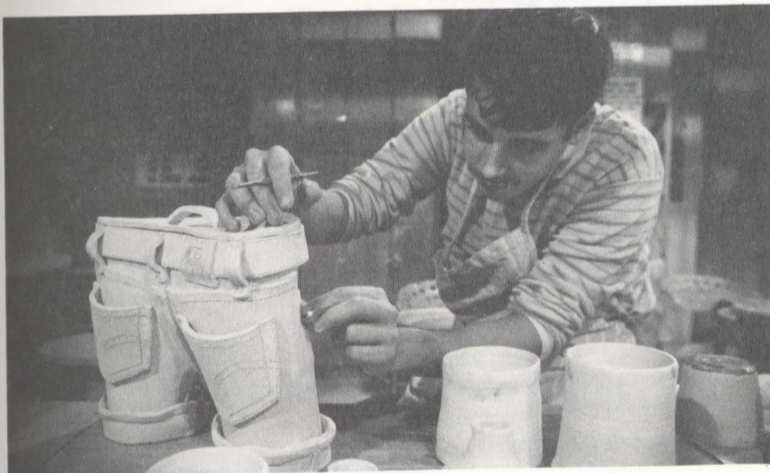
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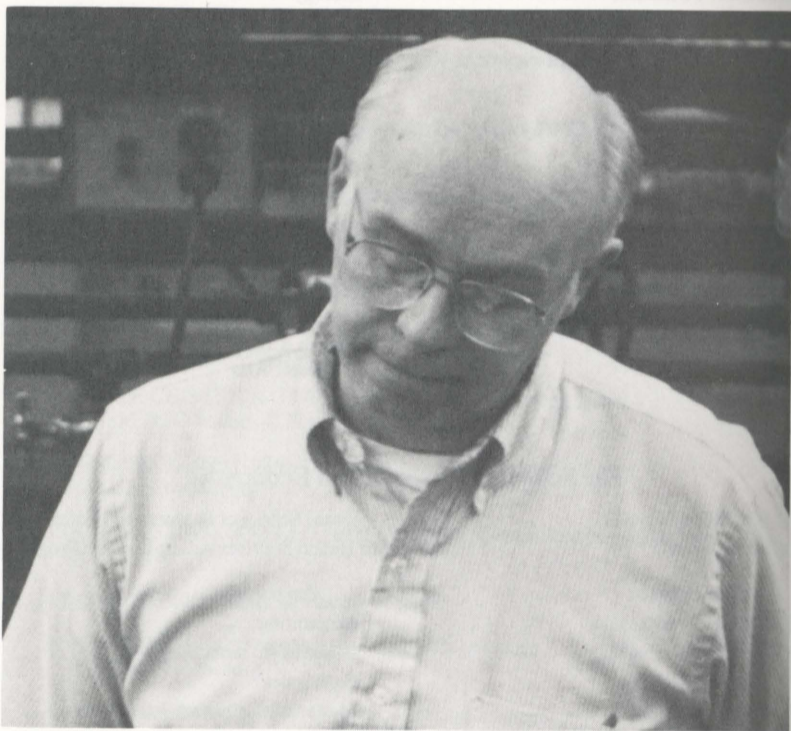
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* * * * *

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B.Sc., M.Sc. Kurukshetra University (India), M.S. Western Michigan,
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B.Tech. Regional Engineering College, Warangal, India,
M.Tech. Indian Institute of Technology, Kharagpur, India,
Ph.D. Massachusetts
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B.A. Tulane, M.A., Ph.D. Yale
- GAY F. MEYERS (1970), Assistant Professor of Physical Education and Health/Education
B.S. Lock Haven, M.S. Wilkes
- JOHN F. MEYERS (1967), Associate Dean for Academic Affairs/Assistant Professor of
History
B.A. Minnesota, M.A. Clark
- SHEO MISRA (1987), Assistant Professor of Engineering
B.S. University of Calcutta, M.S. Banarus Hindu University, Ph.D. West Virginia
- SOLEYMAN MOHSENI (1985), Assistant Professor of Engineering
B.E. Iran, M.E., Ph.D. Rensselaer
- JOHN H. NATZKE (1973), Associate Professor of Sociology/Anthropology
B.A. Wisconsin State, M.A., Ph.D. Western Michigan

- UMID R. NEJIB (1965), Dean, School of Engineering and Physical Sciences/
Professor of Engineering
B.S. Baghdad, M.S., Ph.D. Carnegie-Mellon
- WILLIAM NEWTON (1987), Assistant Professor of Aerospace Science
B.A. Georgia, M.S. Central Missouri State
- MARY ANN NOTARIANNI (1985), Assistant Professor of Nursing
B.S. Georgetown, M.S. Pennsylvania
- PAUL A. O'HOP, SR., (1985), Associate Professor of Business Administration
B.S., M.B.A. George Washington
- MICHAEL C. O'NEILL (1980), Associate Professor of English and Theater Arts
B.A. Fordham, M.A., Ph.D. Purdue
- JOHN L. OREHOTSKY (1971), Professor of Engineering
B.S. M.I.T., M.S. Polytechnic Institute of Brooklyn, Ph.D. Syracuse
- SURENDRA K. PARASHAR (1985), Associate Professor of Engineering
B.S. Punjab, India, M.S., Ph.D. Kansas
- SHRINIVAS PENUGONDA (1987), Assistant Professor of Business Administration
B.S. Osmania University, India, M.B.A. Wilkes
- KENNETH A. PIDCOCK (1988), Assistant Professor of Biology
B.S. Millersville, M.S., Ph.D. Lehigh
- DANIEL PINDZOLA (1987), Associate Professor of Earth and Environmental Sciences
B.S., M.S., Ph.D. Polytechnic Institute of Brooklyn
- WALTER A. PLACEK, JR., (1969), Associate Professor of Physics
B.S. Wilkes, M.Ed. Pennsylvania State, Ph.D. Pennsylvania
- DIANE M. POLACHEK (1986), Assistant Professor of Education
B.A., M.S. Wilkes, M.S. California
- RICHARD G. RASPEN (1967), Assistant Professor of Business Administration
B.S., M.B.A. Wilkes, M.Ed. Bloomsburg
- ALI RAZAVI (1984), Assistant Professor of Engineering
B.S. Tehran, Iran, M.S. Manchester, England, Ph.D. Drexel
- BRIAN T. REDMOND (1976), Associate Professor of Earth and Environmental Sciences/
Associate Dean, School of Engineering and Physical Sciences
B.S., M.S. Michigan State, Ph.D. Rensselaer Polytechnic
- JOHN G. REESE (1955), Professor of Physical Education and Health
B.S., M.Ed. Pennsylvania State
- BRUCE J. REIPRICH (1980), Assistant Professor of Music
B.M., M.A. Eastman School of Music, Ph.D. Iowa
- ROBERT C. RILEY (1949), Professor of Psychology
B.A. Bucknell, Ph.D. Pennsylvania State
- JAMES P. RODECHKO (1968), Dean, College of Arts and Sciences/Professor of History
B.A. Hofstra, M.A., Ph.D. Connecticut
- SHERRY E. RODIN (1987), Assistant Professor of Business Administration
B.A., M.B.A. Wilkes

- RALPH B. ROZELLE (1962), Professor of Chemistry/Dean of Health Sciences
B.S. Wilkes, Ph.D. Alfred
- KARL RULING (1987), Assistant Professor of Speech, Communications, and Theater Arts
B.A. University of California, M.F.A. Illinois
- FRANCIS J. SALLEY (1950), Professor of Chemistry
B.S. St. Joseph's, M.S. Pennsylvania
- JOSEPH H. SALSBERG (1959), Associate Professor of Mathematics/Computer Science
B.A. Bucknell, M.A. Columbia
- ROSENDO E. SANTOS, JR., (1968), Associate Professor of Music
B.M. Philippines, M.M. Catholic University of America
- DORIS B. SARACINO (1960), Associate Professor of Physical Education and Health
B.S., M.S. East Stroudsburg
- MARY ANN SAUERAKER (1983), Assistant Professor of Nursing
B.S. Wilkes, M.S. Pennsylvania State
- ROLAND C. SCHMIDT, JR., (1962), Associate Professor of Physical Education and Health
B.S. Bloomsburg, M.S. Scranton
- JUDITH K. SCHREIBER (1974), Assistant Professor of Nursing
B.S. Wilkes, M.S. Pennsylvania, M.S. Scranton
- NORMA M. SCHULMAN (1979), Assistant Professor of English and Communications
B.A. Barnard, M.A., M.S. Boston, Ph.D. Tufts
- KUO-KANG SHAO (1966), Professor of History
B.A. Taiwan, M.S., Ph.D. Pennsylvania
- BARBARA SHEER (1987), Assistant Professor of Nursing
B.S.N. Pennsylvania, P.N.P. Rutgers, M.S.N. SUNY, Binghamton
- MARIAN SHERMAN (1986), Assistant Professor of Nursing
B.S. Misericordia, M.S.N. Pennsylvania
- HERBERT B. SIMON (1969), Professor of Art
B.A., M.A. New York
- RICHARD E. SOURS (1965), Professor of Mathematics/Computer Science
B.S. Towson, M.S. Michigan State, Ph.D. Virginia
- THYAGARAJAN SRINIVASAN (1985), Assistant Professor of Engineering
B.E., M.S. Madras, India, M.S. Oklahoma State
- JEAN R. STEELMAN (1982), Assistant Professor of Nursing
B.S. Wilkes, M.S. Misericordia
- WILLIAM H. STERLING (1976), Associate Professor of Art
B.A. William & Mary, Ph.D. Iowa
- ROBERT D. STETTEN (1968), Associate Professor of Psychology
B.A., Ph.D. Lehigh, M.S., M.A. Iowa
- WILLIAM R. STINE (1965), Professor of Chemistry
B.S. Union, Ph.D. Syracuse
- HOWARD A. SWAIN, JR., (1960), Professor of Chemistry
B.S. Grove City, Ph.D. Pennsylvania

- WAGIHA ABDEL-GAWAD TAYLOR (1969), Professor of Economics
B.A. Alexandria, M.A. Brown, Ph.D. Clark
- SHARON G. TELBAN (1975), Associate Professor in Nursing
B.S., M.S. Wilkes, M.S. Pennsylvania State
- LEE C. TERRY (1968), Professor of English
B.A. Southern Methodist, Ph.D. Texas
- STEPHEN J. TILLMAN (1970), Professor of Mathematics/Computer Science
B.S. Brown, M.S. Lehigh, Ph.D. Brown
- PHILIP R. TUHY (1960), Assistant Professor of Political Science
B.A. Valparaiso, M.G.A. Pennsylvania
- LESTER J. TUROCZI (1972), Professor of Biology
B.A., M.S., Ph.D. Rutgers
- RICHARD N. TUTWILER (1986), Assistant Professor of Sociology/Anthropology
B.A. Macalester College, M.A., Ph.D. SUNY, Binghamton
- HOWARD J. WILLIAMS (1973), Associate Professor of Economics
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- PHILIP WINGERT (1986), Assistant Professor of Physical Education and Health
B.S. SUNY, Cortland, M.E. Virginia Polytechnic
- GEORGE WOLAK (1987), Assistant Professor of Nursing
B.S. Wilkes, M.S. Pennsylvania
- BING K. WONG (1968), Professor of Mathematics/Computer Science
B.A. Kansas State at Pittsburgh, M.A., Ph.D. Illinois
- MORAD K. YEROUSHALMI (1981), Associate Professor of Engineering
B.S. Arya-Mehr, Iran, M.S., Ph.D. Drexel
- CAROL W. ZACK (1983), Assistant Professor of Nursing
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- BRIDGET ZIELINSKI (1987), Assistant Professor of Nursing
B.S. Wilkes, M.S. SUNY, Binghamton
- KARL ZIMMERMAN (1985), Assistant Professor of Aerospace Science
B.S., M.A. Bloomsburg

Adjunct Faculty

- JEAN ADAMS (1985), Art
B.A. Wilkes
- MARY P. BABCOCK (1972), Nursing
B.A. Wilkes, M.S. Scranton
- LIZA BELIC (1984), Foreign Languages
B.A., M.A. Zagreb
- JAMES L. BENDER (1974), Program Director
Medical Technology Program, Robert Packer Hospital
- MADLINE BONADIES (1978), Educational Coordinator
School of Medical Technology, The Somerset Medical Center
- MARY GENE BUTLER (1981), Educational Coordinator
School of Medical Technology Consortium
- JOSEPH J. CHISARICK (1970), Accounting
B.S., M.B.A. Wilkes, C.P.A. State of Pennsylvania
- MARK COHEN (1974), Art
B.S. Wilkes
- ALFRED S. CONSTON (1981), Medical Director
School of Medical Technology, The Somerset Medical Center
- JOHN L. DAMASKA (1979), Educational Coordinator
School of Medical Technology, The Williamsport Hospital
- BERNARD J. HEALEY (1981), Economics
B.A. King's, M.B.A. Wilkes, M.P.A. Marywood
- THOMAS HRYNKIWI (1987), Music
M.M. Manhattan
- DEBORAH L. JOHNSON (1982), Educational Coordinator
School of Medical Technology, Allentown Hospital Association
- JOSEPH H. KANNER (1949), Psychology
B.A. Bucknell, M.A. New School for Social Research
- MADLYN KOCH (1984), Mathematics/Computer Science
B.S. Bucknell
- C. WARREN KOEHL (1981), Medical Director
School of Medical Technology, Wilkes-Barre General Hospital
- M. CYNTHIA LOFTUS-VERGARI (1986), Anthropology/Sociology
B.A. Marywood, M.A. Austin Peay
- ROSS L. MANTIONE (1978), Mathematics/Computer Science
B.A. Wilkes
- ALEXANDER NEDWICK (1981), Medical Director
School of Medical Technology, Allentown Hospital Association
- VINCENT OSADCHY (1976), Engineering
B.S. Muhlenberg, M.S. Wilkes

ESTELLA PARKER (1983), Language and Literature
B.A. Wilkes

RONALD PRYOR (1983), Mathematics/Computer Science
B.A., M.S. Wilkes

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B.A., M.S. Wilkes

MORRIS N. SLATER (1984), English
B.S. Manitoba

TOM THOMAS (1982), History
B.S. East Stroudsburg State

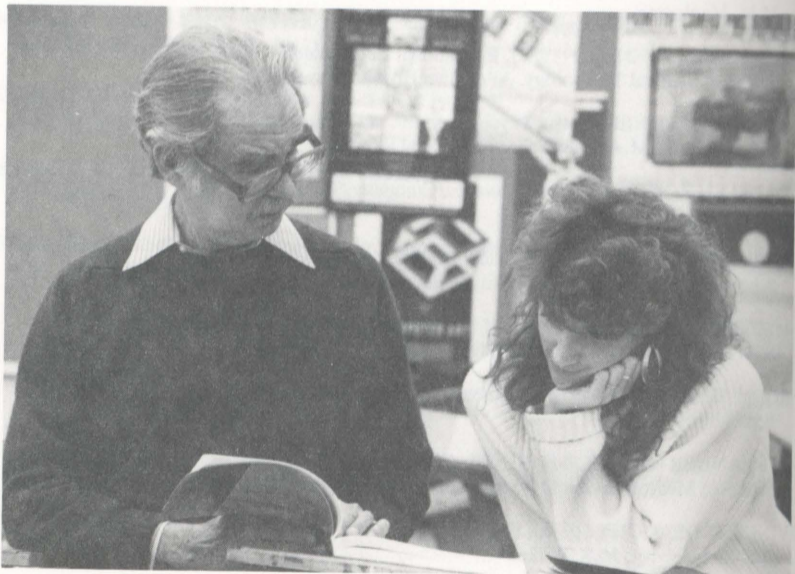
TOM TOMKIEWICZ (1980), Sociology
B.A. Wilkes, M.S. Marywood

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DONALD R. WEAVER (1981), Medical Director
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Professor of Accounting, and President from 1975-1984. M.B.A. Lehigh

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Assistant Professor of Nursing, Emerita. M.S. Simmons

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KLAUS HOLM
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BRONIS KASLAS
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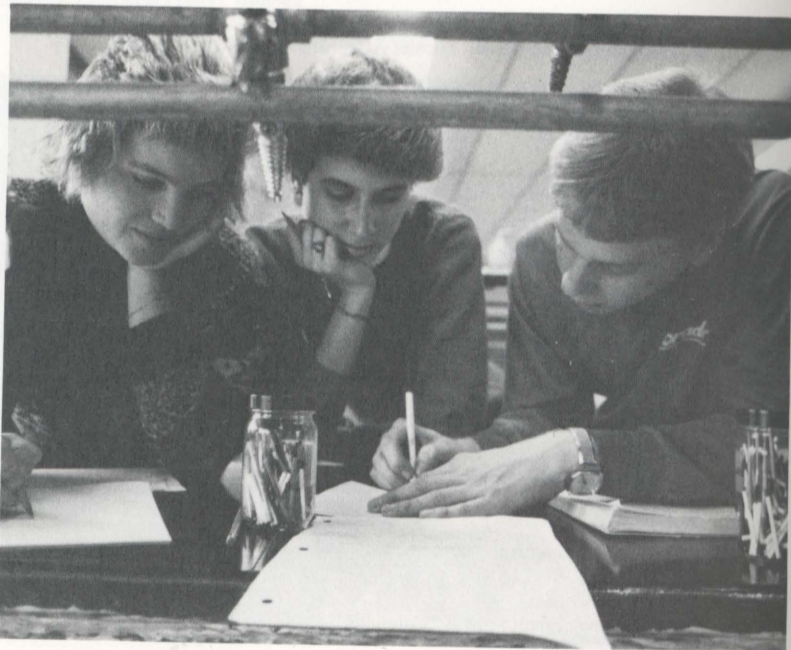
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HILDA A. MARBAN
Professor of Foreign Languages, Emerita. Ph.D. Havana, Ph.D. Virginia

