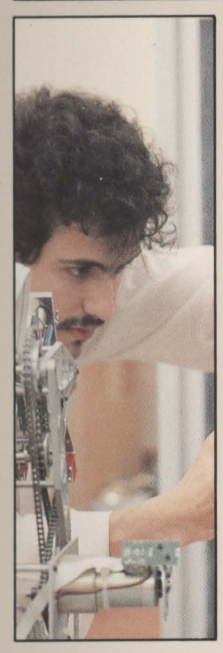
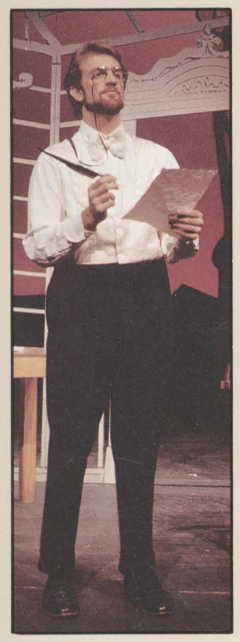
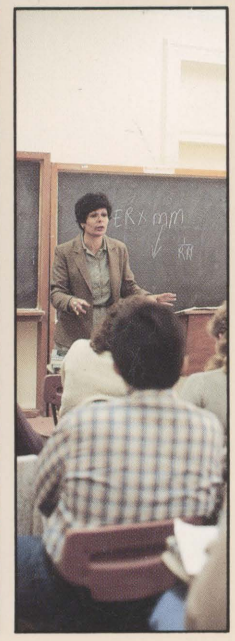






1986 • 1987
Wilkes College
BULLETIN

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.

College Calendar

SUMMER — 1986

First Day Session

Classes Commence	Monday, June 9 — 8 a.m.
Classes End	Friday, July 11 — 12 noon *(Including Final Examinations)*

Second Day Session

Classes Commence	Monday, July 14 — 8 a.m.
Classes End	Friday, August 15 — 12 noon *(Including Final Examinations)*

Eight-week Evening Session

Classes Commence	Monday, June 9 — 6 p.m.
Classes End	Friday, August 1 — 10 p.m. *(Including Final Examinations)*

FALL SEMESTER — 1986

Classes Commence	Wednesday, August 27 — 8 a.m.
Classes on Labor Day	Monday, September 1
Fall Break	Friday, October 10 — 5:30 p.m.
Classes Resume	Wednesday, October 15 — 8 a.m.
Thanksgiving Break	Tuesday, November 25 — 10 p.m.
Classes Resume	Monday, December 1 — 8 a.m.
Classes End	Tuesday, December 9 — 10 p.m.
Final Examinations Begin	Thursday, December 11 — 8:30 a.m.
Final Examinations End	Friday, December 19 — 4:30 p.m.

SPRING SEMESTER — 1987

Classes Commence	Wednesday, January 14 — 8 a.m.
Winter Break	Friday, February 20 — 5:30 p.m.
Classes Resume	Wednesday, February 25 — 8 a.m.
Spring and Easter Break	Friday, April 10 — 5 p.m.
Classes Resume	Tuesday, April 21 — 8 a.m.
Classes End	Friday, May 1 — 5 p.m. *(Thursday, April 30, follow Monday Schedule and May 1 follow Tuesday Schedule)*
Final Examinations Begin	Monday, May 4 — 8:30 a.m.
Final Examinations End	Saturday, May 9 — 5:30 p.m.
Commencement	Sunday, May 17 — 11 a.m.

College Calendar

SUMMER — 1987

First Day Session

Classes Commence	Monday, June 15 — 8 a.m.
Classes End	Friday, July 17 — 12 noon *(Including Final Examinations)*

Second Day Session

Classes Commence	Monday, July 20 — 8 a.m.
Classes End	Friday, August 21 — 12 noon *(Including Final Examinations)*

Eight-week Evening Session

Classes Commence	Monday, June 15 — 6 p.m.
Classes End	Friday, August 7 — 10 p.m. *(Including Final Examinations)*

FALL SEMESTER — 1987

Classes Commence	Wednesday, September 2 — 8 a.m.
Classes on Labor Day	Monday, September 7
Fall Break	Friday, October 16 — 5 p.m.
Classes Resume	Wednesday, October 21 — 8 a.m.
Thanksgiving Break	Tuesday, November 24 — 10 p.m.
Classes Resume	Monday, November 30 — 8 a.m.
Classes End	Tuesday, December 15 — 10 p.m.
Final Examinations Begin	Thursday, December 17 — 8:30 a.m.
Final Examinations End	Wednesday, December 23 — 10 p.m.

SPRING SEMESTER — 1988

Classes Commence	Wednesday, January 20 — 8 a.m.
Winter Break	Friday, February 19 — 5 p.m.
Classes Resume	Wednesday, February 24 — 8 a.m.
Easter Break	Friday, March 25 — 5 p.m.
Classes Resume	Tuesday, April 5 — 8 a.m.
Classes End	Friday, May 6 — 5 p.m.
Final Examinations Begin	Monday, May 9 — 8:30 a.m.
Final Examinations End	Saturday, May 14 — 4:30 p.m.
Commencement	Sunday, May 22 — 11 a.m.

Eugene S. Farley Library, named in honor of the College's first president
"May all who study in these halls
gain vision to inspire,
conviction to sustain, and
wisdom to guide."

WILKES COLLEGE *Bulletin*

UNDERGRADUATE STUDIES

1986 - 1987

The College reserves the right to change any provisions or requirements at any time within the student's term of residence.

Wilkes College is An Equal Opportunity/Affirmative Action Institution.

No applicant shall be denied admission to Wilkes College because of race, color, sex, religion, national or ethnic origin, or handicap.

Wilkes College shall not discriminate on the basis of race, color, sex, religion, national or ethnic origin, or handicap in the employment of staff, in the administration of its educational policies, scholarships, loan programs, athletics, or any other College-administered programs.