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Dean of Student Affairs, Emeritus. M.A. Columbia
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- ROBERT E. WERNER**
Professor of Economics, Emeritus. Ph.D. Wisconsin
- ROY E. WILLIAMS**
Professor of Philosophy, Emeritus. Ph.D. Drew



Index

(A)

Academic Ineligibility63
 Academic Officers269
 Academic Probation63
 Academic Progress64
 Academic Requirements62
 Academic Standards Committee63
 Accounting210
 Accreditation8
 Act 101 Program18
 Adjunct Faculty279
 Administrative Personnel265
 Admissions22
 Acceptance23
 Advanced Placement25
 Applications22
 College Level Examination
 Program Subject Credits26
 Deposit23
 International Students23
 Interviews23
 Readmission24
 Tests22
 Transfer Students24
 Advanced Course Standing25
 Advanced Placement25
 Advisement15
 Aerospace Engineering238
 Aerospace Studies70
 Aid34
 Appeals34
 Refunds33
 Reinstatement34
 Air Force ROTC31, 70
 Air Force ROTC Scholarships70
 Alumni Discount32
 Anthropology75
 Appeals63
 Army ROTC153
 Art77
 Art Gallery10
 Athletics14
 Attendance60
 Auditing Courses30, 60

(B)

Bachelor of Arts57
 Bachelor of Fine Arts58, 77
 Bachelor of Music58, 156

Bachelor of Science57
 Band14, 156
 Biology83
 Board of Trustees264
 Bookstore19
 Business Administration214

(C)

Calendar52
 Career Resource Library17
 Career Services (Roth Center)17
 Center for the Performing Arts9
 Certification Requirements58
 Challenge Examinations27
 Change of Major61
 Chemistry89
 Chorus14, 156
 Class Attendance60
 Class Standing34
 CLEP (College Level Examination
 Program)26
 Clubs14
 College Health Service17
 College of Arts and Sciences69
 College Testing Service17
 Commencement52
 Communications94
 Commuter Council14
 Computer Information Systems107
 Computer Science109
 Computer Support Center10
 Concert and Lecture Series15
 Continuing Education53
 Conyngham Student Center10
 Cooperative Education Program58
 Core Requirements55
 Counseling16
 Course Credits62
 Course Load60
 Course Requirements and
 Descriptions68
 Accounting210
 Aerospace Engineering238
 Aerospace Studies (ROTC)70
 Anthropology75
 Art77
 Biology83
 Business Administration214

Index

Chemical Engineering	239
Chemistry	89
Civil Engineering	238
Communications	94
Computer Information Systems	107
Computer Science	109
Dentistry	189
Earth and Environmental Sciences	228
Economics	221
Education	115
Electrical Engineering	240
Elementary Education	116
Engineering	237
Engineering Management	243
English	120
Environmental Engineering	241
French	125
German	127
Health Records Administration	129
Health Sciences Programs	129
Hebrew	196
History	134
Individualized Studies	138
Industrial Engineering	239
International Studies	139
Italian	196
Latin	196
Materials Engineering	242
Mathematics	142
Mechanical Engineering	238
Medical Technology	152
Military Science	153
Music	156
Music Education	156
Nursing	168
Occupational Therapy	173
Optometry	173, 189
Osteopathic Medicine	132, 192
Pharmacy	191
Philosophy	173
Physical Education and Health	178
Physical Therapy	181
Physics	253
Podiatric Medicine	189
Polish	196
Political Science	182
Pre-Law	188
Pre-Medical and Pre-Doctoral Programs	189
Pre-Pharmacy	191
Psychology	192
Russian	196
Sociology	197
Spanish	202
Speech	94
Speech Pathology	204
Theater Arts	94, 207
Ukrainian	196
Credit for Life Experiences	27
Credit Balances	31
Cultural Activities	14, 15
Curriculum	55

(D)

Damage Deposit	30
Day Care Service	19
Dean's List	63
Deans' Offices	17
Debate	14
Deferred Payment Plans	31
Degree Requirements	55
Bachelor of Arts Degree	57
Bachelor of Fine Arts Degree	58, 77
Bachelor of Music Degree	58, 156
Bachelor of Science Degree	57
Dentistry Program	189
Dormitories (Residence Halls)	11, 30
Dorothy Dickson Darte Center for the Performing Arts	9
Dorothy Dickson Darte Music Building	9
Double Major	59

(E)

Earth and Environmental Sciences	228
Economics	221
Education	115
Certification	58
Elementary	116
Music	156
Secondary	117
Educational Program	54
Electives	58
Electrical Engineering	240
Employment	17, 18
Engineering	237
Aerospace	238
Chemical	239
Civil	238

Index

Electrical	240
Environmental	241
Industrial	239
Management	243
Materials	242
Mechanical	238
English	120
Evening Program	52
Evening School Discounts	32
Evening, Summer, & Weekend College	52
Expenses	30
Extracurricular Activities	14

(F)

Faculty	271
Adjunct	279
Emeriti	281
Family Educational Rights and Privacy Act	61
Fees	30
Accident Insurance	30
Application	30
Auditing Courses	30
Challenge Examinations	30
Graduation	30
Installment Payment Plan	31
Laboratory	30
Late Registration	30
Liability Insurance	31
Medical Technology	31
Music	31
Orientation	31
Part-time Student	30
Payment	31
Property Damage	30
Refunds	31
Residence Halls	30
Room and Board	30
Sickness Insurance	30
Student Activities	30
Tuition	30
Financial Aid Director	34
Financial Aid Office	34
Financial Assistance	34
Deferred Payment Plans	31
Employment	35
Grants	35
Loans	35

Scholarships	34
State Scholarships	34, 49
Tuition Discounts	32
Veterans	35
Work-Study	17, 49
French	125
Freshman Orientation	15, 31

(G)

Geology	228
German	127
Grade Point Average	62
Grades	62
Graduate Program	53
Graduation Requirements	65
Grants	35
Guidance	16
Gymnasium	11

(H)

Health Records Administration	130
Health Sciences Programs	129
Health Services	17
Hebrew	196
History	134
Honors	65
in Biology	84
in Engineering	238
in English	120
Housing	11, 30

(I)

Incompletes	62
Individualized Studies	138
Ineligibility	63
Insurance — Accident and Health	30, 31
International Students	16
International Studies	139
Internships	58, 210
Inter-Residence Council	14
Interviews	23
Italian	196

(L)

Latin	196
Law	188
Learning Center	18

Index

Library	9
Loans	35
(M)	
Major	57
Change of Major	61
Double	59
Mathematics	142
Meals	30
Medical and Health Physics	253
Medical Technology	152
Military Experience	27
Military Science	153
Minor	58
Music	156
Music Education	156
Music Scholarship	34
(N)	
National Direct Student Loan Fund	49
Nursing	27, 168
Nursing Student Loans	49
(O)	
Occupational Therapy	131
Optometry Program	129, 173, 189
Orientation for New Students	15, 31
Osteopathic Medicine	132, 189, 192
Overloads	30, 60
(P)	
Part-time	16, 24, 25, 36, 52
Payments	31
Pharmacy Program	129, 173, 191
Philosophy	178
Physical Education and Health	178
Physical Therapy	181
Physics	253
Podiatric Medicine Program	189
Polish	196
Political Science	182
Pre-Law	188
Probation and Dismissal	63
Psychology	192
Public Administration	182

(R)	
Readmission	24
Refunds	33
Registered Nurses	27, 168
Registration	60
Resident Assistants	11
Residence Halls	11
Residence Life Office	11
Room and Board	30
Room Rent	30
ROTC (Air Force)	31, 70
ROTC (Army)	153
Russian	196
(S)	
Scholarships	34, 37, 49
School of Business and Economics	209
School of Engineering and Physical Sciences	227
Second Baccalaureate Degree	36, 59
Sigma Xi	14
Social Studies Certification	115
Sociology	197
Sordani Art Gallery	10
Spanish	202
Speech	94, 204
Speech Pathology	204
Sports and Conference Center	11
Stark Learning Center	10
Student Access to Files	61
Student Activities	14
Student Activities Director	17
Student Activities Fee	30
Student Advisement	16
Student Government	14
Student Life	14
Student Load	60
Student Responsibility	59
Academic Standards Committee	63
Access to Files	61
Admissions	22
Advisement	15
Athletics	14
Attendance	60
Auditing	30, 60
Bachelor of Arts	57
Bachelor of Science	57
Calendar	52

Index

Career Services	17
Certification	58
Class Standing	34, 64
Commencement	52, 65
Cooperative Education Program	58
Core Requirements	55
Counseling	17
Cultural Activities	14, 15
Employment	17
Evening Program	30, 32, 52
Expenses	30
Extracurricular Activities	14
Grade Averages	62
Graduate Study	53
Graduation	65
Honors	65
Incompletes	62
Individualized Studies	138
International Studies	139
Life Experiences	27
Loans	35, 49
Major	57
Meals	30
Minor	58
Orientation	15, 31
Payments	31
Probation	63
Readmission	24
Refunds	33
Registration	60
Residence Halls	11, 30
Scholarships	34, 49
Social Activities	14
Student Evaluation Files	61
Student Center	10
Summer Program	52
Teacher Certification Requirements	58
Transfer Credit	61
Transfer Students	24, 61
Tuition	30
Weekend Program	30, 53
Withdrawals	61
Student Center	10
Study Abroad	59, 139
Summer Program	30, 52
(T)	
Teacher Certification	58
Testing Center	17
Theater Arts	94, 207
Transfer Credit	61, 65
Transfer Students	24, 61, 65
Tuition	30
Tuition Discounts	32
Tuition Exchange Program	32
Tuition Payment Plans	31, 32
Tuition Refund	33
Tutorial Services	18
(U)	
Ukrainian	196
Undergraduate Degree Programs	54
Upward Bound Program	18
(W)	
WCLH-FM	14
Weekend Program	53
Wilkes College	8
Accreditation	22
Admissions	7
Background	52
Calendar	54
Educational Program	52
Evening, Summer, & Weekend College	52
Faculty Guide	271
Graduate Studies	53
Installment Payment Plan	30, 31
Mission	7
Scholarships	34, 37, 49
Tuition Discounts	32
Wilkes/King's Cross-Registration	60
Wilkes/Pennsylvania College of Optometry Program	189
Wilkes/Pennsylvania College of Podiatric Medicine Program	189
Wilkes/Philadelphia College of Osteopathic Medicine Undergraduate/Medical School Program	132, 189, 192
Wilkes/ Temple University College of Allied Health Professions Program	132
Wilkes/ Temple University Dentistry Program	189
Wilkes/ Temple University Pharmacy Program	173, 191
Withdrawals	61
Work-Study Program	17, 35
Writing Laboratory	18

Location of Frequently-Used Student Services

As this Bulletin goes to press, several offices are preparing to relocate. Students are advised that this listing may be somewhat inaccurate.

Act 101 OfficeH	Part-time Studies OfficeB
Admissions OfficeB	Public Relations OfficeN
Air Force ROTCC	RecorderL
Alumni OfficeA	RegistrarL
Athletic DepartmentM	Residence Life OfficeJ
BookstoreJ	Student Affairs OfficeD
Career CenterI	Student Union BuildingD
Continuing Education OfficeI	Study Abroad CoordinatorB
Cooperative Education OfficeG	Summer College OfficeB
Evening College OfficeB	Testing CenterK
Finance OfficeL	TheaterE
Financial Aid OfficeL	Upward Bound OfficeL
Graduate School OfficeI	Weekend College OfficeB
Health SciencesG	Wilkes College Learning CenterH
Health ServicesG	Writing LaboratoryH
LibraryF	

Building Key

Symbol	Building and Location
A	Annette Evans Faculty and Alumni House, 146 South River Street
B	Chase Hall, 184 South River Street
C	Church Hall, 187 South Franklin Street
D	Conyngham Student Center, 130 South River Street
E	Dorothy Dickson Darte Center for the Performing Arts, Corner of River and South Streets
F	Eugene Shedden Farley Library, Corner of Franklin and South Streets
G	Hollenback Hall, 192 South Franklin Street
H	Kirby Hall, Corner of River and South Streets
I	Max Roth Center, 215 South Franklin Street
J	Pickering Hall, Wright Street
K	Ross Hall, 251 South River Street
L	Sturdevant Hall, 129 South Franklin Street
M	Weckesser Annex, Rear 170 South Franklin Street
N	Weckesser Hall, 170 South Franklin Street

WILKES COLLEGE 1988-89 ACADEMIC CALENDAR

Summer 1988 - First Day Session

Classes Commence	Monday, June 13, 1988	8:00 a.m.
Classes End	Friday, July 15, 1988	12:00 noon
	<i>(Including Final Examinations)</i>	

Second Day Session

Classes Commence	Monday, July 18, 1988	8:00 a.m.
Classes End	Friday, August 19, 1988	12:00 noon
	<i>(Including Final Examinations)</i>	

Eight-Week Evening Session

Classes Commence	Monday, June 13, 1988	6:00 p.m.
Classes End	Friday, August 5, 1988	10:00 p.m.
	<i>(Including Final Examinations)</i>	

Fall Semester - 1988

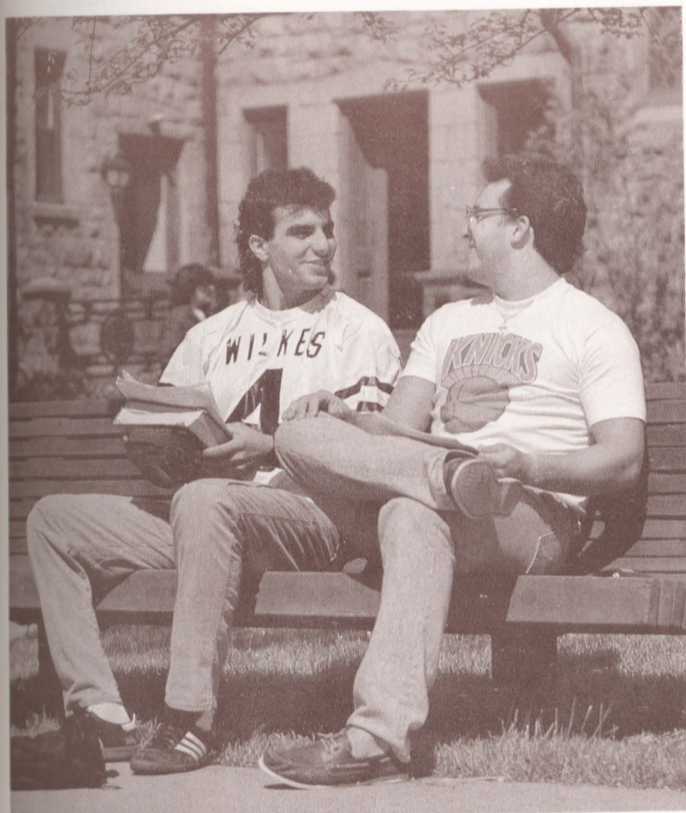
Classes Commence	Wednesday, August 31, 1988	8:00 a.m.
(Classes on Labor Day - September 5, 1988)		
Fall Recess	Thursday, October 13, 1988	10:00 p.m.
Classes Resume	Tuesday, October 18, 1988	8:00 a.m.
Thanksgiving Recess	Tuesday, November 22, 1988	10:00 p.m.
Classes Resume	Monday, November 28, 1988	8:00 a.m.
Classes End	Tuesday, December 13, 1988	5:00 p.m.
	<i>(Follow Friday Class Schedule)</i>	
Final Examinations Begin	Wednesday, December 14, 1988	1:30 p.m.
Final Examinations End	Thursday, December 22, 1988	11:30 a.m.
Semester Ends	Saturday, December 24, 1988	

Intersession January 2, 1989 to January 20, 1989

Spring Semester - 1989

Classes Commence	Monday, January 23, 1989	8:00 a.m.
Winter Recess	Wednesday, February 15, 1989	10:00 p.m.
Classes Resume	Monday, February 20, 1989	8:00 a.m.
Spring and Easter Recess	Friday, March 17, 1989	5:00 p.m.
Classes Resume	Tuesday, March 28, 1989	8:00 a.m.
Classes End	Wednesday, May 10, 1989	5:00 p.m.
	<i>(Tuesday, May 9, follows Thursday Class Schedule; Wednesday, May 10, follows Friday Class Schedule)</i>	
Final Examinations Begin	Thursday, May 11, 1989	1:30 p.m.
	<i>(Includes Saturday, May 13)</i>	
Final Examinations End	Friday, May 19, 1989	11:30 a.m.
Commencement	Saturday, May 27, 1989	4:00 p.m.