Contents

Wilkes College

Wilkes College had its beginning in 1933 when Bucknell University, responding to a request of community leaders, established its Junior College in Wilkes-Barre. On June 26, 1947, Bucknell University Junior College came to an end and Wilkes College received its charter as a four-year, coeducational, liberal arts college. The College has grown to its current enrollment of approximately 1,800 full-time day students, 600 part-time students, and over 900 graduate students.

Since its founding, Wilkes College has had three presidents: Eugene Shedden Farley, 1947-1970; Frances J. Michelini, 1970-1975; Robert S. Capin, 1976-1984. On April 14, 1985, Christopher Breiseth was inaugurated as the fourth president of Wilkes College.

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 a 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 commuting 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, and health administration 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 Middle States Association of Colleges and Secondary Schools.

In addition to the total program accreditation certain special areas are recognized by professional societies. The Chemistry curriculum is approved by the American Chemical Society.

The Electrical Engineering Program is accredited by the Accreditation Board for Engineering and Technology (ABET), formerly ECPD, which is the sole authorized agency to accredit engineering programs in the U.S.

The baccalaureate program in nursing is approved by the Pennsylvania State Board of Nurse Examiners and is accredited by the National League for Nursing. The Department of Nursing is a member of the Council of Baccalaureate and Higher Degree Programs, National League for Nursing, and the American Association of Colleges of Nursing. Graduates of the program are eligible for admission to the examination for licensure, in any state, to practice professional nursing.

College Life

Student Activity

An active Student Government and numerous campus clubs and organizations provide a structure of activities for student life outside of the classroom. An Inter-Residence Council and Commuter Council plan and coordinate activities for on-campus and off-campus students as well.

In addition to the curricular and co-curricular activities of particular organizations, a number of all-campus events are held each year. Parents' Day, Homecoming, Winter Carnival, and the Cherry Blossom Weekend are typical of the social and cultural events which are regarded as important in the development of an active and involved student body.

The College also offers an outlet for students interested in developing their communications skills. Students publish the *Beacon,* a weekly newspaper; the *Manuscript,* a journal of art, poetry, and fiction; and the *Amnicola,* the College annual.

The College also maintains an FM radio station, WCLH, which is operated by students and broadcasts daily throughout the Wyoming Valley.

Other student activities include the theater, the symphonic band, choruses, numerous brass, woodwind, and percussion ensembles, and an active intercollegiate forensics and debate organization.

Policy

It is College policy that all campus organizations be open to all students; consequently, groups that are exclusive do not exist. All student groups work in cooperation with faculty advisers and deans.

Athletics

The College views men's and women's athletics as an integral part of the activity program. An active intramural sports program is maintained each year, and the College also schedules intercollegiate athletic contests in eight men's and five women's varsity areas. The men's varsity program includes cross-country, football, soccer, basketball, wrestling, golf, tennis, and baseball. Varsity programs for women include field hockey, tennis, basketball, volleyball, and softball.

One of the highlights of the athletic year is the Wilkes Open Wrestling Championship. This annual tournament attracts athletes from over sixty colleges, athletic clubs, and YMCA's throughout the United States. The tournament, the largest in the country, has the record for the greatest number of entries.

The College is a member of the Middle Atlantic Collegiate Athletic Conference, the National Collegiate Athletic Association, the Eastern Collegiate Athletic Conference, Northeastern Pennsylvania Women's Intercollegiate Athletic Association, and the Susquehanna Field Hockey Association.

The College and the Community

The College has long recognized that its growth was related to the economic and social development of the Wilkes-Barre and Northeastern Pennsylvania communities and, therefore, it has sought actively and enthusiastically to participate in every effort for community betterment.

Institute of Regional Affairs

The Institute of Regional Affairs has been established by Wilkes as a multi-purpose organization which views regional problems as belonging to no single academic discipline, but rather as opportunities for multi-disciplinary community involvement. Its resources include not only the College faculty, but also those experts in the region who can lend their talents to the solution of various of the region's problems. Its four-fold purpose is education and training, community information, research, and consultation.

Included among the activities of the Institute of Regional Affairs are: a management training program under which special classes are organized for personnel in industry, commerce, and banking; individually-designed programs for members of labor unions; a Municipal Government Program which offers in-service training activities for local government officials; and a Research Center, which is available to faculty, administration, and alumni.

The growth and support of the College's Institute of Regional Affairs led to the establishment of an independent Economic Development Council to serve Northeastern Pennsylvania.

Regional Computer Resource Center

The Regional Computer Resource Center at Wilkes College was established in 1984 as part of the Information Technology for the Commonwealth (ITEC) Act adopted and funded by the Pennsylvania General Assembly. The Center at Wilkes is one of 14 across the Commonwealth created to raise the floor of microcomputer literacy among classroom teachers in Pennsylvania.

The Regional Computer Resource Center provides the following services:

1. free graduate-level computer literacy courses to K-12 teachers in Pennsylvania's public and nonpublic schools;
2. teacher training in microcomputer topics such as software evaluation via short workshops and seminars;
3. assistance to school districts in designing computer-oriented curricula;
4. dissemination of information about ITEC grants for the acquisition of hardware and courseware by school districts.

The Regional Computer Resource Center is administered by the Pennsylvania Higher Education Assistance Agency.

Anthracite & Community Development Institute

The Anthracite and Community Development Institute was established at Wilkes College to work with communities located in and around the Anthracite Region to develop economically and to assist the anthracite industry by improving the market and by serving as a liaison between the industry and government. The Institute engages in many activities toward these goals including technical, historical, and market research, environmental and product testing, engineering, promotional analysis, education, job training, and more.

Small Business Development Center

The Small Business Development Center (SBDC) of Wilkes College is a resource for individuals who want to start a small business or for an existing business in need of assistance. The Center utilizes the resources of the College and the community in offering counseling and technical help.

The SBDC has been helping small businesses since it was established on campus in 1978 and providing business counseling services throughout Luzerne, Carbon, Columbia, Schuykill, and Sullivan Counties.

The Center is a non-profit organization and most of the services are provided free of charge to individuals and firms.

The Center also offers on-going training programs which provide individuals with information on subjects of concern and interest.

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.

The program provides trained tutors to help in each course the student takes and to assist students in developing good study habits.

Individual counseling is available to aid students in developing self-confidence and in coping with any problems and anxieties that may develop.

Also, special instruction is provided to help each student to take advantage of all available financial assistance.

Information about the Act 101 program may be obtained by contacting the Office of Admissions.

Project Upward Bound

Upward Bound, a federal program, provides disadvantaged high school students with a college preparatory program of curricular and extracurricular activities designed to improve academic skills, self-confidence and to deepen curiosity and human understanding.

Students attend weekly classes, tutoring and counseling sessions on campus. In the summer, the six-week residential program prepares students for fall classes and provides intensive career guidance. The program has been at Wilkes since 1967.

Day Care Service

Since 1982, Wilkes College has maintained an arrangement with Child Development Council of Northeastern Pennsylvania that offers regular full- and part-time day care services at a reduced fee to students. The day care centers are conveniently located near to campus. Children must attend on a regular, scheduled basis.

Academic Support Center

The Academic Support 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.

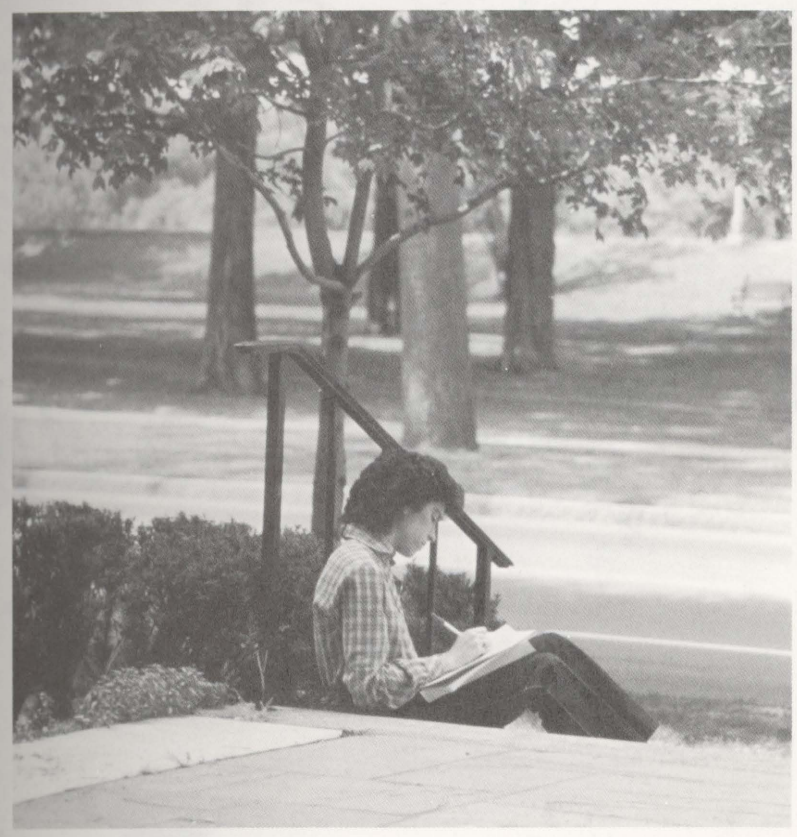
Sigma Xi

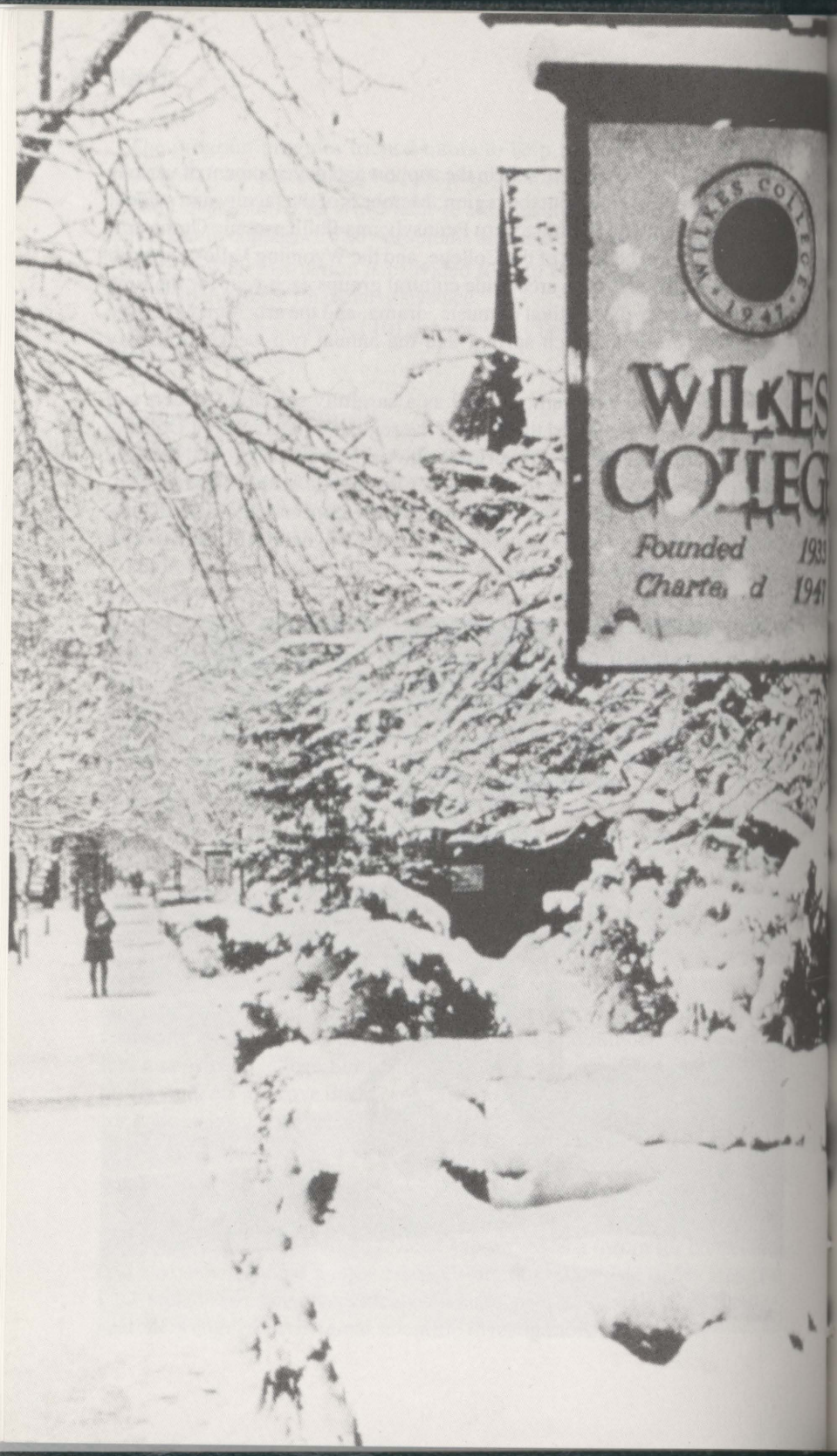
Sigma Xi, the Scientific Research Society, has established a local affiliate on the Wilkes College campus. The Club serves as a forum for cooperation and exchange of ideas among research-oriented scientists in the area. The Club welcomes as members local collegiate, professional, and industrial researchers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