Wilkes College



Fall Sessions 1988

*Evening and Weekend College
Undergraduate Programs*

Wilkes College Continuing Education

Non-Profit Organization
11 S. Postage

Wilkes College Fall Sessions 1988

New Students, Students in Need of
Counseling, Returning Students &
Undergraduate Registration
Max Roth Center, Third Floor

For further information, write or call:

JOSEPH R. BARBERIO, Coordinator

Evening, Weekend, and Summer Programs

WILKES COLLEGE

215 S. Franklin St.

Wilkes-Barre, Pennsylvania 18766

Phone: (717) 824-4651, ext. 4235

Toll-free from Scranton, Pennsylvania 342-5617

from elsewhere in Pennsylvania (800) 572-4444

from outside of Pennsylvania [Middle-Atlantic and New England
Regions] (800) 537-4444

Dr. Mahmoud Fahmy, *Dean*

Evening and Weekend College

Affirmative Action/Equal Opportunity Institution

Wilkes College is an equal opportunity institution and prohibits and rejects any discrimination in admissions or hiring practices based on race, age, sex, color, creed, national origin, handicap, or religion.

GENERAL INFORMATION

Calendar for Fall Semester 1988

Registration for Evening College and Part-time Day School Students:

Wednesday, August 24	8:30 a.m. to 8:00 p.m.
Thursday, August 25	8:30 a.m. to 8:00 p.m.
Wednesday, Aug. 31	Classes begin at 8:00 a.m.
Monday, Sept. 5 (Labor Day)	Classes are in session
Thursday, Oct. 13	Fall recess begins at 10:00 p.m.
Tuesday, Oct. 18	Classes resume at 8:00 a.m.
Tuesday, Nov. 22	Thanksgiving recess at 10:00 p.m.
Monday, Nov. 28	Classes resume at 8:00 a.m.
Tuesday, Dec. 13	Classes end at 5:00 p.m. (follow Friday class schedule)
Wednesday, Dec. 14	Final Examinations begin at 1:30 p.m.
Thursday, Dec. 22	Final Examinations end at 11:30 a.m.
Saturday, Dec. 24	Semester ends

Weekend College (at Keystone Junior College)

Sept. 9 to Dec. 11 (including Final Examinations)
Final Registration September 9
(Weekender Office, La Plume, PA) 4:30 - 6:30 p.m.

Accreditation:

Wilkes College is accredited by The Department of Public Instruction of the State of Pennsylvania and the Middle States Association of Colleges and Secondary Schools. The Chemistry curriculum has been certified by the American Chemical Society. The Electrical Engineering and Materials Engineering programs are accredited by the ABET, the sole authorized accrediting agency for engineering programs.

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Bookstore:

Books, stationery and supplies may be purchased at the College Bookstore, located on the lower level of Pickering Hall. They must be paid for at the time of purchase. The Bookstore is open from 8:30 a.m. to 4:30 p.m. Monday through Friday.

Change of Schedule:

The College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. When possible, any change in the course schedule will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.

Day-Care:

Day-Care is available for young children of Wilkes students from 7:00 a.m. to 5:30 p.m. at Child Development Council Centers near the campus. These services are partially subsidized by the College. For further information, contact Ms. Anne Graham, 824-4651, extension 4230.

Degree Programs:

Bachelor of Arts:

Art	Foreign Languages
Art Management	History
Biology	Individualized Studies
Chemistry	International Studies
Communication Studies	Mathematics
Computer Information Systems	Philosophy
Computer Science	Physics
Earth & Environmental Sciences	Political Science
Economics	Psychology
English	Sociology
	Theater Arts

Bachelor of Science:

Accounting	Engineering
Biology	(a) Electrical Engineering
Business Administration	(b) Engineering Management
Chemistry	(c) Environmental Engineering
Computer Science	(d) Materials Engineering
Earth & Environmental Sciences	Individualized Studies
	Mathematics
	Medical Technology
	Medical & Health Physics
	Nursing
	Physics

Bachelor of Fine Arts

Bachelor of Music

A "Certificate of Achievement" is available to undergraduate students in the field of Business Administration who earn 42 hours of credit in Evening College and Summer School programs with at least 24 hours in Business Administration and 18 hours in general education. Specific course requirements are available on request.

Expenses:

All charges must be paid at the time registration forms are processed.

Undergraduate:

Undergraduate students who register for fewer than 12 credits pay \$158.00 per credit. Fees: \$4.00 per credit hour general college fee.
Undergraduate students who register for 12 through 18 credits pay a flat tuition fee of \$3,465.00 per semester. (Students who take more than 18 credits pay \$158.00 for each credit above 18.)

Financial Aid For Undergraduates:

Part-time as well as full-time students have a variety of aid programs available to them, but students must make formal application to establish their eligibility. Therefore, ALL undergraduate students are urged to apply for Financial Aid. Forms for this purpose are available in the Financial Aid Office. Inquiries about financial aid should be made to the Financial Aid Office. Information about Veterans' Benefits is available through the Veterans' Affairs Office.

Library:

The Eugene Shedden Farley Library is open to all Wilkes students. Students may borrow books from the Library by presenting their College identification cards. Hours are posted at the beginning of each academic session.

Withdrawal:

Evening college; part-time day-school and weekend college students may withdraw, without prejudice, from any course at any time during the first 6 weeks of the semester, providing that they give written notice to the instructor and to the Director of Evening, Summer and Weekend College within this 6-week period. (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official withdrawal form.)

Students who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, **upon written request to the Comptroller's Office, according to the following schedule:**

Time of withdrawal	Tuition Refund
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Weekend College students who have paid their tuition in full and who withdraw from Weekend College classes will receive a refund of one-half of their tuition through the second weekend of classes, **upon written request to the Comptroller's Office within this period.** No refunds will be made after the second weekend of classes.

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

For further undergraduate information, contact:

Joseph R. Barberio, Coordinator
Evening, Weekend, and Summer Programs
Wilkes College
Max Roth Center
Third Floor
215 S. Franklin Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651, Ext. 4235
Toll-free: from Scranton, PA 342-5617
from elsewhere in PA (800) 572-4444
from outside of PA [Middle-Atlantic and
New England Regions] (800) 537-4444

Dr. Mahmoud Fahmy, Dean
Evening and Weekend Programs

1988 Undergraduate Division

Undergraduate Registration

Wednesday, August 24 8:30 a.m.-8:00 p.m.
Thursday, August 25 8:30 a.m.-8:00 p.m.

EARLY REGISTRATION WILL BE ACCEPTED
8:30 A.M. - 4:30 P.M. AFTER AUGUST 1, 1988

For further undergraduate information, contact:

JOSEPH R. BARBERIO, Coordinator

Evening, Weekend,
and Summer Programs

WILKES COLLEGE
Max Roth Center
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New England regions) (800) 537-4444

Dr. Mahmoud Fahmy, Dean
Evening and Weekend Programs

Evening Session Undergraduate Schedule August 31 - December 24, 1988

(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)

Course	Description	Room	Day and Hour	Credits
ACCOUNTING				
ACC 121 E	Introduction to Financial Accounting (Prereq: Sophomore standing or permission of instructor) Fee: \$20	DDD 201	T 6:30-9:30	3
ACC 122 E	Introduction to Managerial Accounting (Prereq: ACC 121) Fee: \$20	DDD 201	W 6:30-9:30	3
ACC 221 E	Taxes I (Prereq: ACC 122)	DDD 101	W 6:30-9:30	3
ACC 231 E	Auditing I (Prereq: ACC 212)	DDD 201	Th 6:30-9:30	3
ACC 233 E	Cost Accounting (Prereq: ACC 212)	DDD 201	M 6:30-9:30	3
AEROSPACE STUDIES				
AS 000 E	Leadership Laboratory	Armory	Th 7-9	0
ANTHROPOLOGY				
ANT 101 E	Introduction to Anthropology	SLC 380	Th 6:30-9:30	3
ANT 270 E	Cultural Anthropology (May be substituted for ANT 101)	SLC 380	W 6:30-9:30	3
ART				
ART 101 E	Experiencing Art I	SLC 206	M 6:30-9:30	3
ART 245 E	Surface Design	TBA	Th 6-9:30	1
BUSINESS ADMINISTRATION				
BA 209 E	Business Correspondence and Reports	DDD 202	W 6:30-9:30	3
BA 225 E	Managerial Finance	SLC 209	T 6:30-9:30	3
BA 231 E	Business Law-Contracts and Sales	SLC 209	Th 6:30-9:30	3
BA 241 E	Life Insurance	SLC 209	W 6:30-9:30	3
BA 251 E	Principles of Management	DDD 202	M 6:30-9:30	3
BA 261 E	Principles of Retailing	SLC 405	T 6:30-9:30	3
BA 398 E	Topics: Risk Management	SLC 209	M 6:30-9:30	3
COMPUTER SCIENCE				
CS 115 E	Survey of Computers and Data Processing	SLC 409	MW 8-9:30	3
CS 124 E	COBOL Programming Fee: \$45	SLC 424	MW 6:30-7:45	3
EARTH AND ENVIRONMENTAL SCIENCES				
EES 110 E	Survey of Astronomy	SLC 1	Th 6-7:45	3
EES 110 E*	Survey of Astronomy Laboratory Fee: \$35	SLC 435	Th 8-10	0
EES 181 E	Graphics Laboratory Fee: \$15	SLC 27	T 6-7:45	1
EES 298 E	Topics: Forestry	SLC 441	M 6:30-9:30	3

Course	Description	Room	Day and Hour	Credits
ECONOMICS				
EC 101 E	Principles of Economics I	SLC 207	T 6:30-9:30	3
EC 201 E	Money and Banking	SLC 207	M 6:30-9:30	3
EC 231 E	Applied Economic Statistics I (Part-time and evening students only.) (Prereq: EC 101-102, 6 hours of mathematics) Fee: \$20	DDD 202	Th 6:30-9:30	3
EDUCATION				
ED 302 E	Children's Literature	SLC 359	M 6:30-8:30	2
ED 321 E	The Teaching of Reading	SLC 359	M 4-6:30	3
ED 323 E	Mathematics and Science in Early Childhood and Elementary Education	SLC 147	TTh 4-5:30	3
ED 361 E	Early Childhood Education	SLC 359	W 6:30-9:30	3
ED 371 E-1	The Individual in the Classroom (Elementary) (Prereq: Enrollment in ED 380)	SLC 403	M 4-6:30	3
ED 371 E-2	The Individual in the Classroom (Secondary) (Prereq: Enrollment in ED 380)	SLC 411	Th 6-8:30	3
ENGINEERING				
EE 211 E	Circuit Theory I (Prereq: MTH 112)	SLC 316	TTh 8-9:30	3
EE 251 E	Electronics I (Prereq: EE 212)	SLC 316	MW 8-9:30	3
EE 323 E	Electric Machines Laboratory (Prereq: To be taken with or after EE 321) Fee: \$40	SLC 29	T 6:30-9:30	1
EE 331 E	Electromagnetics I (Prereq: MTH 211 and PHY 202)	SLC 316	TTh 6:30-7:45	3
EE 333 E	Electromagnetics I Laboratory (Coreq: EE 331) Fee: \$40	SLC 125	M 6:30-9:30	1
EE 335 E	Microwaves and Antenna Systems (Prereq: EE 332)	SLC 316	MW 6:30-7:45	3
EE 381 E	Advanced Microelectronics Laboratory (Prereq: Senior engineering standing) Fee: \$45	SLC 1 SLC 224	M 5-6:15 M 6:15-11	4
EE 391 E	Senior Projects I (Prereq: Senior engineering standing)	SLC 1	T 5-6	1
EGR 181 E	Graphics Laboratory	SLC 27	T 6-7:45	1
EGR 231 E	Statics and Dynamics (Prereq: PHY 201, MTH 112)	TBA	MW 8-9:30	3
EGR 233 E	Fluid Mechanics (Prereq: EGR 231)	SLC 411	MW 8-9:15	3
EGR 283 E	Measurement Lab I Fee: \$30 per semester	SLC 23	W 6-7:50	1
EGR 398 E	Topics: Expert Systems in CIM	SLC 405	MW 8-9:15	3
MAE 210 E	Introduction to Materials Engineering (Prereq: PHY 201, 202)	SLC 334	TTh 6:30-7:15	3
MAE 231 E	Ceramics (Prereq: MAE 210)	SLC 240	M 6:30-9:30	3
ENGLISH				
ENG 101 E	Composition I	KBY 302	M 6:30-9:30	3
ENG 102 E	Composition II (Prereq: ENG 101 or ENG 100)	SLC 359	Th 6:30-9:30	3

Course	Description	Room	Day and Hour	Credits
ENG 151 E	Western World Literature I (Prereq: ENG 102 or equivalent in composition)	DDD 101	T 6:30-9:30	3
ENG 383 E	American Novel (Prereq: ENG 152 or 254)	KBY 302	W 6-9	3
ENG 397 E	Conflicts of Love and Loyalty in Medieval Epic and Romance	KBY 309	M 6-9	3
HISTORY				
HST 101 E	World Civilization I	SLC 318	T 6:30-9:30	3
HST 102 E	World Civilization II	SLC 318	W 6:30-9:30	3
HST 328 E	History of US Foreign Policy	Capin 15	M 6:30-9:30	3
HST 376 E	World War II	SLC 160	T 6:30-9:30	3
MATHEMATICS				
MTH 111 E	Calculus I (Prereq: MTH 100 or at least 3 years of secondary school math including Geometry, Algebra II, and topics in Trig.)	SLC 403	MW 6:30-8:30	4
MTH 211 E	Elementary Differential Equations (Prereq: MTH 112)	SLC 409	MW 6-8	4
MUSIC				
MUS 101 E	Introduction to Music I	DDD 218	T 6:30-9:30	3
NURSING				
NSG 200 E	Principles of Normal Nutrition (Prereq: CHM 130)	SLC 342	W 6:30-9:30	3
NSG 203 E	Nursing Care of the Adult Client I	SLC 334	MW 3-5	8
NSG 203 E1	Laboratory	TBA	TTh 3-9:30	0
NSG 298 E	Topics: Wellness through the Life Cycle	SLC 311	W 6:30-9:30	3
NSG 299 E	Nursing Forum I (Prereq: RN Status or NCLEX eligibility) Fee: \$75	SLC 334	MW 6:30-9:30	6
NSG 305 E1	Introduction to Research (Prereq: NSG 204, MTH 150)	SLC 311	T 6:30-9:30	3
NSG 305 E2	Introduction to Research (Prereq: NSG 204, MTH 150)	SLC 311	Th 6:30-9:30	3
NSG 307 E	Physical Assessment (Prereq: Junior and Senior NSG majors or RN students)	SLC 311	M 6:30-9:30	3
PHYSICS				
PHY 101 E	Physical Science I (Prereq: No background in Mathematics or Science necessary)	SLC 166	Th 6:30-8:30	3
PHY 101 E1	Physical Science I Discussion	SLC 150	Th 8:30-9:30	0
PHY 101 E2	Physical Science I Discussion	SLC 150	Th 9:30-10:30	0
PHY 105 E*	Introductory Physics I Laboratory Fee: \$40	SLC 149	W 6:30-9:30	0
PHY 181 E	Graphics Laboratory Fee: \$15	SLC 27	T 6-7:45	1
PHY 201 E	General Physics I (Coreq: MTH 111)	SLC 166	M 6:30-8:15	4
PHY 201 E*	General Physics I Laboratory Fee: \$40	SLC 149	W 6:30-9:30	0
PHY 201 E1	General Physics I Discussion	SLC 160	M 8:30-9:30	0
PHY 202 E*	General Physics II Laboratory Fee: \$40	SLC 151	M 6:30-9:30	0
PHY 210 E	Introduction to Materials Engineering (Prereq: PHY 201, 202)	SLC 334	TTh 6:30-7:15	3

Course	Description	Room	Day and Hour	Credits
PHY 211 E	Statics and Dynamics (Prereq: PHY 201 or PHY 105, MTH 112)	TBA	MW 8-9:30	3
PHY 330 E	Optics and Light (Prereq: PHY 202)	SLC 342	T 6:30-9:30	4
PHY 330 E1	Optics and Light Laboratory Fee: \$40	SLC 158	Th 6:30-9:30	0
PHY 331 E	Electricity and Magnetism I (Prereq: MTH 211, PHY 202)	SLC 316	TTh 6:30-7:45	3
PHY 333 E	Electricity and Magnetism I Laboratory (Coreq: PHY 331) Fee: \$40	SLC 125	M 6:30-9:30	1
POLITICAL SCIENCE				
PS 105 E	Modern Political Systems	SLC 347	W 6:30-9:30	3
PS 316 E	Government Budgeting (Prereq: PS 102 or permission of instructor)	SLC 347	T 6:30-9:30	3
PSYCHOLOGY				
PSY 101 E	General Psychology I	SLC 347	Th 6:30-9:30	3
SOCIOLOGY				
SOC 101 E	Introduction to Sociology	SLC 1	T 6:30-9:30	3
SOC 251 E	Fields of Social Work (Prereq: SOC 101, ANT 101, PSY 101, or approval of instructor)	SLC 342	Th 6:30-9:30	3
SOC 275 E	Sociology of Minorities (Prereq: SOC 101, ANT 101, or permission of instructor)	SLC 380	T 6:30-9:30	3
SOC 398 E	Topics: Human Sexuality I (Prereq: SOC 101, ANT 101, or permission of instructor)	SLC 380	M 6:30-9:30	3
SPEECH, COMMUNICATIONS, AND THEATER ARTS				
SCT 101 E	Fundamentals of Speech	SLC 204	T 6:30-9:30	3

Weekend College Courses Fall, 1988

on the campus of Keystone Junior College
La Plume, Pennsylvania

September 9 - December 11, 1988

Calendar — Fall, 1988

September 9, 10, 11
September 30, October 1, 2
October 14, 15, 16*
November 4, 5, 6
November 18, 19, 20
December 9, 10, 11

*2-week interval between classes

A Schedule

Fri. 6:30-8:30
Sat. 10:10-12:10
Sat. 3:10-5:10

B Schedule

Sat. 8:00-10:00
Sat. 1:00-3:00
Sun. 10:10-12:10

C Schedule

Sat. 6:00-8:00
Sun. 8:00-10:00
Sun. 1:00-3:00

Unless otherwise indicated, all courses in the Weekend College meet according to the following schedule:

(TIMES IN LIGHT FACE REPRESENT A.M. AND TIMES IN BOLD FACE P.M.)