Cultural Activities

Wilkes also plays an active role in the support and development of various cultural activities throughout the region. Members of the faculty and student body participate in the Northeastern Pennsylvania Philharmonic Orchestra, established under the aegis of the College, and the Wyoming Valley Oratorio Society. The College joins area-wide cultural groups each year for the Fine Arts Fiesta, a four-day festival of music, drama, and the arts founded by the College and presented each spring, and the annual two-weekend Cherry Blossom Festival.

An active theater program, as well as a carefully selected Concert and Lecture Series, is presented throughout the regular college year at Dorothy Dickson Darte Center for the Performing Arts. The Concert and Lecture Series is open to the College family and the public without charge as a Wilkes College service to the community as are concerts and recitals presented by the Music Department, and events at Conyngham Student Center sponsored by campus organizations.





Policies and Objectives

Admissions

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 Math. 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, Math. 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 elective 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 Dean of Admissions. The completed applications should be returned with a $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 $150 tuition and dormitory deposit by May 1 in order to guarantee their entry into the College. Commuting students are required to forward a $75 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.

Personal Interviews

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.

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 transcript of previous college work, including a statement of honorable dismissal, a complete secondary school record, and results from all College Entrance Examination Board tests previously taken. Students offered admission should have a personal interview with the Admissions Office. 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 and placed on the student's record. Students transferring into the nursing program must arrange their scheduling and registration after consultation with the Department of Nursing chairman or assistant to the chairman.

Grades earned in all transferable courses are not included in the computation of the cumulative grade point averages.

Transfer students from junior colleges, community colleges, and other two-year institutions must complete a minimum of 60 credits at baccalaureate degree-granting institutions; 30 of these credits must be earned at Wilkes College.

All transfer students must complete at least one-half of their major field credits 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.

Transfer From Part-Time to Full-Time

Part-time students who wish to enroll as full-time students must interview with the Office of Student Affairs as the first step in the process.

All inquiries concerning the transfer from part-time to full-time should be directed to the Office of Student Affairs, Weckesser Hall. Telephone: (717) 824-4651, Ext. 254.

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 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.

Advanced Placement Program

Students who have successfully passed one or more Advanced Placement Tests administered by the College Entrance Examination Board may request advanced placement and/or credits. Advanced placement means that the student may be scheduled for a course at a more advanced level. 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. A decision on advanced placement is made after review of the examination by the academic department concerned. 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 Subject Examinations

The College grants credits through Subject Examinations of the College Level Examination Program. Satisfactory performance on one of the designated CLEP Subject Examinations is acceptable in substitution for the designated course, and the credits for the course will be applied to the student's transcript. CLEP credits from an accredited institution are transferable. The College does not grant credit through General Examination of the College Level Examination Program. For further information contact: College Level Examination Program, Box 1824, Princeton, New Jersey 08540. Information on specific course exemptions and credits may be obtained from the Wilkes College Office of Admissions. Students wishing to be considered for CLEP credits should have the test results forwarded to the Office of Admissions.

Challenge Examinations

Advanced placement and/or credit can be earned by challenge examinations administered by the appropriate department. Interested students should contact the department chairman. A fee of $20 per credit will be assessed for each challenge examination. Students requesting a challenge examination must present a receipt from the Finance Office before the examination will be administered.

Readmission to the College

Students who have been enrolled full-time at Wilkes College and who, for any reason, terminate their studies at the College must interview with the Office of Student Affairs as the first step in the readmission process.

Any applicant for readmission whose studies were terminated by the Academic Standards Committee must receive clearance through that committee before a decision on readmission can be made. Arrangements for this clearance will be made through the Office of Student Affairs at the time of the interview.

All inquiries concerning readmission should be directed to the Office of Student Affairs, Weckesser Hall. Telephone: (717) 824-4651, Ext. 254.

Counseling

The guiding principle of all Wilkes counseling is to encourage students to discover their own abilities and potential and to assist them in making sound, independent decisions.

New-Student Orientation Program

The transition from the directed work of the high school to the independent and more intensive work of the College occasionally causes difficulty. Several days during the summer and at the beginning of the term are, therefore, set aside to assist new students in planning their academic programs.

During this period, new students may take aptitude and interest tests. New students are given an opportunity to become acquainted with one another and to learn about the College, the curriculum, and the student activities.

Student Advisement

Students sometimes need guidance in resolving personal, social, and academic difficulties. Since a student's physical and mental health affects his studies and his grades, he is encouraged throughout his college career to consult with his classroom instructors, his faculty adviser, the deans, or the department chairmen concerning his scholastic progress.