Course	Description	Room	Schedule	Credits
ACCOUNTING				
ACC 233 W	Cost Accounting (Prereq: ACC 212)	TBA	C	3
BUSINESS ADMINISTRATION				
BA 225 W	Managerial Finance	TBA	B	3
BA 256 W	Business Policies and Corporate Responsibility	TBA	A	3
ECONOMICS				
EC 223 W	Collective Bargaining	TBA	C	3
EC 241 W	Microeconomics I	TBA	A	3
HISTORY				
HST 101 W	World Civilization I	TBA	B	3
PHYSICS				
PHY 102 W	Physical Science II	TBA	B	3
PSYCHOLOGY				
PSY 215 W	Research Design and Analysis	TBA	A	3
SOCIOLOGY				
SOC 230 W	Social Problems (Prereq: SOC 101, ANT 101, or approval of instructor)	TBA	B	3

Day Classes

August 31 - December 24, 1988

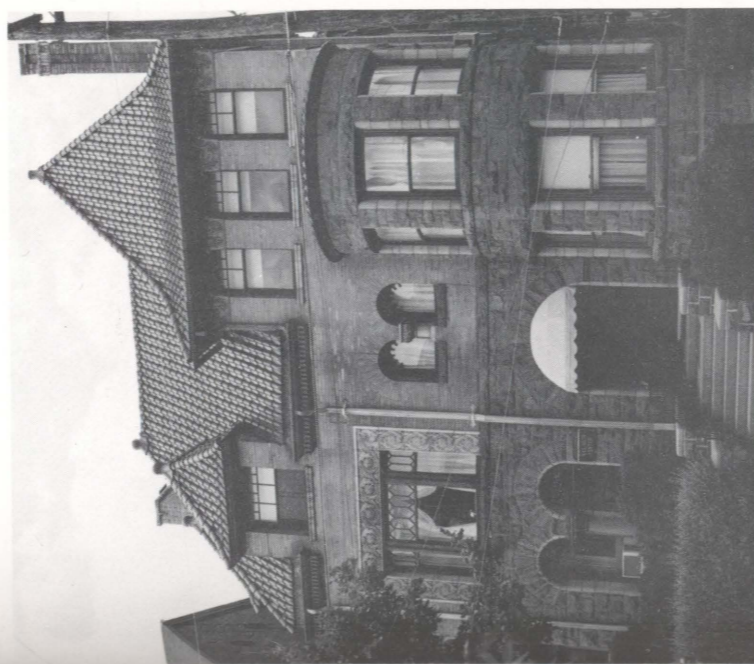
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Day-Care

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For information, contact: **Ms. Anne Graham**
824-4651, Ext. 4230

Wilkes
College



Max Roth Center

Spring
Sessions
1989

Evening and Weekend College
Undergraduate Programs

Wilkes College
Wilkes-Barre, Pennsylvania 18766

Topfer Sue A
Library/Media Center

The Evening & Weekend College has played an important role in the ongoing history of Wilkes College and will continue to recognize the needs of the area by offering programs of quality and substance to both campus and community.

Office Hours:

Evening, Weekend & Summer Programs

Monday — 8:30 a.m.-4:30 p.m.

Tuesday — 12:00 p.m.-8:00 p.m.

Wednesday — 12:00 p.m.-8:00 p.m.

Thursday — 12:00 p.m.-8:00 p.m.

Friday — 8:30 a.m.-4:30 p.m.

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Wilkes College Spring Sessions 1989

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For further information, write or call:

ANN M. GALLI, Coordinator

Evening, Weekend, and Summer Programs

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215 S. Franklin St.

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Phone: (717) 824-4651, ext. 4235

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Dr. Mahmoud H. Fahmy, *Dean*

Graduate Studies & Continuing Education
& Evening, Weekend and Summer Programs

GENERAL INFORMATION

Calendar for Spring 1989

REGISTRATION ACCEPTED:

Monday, December 12 and after	8:30 a.m. to 4:30 p.m.
Monday, January 16	8:30 a.m. to 8:00 p.m.
Tuesday, January 17	8:30 a.m. to 8:00 p.m.

LATE REGISTRATION:

Thursday, January 19	8:30 a.m. to 6:00 p.m.
Friday, January 20	8:30 a.m. to 6:00 p.m.
Monday, January 23	8:30 a.m. to 6:00 p.m.
Tuesday, January 24	8:30 a.m. to 6:00 p.m.
Wednesday, January 25	8:30 a.m. to 6:00 p.m.
Thursday, January 26	8:30 a.m. to 6:00 p.m.

CLASSES BEGIN:

Monday, January 23	8:00 a.m.
Wednesday, February 15	10:00 p.m. Winter Recess
Monday, February 20	8:00 a.m. Classes Resume
Friday, March 17	5:00 p.m. Spring and Easter Recess
Tuesday, March 28	8:00 a.m. Classes Resume
Wednesday, May 10	5:00 p.m. Classes End
(Tuesday, May 9, follows Thursday class schedule;	
Wednesday, May 10, follows Friday class schedule)	
Thursday, May 11	1:30 p.m. Final Examinations
Through Friday, May 19	11:30 a.m. Final Examinations End
Saturday, May 27	4:00 p.m. Commencement

Weekend College

(at Keystone Junior College)

January 13 to April 23 (including Final Examinations)	
Final Registration	January 13
(Weekender Office, La Plume, PA)	4:30 - 6:30 p.m.

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Admissions:

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Bookstore:

Books, stationery and supplies may be purchased at the College Bookstore, located in Church Hall. They must be paid for at the time of purchase. The Bookstore is open from 8:30 a.m. to 4:30 p.m. Monday through Friday.

Bookstore Evening Hours: January 1989

January 16, 17	8:00 a.m.-8:00 p.m.
January 19, 20	8:00 a.m.-6:00 p.m.
January 23	8:00 a.m.-8:00 p.m.
January 24, 25, 26	8:00 a.m.-6:00 p.m.

Change of Schedule:

The College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. When possible, any change in the course schedule will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.

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January 23 - May 19, 1989

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Bachelor of Arts:

Art	Foreign Languages
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Biology	Individualized Studies
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Communication Studies	Mathematics
Computer Information Systems	Philosophy
Computer Science	Physics
Earth & Environmental Sciences	Political Science
Economics	Psychology
English	Sociology
	Theater Arts

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Accounting	Engineering
Biology	(a) Electrical Engineering
Business Administration	(b) Engineering Management
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Computer Science	(d) Materials Engineering
Earth & Environmental Sciences	Individualized Studies
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	Medical Technology
	Medical & Health Physics
	Nursing
	Physics

Bachelor of Fine Arts

Bachelor of Music

A "Certificate of Achievement" is available to undergraduate students in the field of Business Administration who earn 42 hours of credit in Evening College and Summer School programs with at least 24 hours in Business Administration and 18 hours in general education. Specific course requirements are available on request.

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Financial Aid For Part-Time Students:

The Pell Grant, Guaranteed Student Loan, PLUS/SLS Loan, PHEAA-HELP Guaranteed Student Loan and the PHEAA-HELP Alternate Loan are available to part-time students. Interested students must complete the PHEAA/Federal Student Aid Application and the appropriate loan

applications in order to apply for these programs. In addition to financial need, eligibility for the Pell Grant program is based on enrollment status. Students registered for at least 6 credits but less than 9 credits qualify for approximately one-half of the full-time award and those registered for at least 9 credits but less than 12 credits qualify for approximately three-quarters of the full-time award. Inquiries about financial aid should be made at the Financial Aid Office, Sturdevant Hall, 824-4651, extension 4346.

Veterans' Affairs:

Information about Veterans' Benefits is available through the Veterans' Affairs Office, Sturdevant Hall, 824-4651, extension 4858.

Library:

The Eugene Shedden Farley Library is open to all Wilkes students. Students may borrow books from the library by presenting a Farley Library card available at the circulation desk. Hours are posted at the beginning of each academic session.

Withdrawal:

Evening college, part-time day-school and Weekend college students may withdraw, without prejudice, from any course at any time during the first 6 weeks of the semester, **providing that they give written notice to the instructor and to the Coordinator of Evening, Summer and Weekend College within this 6-week period.** (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official withdrawal form.)

Students who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, **upon written request to the Comptroller's Office, according to the following schedule:**

Time of withdrawal	Tuition Refund
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Weekend College students who have paid their tuition in full and who withdraw from Weekend College classes will receive a refund of one-half of their tuition through the second weekend of classes, **upon written request to the Comptroller's Office within this period.** No refunds will be made after the second weekend of classes.

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

For further undergraduate information, contact:

Ann M. Galli, Coordinator
Evening, Weekend, and Summer Programs
 Wilkes College
 Max Roth Center
 Third Floor
 215 S. Franklin Street
 Wilkes-Barre, Pennsylvania 18766
 Phone: (717) 824-4651, Ext. 4235
 Toll-free: from Scranton, PA 342-5617
 from elsewhere in PA (800) 572-4444
 from outside of PA [Middle-Atlantic and
 New England Regions] (800) 537-4444

Dr. Mahmoud H. Fahmy, Dean
 Graduate Studies & Continuing Education
 & Evening, Weekend and Summer Programs.

1989 Undergraduate Division

Undergraduate Registration

Monday, January 16 8:30 a.m.-8:00 p.m.
 Tuesday, January 17 8:30 a.m.-8:00 p.m.

For further undergraduate information, contact:

ANN M. GALLI, Coordinator

Evening, Weekend,
and Summer Programs

WILKES COLLEGE

Max Roth Center

Third Floor

215 S. Franklin St.

Wilkes-Barre, Pennsylvania 18766

Phone: (717) 824-4651, ext.4235

Toll-free: from Scranton, PA 342-5617

from elsewhere in PA (800) 572-4444

from outside PA (Mid Atlantic and

New England regions) (800) 537-4444

Dr. Mahmoud H. Fahmy, Dean

Graduate Studies & Continuing Education

& Evening, Weekend, and Summer Programs

Evening Session Undergraduate Schedule January 23 - May 19, 1989

(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)

Course	Description	Room	Day and Hour	Credits
ACCOUNTING				
ACC 121 E	Introduction to Financial Accounting (Prereq: Sophomore standing or permission of instructor) Fee: \$20	DDD 201	Th 6:30-9:15	3
ACC 122 E	Introduction to Managerial Accounting (Prereq: ACC 121)	DDD 201	T 6:30-9:15	3
ACC 224 E	Taxes I (Prereq: ACC 121)	DDD 202	T 6:30-9:15	3
AEROSPACE STUDIES				
AS 000.E	Leadership Laboratory	Armory	Th 7-9 (8 times per semester)	0
ANTHROPOLOGY				
ANT 101 E	Introduction to Anthropology Physical & Archaeology	SLC 209	W 6:30-9:15	3
ART				
ART 101 E	Experiencing Art I	SLC 206	M 6:30-9:15	3
BUSINESS ADMINISTRATION				
BA 209 E	Business Correspondence and Reports	SLC 207	W 6:30-9:15	3
BA 220 E	Real Estate	SLC 207	M 6:30-9:15	3
BA 226 E	Investments	SLC 409	T 6:30-9:15	3
BA 232 E	Business Law—Agency + Sales	SLC 380	Th 6:30-9:15	3
BA 240 E	Property Insurance	SLC 209	Th 6:30-9:15	3
BA 254 E	Organizational Design & Behavior	SLC 316	Th 6:30-9:15	3
BA 398 E	Topic: Insurance Management	SLC 147	M 6:30-9:15	3
EARTH AND ENVIRONMENTAL SCIENCES				
EES 130 E	Environmental Awareness	SLC 1	Th 6:30-7:45	3
EES 130 E1	Laboratory Fee: \$35	SLC 435	Th 8-9:45	0
EES 315 E	Soils Science (Prereq: CHM 116 or 118 and EES 240.)	SLC 434	M 6-7:45	3
EES 315 E1	Laboratory Fee: \$40	SLC 434	M 8-9:45	0
ECONOMICS				
EC 101 E	Principles of Economics I (P.T. & Eve. Students Only)	DDD 101	M 6:30-9:15	3
EC 102 E	Principles of Economics II (P.T. & Eve. Students Only)	DDD 101	T 6:30-9:15	3
EC 232 E	Applied Economic Statistic II (P.T. & Eve. Students Only) (Prereq: EC 231 or permission of instructor) Laboratory Fee: \$20	SLC 318	Th 6:30-9:15	3

Course	Description	Room	Day and Hour	Credits
EDUCATION				
ED 202 E	Educational Psychology (Prereq: PSY 101)	SLC 160	M 4-6:30	3
ED 301 E	Health, Phys Ed, & Safety	SLC 160	M 6:30-8:15	2
ED 322 E	Lang Arts and Social Studies	SLC 209	T 5-7:45	3
ED 362 E	Instruction in Early Childhood	SLC 311	W 6:30-9:15	3
ENGINEERING				
EE 211 E	Circuit Theory I (Prereq: MTH 112)	SLC 409	MW 6:30-7:45	3
EE 212 E	Circuit Theory II (Prereq: EE 211)	SLC 334	TTh 6:30-7:45	3
EE 254 E	Electronic Laboratory II (Prereq: To be taken along with or after EE 252) Fee: \$45	SLC 125	W 6:30-9:15	1
EE 272 E	Solid State Devices (Prereq: MAE 210, PHY 203)	SLC 405	TTh 8-9:15	3
EE 314 E	Control Systems (Prereq: EE 214)	SLC 223	TTh 6:30-7:45	3
EE 332 E	Electromagnetics II (Prereq: EE 331)	SLC 347	TTh 6:30-7:45	3
EE 334 E	Electromagnetics Lab II (Prereq: EE 331) Fee: \$40	SLC 125	M 6:30-7:45	1
EE 382 E	Communications & Antenna Lab (Prereq: Senior standing in Engineering) Fee: \$45	SLC 224	Th 5-10:45	4
EE 392 E	Senior Projects II (Prereq: EE 391)	SLC 1	T 5-5:50	2
EE 416 E	Robot Vision	SLC 403	MW 8-9:15	3
EE 461 E	Digital Communications	SLC 411	MW 6-7:15	3
EE 474 E	Intergrated Circuit Design	SLC 223	TTh 8-9:15	3
EE 482 E	Adv. Communication & Antenna	SLC 224	Th 5-10:45	3
EGR 224 E	Heat and Mass Transfer (Prereq: PHY 201, MTH 211)	SLC 270	TTh 6:30-7:45	3
EGR 232 E	Strength of Materials (Prereq: EGR 231)	SLC 270	TTh 8-9:15	3
EGR 284 E	Measurement Lab II Fee: \$30	SLC 23	W 6-7:45	1
EGR 392 E	Senior Projects II (Prereq: EGR 391)	SLC 1	M 5-5:45	2
EGR 400 E	Science, Technology & Ethics	SLC 316	MW 6-7:15	3
MAE 210 E	Intro to Materials Engineer (Prereq: PHY 201, 202)	SLC 334	MW 6:30-7:45	3
MAE 234 E	Electrochemistry	SLC 334	MW 8-9:15	3
ENGLISH				
ENG 101 E	Composition I	KBY 302	T 6:30-9:15	3
ENG 102 E	Composition II (Prereq: ENG 101, 100)	KBY 302	Th 6:30-9:15	3
ENG 102 E	Composition II	KBY 102	M 6:30-9:15	3
ENG 152 E	Western World Literature II (Prereq: ENG 151)	KBY 102	T 6:30-9:15	3
ENG 343 E	The Eighteenth Century (Prereq: ENG 152, 245)	KBY 302	M 6-8:45	3
ENG 440 E	Restoration & 18th Century Lit	KBY 302	M 6-8:45	3
ENG 480 E	American Literature	KBY 302	W 6-9:15	3
HISTORY				
HST 102 E	World Civilization II	SLC 318	W 6:30-9:15	3
HST 321 E	American Social History	Capin 15	M 6:30-9:15	3
HST 398 E	Topic: Holocaust	SLC 424	T 6:30-9:15	3

Course	Description	Room	Day and Hour	Credits
MATHEMATICS & COMPUTER SCIENCE				
MTH 100 E	Pre-Calculus Mathematics (Prereq: 2 years of secondary school mathematics in Algebra and Geometry.)	SLC 403	TTh 6-7:45	4
MTH 102 E	Fundamentals of Math II (Prereq: MTH 101)	SLC 403	MW 6:30-7:45	3
MTH 111 E	Calculus I (Prereq: MTH 100 or at least 3 years of secondary school math including Geometry, Algebra II, and topics in Trigonometry)	SLC 405	TTh 6:30-7:45	4
MTH 112 E	Calculus II (Prereq: MTH III)	SLC 405	MW 6-7:45	4
MUSIC				
MUS 101 E	Introduction to Music I	DDD 218	T 6:30-9:15	3
NURSING				
NSG 303 E	Issues and Trends in Nursing	SLC 311	M 4-6:45	3
PHYSICAL EDUCATION				
PE 210 E	Contemporary Health Concepts	GYM	W 6:30-8:15	2
PE 315 E	Emergency Care Techniques (Prereq: student must possess a current Cardiopulmonary Resuscitation (CPR) Card.)	GYM	T 6:30-9:15	3
PHYSICS				
PHY 102 E	Physical Science II	SLC 166	Th 6-7:45	3
PHY 102 E1	Physical Science Discussion	SLC 150	Th 8-8:50	0
PHY 102 E2	Physical Science Discussion	SLC 150	Th 9-9:50	0
PHY 106 E	Laboratory Fee: \$40 per semester	SLC 151	W 6:30-9:15	0
PHY 201 E	Laboratory Fee: \$40 per semester (Coreq: MTH 112)	SLC 149	M 6:30-9:15	0
PHY 202 E	General Physics II (Coreq: MTH 112) (Prereq: PHY 201, PHY 105)	SLC 166	M 6:30-9:15	4
PHY 202 E	Laboratory Fee: \$40	SLC 166	W 6:30-9:15	0
PHY 210 E	Introduction to Materials Engineering (Prereq: PHY 201, 202)	SLC 334	MW 6:30-7:45	3
PHY 302 E	Math Methods in Physics II (Prereq: MTH 211, 212)	SLC 166	T 6-8:45	3
PHY 332 E	Electricity & Magnetism II (Prereq: PHY 331)	SLC 347	TTh 6-8:45	3
PHY 334 E	Electricity & Magnetism Laboratory II (Prereq: PHY 333) Fee: \$40	SLC 125	M 6:30-9:15	1
PHY 400 E	Science, Technology & Ethics	SLC 316	MW 6-7:15	3
POLITICAL SCIENCE				
PS 102 E	Introduction to American Politics	SLC 207	Th 6:30-9:15	3
PS 354 E	Administrative Policy Making (Prereq: PS 102, 218, Consent of instructor)	Capin 15	T 6:30-9:15	3
PSYCHOLOGY				
PSY 101 E	General Psychology I	SLC 342	Th 6:30-9:15	3
PSY 311 E	Comparative Psychology (Prereq: PSY 101)	SLC 341	M 6:30-9:15	3

Course	Description	Room	Day and Hour	Credits
PSY 325 E	The Exceptional Individual (Prereq: PSY 101, 221)	SLC 342	T 6:30-9:15	3
PSY 398 E	Topic: Forensic Psychology	SLC 347	W 6:30-9:15	3
SOCIOLOGY				
SOC 200 E	The Family	SLC 204	T 6:30-9:15	3
SOC 253 E	Interventive Strategies Social Work	SLC 204	Th 6:30-9:15	3
SOC 398 E	Topic: Human Sexuality	SLC 380	M 6:30-9:15	3
SOC 398 E	Topics: The Sixties	SLC 380	T 6:30-9:15	3
SPEECH/COMMUNICATIONS/THEATER ARTS				
SCT 101 E	Fundamentals of Speech	SLC 411	T 6:30-9:15	3

Weekend College Classes Spring, 1989

on the campus of Keystone Junior College
La Plume, Pennsylvania

January 13 - April 23, 1989

Calendar — Spring, 1989

January 13, 14, 15
February 3, 4, 5*
February 17, 18, 19
March 10, 11, 12
March 31, April 1, 2
April 21, 22, 23

*2-week interval between classes

A Schedule
Fri. 6:30-8:30
Sat. 10:10-12:10
Sat. 3:10-5:10

B Schedule
Sat. 8:00-10:00
Sat. 1:00-3:00
Sun. 10:10-12:10

C Schedule
Sat. 6:00-8:00
Sun. 8:00-10:00
Sun. 1:00-3:00

Unless otherwise indicated, all courses in the Weekend College meet according to the above schedule:

(TIMES IN LIGHT FACE REPRESENT A.M. AND TIMES IN BOLD FACE P.M.)

Course	Description	Instr.	Schedule	Credits
ACCOUNTING				
ACC 234 W	Financial and Managerial Accounting Systems (Prereq: ACC 212)	Croop	C	3
BUSINESS				
BA 226 W	Investments	Gover	B	3
BA 252 W	Operations and Systems Management	Mecca	A	3
BIOLOGY				
BIO 113 W	Microbiology Fee: \$35	Steuben	A + C	4
ECONOMICS				
EC 245 W	Consumer Economics	Mecca	C	3
EC 251 W	Macroeconomics I	Tarnawiecki	A	3
ENGLISH				
ENG 151 W	Western World Literature I (Prereq: ENG 102 or equivalent in composition)	Schappert	B	3
PSYCHOLOGY				
PSY/SOC 255 W	Introduction to Social Psychology (Prereq: SOC 101 or ANT 101 or PSY 101, or approval of instructor)	Natzke	B	3
PSY 243 W	Industrial Psychology (Prereq: PSY 101)	O'Neill	A	3

Course	Description	Room	Day and Hour	Credits
SOCIOLOGY				
SOC/PSY 255 W	Introduction to Social Psychology (Prereq: SOC 101, ANT 101, or PSY 101, approval of instructor)	Natzke	B	3

Pre-Registration Keystone Weekender

December 9 4:00 p.m.-6:30 p.m.
December 10 9:00 a.m.-3:30 p.m.

Wilkes College
is offering an

INTERSESSION
January 3 - January 20, 1989

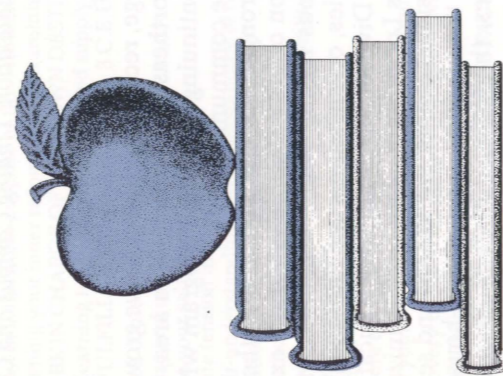
**For further information
concerning offerings**

Call Mr. John F. Meyers,
Associate Dean of Academic Affairs

(717) 824-4651
extension 4207

Wilkes College Continuing Education

Non-Profit Organization
U.S. Postage



Wilkes College Continuing Education

Quality Education: Linking Campus and Community

Fall Course Offerings 1988

Wilkes College
Wilkes-Barre, Pennsylvania 18766

Non-Profit Organization
U.S. Postage
PAID
Wilkes-Barre, Pa.
Permit No. 355

Krohle Frederick J

Library/Media Center

The Evening & Weekend College has played an important role in the ongoing history of Wilkes College and will continue to recognize the needs of the area by offering programs of quality and substance to both campus and community.

The Wilkes College Division of Continuing Education

Quality Education: Linking Campus and Community

The Program:

Wilkes College, recognizing the positive growth and development of the Northeastern Pennsylvania area, offers a quality, non-degree Continuing Education program which responds to the needs of the community.

Placing its strongest emphasis on quality, the Continuing Education Division offers a flexible schedule, excellent facilities and a prestigious faculty which accommodates the growing needs of agencies, organizations and individuals.

The Wilkes Division of Continuing Education co-sponsors with numerous Local, State, National Organizations and Institutions, professional events, workshops and seminars.

Through the use of public seminars, in-house presentations, and conferences, the College offers programs in supervisory training, management development, executive development, research, and continuing professional education.

The Continuing Education Division will award credits for non-degree training in numerous areas including: governmental operations, industrial and business management, humanities, cultural affairs, tax-related issues, legal-related issues, and family and personal concerns. The curriculum is designed to offer pertinent and informative materials to students and will be flexible from semester to semester to fulfill the needs of the community.

Continuing Education Units (C.E.U.) are nationally recognized, standard units of measurement earned for satisfactory completion of qualified programs of continuing education.

The Division of Continuing Education is a member of the National Registry for Continuing Education and the Council on the Continuing Education Unit.

The Division of Graduate Studies and Continuing Education offers Masters Programs in various areas such as MBA, Health Administration, Engineering, Education, Nursing and others. For further information please call Ext. 4462. In addition to the programs listed above the Division also offers opportunities for undergraduate programs in the Evening, Weekend and Summer. For further information please call Ext. 4235.

Wilkes College is an equal opportunity institution and prohibits and rejects any discrimination in admissions or hiring practices based on race, age, sex, color, creed, national origin, handicap, and religion.

PROFESSIONAL DEVELOPMENT

Adventures in Attitudes

Awareness and Growth is the main purpose of this workshop, however, it goes further by strengthening your inner resources and examining the inter-relationship of thought and life. BE IN CHARGE OF YOUR OWN DESTINY!!! Get what you want out of life by learning to tap into the unlimited supply of SUCCESS, HAPPINESS, JOY, and FULFILLMENT waiting for you. 3 C.E.U.'s.

During this ten-week course you will explore:

- How to recognize and use your strengths
- How to increase your self-confidence
- How to eliminate tension in your life
- How to gain self-understanding and understanding of others
- How attitudes affect your communication
- How positive attitudes get positive results
- How to tap the unsuspected stores of energy and ability you possess
- How to discover opportunity
- The secrets of motivation
- 5 Ways to be more effective in any job setting

SUCCESS is within your reach; for as William James promises:

"The greatest discovery of my generation is that men AND women can alter their lives by altering their attitudes of mind".

Coordinator: Joanna Douglas, President, SUCCESS FACTOR

Dates: Tuesdays, September 20, 27; October 4, 11, 18, 25; November 1, 8, 15, 22.

Time: 6:30 p.m. to 9:30 p.m.

Location: Riverstreet Manor Nursing and Rehabilitation Center

Cost: \$100.00

Detection and Prevention of Sports Injuries

This course is designed to teach the coach and affiliated sports personnel to detect and prevent sports injuries. Participants will learn the difference between sprains and strains (hot and cold), when and when not to send a player back into the game. On hand at one session will be a qualified lawyer who will answer any questions you might have regarding the legal implications of coaching and your rights!

Topics to be covered will include:

1. Introduction to Sport Injuries
2. Nutrition for Athletes
3. Recognizing General Injuries
4. Rehabilitation of Sport Injuries
5. Pre-Season Prevention

Instructor: Dr. Malcolm Conway, Conway Chiropractic, P.C.

Dates: Tuesdays, November 8, 15, 22, 29; December 6.

Time: 7:30 p.m. to 9:00 p.m.

Location: Stark Learning Center, Room 359

Cost: \$50.00

Drugs in the Community

This course is designed for those students involved in health care or human relations. It is intended to provide comprehensive knowledge regarding the most commonly used and abused drugs in today's modern society. Through the use of didactic presentations and experiential exercises, the participants will be afforded the opportunity to increase their knowledge and skills in the areas of prevention, identification, basic pharmacology, and treatment resources avail-

able within the community. Class size is limited to 40 students. 15 hours C.A.C. credits. 1.5 C.E.U.'s.

Instructor: Anthony Douglas, *Registered Pharmacologist*
Dates: Thursdays, September 15, 22, 29; October 6, 13, 20.
Time: 6:30 p.m. to 9:00 p.m.
Location: Media Room, Wilkes College Library
Cost: \$50.00

Modes of Communication with the Deaf Community

This course in Deaf Awareness is geared to the beginner/novice. Participants will learn sign language and other varied modes of communication both manual and technical used by the deaf and hearing impaired community. 2.5 C.E.U.'s.

Instructor: Gerald McGinnis, *Director of Treatment Services, Scranton State School for the Deaf*
Dates: Thursdays, September 15, 22, 29; October 6, 13, 20, 27; November 3, 10, 17.
Time: 6:30 p.m. to 9:00 p.m.
Location: John Heinz Institute
Mundy St., Wilkes-Barre
Cost: \$50.00

Written Communication Skills

This eight hour seminar-style program is designed to increase the effectiveness of communication skills of practicing managers. Intended for any manager or supervisor who desires a fresh perspective on what might become too routine a process, and for newer organizational members responsible for both interpersonal and organizational communicating. Each session will briefly explore the theoretical base of a topic, examine current thinking about the subject, then move quickly into practical applications in the settings of the class participants. No formal background in communications or management theory is required but participants will be required to contribute to group interactions and discussions involving current and past experience. Class will be limited to the first 20 paid participants. .8 C.E.U.'s.

Topics to be discussed:

- The Communication Process
- Fundamentals of written interpersonal communication
- Message types and strategies for success
- Overcoming barriers to effective communication
- Analyzing communication effectiveness
- The psychology of effective communications

Instructor: Mr. Richard Raspen, *Assistant Professor, Wilkes College School of Business and Economics*
Dates: Wednesdays, October 19, 26; November 2, 9.
Time: 6:30 p.m. to 8:30 p.m.
Location: Kirby Hall, Room 102
Cost: \$80.00

SMALL BUSINESS PROFESSIONAL DEVELOPMENT

The following seminars are sponsored by the Wilkes College Division of Continuing Education and the Small Business Development Center and are co-sponsored by the Small Business Administration, Ben Franklin NET/ATC, Small Business Council Wilkes-Barre Partnership, area Chambers of Commerce, and Industrial Development Authorities. Special arrangements for the handicapped are available upon request. Please call 824-4651, extension 4340.

How to Develop a Business Plan or Financing Proposal

This course will enable the student to develop and write a comprehensive business plan and use the plan to make a legitimate bank loan application.

Business Plan Includes: Description of the Business, Premise, Market, Location, Labor Competition, and Operation Scenarios.

Financial Analysis Includes: Cash Flow Statements, Profit & Loss Statements, ProForma Balance Sheets.

Instructor: TBA
Time: Two sessions, Two Hours Each, 7:00 p.m. to 9:00 p.m.
Location: Tuesday, September 27 & Thursday, September 29,
Hazleton — Genetti's Best Western Hotel
Tuesday, October 11 & Thursday, October 13,
Quality Inn, 500 Kidder Street, Wilkes-Barre
Cost: \$95.00

Liability Risks for Manufacturers*

A noted products liability attorney will provide this presentation, topics to be covered will include:

- When Are You At Risk?
- Methods To Reduce Liability
- What To Do If Sued
- Does Your Insurance Protect You

Instructor: Richard Ferguson, *Attorney*
Date: Wednesday, August 24, 1988
Time: 8:30 a.m. to 11:30 a.m.
Location: Woodlands Inn and Resort, Wilkes-Barre
Cost: \$75.00

Marketing Business to Business*

This workshop will inform business of successful methods of marketing their products to other businesses. Special attention will be paid to the needs of component manufacturers.

Instructor: James Zaroda, *Marketing Director, WNEPTV*
Date: Thursday, September 22, 1988
Time: 8:30 a.m. to 11:30 a.m.
Location: Genetti's Best Western, Hazleton
Cost: \$75.00

Insurance for Manufacturers*

A representative of the insurance industry will provide manufacturers with an understanding of what they must do to adequately protect their business.

Instructor: TBA

Date: Thursday, October 20, 1988

Time: 8:30 a.m. to 11:30 a.m.

Location: TBA (Pottsville)

Cost: \$75.00

NOTE: * These three seminars may be subscribed to as a package for \$200.00, a savings of \$25.00. This will entitle the firm to send one (1) representative to each session.

DETAILS OF THE FOLLOWING SEMINARS WILL BE ANNOUNCED AT A FUTURE DATE OR FOR FURTHER INFORMATION CALL THE SMALL BUSINESS DEVELOPMENT CENTER AT 824-4651, EXT. 4340.