Foreign Student Adviser

The Foreign Student Adviser provides immigration and visa information and assistance, and advice on academic concerns and personal issues. The Foreign Student Adviser provides orientation to life in the United States and the American educational system; serves as the spokesman for foreign students in dealings with U.S. and foreign government agencies, other campus offices and departments, and the community; and serves as adviser to the International Organization. These services are available to all international students, non-immigrants and immigrants alike.

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.

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.

Weekend Program

Wilkes offers upper-division courses on weekends on the campus of Keystone Junior College, La Plume, Pennsylvania. These courses provide students with the opportunity to complete their baccalaureate degree, in selected majors, by attending college strictly on weekends. For more information on the Weekend Program, contact the Director of Evening, Summer, and Weekend College.

Evening Program

The College offers educational opportunities to students who cannot attend day classes. Students may register for courses in the evening and earn credits toward an undergraduate degree. Some graduate courses are also offered during the evening hours.

Students will confer with the Director of Evening, Summer, and Weekend College to arrange a course of study to meet their needs, abilities, and special requirements. Students wishing to complete the nursing major with an evening/weekend schedule must also arrange this scheduling and registration after consultation with the Department of Nursing chairman.

When the student completes thirty hours, his record is reviewed by the Admissions Committee. At this time the Committee recommends continued work for a degree, probation, or withdrawal from the Evening Program.

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.

Summer Program

Course-work is available to students in any of three summer sessions. The majority of the course-work is offered in two five-week, day-school sessions. The evening session is eight weeks in length, beginning in mid-June and ending in early August. Course offerings in Summer College vary from year to year, but routinely the liberal arts courses required to fulfill the core curriculum are available.

A student from Wilkes College who wishes to take summer work at another institution must secure the approval of the Director of Evening, Summer, and Weekend College. Application forms may be obtained from that office or the office of the counseling Deans.

Division of Graduate Studies

Wilkes College Division of Graduate Studies offers a wide range of quality programs in the fields of Business Administration, Biology, Chemistry, Earth and Environmental Science, Education, Engineering, Health Service Administration, Mathematics, and Physics.

In the area of the Master of Business Administration there are various concentrations such as Accounting, Finance, Labor, Health Care, Managerial Sciences, and Marketing. In the area of Education there are three degrees: Elementary Education, Secondary Education, Master of Sciences in Education. There is a Master of Science Degree in Electrical Engineering.

Wilkes Graduate programs offer flexible schedules and high quality faculty academicians and professionally established teacher-practitioners. Classes are scheduled conveniently for both full-time and working students. Weekend programs are available.

Information concerning admission to Graduate Studies may be obtained from:

Dr. Mahmoud H. Fahmy, *Dean*
Division of Graduate Studies
and Continuing Education
Wilkes College
Wilkes-Barre, PA 18766
Telephone: (717) 824-4651, Ext. 226

The College issues a supplementary graduate bulletin.

Registration

Every student is expected to register on the dates specified in the College calendar. Student who register after *the final date specified* will pay a late fee of $10.

Incoming freshmen will be registered during the summer for their first semester program. Inquiries regarding clarification or change of schedule should be directed to the Dean of Admissions.

Fees and Expenses

New-Student Orientation Fee

A non-refundable fee of $40 is required with the application for the new-student orientation program.

Application Fee

A non-refundable fee of $20 is required with the initial application of all full-time applicants for admission to a degree or certificate program. Part-time and special students changing to full-time must pay the $20 fee at the time of change.

Acceptance Deposit

Each applicant is required to remit an acceptance deposit of $75 by May 1. The deposit is applied to the first tuition payment upon matriculation. Acceptance deposits are non-refundable.

Tuition

Full-Time

A flat tuition fee of $3,075 per semester will be charged to all students taking a course load of twelve to eighteen hours. In addition to the flat tuition fee, there is a general college fee of $60 per semester for full-time students. A student who elects to schedule more than eighteen hours will be charged $130 for each additional credit hour.

Wilkes College maintains a comprehensive program of financial aid in the forms of scholarships, grants, loans, and part-time employment programs. The College also participates in the Federal campus-based programs and is approved by the Federal Basic Grant Program, the Pennsylvania Higher Education Assistance Agency, the Federal Insured/Guaranteed Student Loan Program, and other State programs as an eligible institution. The individual aid programs are described in detail in the publication, "A Consumer's Guide to Financial Aid at Wilkes College" and on pages 34-41 of the Wilkes College Bulletin.

Medical Technology

Wilkes tuition for the clinical year of the medical technology program is $975 per semester. In addition, students are required to pay hospital tuition directly. No financial aid will be available from Wilkes.

Part-Time

Students enrolled in day or evening courses on a part-time basis (i.e. eleven or fewer hours) as well as students enrolled in the summer will be charged tuition of $130 per credit hour plus a general college fee of $3 per credit hour. Part-time students may qualify for some forms of financial aid.

Audit

A full-time enrolled student (taking 12 hours or more) may audit additional courses at no charge on a space available basis. Part-time students may audit a course for one-half the regular tuition fee. Determination of audit status for financial purposes will be made at the time of registration for the course or within the first week of classes. An audit does not qualify for any discount.

Other Fees

Laboratory and other course fees are charged where special supervision and use of certain equipment or supplies are required. These fees are listed in the Bulletin with the course description. After the first week of classes, none of the fees are refundable, except for certain lab fees associated with biology modules.

There is a fee of $20 per semester for all music and music education majors. The cost of individual instruction in applied music is $140 per credit for full-time students (12 credits or more) for a series of fourteen half-hour lessons and $150 for part-time students.

A student activities fee of $75 per year provides for special programs, including plays, concerts, recitals, lectures, and home athletic events. Full-time students will be charged the entire amount at the beginning of the fall semester. The activity fee is not refundable. Students entering in the spring semester will be charged $37.

All graduating seniors will be charged a graduation fee of $65. The fee is assessed regardless of participation in commencement exercises.