Sales Tax Obligations

Business will be informed of the intricacies of the Pennsylvania Sales and Use Tax Laws.

To be offered in Hazleton and Bloomsburg.

Date: September and October, 1988

Cost: \$25.00

Effective Marketing

How to effectively utilize the media to sell your product. Three nights from 7:00 p.m. to 9:00 p.m.

Date: October, 1988

Insurance Obligation for Business

Will explain the basic insurance needs and additional options available for the business person.

Date: November, 1988

Win - Win Labor Management Relations

Will explain inter-personal relations in the work place and the value of cooperative management direction and worker relationship to industry goals.

Date: November, 1988

COMPUTER SKILLS

Introduction to Computers & DOS

This course will introduce you to the basics of a computer and enable you to efficiently run both home and business. You will become familiar with computer parts such as the CPU - Central Processing Unit permanent storage, keyboard, monitor and printer. DOS - Disk Operating System, is a collection of programs that allow a computer system to supervise its own operations. Students will learn DOS commands such as formatting, copying and erasing.

To ensure individual attention and personalized instruction on an IBM compatible computer, class size is limited to twenty (20) students.

Instructor: Mr. James Belles

Dates: Tuesdays, September 6, 13.

Time: 7:00 p.m. to 10:00 p.m.

Location: 240 South Main St., Wilkes-Barre

Cost: \$60.00

Introduction to Data Base Management

This course is designed to allow the individual to create and maintain files of facts, figures, names, mailing lists, patient records, etc. "File Express" is a database management program allowing easy manipulation of small and medium size data bases, using menu commands. The course offers hands-on practice with an IBM compatible computer for all students.

To ensure individual instruction and attention, classes will be limited to twenty (20) students. (10 hours classroom instruction, 5 hours lab.)

Instructor: Mr. James Belles

Dates: Tuesdays, September 20, 27; October 4, 11, 18, 25.

Time: 6:30 p.m. to 9:00 p.m.

Location: 240 South Main St., Wilkes-Barre

Cost: \$80.00

Introduction to Lotus 1 2 3

This course is designed for those individuals with a general understanding of microcomputers. The course reviews general spreadsheet concepts, and includes worksheet set-up, movement, input, commands, menus, printing and modeling techniques.

To ensure individual attention and personalized instruction on an IBM compatible computer, classes will be limited to twenty (20) students. (10 hours classroom instruction, 5 hours lab.)

Instructor: Mr. Steven Teufel

Dates: Tuesdays, November 1, 8, 15, 22, 29; December 6.

Time: 6:30 p.m. to 9:00 p.m.

Location: 240 South Main St., Wilkes-Barre

Cost: \$80.00

Introduction to Word Processing

This course is designed to introduce you to the basic concepts of Word Processing.

To ensure individual instruction on an IBM compatible computer, class size will be limited to twenty (20) students. (10 hours classroom instruction, 5 hours lab.)

Instructor: Mr. Steven Teufel

Dates: Thursdays, September 22, 29; October 6, 13, 20, 27.

Time: 6:30 p.m. to 9:00 p.m.

Location: 240 South Main St., Wilkes-Barre

Cost: \$80.00

THE FOLLOWING INTRODUCTORY COMPUTER COURSES WILL BE OFFERED IN ADDITION TO OUR REGULARLY SCHEDULED COURSES, FOR FURTHER INFORMATION PLEASE CONTACT ANN F. CALKINS, COORDINATOR, CONTINUING EDUCATION, 824-4651, EXTENSION 4460.

Introduction to dBase III

In this 15 hour course the dBase III user will become familiar with database concepts. You will learn how to create a database file for the information you want to store. Then you will learn how to add, display, edit, and print records and reports. You will also discover how to locate specific records and generate indexes.

Introduction to Word Perfect

Word Perfect gives a unique combination of top quality word processing with graphic integration. The creation of newsletters, reports and documents with the professional look is made easy with the Word Perfect software. Some special features include:

1. Text and Graphics
2. Automatic Referencing
3. Speller/Thesaurus
4. Document Compare

Introduction to Auto CAT

This three session course is designed for the professional who has little or no experience with micro-computer aided design and drafting, using the P.C. Graphics capabilities.

Managing Your Hard Disc

In this course, you will learn to use DOS to keep your hard disk running smoothly and efficiently. Understanding subdirectory structure and backup procedures will help prevent data loss in the event of power loss, mechanical failure, or user error. You will also learn to use DOS commands and utilities as well as create batch files.

PERSONAL IMPROVEMENT

Calligraphy — Beginning

This course will consist of ten 2 hour sessions and will teach the participants the basics of calligraphy scripts. Individual instruction will be given. Supplies can be purchased from the instructor at the first class.

Instructor: Myles Jacques, *Calligrapher*

Dates: Wednesdays, October 12, 19, 26; November 2, 9, 16, 23, 30; December 7, 14.

Time: 7:00 p.m. to 9:00 p.m.

Location: Riverstreet Manor Nursing and Rehabilitation Center

Cost: \$40.00

Effective Communication — The Fine Art of Public Speaking

For most Americans the number one fear is public speaking. By participating in this course you will overcome this fear and develop confidence as well as learning to give presentations in a clear concise manner. Through immediate and positive feedback in a risk free and enthusiastic atmosphere you will develop a professional and powerful presentation.

Instructor: Mr. Mark Thibodeau

Dates: Thursdays, September 29; October 6, 13, 20, 27.

Time: 6:30 p.m. to 9:30 p.m.

Location: Capin Hall, Room 15

Cost: \$55.00

Holiday Floral Designing

Participation in this course requires a basic knowledge of flower arranging. Creative imagination will be encouraged in designing special Thanksgiving and Christmas arrangements for your home or office. Supplies will be available for purchase at both classes. (Please bring scissors or small shears with you to class.)

Instructor: Yvonne Tranell, *Proprietor, Distinctive Designs by Yvonne*

Dates: Thursdays, October 27; November 3.

Time: 7:00 p.m. to 9:00 p.m.

Location: Stark Learning Center, Room 206

Cost: \$25.00

Improving Your Grades — The Choice Is Yours

This four hour seminar is designed for high school and college students who would like to improve their GPA. The seminar will discuss common barriers to achieving top grades and action steps to overcome them. The instructor will provide you with his own academic experiences which led him to a management position with a major corporation. Specific topics will include:

- Our personal abilities
- Note taking
- Study habits
- Test taking

Instructor: Mr. Mark Thibodeau

Dates: Thursdays, September 15, 22.

Time: 7:00 p.m. to 9:00 p.m.

Location: Capin Hall, Room 15

Cost: \$20.00

Introduction to Self-Hypnosis

If there was a way to rapidly and dramatically increase your awareness and ability, wouldn't you want to know about it?

This training for the self-hypnosis beginner, covers all the basics of how to hypnotize yourself and give yourself beneficial suggestions that really work. More than just a class — this is an experience that trains you in valuable mental skills you can use in many ways and benefit from your whole life long. Whether you need to: reduce stress, gain confidence, enjoy better health, control pain, sleep better, conquer fears and bad habits, achieve goals or improve performance levels, this exciting program is a must for you! You owe it to yourself to learn how to tap more of your total mind power. Enhance and enrich your life — enroll today!

Instructor: Mr. Frederick Sam, *Certified Master Hypnotist/Hypnotherapist*

Date: Tuesdays, September 20, 27; October 4, 11, 18.

Time: 6:30 p.m. to 9:30 p.m.

Location: Kirby Hall, Room 309

Cost: \$60.00

Self-Hypnosis II

This dynamic training teaches you a wealth of advanced self-hypnosis principles and techniques that merge with and build upon the fundamentals taught in Part I.

Whether you have previous experience with self-hypnosis or with other mind expanding techniques, this unique learning experience will add tremendously to your present knowledge and skills. You will also explore your ability to experience and self induce an even wider range of hypnotic phenomena. Learn how to make a fuller and more effective use of your hypnotizability.

Class members will be hypnotized many times so dress comfortably and bring a pillow if you wish. To allow for individualized practice and instruction, enrollment is limited.

Instructor: Frederick Sam, *Certified Master Hypnotist/Hypnotherapist*

Dates: Tuesdays, October 25; November 1, 8, 15, 22.

Time: 6:30 p.m. to 9:30 p.m.

Location: Kirby Hall, Room 309

Cost: \$60.00

Successful Money Management

This workshop will deal with the key concepts and practices of wise money management — how to minimize taxes, maximize investment returns, and plan for your future.

Seminar I - Building Your Financial Foundation

Seminar II - Putting Your Dollars To Work

Seminar III - Retirement Planning

Instructor: Mr. Robert Graham, Sr.

Dates: Thursdays, October 6, 13, 20.

Time: 7:00 p.m. to 9:00 p.m.

Location: Granada Ballroom, Quality Inn, Wilkes-Barre

Cost: \$49.00 (same price for singles and couples)

Good Health Through Basic Nutrition And Diet

This course in basic good nutrition will enable the participant to maintain a healthy body through assessing their basic calorie needs. Weight reduction techniques will be discussed along with sodium needs and cholesterol levels. Shopping and cooking methods will also be discussed.

Instructor: Rosemarie Varzaly, R.D. *Chief Clinical Dietician, Mercy Hospital, Wilkes-Barre.*

Dates: Thursdays, October 27; November 3, 10, 17.

Time: 7:00 p.m. to 8:30 p.m.

Location: Riverstreet Manor Nursing and Rehabilitation Center

Cost: \$40.00

Women and Financial Independence

This practical course encourages women to organize and manage their financial lives. It is designed to build confidence and develop skills for making investment decisions in these changing times.

Instructor: Ms. Susan C. Yelen, *Certified Financial Planner, Financial Consultant, Shearson Lehman Brothers.*

Dates: Tuesdays, September 27; October 4, 11, 18, 25; November 1.

Time: 7:30 p.m. to 9:00 p.m.

Location: Stark Learning Center, Room 359

Cost: \$55.00

The Nursing Home — The Inevitable Choice

This course is designed to assist and provide a personal touch in helping individuals face the reality of Nursing Home placement of a family member. Through education you will learn how to maximize your health care dollar and feel comfortable with your choice of nursing home. Topics to be discussed will include:

- Selecting the Right Home
- Defining the Purchasing Power of Your Health Care Dollar
- Financing Alternatives
- Rules and Regulations
- Alternative Placements

Instructor: Frank J. Berleth, *NHA*

Dates: Thursdays, November 3, 10, 17; December 1, 8.

Time: 7:00 p.m. to 8:30 p.m.

Location: Capin Hall, Room 15

Cost: \$40.00

CULTURAL ENRICHMENT

The American Civil War

In many ways, the American Civil War was one of the most dramatic and traumatic experiences in our nation's history. The events of that era still have the power to stir great emotions within the Americans. This short course will give first of all an overview of the events leading up to the outbreak of the war, as well as overview of the general course of the war. The focus of the course will be the roll played by Luzerne County, Pennsylvania, in the Civil War. This will include the men who served in the armed services from this area and also the events on the home front during the war years. The course will be taught by various historians who will discuss Civil War topics of local and national interest. At least one session will be held at the Historical Society Museum to review its Civil War collections, and if possible, a field trip will be arranged one week-end to the Gettysburg Battlefield.

Coordinator: Mr. Richard Kastle, *Executive Director,*
Wyoming Historical & Geological Society

Dates: Wednesdays, September 7, 14, 21, 28; October 5, 12.

Time: 7:00 p.m. to 8:30 p.m.

Location: Kirby Hall, Room 102

Cost: \$35.00

Opera — The Magic Of Mozart

From *Amadeus* to *Zauberflöte* this fall's course will present the life and the most popular operas of Wolfgang Amadeus Mozart. All works in this 9-week course will be shown on videotapes — mostly subtitled!

Instructor: Mrs. Muriel Bravman

Dates: Mondays, October 3, 10, 17, 24, 31; November 7, 14, 21;
December 5.

Time: 1:00 p.m. to 3:30 p.m.

Location: Media Room, Wilkes College Library

Cost: \$60.00

Mining Shakespearean Masterpieces for SOUND, SENSE, and SOUL.

Study of tragedy, comedy, and romance enriched by film, recordings, music and an optional trip to the New York Shakespeare Festival.

Instructor: Charlotte Lord, *Ph.D.*

Dates: Wednesdays, September 14, 21, 28; October 5, 12, 19, 26;
November 2, 9, 16.

OR

Thursdays, September 15, 22, 29; October 6, 13, 20, 27;
November 3, 10, 17.

Time: 2:00 p.m. to 4:00 p.m.

Location: Wednesdays, Stark Learning Center, Room 380

Thursdays, Dorothy Dickson Darte Building, Room 202

Cost: \$50.00

Social Crises III — Myth vs Reality

Discussion about the traditions of great religions and civilizations, how myth influences our lives culturally and religiously. In depth investigation of where myth ends and reality begins.

Panel: Dr. Jule Ayers
Monsignor T. Banick
Dr. Christopher Breiseth
Dr. Mahmoud H. Fahmy
Rabbi Isreal Kestenbaum
Dr. John J. Markarian
Dr. A. Mitra

Dates: Thursdays, September 29; October 6, 13, 20, 27; November 3,
10, 17.

Time: 7:00 p.m. to 9:00 p.m.

Location: Stark Learning Center, Room 405

Cost: \$35.00

LANGUAGES

Italian — Beginners

Do you like to travel, to see eternal Rome? Would you like to get to know the Italian people better? Then this course will introduce you to the basics of the Italian language. Pronunciation, sentence patterns and practical vocabulary will be covered in this six-week course.

Text: Rapid Italian for Students and Tourists, will be available at the Wilkes College bookstore and is not included in the cost of the course. (For travel purposes as well as continuous study.)

Instructor: Dr. Carla P. Chapin

Dates: Tuesdays, October 25; November 1, 8, 15, 22, 29.

Time: 7:00 p.m. to 9:00 p.m.

Location: Stark Learning Center, Room 441

Cost: \$45.00

Italian — Intermediate

A knowledge of basic Italian is required to register for this course. The course consists of a systematic review of Italian grammar, comprehensive exercises and idiomatic vocabulary building.

Text: Rapid Italian for Students and Tourists, will be available at the Wilkes College bookstore and is not included in the cost of the course.

Instructor: Dr. Carla P. Chapin

Dates: Thursdays, October 27; November 3, 10, 17; December 1, 8, Tuesday, December 6.

Time: 7:00 p.m. to 9:00 p.m.

Location: Stark Learning Center, Room 441

Cost: \$45.00

SPECIAL SEMINARS

The 3rd Annual State Tax Seminar

Wilkes College Division of Graduate Studies and Continuing Education in cooperation with the Commonwealth of Pennsylvania Department of Revenue is sponsoring the 3rd Annual State Tax Seminar on Wednesday, October 26, 1988 at the Quality Inn, 500 Kidder Street, Wilkes-Barre. For further information please contact Ann Calkins, Coordinator, Continuing Education, 824-4651, Ext. 4460.

Travel Study

Wilkes College Division of Graduate Studies and Continuing Education is offering a travel study trip to Egypt entitled "A Complete Egyptian Odyssey", October 4-15, 1988. Trip highlights include a 5 day Deluxe Nile Cruise and flight to Abu Simbel. Three days of viewing Pharonic, Islamic, Coptic and Modern Cairo and two days at the Greco-Roman Sites of Alexandria. For further information please contact Ann Calkins, Coordinator, Continuing Education, 824-4651, Ext. 4460. (A limited number of reservations remain.)

EIT Review (Pre-requisite for P.E. Exam)

Wilkes College Division of Continuing Education will offer the EIT Review for the April 15, 1989 exam. (Application deadline for the exam is December 1, 1988). Classes will begin on Saturday, December 3, 1988 through March 25, 1989 from 9:00 a.m. to 12:30 p.m. For further information please contact Ann Calkins, Coordinator, Continuing Education, 824-4651, Ext. 4460.

P.E. Exam Review

Wilkes College Division of Continuing Education will offer the P.E. Exam Review for the exam which will take place October 30 & 31, 1989. Application deadline for the exam is July 1, 1989. Classes are scheduled to begin on June 13, 1989. For further information please contact Ann Calkins, Coordinator, Continuing Education, 824-4651, Ext. 4460.

JOB TRAINING PARTNERSHIP ACT

Wilkes College Division of Continuing Education in cooperation with the Luzerne County Human Resources Development Department is offering training programs which will provide an opportunity for those who wish to re-enter the employment market and advance their career future. Courses to be offered are:

1. Computerized Advanced Office Procedures
2. Computerized Bookkeeping and Accounting
3. Enhancement Skills for Medical Office Staff
4. Computer Bookkeeping/Financial Assistant Internship Program

**ATTENTION
CERTIFIED PUBLIC ACCOUNTANTS,
PUBLIC ACCOUNTANTS AND
ENROLLED AGENTS**

Wilkes College Division of Graduate Studies and Continuing Education is extensively involved in providing workshops and seminars for Continuing Professional Education. The Division of Graduate Studies and Continuing Education has received official approval from:

The Pennsylvania Board of Public Accountants
The New York State Education Department, Office of the State Board for Public Accountancy
United States Internal Revenue Service (Enrolled Agents)

and is authorized to issue Continuing Professional Education credits to all attendees.

For further information, write or call:

Ann Calkins, Coordinator

Division of Graduate Studies and Continuing Education

Wilkes College

Wilkes-Barre, PA 18766

Phone: (717) 824-4651, extension 4460

Toll-free from Scranton, PA 342-5617

From elsewhere in Pennsylvania (800) 572-4444

From Middle-Atlantic and New England Regions (800) 537-4444



Max Roth Center, Division of Graduate Studies and Continuing Education, 2nd & 3rd Floor

**Fall Course Offerings
1988**

REGISTRATION FORM

Name _____

Address _____

City _____ State _____ Zip _____

Home Phone _____

Business Phone _____

Name of Course(s) _____

Social Security Number _____

Make checks payable to Wilkes College.

Pre-registration required.

Registration fees are non-refundable after the first session.

Send to: **Ann Calkins, Coordinator**
Wilkes College
Division of Continuing Education
Wilkes-Barre, Pa. 18766
Ph. (717) 824-4651, ext. 4460

**Dr. Mahmoud H. Fahmy, Dean of Graduate Studies
and Continuing Education**

SUMMER COURSE OFFERINGS — 1988

PROFESSIONAL DEVELOPMENT

Sports Injuries For Coaches

This course is designed to teach the coach and affiliated sport personnel to detect and prevent sports injuries. Learn the difference between sprains and strains, hot and cold, when and when not to send a player back into a game. A qualified lawyer will be available at one session to answer any questions you might have regarding the legal implications of coaching and your rights.

Topics to be covered will include:

1. Introduction to Sports Injuries
2. Nutrition for Athletes
3. Recognizing General Injuries
4. Rehabilitation of Sports Injuries
5. Pre-Season Prevention

Instructor: Dr. Malcolm Conway, *Conway Chiropractic, P.C.*
Dates: Thursdays, July 7, 14, 21, 28; August 4.
Time: 7:00 p.m. to 9:00 p.m.
Place: TBA
Cost: \$50.00

COMPUTER SKILLS

Introduction to Computers and DOS

This course will introduce you to the basics of a computer and enable you to efficiently run both home and business. You will become familiar with computer parts such as the CPU — Central Processing Unit permanent storage, keyboard, monitor and printer. DOS — Disk Operating System is a collection of programs that allow a computer system to supervise its own operations. Students will learn DOS commands such as: formatting, copying and erasing.

To ensure individual attention and personalized instruction on an IBM compatible computer, class size will be limited to twenty (20) students.

Instructor: TBA
Dates: Tuesdays, June 7, 14.
Time: 7:00 p.m. to 10:00 p.m.
Place: 240 South Main Street, Wilkes-Barre
Cost: \$60.00

Introduction to Data Base Management

This course is designed to allow the individual to create and maintain files of facts, figures, names, mailing lists, patient records, etc. "File Express" is a database management program allowing easy manipulation of small and medium size data bases, using menu commands. The course offers hands-on practice with an IBM compatible computer for all students.

To ensure individual instruction and attention, classes will be limited to twenty (20) students. (10 hours classroom instruction, 5 hours lab.)

Instructor: TBA
Dates: Tuesdays, June 21, 28; July 5, 12, 19.
Time: 7:00 p.m. to 10:00 p.m.
Place: 240 South Main Street, Wilkes-Barre
Cost: \$80.00

Introduction to Lotus 1 2 3

This course is designed for those individuals with a general understanding of microcomputers. The course reviews general spreadsheet concepts, and includes worksheet set-up, movement, input, commands, menus, printing and modeling techniques.

To ensure individual attention and personalized instruction on an IBM compatible computer, classes will be limited to twenty (20) students. (10 hours classroom instruction, 5 hours lab.)

Instructor: TBA
Dates: Tuesdays, July 26; August 2, 9, 16, 23.
Time: 7:00 p.m. to 10:00 p.m.
Place: 240 South Main Street, Wilkes-Barre
Cost: \$80.00

Introduction to Word Processing

This course is designed to introduce you to the basic concepts of word processing. The student will learn the basics of letter formation, formatting, and printing.

To ensure individual instruction on an IBM compatible computer, classes will be limited to twenty (20) students. (10 hours classroom instruction, 5 hours lab.)

Instructor: TBA
Dates: Tuesdays, June 21, 28; August 5, 12, 19.
Time: 7:00 p.m. to 10:00 p.m.
Place: 240 South Main Street, Wilkes-Barre
Cost: \$80.00

Computer Summer Camp for Kids

Have Fun While Learning — A one week seminar designed to expose school age students to the basic operations of the computer and the advantages this offers in the academic and business settings.

- Group One — Ages 10-14
- Group Two — Ages 14-17

For further information, please contact the Division of Continuing Education at 824-4651, Ext. 4460.

PERSONAL IMPROVEMENT

Your Image — Does It Reflect Your Career

Is your career on hold? Then it is possible that you need to change the image you are projecting. During this interesting seminar you will be introduced to innovative ideas in hairstyles, makeup and

fashion that will assist you in moving from college to career or the secretarial pool to the boardroom. Selected volunteers will receive a makeover. All participants will receive a free assortment of samples.

Instructor: Mary Taylor, *Hair Designer & Beauty Consultant*
Dates: Tuesdays, May 31; June 7, 14, 21.
Time: 7:00 p.m. to 10:00 p.m.
Place: TBA
Cost: \$45.00

Planning For College Costs: A College Builder Program

A college education is not only one of the most important investments that parents will make, it is probably one of the most expensive. The national average for a college education is \$10,000.00 per year. That is \$40,000.00 per child for 4 college years and costs are rising annually. You will be introduced to ways to save for college that are innovative and easy. You are welcome to a free computer generated college cost analysis tailored to your personal needs with no obligation to you.

Instructor: Anthony Piccolo, *Merrill Lynch, Pierce, Fenner & Smith, Inc.*
Dates: Tuesday, June 7.
Time: 7:00 p.m. to 8:30 p.m.
Place: TBA
Cost: \$20.00

Pre-Retirement Planning: A Retirement Builder Program

We all wonder what our lives will be like when we retire, good retirements do not just happen, they are planned! This is a working seminar, all participants will receive a retirement planning analysis. You will be taken through all aspects of retirement . . . everything will be covered from time management and housing issues to health, taxes, estate planning and income. If you are 45 or older this is an excellent way to begin your retirement planning process. This is one seminar you will not want to miss!

Instructor: TBA
Dates: Tuesday, June 28.
Time: 7:00 p.m. to 8:30 p.m.
Place: TBA
Cost: \$20.00

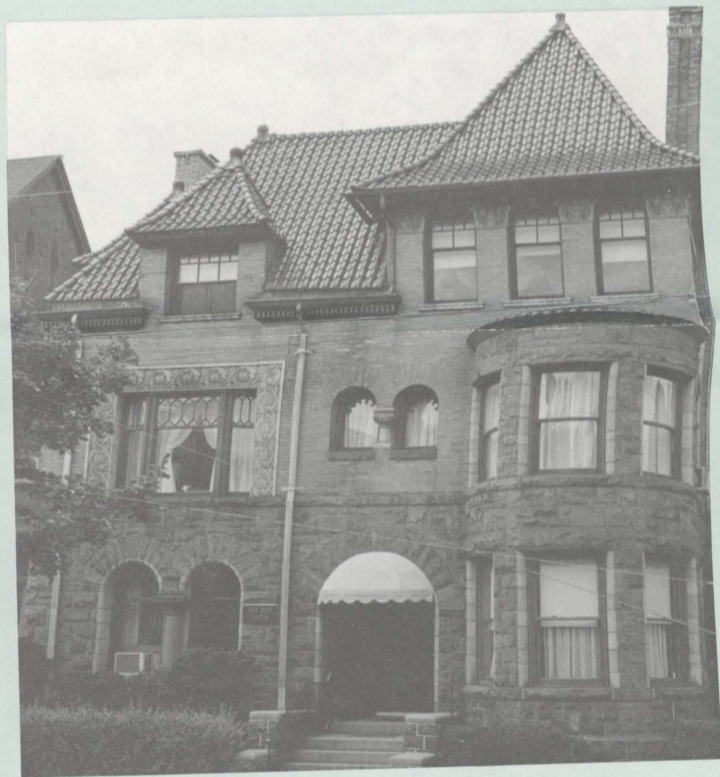
CULTURAL ENRICHMENT

The American Civil War

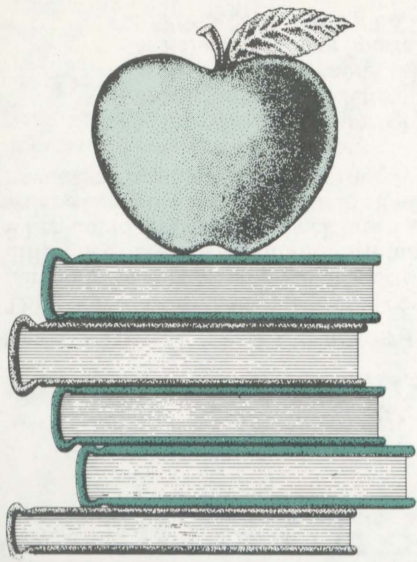
In many ways, the American Civil War was one of the most dramatic and traumatic experiences in our nation's history. The events of that era still have the power to stir great emotions within the Americans. This short course will give first of all an overview of the events leading up to the outbreak of the war, as well as an overview of the general course of the war. The focus of the course will be the roll played by Luzerne County, Pennsylvania, in the Civil War. This will include the men who served in the armed services from this area and also events on the home front during the war years.

The course sessions will be taught by various historians who will discuss Civil War topics of local and national interest. At least one session will be held at the Historical Society Museum to review its Civil War collections, and if possible, a field trip will be arranged one weekend to the Gettysburg Battlefield.

Coordinator: Mr. Richard Kastle, *Executive Director, Wyoming Historical & Geological Society*
Dates: Wednesdays, September 7, 14, 21, 28; October 5, 12.
Time: 7:00 p.m. to 8:30 p.m.
Place: TBA
Cost: \$35.00



The Division of Continuing Education has played an important role in the ongoing history of Wilkes College and will continue to recognize the needs of the area by offering programs of quality and substance to both campus and community.



Wilkes College Division of Continuing Education

Quality Education: Linking Campus and Community

Summer Course Offerings 1988

Graduate Studies

FALL 1988 (TIMES IN LIGHT FACE REPRESENT A.M.
and TIMES IN **BOLD FACE P.M.**)

COLLEGE OF ARTS AND SCIENCES

BIOLOGY

Course	Description	Room	Day & Hour	Instructor	Credit
BIO 303GA	Bacteriology (Prereq: Bio 121-122, or permission of instructor)	SLC 359	TTh 10-10:50	Pidcock	3
BIO 304GA1	Laboratory (Lab Fee: \$35)	SLC 305	TTh 12:30-1:50	Pidcock	0
BIO 308GA	Genetics (Prereq: Bio 121-122, or permission of instructor)	SLC 359	MW 9-9:50	Turoczi	3
BIO 308GA1	Laboratory (Lab Fee: \$35)	SLC 370	M 2-2:45	Turoczi	0
BIO 319GA	Plant Diversity (Prereq: Bio 121-122, 223-224, or permission of instructor)	SLC 359	TTh 9-9:50	Klemow	3
BIO 319GA1	Laboratory (Lab Fee: \$35)	SLC 349	W 2-2:45	Klemow	0
BIO 397GA	Seminar	SLC 359	Th 3:30-5:15	Hayes	1
BIO 398GA	Topics: Mammalian Physiology (Prereq: Bio 121-122, or permission of instructor)	SLC 380	MW 11-11:50	Long	3
BIO 398GA1	Laboratory (Lab Fee: \$35)	SLC 377	F 2-6:45	Long	0
BIO 398GB	Topics: Electron Microscopy (Prereq: Bio 121-122, or permission of instructor)	SLC 359	MW 1-1:50	Hayes	3
BIO 398GB1	Laboratory (Lab Fee: \$35)	SLC 378	T 2-4:45	Hayes	0

CHEMISTRY

CHEM 325GA	Adv. Inorganic Chemistry	SLC 147	MWF 11-11:50	Faut	3
CHEM 361GA	Biochemistry I	SLC 147	TTh 9:30-10:45	Stine	3

EDUCATION

ED 403	Intern Teaching	TBA	TBA	Staff	3
ED 510GE	Psychological Foundations of Education	SLC 147	T 6-9	Ginsburgh	3
ED 511GE	Philosophical	SLC 204	M 6-9	Staff	3
ED 520GE	Tests & Measurements	SLC 147	W 6-9	Ginsburgh	3
ED 531	Children's Literature	SLC 359	M 6:30-9:30	G. Meyers	3
ED 532GE	Problems in Elementary Education Language Arts	SLC 160	W 6-9	Polachek	3
ED 536GE	Elementary School Reading Instruction	SLC 160	M 6-9	Staff	3
ED 540B	Special Methods in Secondary School Instruction: Chemistry	TBA	TBA	Staff	3
ED 550GE	Project T.E.A.C.H.	TBA	TBA	Staff	3
ED 551GE	P.R.I.D.E.	TBA	TBA	Staff	3
ED 552GE	Teaching Through Learning Channels	TBA	TBA	Staff	3
ED 553GE	Patterns for I.D.E.A.S.	TBA	TBA	Staff	3
ED 588GE	Microcomputer Organization & Operating Systems	KBY 102	T 6-9	Pryor	3

EDUCATION COURSES WITH SPECIAL INTEREST

(Special permission is needed to enroll in the courses below.)

Call (717) 824-4651, ext. 4670 for further information)

ED 533B	Problems in Elementary Education (PIES)	SLC 150	M 6-9	Placek	3
ED 580E1	Computer Literacy for Secondary Teachers	SLC 127	T 6-9	Bellucci	3
ED 580E2	Computer Literacy for Elementary Teachers	SLC 127	Th 6-9	Pryor	3
ED 586E	Microcomputers in Education (CORES II)	SLC 127	M 6-9	Koch	3

The following is a Federally funded program. For further information contact
Dr. Michael Garr (717) 824-4651, ext. 4042. (Permission needed to enroll).

ED 598E	Topics: Drug-Free School Training Program	SLC 405	MW 5-7:50	Staff	3
ED 598E1	Topics: Drug-Free School Training Program	SLC 411	MW 5-7:50	Staff	3

ENGLISH

ENG 325GA	Shakespeare (Prereq: Eng 152 or 254)	SLC 359	TTh 2-3:15	Kaska	3
ENG 381GA	American Literature I (Prereq: Eng 152 or 254)	SLC 441	MWF 10-10:50	Gutin	3
ENG 383GA	American Novel	KBY 302	W 6-8:45	Terry	3
ENG 384GA	American Drama (Prereq: Eng 152 or 254)	CPA 2	MWF 11-11:50	O'Neill	3
ENG 397GE	Seminar: Conflicts of Love & Loyalty in a Medieval Epic & Romance	KBY 309	M 6-9	Fiestler	3
			TTh 9:30-10:45	R. Hooper	3

SCHOOL OF BUSINESS AND ECONOMICS

BUSINESS ADMINISTRATION

Course	Description	Room	Day & Hour	Instructor	Credit
ACCT 501E	Financial & Managerial Accounting (Prereq: ACCT 101 & 102, BA 225) (Formerly ACCT 503 Managerial Accounting)	DDD 101	Th 6-9	Croop	3
ACCT 561E	Corp. Fin. Reporting (Prereq: 12 credit hours of accounting)	DDD 101	M 6-9	Broadt	3
ACCT 595E	Independent Research	TBA	TBA	TBA	3
BA 502E	Management Science (Prereq: Computer Science)	SLC 270	M 6-9	Engel	3
BA 502E1	Management Science (Prereq: Computer Science)	KBY 302	T 6-9	Penugonda	3
BA 508E	Management Info System (Prereq: Admission to the MBA Program or permission of the School of Business & Economics. No computer programming background is assumed.)	SLC 270	W 6-9	Penugonda	3
BA 511E	Modern International Commerce	SLC 342	M 6-9	Taylor	3
BA 513E	Human Behavior & Marketing	Capin 15	T 6-9	Batory	3
BA 521E	Organizational Theory	SLC 270	Th 6-9	Raspen	3
BA 550E	Topics: Regional Econ. Development	SLC 347	M 6-9	Grossman	3
BA 550E1	Topics: Small Business Administration	TBA	TBA	Staff	3
BA 557E	Pension Administration	SLC 424	T 6-9	Farrar	3
BA 595E	Independent Research	TBA	TBA	Staff	3

ECONOMICS

EC 505E	Managerial Statistics (Prereq: EC 231)	SLC 204	Th 6-9	Cordora	3
EC 510E	Managerial Economics	SLC 204	W 6-9	Williams	3
EC 595E	Independent Research	TBA	TBA	Staff	3