A Health Care fee of $65 per year is required of each full-time commuter student. Part of this fee provides the student with a $2,000 Accident Insurance plan. Students entering in the spring semester will be charged $50. Sickness Insurance is also available to full-time and part-time students on an optional basis at a cost of $43 per year. Protection is provided under both plans from September 1 (or beginning class date for spring entrants) to August 31 of the following year. The Health Care fee for full-time commuting students is payable in full with the first semester charges. Application for the optional sickness insurance must be made at the Comptroller's Office at Sturdevant Hall not later than the end of the second week of each semester. The Health Care fee of all resident students is included as part of the residence hall fee.

Part-time students enrolled in certain specified courses requiring participation in laboratories will be charged $14 each semester (summer, fall, spring) for participation in the Accident Insurance Program. All other part-time students *may* apply for the Accident Insurance on a voluntary basis. Part-time students enrolled in the specified courses not wishing to carry the College Accident Insurance may have the charges dropped by signing a waiver *within the first two weeks of each semester.* See the Office of Evening, Summer, and Weekend College for courses requiring insurance coverage.

Students enrolled in health care curricula are required to be covered by professional liability insurance. The fee for this malpractice insurance is billed each fall.

There is no charge for the first transcript requested whether official or unofficial. The student will pay a fee for each additional transcript requested whether official or unofficial. A transcript requested by and given to the student is an unofficial transcript.

Residence Hall Fees

On-campus living is available to full-time single men and women students in a variety of residential settings. 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 in each residence hall.

Each room is equipped with beds, desks, bureaus, and closets. Clean bed linen and towels may be contracted by the student on an individual basis. Students supply their own blankets, pillows, and study lamps. Each residence hall is equipped with television sets, laundry facilities, and lounges. Prospective students and their families are invited to visit the residence halls at any time.

All full-time undergraduate students who are under 18 years of age are required to reside in Wilkes 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 unless they commute from the home of their parents or legal guardian. Students who have achieved sophomore class standing may live off campus.

Returning resident students must file a signed residence hall contract with a $75 deposit to be eligible to select a room. **Housing contracts are binding for the full academic year (see Refunds).** If returning students notify the Residence Life Office prior to July 15 of their intention not to return to residence, the $75 deposit will be returned. After July 15, and prior to the beginning of classes, no refunds will be made. The $75 deposit does not guarantee acceptance into the residence hall. The Residence Life Office reserves the right to approve or disapprove the contract. In the event of a disapproved contract, a refund of the deposit will be processed.

The cost of room and board is $1,570 per semester. This charge includes the cost of health service, room rent, washer/dryer fee and twenty meals per week.

Resident students are required to contract for meals. Exception to this policy will be made only by the Director of Food Service upon receiving a written recommendation and diet from a physician. The Director of Food Service must communicate in writing to the Student Affairs Council in order for the exception to become effective. Excuses must be renewed each year before the start of the Fall semester. Excuses obtained after the first day of classes will result in pro-rated charges for meals even if none are eaten.

Resident students are required to maintain a minimum balance of $50 on deposit in their account for damages and other unpaid expenses so long as the student is enrolled. Charges for damages to College property, parking charges, and other unpaid expenses may be automatically deducted from this deposit. When students graduate or terminate matriculation at the College, they will be given the unassessed portion of this deposit.

Information regarding residence halls can be obtained from the Office of Admissions or the Residence Life Office.

Payment of Charges

All payments for tuition, room and board, fees, etc. are to be made at the Finance Office, Sturdevant Hall.

Regular Procedure

Prior to the first day of classes for any semester, the student is required to pay in full any balance due from the previous semester, and one-half the net bill for the current semester. The net bill is the balance due after financial aid has been credited to the student's account.

The remainder is due on November 1 of the first semester and March 1 of the second semester. Failure to pay balances in full by the due dates may result in suspension from classes unless arrangements are made in advance with the Director of Student Accounts. Grades or transcripts will not be released until settlement has been made. Diplomas will not be awarded nor will participation be allowed in commencement exercises until all financial obligations to the College have been satisfied.

Questions concerning fees and payment of fees should be referred to Mrs. Karen Alberola, Director of Student Accounts, Room 113, Sturdevant Hall, 129 South Franklin St., Wilkes-Barre, Pa. 18766. Telephone (717) 824-4651, Ext. 423.

Wilkes Installment Payment Plan

In an effort to make it easier to finance an education at Wilkes, the College offers an innovative payment program which allows payments to be spread over eleven months. The Installment Payment Plan (IPP), explained fully below, includes a sample payment schedule.

ELIGIBILITY

Ordinarily, parents of any Wilkes undergraduate student are eligible if their combined annual income is $15,000 or more. Parents who have a combined annual gross income of less than $15,000 should consult the Director of Financial Aid for other sources of financial aid. It is advised that the student make sure that all other sources of financial aid have been exhausted before applying for the IPP. Independent graduate and undergraduate students should consult the Director of Student Accounts for special permission to participate in the plan.

The amount financed through the plan is determined by the parents and student, and is subject to the following conditions:

1) The amount must be greater than $1,500 and must be rounded to an even $100; and
2) The maximum amount which can be financed annually is $7,000.

The following table illustrates typical monthly payment schedules:

Cash Price Advance	Monthly Payment
$1,500	$136.36
3,000	272.73
4,500	409.09
7,000	636.36

SCHEDULE OF PAYMENTS

The first monthly payment will be due July 1 and subsequent payments will be due on the first day of each month thereafter. The plan will extend over an 11-month period, with the first payment due on July 1 and the final payment due May 1.

OPTIONAL PAYMENTS

Additional optional payments over the basic schedule may be made at any time.

FEES

Although no finance charge will be assessed on the IPP, an application fee of $50 must accompany the application form. An additional fee of $20 will be assessed for early withdrawal from the plan.

RETAIL INSTALLMENT CONTRACT

The parent(s) will be required to sign a Retail Installment Contract providing for the purchase of the educational services involved. Parents may discontinue the plan at any time providing that the portion of the obligation then outstanding is repaid and the early withdrawal fee is paid.