HEALTH SERVICE ADMINISTRATION (MHA)

HSA 551E	Health Policy & Politics	SLC 403	T 6-9	Basu	3
HSA 552E	Organizational Theory & Behavior in Health Care Institutions	SLC 207	W 6-9	Basu	3
HSA 554E	Medical Sociology	SLC 409	T 6-9	Garr	3
HSA 555E	Financial Management in Health Care Organizations	SLC 318	Th 6-9	Grabo	3
HSA 556E	Quantitative & Applied Methods in Health Care Organizations	SLC 147	M 6-9	Houseknecht	3
HSA 560E	Topics: Institutional Planning in Health Care	KBY 102	M 6-9	Lugg	3
HSA 564E	Health Care Marketing			Healey	3
			Friday Evening 6-9 : Sept. 9, 10 Saturday 9-12: Sept. 30, Oct. 1 1-4 : Oct. 21, 22 Nov. 4, 5 Dec. 9, 10		
HSA 568E	Labor/Management Relations in Health Care	SLC 1	M 6:30-9:30	Livingstone	3
HSA 569E	Ambulatory Care Management	Capin 15	W 6-9	Staff	3
HSA 574E	Medical Management Information Systems: A Managerial Perspective	KBY 102	Th 6-9	Lugg	3
HSA 595E	Health Services Independent Study	TBA	TBA	Basu	3

SCHOOL OF ENGINEERING AND PHYSICAL SCIENCES

ELECTRICAL ENGINEERING

(Courses Applicable to the MSEE Degree)

Course	Description	Room	Day & Hour	Instructor	Credit
EE 398A	T: Microstrip Design	SLC 207	TTh 3:30-4:50	Choe	3
EGR 398E	T: Expert Systems in CIM	SLC 405	MW 8-9:15	Lee	3
MAE 398A	T: Thin Film Processing	SLC 240	MWF 11-11:50	Razavi	3
EE 401A	Analysis	SLC 223	TTh 7:30-8:45	Hostler	3
EE 421	Power Systems Analysis (Prereq: EE 321)	SLC 223	MW 7:30-8:45	Srinivasan	3
EE 441	Digital Systems Design (Prereq: EE 342)	SLC 223	MW 6-7:15	Mohseni	3
EE 460E	Stochastic Processes in Engineering (Prereq: EE 214)	SLC 223	TTh 6-7:15	Armand	3
EE 481E	Advanced Microelectronics Laboratory (Prereq: EE 272)	SLC 1	M 5-6:15 SLC 22 M 6:15-11	Osdachy	3
EE 590	Thesis	TBA	TBA	Staff	1-3

PHYSICS

(Courses Applicable to the MS Physics Degree/or MS Physics Education Degree)

PHY 301A	Math Methods in	SLC 147	TTh 8-9:15	Bellas	3
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BIO 398GB1	Microscopy (Prereq: Bio 121-122, or permission of instructor)	SLC 378	T 2-4:45	Hayes	0
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CHEMISTRY

CHEM 325GA	Adv. Inorganic Chemistry	SLC 147	MWF 11-11:50	Faut	3
CHEM 361GA	Biochemistry I	SLC 147	TTh 9:30-10:45	Stine	3

EDUCATION

ED 403	Intern Teaching	TBA	TBA	Staff	3
ED 510GE	Psychological Foundations of Education	SLC 147	T 6-9	Ginsburgh	3
ED 511GE	Philosophical	SLC 204	M 6-9	Staff	3
ED 520GE	Tests & Measurements	SLC 147	W 6-9	Ginsburgh	3
ED 531	Children's Literature	SLC 359	M 6:30-9:30	G. Meyers	3
ED 532GE	Problems in Elementary Education	SLC 160	W 6-9	Polachek	3
ED 536GE	Elementary School Reading Instruction	SLC 160	M 6-9	Staff	3
ED 540B	Special Methods in Secondary School Instruction: Chemistry	TBA	TBA	Staff	3
ED 550GE	Project T.E.A.C.H.	TBA	TBA	Staff	3
ED 551GE	P.R.I.D.E.	TBA	TBA	Staff	3
ED 552GE	Teaching Through Learning Channels	TBA	TBA	Staff	3
ED 553GE	Patterns for I.D.E.A.S.	TBA	TBA	Staff	3
ED 588GE	Microcomputer Organization & Operating Systems	KBY 102	T 6-9	Pryor	3

EDUCATION COURSES WITH SPECIAL INTEREST

(Special permission is needed to enroll in the courses below. Call (717) 824-4651, ext. 4670 for further information.)

ED 533B	Problems in Elementary Education (PIES)	SLC 150	M 6-9	Placek	3
ED 580E1	Computer Literacy for Secondary Teachers	SLC 127	T 6-9	Bellucci	3
ED 580E2	Computer Literacy for Elementary Teachers	SLC 127	Th 6-9	Pryor	3
ED 586E	Microcomputers in Education (CORES II)	SLC 127	M 6-9	Koch	3

The following is a Federally funded program. For further information contact Dr. Michael Garr (717) 824-4651, ext. 4042. (Permission needed to enroll).

ED 598E	Topics: Drug-Free School Training Program	SLC 405	MW 5-7:50	Staff	3
ED 598E1	Topics: Drug-Free School Training Program	SLC 411	MW 5-7:50	Staff	3

ENGLISH

ENG 325GA	Shakespeare (Prereq: Eng 152 or 254)	SLC 359	TTh 2-3:15	Kaska	3
ENG 381GA	American Literature I (Prereq: Eng 152 or 254)	SLC 441	MWF 10-10:50	Gutin	3
ENG 383GA	American Novel	KBY 302	W 6-8:45	Terry	3
ENG 384GA	American Drama (Prereq: Eng 152 or 254)	CPA 2	MWF 11-11:50	O'Neill	3
ENG 397GE	Seminar: Conflicts of Love & Loyalty in a Medieval Epic & Romance	KBY 309	M 6-9	Fiestor	3
ENG 398GA	Topics in English: Love in Western World	KBY 302	TTh 9:30-10:45	P. Hearnan	3
ENG 498GA	American	SLC 441	MWF 10-10:50	Gutin	3
ENG 497GE	Seminar: Conflicts of Love & Loyalty in Epic & Romance	KBY 309	M 6-9	Fiestor	3

HISTORY/POLITICAL SCIENCE

HST 316A	Ancient History: Classical World	TBA	TBA	Berlatsky	3
HST 328E	History of US Foreign Policy	Capin 15	M 6:30-9:30	Cox	3
HST 331A	Colonial America	Capin 15	MWF 11-11:50	Hartdagen	3
HST 353A	Age of Absolutism	Capin 15	MWF 10-10:50	Berlatsky	3
HST 365A	History of Chinese Communism	Capin 15	MWF 9:9-50	Shao	3
HST 376E	World War II	SLC 160	T 6:30-9:30	Rodechko	3
PS 301A	American Political Dynamics	SLC 342	TTh 2-3:15	Auerbach	3
PS 314A	Planning in Urban Development	SLC 316	TTh 9:30-10:45	Tuhy	3
PS 316E	Government Budgeting	SLC 347	T 6:30-9:30	Tuhy	3
PS 329A	International Law and Organization	SLC 342	TTh 12:30-1:45	Henehan	3

MATHEMATICS/COMPUTER SCIENCE

MTH 331A	Intro to Abstract Algebra	SLC 424	TTh 3-4:45	Wong	4
MTH 343A	Introduction to Geometry	SLC 409	11-11:50	Kenney	3
MTH 351A	Probability & Statistics	SLC 411	MWF 1-1:50	Merrill	3
CS 321A	Simulation & Data Analysis	SLC 424	MWF 3-3:50	Merrill	3
CS 323A	Form Language & Autom Theory	SLC 424	MWF 11-11:50	Koch	3

NURSING

For further information, call Dean of Graduate Studies, ext. 4462 or The Nursing Department, ext 4420.

HEALTH SERVICE ADMINISTRATION (MHA)

HSA 551E	Health Policy & Politics	SLC 403	T 6-9	Basu	3
HSA 552E	Organizational Theory & Behavior in Health Care Institutions	SLC 207	W 6-9	Basu	3
HSA 554E	Medical Sociology	SLC 409	T 6-9	Garr	3
HSA 555E	Financial Management in Health Care Organizations	SLC 318	Th 6-9	Grabo	3
HSA 556E	Quantitative & Applied Methods in Health Care Organizations	SLC 147	M 6-9	Houseknecht	3
HSA 560E	Topics: Institutional Planning in Health Care	KBY 102	M 6-9	Lugg	3
HSA 564E	Health Care Marketing			Healey	3

Friday Evening 6-9: Sept. 9, 10
Saturday 9-12: Sept. 30, Oct. 1
1-4: Oct. 21, 22
Nov. 4, 5
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SCHOOL OF ENGINEERING AND PHYSICAL SCIENCES

ELECTRICAL ENGINEERING

(Courses Applicable to the MSEE Degree)

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EE 481E	Advanced Microelectronics Laboratory (Prereq: EE 272)	SLC 1 SLC 22	M 5-6:15 M 6:15-11	Osdachy	3
EE 590	Thesis	TBA	TBA	Staff	1-3

PHYSICS

(Courses Applicable to the MS Physics Degree/or MS Physics Education Degree)

PHY 301A	Math Methods in Physics (Prereq: MTH 211 & 212)	SLC 147	TTh 8-9:15	Bellas	3
PHY 330E	Optics & Light	SLC 342	T 6:30-9:15	Maxwell	4
PHY 330E1	Laboratory	SLC 158	Th 6:30-9:15	Maxwell	0
PHY 331A	Electricity & Magnetism I	SLC 207	MWF 11-11:50	Ghorieshi	3
PHY 331E	Electricity & Magnetism I	SLC 316	TTh 6:30-7:45	Ghorieshi	3
PHY 333A	Electricity & Magnetism Laboratory I	SLC 125	M 2-4:45	Staff	1
PHY 333B	Electricity & Magnetism Laboratory I	SLC 125	W 2-4:45	Choe	1
PHY 333C	Electricity & Magnetism Laboratory I	SLC 125	Th 8-10:45	Kucirka	1
PHY 333E	Electricity & Magnetism Laboratory I	SLC 125	M 6:30-9:15	Misra	1
PHY 351A	Quantum Mechanics	SLC 347	MWF 12-12:50	Hostler	3
PHY 361A	Atomic Physics	TBA	TBA	Staff	3
PHY 363A	Atomic Physics Lab	TBA	TBA	Staff	1
PHY 395A	Independent Research	TBA	TBA	Staff	1
PHY 395B	Independent Research	TBA	TBA	Staff	2
PHY 395C	Independent Research	TBA	TBA	Staff	3
EE 381A	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 W 1-5:50	Choudhry Choudhry	4
EE 381B	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 Th 1-5:50	Arora Arora	4
EE 381C	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 F 1-5:50	Arora Arora	4
EE 381E	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 M 6:15-11	Choudhry Choudhry	4
EE 398A	Topics: Microstrip Design	SLC 207	TTh 3:30-4:50	Choe	3
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Special Feature

Wilkes College Masters Degree in Health Administration is accredited and formally approved by the Division of Academic Program Approval, Department of Education of the Commonwealth of Pennsylvania. The College is an Associate Member of the Association of University Programs in Health Administration (AUPHA). Wilkes has recently been approved to offer a Master of Science Degree with Major in Nursing and concentration in Gerontology, Administration and Education.

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HSA 556E	Quantitative & Applied Methods in Health Care Organizations	SLC 147	M 6-9	Houseknecht	3
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PHY 361A	Atomic Physics	TBA	TBA	Staff	3
PHY 363A	Atomic Physics Lab	TBA	TBA	Staff	1
PHY 395A	Independent Research	TBA	TBA	Staff	1
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EE 381B	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 Th 1-5:50	Arora Arora	4
EE 381C	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 F 1-5:50	Arora Arora	4
EE 381E	Adv. Microelectronics Lab	SLC 1 SLC 224	M 5-6:15 M 6:15-11	Choudhry Choudhry	4
EE 398A	Topics: Microstrip Design	SLC 207	TTh 3:30-4:50	Choe	3
MAE 398A	Topics: Thin Film Processing	SLC 240	MWF 11-11:50	Razavi	3
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General Information

Wilkes College

Division of Graduate Studies
and Continuing Education
Wilkes-Barre, Pennsylvania 18766

Calendar

Registration for Graduate Students - Fall 1988:

*PLEASE NOTE: All registrations are to be made at the Registrar's Office. Further information concerning courses, etc., will be available at the Graduate Studies office during the same hours listed below.

Registration Accepted:

Monday, August 1 and after 8:30 a.m. to 4:30 p.m.
Wednesday, August 24 8:30 a.m. to 8:00 p.m.
Thursday, August 25 8:30 a.m. to 8:00 p.m.
Wednesday, August 31 8:30 a.m. to 6:00 p.m.
Thursday, September 1 8:30 a.m. to 6:00 p.m.
Monday, September 5 8:30 a.m. to 6:00 p.m.
Tuesday, September 6 8:30 a.m. to 6:00 p.m.

Classes Begin

Wednesday, August 31 8:00 a.m.

Classes will be held

Labor Day, September 5, 1988

Thursday, October 13 Fall Break begins at 10:00 p.m.
Tuesday, October 18 Classes resume at 8:00 a.m.
Tuesday, November 22 Thanksgiving Recess begins at 10:00 p.m.
Monday, November 28 Classes resume at 8:00 a.m.
Tuesday, December 13 Classes end at 5:00 p.m. (Follow Friday Class Schedule)
Wednesday, December 14 through
Thursday, December 22 Final Examinations

Krohle Frederick J
Library/Media Center

Wilkes College offers the Master of Business Administration Degree, Master of Science in Electrical Engineering Degree, Master of Health Services Administration Degree, Master of Science Degrees in Mathematics and Physics, and a Master of Science Degree in Education with concentrations in Biology, Chemistry, Education, Educational Computing, Elementary Education, English, Educational Development and Strategies, History, Mathematics, Physics, and a Master of Science Degree with major in Nursing and concentration in Gerontology, Administration and Education.

Wilkes College Graduate programs are approved and accredited by the Pennsylvania Department of Education and Middle States Association of Colleges and Schools.

Application

Application for admission to Wilkes College Graduate Studies should be made to the Division of Graduate Studies and Continuing Education, Second Floor, Max Roth Center, 215 South Franklin Street, Wilkes-Barre, Pennsylvania 18766.

Registration

Course registration is made at the Registrar's Office located in Sturdevant Hall, 129 South Franklin Street, Wilkes-Barre, Pennsylvania 18766. Registration forms can be obtained by calling the Registrar's Office at 824-4651, extension 4853. Completed forms may be returned in person or by mail.

The College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. When possible, any change in the course schedule will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.

Fees and Expenses

The cost of each graduate credit is \$210 plus a \$4 per credit hour general College fee. Laboratory fees are as indicated.

Payment is to be made at the Finance Office, First Floor, Sturdevant Hall, 129 South Franklin Street, Wilkes-Barre, Pennsylvania 18766.

Information about Veterans' Benefits is available through the Veterans' Affairs Office, First Floor, Sturdevant Hall.

Deferred Payment and Third-Party Billing forms can be obtained at the Finance Office. These forms must be submitted each semester.

Withdrawal

Graduate students may withdraw, without prejudice, from any course at any time during the first 4 weeks of the semester, providing they give written notice to the instructor and to the Dean of Graduate Studies within this 4-week period. Withdrawal and Add forms can be obtained at the Graduate Studies Office. (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official Withdrawal form.)

Students who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, upon written request to the Dean of Graduate Studies and Director of Financial Management, according to the following schedule:

Time of Withdrawal	Tuition Refund
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	No Refund

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

Financial Aid

Inquiries about financial aid should be made to the Financial Aid Office, Sturdevant Hall, second floor, 129 South Franklin Street.

Library

The Eugene Shedden Farley Library is open to all Wilkes students. Graduate students may borrow books from the Library by presenting their College identification cards. The identification cards may be obtained at the Registrar's Office. Hours for the Library are posted at the beginning of each academic session.

Bookstore

The College Bookstore is located in Church Hall, 187 South Franklin Street. The Bookstore will be open August 24, and 25 from 8:00 a.m. to 8:00 p.m., August 31, from 8:00 a.m. to 6:30 p.m. and September 1 from 8:00 a.m. to 6:30 p.m., September 5, from 8:00 a.m. to 6:30 p.m., September 6, from 8:00 a.m. to 6:30 p.m.

For further information, write or call:

DR. MAHMOUD H. FAHMY, Dean
Division of Graduate Studies and Continuing Education
Extension Programs and Summer College
215 South Franklin Street
Wilkes-Barre, Pennsylvania 18766

Phone: (717) 824-4651 Extension 4460 and 4462
Toll-free: from Scranton, Pennsylvania 342-5617
from elsewhere in Pennsylvania (800) 572-4444
from outside of Pennsylvania (Middle Atlantic and New England Regions) (800) 537-4444