PAYMENT COUPONS

Parent(s) will receive a book of dated coupons to identify each payment. Each monthly payment, along with the appropriate coupon, should be sent to the Finance Office, Wilkes College, in the envelope enclosed with the coupon book. A fee of $5 will be charged for a replacement coupon book.

SEMESTER BILL PAYMENTS

One-half of the contracted amount will be credited to the student's account twice a year, once in September and once in January. Semester charges which exceed one-half of the IPP contracted amount must be paid in accordance with the regular payment procedure.

DELINQUENT PAYMENTS

A late charge of $5 will be charged on any monthly payment in default for a period of 10 days or more. If any payment is delinquent for 60 days or more, the IPP contract will be cancelled and the unpaid balance will be charged to the student's account. If a check is returned by the bank for insufficient funds, a $10 processing fee will be charged in addition to the above late charge of $5.

APPLICATION DEADLINE

Parents are urged to apply by June 15. If the financial aid package is not received by this time, families may request an early decision from the Financial Aid Office by calling (717) 824-4651, Extension 420, 421. Parents may still participate after that time by making payment(s) sufficient to catch up to the regular payment schedule.

ADDITIONAL INFORMATION

Additional information about IPP is available from the Office of the Director of Student Accounts. Telephone (717) 824-4651, Extension 423.

Knight Tuition Payment Plans

SCHOOL CHEX is a loan program which offers an extended period of time to meet school expenses. Under this plan, parents may borrow from a prearranged line of credit and use special checks to pay the school bills as they come due.

EXTENDED REPAYMENT PLAN is an insured loan program. With this plan, payment of current educational expenses is spread over an extended period of time. The maximum amount which can be borrowed from the plan is $60,000, and can be repaid over a time period up to 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 number of years of education to finance.

For further information, including application procedures, write or call Knight Tuition Payment Plans, 53 Beacon Street, Boston, Massachusetts 02108. Telephone (617) 742-3911.

Notice: Graduating Seniors

The Finance Office is prohibited from signing senior graduation clearance forms until the outstanding balance is paid in full. Any seniors who have requested the deferred payment option must pay the final semester balances personally before clearance forms are signed or have a written guarantee from their employer that the amount will be paid to Wilkes College regardless of course completion or final grade. Those prospective graduates not complying with the above policy will not be cleared until actual cash payment is received from their employer.

Tuition Discounts

In addition to financial aid, Wilkes College offers three types of tuition discounts.

Multiple Student Discount (brother, sister, parent, child, husband, wife)

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 costs will be given to all but the first family member. If the family members do not attend at the same time, no tuition discounts will be allowed. Net tuition cost is the amount due after financial aid has been credited to the student's accounts.

Students must apply for the discount at the Financial Aid Office each year. A Wilkes College application for financial aid must be completed.

Alumni Discount

When graduates of Wilkes College return to the College to continue their education, tuition discounts are available for both undergraduate and graduate studies. Students may receive a 25% tuition discount for undergraduate courses and/or a $10 per credit discount for graduate courses. Interested students should contact the Finance Office for more details.

Alumni Children Discount

Children of alumni will be awarded a flat 10% reduction on tuition (not room and board), which will be applicable through a student's undergraduate years so long as the student remains in good academic standing. Additional information is available through the offices of Admission or Alumni Relations.

Evening School Discount

Certain full-time evening school students who also are employed full-time may qualify for the tuition discount. Interested students must apply at the Financial Aid Office.

Refunds

Total Withdrawal

When it is necessary for students to withdraw from college, they must file an official withdrawal form with the Registrar's Office. It is recommended that this be done before the student withdraws.

Before a refund will be processed and released by the Finance Office, there must be an official withdrawal form or written request on file in the Registrar's Office. The date of official withdrawal will be determined by the date notification is recorded by the Registrar.

Time of Withdrawal	Tuition Refund
First two weeks	80%
Third and fourth week	60%
Fifth week	40%
After fifth week	No Refund

Students dropping courses or reducing a regular load will have their charges calculated according to the following formula:

FULL-TIME TO PART-TIME

Students will be charged for the cost of actual credits carried after the drop, plus an additional amount computed according to a sliding scale formula. The additional amount will be the sum of full-time tuition minus the cost of courses actually carried times the applicable percentage listed above for withdrawals. For example, a student registers for 15 credits including labs at a cost of $3,075 and $50 for laboratory fees, then decides to drop a 4 credit course in the fourth week of classes. Charges for these 11 credits are computed as follows:

11 cr. x cost per part-time credit + allowable % of the difference between full-time tuition and the cost of the part-time credits

11 x $130 + .40 ($3,075 – $1,430)
$1,430 + $658 = $2,088 = newly computed cost of 11 credits

This student would not receive a credit on any laboratory fees since the drop occurred after the first week of classes. Students should also bear in mind that financial aid will be reduced in proportion to the new charges.

REDUCED PART-TIME LOAD

Students will be charged for the cost of actual credits carried after the drop, plus an additional amount which will be the sum of the cost of courses the student is originally enrolled in, minus the cost of courses actually carried, times the applicable percentage listed above for withdrawals.

WEEKEND COLLEGE

Students who have paid their tuition in full and withdraw from courses in the Weekend Program through the *second weekend of classes* will receive a credit of *one-half of the tuition upon request* to the Director of Evening, Summer, and Weekend College. After the second weekend, no credit is allowed and the student is obligated for the full cost of the term. No student who is suspended or expelled shall be entitled to any refunds.

Students may withdraw from courses or from the Weekend Program through the fourth weekend of classes, without prejudice, providing that *written* notice to this effect is given to the Director of Evening, Summer, and Weekend College. Following the fourth weekend, students must obtain the written approval of the instructor of the course and append it to the written notice of withdrawal.

SUMMER PROGRAM

Students who have paid their tuition in full and who withdraw from courses or from the College during the first week of the first or second sessions or during the first two weeks of the eight-week evening session will

receive a refund of one-half of their tuition upon written request. No refunds will be made to students who withdraw from courses or from the College after these periods. Fees are non-refundable.

Students who are suspended or expelled shall not be entitled to any refund.

MEALS

In the event of withdrawal at any time during the 15-week semester, meal charges will be refunded on a pro-rata basis from the end of the week during which official withdrawal was made.

ROOM RENT

In the event of withdrawal at any time during the 15-week semester, rent will be charged for the entire semester.

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

Refunds of Financial Aid

Federal Title IV Aid Programs

When a student withdraws during the College's refund period, charges are adjusted according to the schedule on page 29.

If this results in a credit balance on the student's account (student refund) and the student had received Federal financial aid, then the Title IV refund policy is applied. As required by Federal regulations, the percentage of the student refund to be returned to Title IV programs is determined as follows:

$$\frac{\text{Total amount of Title IV aid (exclusive of work earnings) awarded for the payment period}}{\text{Total amount of aid (exclusive of work earnings) awarded for the payment period.}}$$

The percentage is then multiplied by the student refund to determine the amount to be returned to the Title IV programs. Funds are then returned to the Title IV programs in the following order:

State Grant*
Supplemental Educational Opportunity Grant
National Direct Student Loan
Guaranteed Student Loan
PLUS (ALAS) Loan
Pell Grant

*Refunds to State Grant programs are made in accordance with the various State Grant regulations.

Non-Title IV Aid Programs

When a student withdraws during the College's refund period and the student did not receive any Federal Title IV aid, the financial aid received by the student will be reduced in proportion to the adjustment of the student's charges.

Credit Balances

Credit balances in a student's accounts will not be refunded unless requested from the Finance Office.

Financial Assistance

Wilkes College maintains an extensive program of financial aid 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.

Wilkes College has been designated as an eligible institution by the Pennsylvania Higher Education Assistance Agency (PHEAA), enabling students to participate in both the State Grant program and the Guaranteed Student Loan program; by the Federal Department of Education for purposes of the Pell Grant program and the campus-based programs: National Direct Student Loans, Supplemental Educational Opportunity Grants, and College Work-Study. The College also participates in the Nursing Student Loan program, along with grant and loan programs of all other states which allow those programs to be brought into the Commonwealth of Pennsylvania.

Inquiries and applications regarding all financial assistance programs should be initiated with the Director of Financial Aid. The Financial Aid Office is located in Sturdevant Hall. More detailed information regarding the financial aid programs and requirements is included in the Wilkes College "Consumer's Guide to Financial Aid, Costs, and Charges at Wilkes College," which is available at the Financial Aid Office.

Application Procedures

Students requesting financial aid shall indicate this in the appropriate space on the Application for Admission. Before an application for financial aid will be considered, the student must first be admitted to the College.

Every applicant for financial aid must complete the Wilkes College Application for financial aid and shall submit confidential information pertaining to the applicant's financial needs and academic achievements. Because of the limited nature of College funds, applicants are *required* to submit applications for the Federal Pell Grant Program and for their State Grant/Scholarship Programs, where these are available. College grants may then be offered to students as supplements to these Federal and State funds.

Pennsylvania residents shall file the PHEAA/Federal Student Aid Composite application form, which gathers financial information about the applicant's family for the Pennsylvania State Grant Program, the Federal Pell Grant Program, and all the need-based programs of assistance administered by the College Financial Aid Office. The form should be filed as soon as possible after January 1 and not later than May 1 to insure timely application for the academic year beginning the following September.

Residents of other states using the Financial Aid Form of the College Scholarship Service to gather financial information for those State Scholarship/Grant programs which can be used in Pennsylvania should file their state's version of the Financial Aid Form. Applicants should list Wilkes College and the CSS Code 2977 as a recipient of the information.

Residents of states with scholarship/grant programs which can not be used in Pennsylvania should file the PHEAA/Federal Student Aid Composite form. As non-residents, applicants could not apply for the Pennsylvania Grant program, but the application will transmit the information to the Pell Grant Program and to the College for its use in determining the applicant's eligibility for its aid programs.

After the student has been accepted for admission, has submitted the Wilkes College Application for financial aid, and after a copy of the family financial information is received from either PHEAA or the College Scholarship Service, the Financial Aid Office acts on all completed applications under policies established by the faculty and administration of the College. Notification of action taken by the Financial Aid Office is sent immediately to the student.

Financial aid is awarded for a one-year period; however, aid will be renewed upon request, provided the request is supported by evidence of continued need and satisfactory progress toward completion of the degree requirements. Because the level of financial need may change from one year to another, changes in the amount and composition of individual financial aid packages may also occur.

Students must complete the Wilkes College Application for financial aid and the PHEAA/Federal Student Aid Application or the Financial Aid Form of the College Scholarship Service annually.

Aid awarded to students from sources outside the College must be reported to the College by the students. All such aid shall be taken into consideration to insure the most equitable distribution of funds. When necessary, a financial aid package awarded by the College may be adjusted in light of such aid awarded by outside sources.

Except where specifically noted, recipients of financial aid are required to enroll as full-time students in order to receive the aid funds. The College has defined full-time to mean a student who is registered for a minimum of twelve credits during each semester that aid funds are received.

The primary responsibility for financing the cost of education rests with the student and his family. Consequently, financial aid will be granted only

after they have made every reasonable effort to finance as large a portion of the student's education as possible. When such home support is lacking, the College will seek to develop with the student a plan whereby his or her education may be continued through work, loan, and scholarships/grants.

Intercollegiate athletics are introduced for the benefit of all students and in consequence athletes receive the same consideration in admissions and in the awarding of scholarships that is given to other students. National Collegiate Athletic Association (NCAA) rules prohibit athletes participating in Division III sports from receiving assistance unless that aid is based on the financial needs of the applicant.

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 programs:

Scholarships — Outright gift assistance that is not repayable by the recipient and is based on factors other than demonstrated financial need, such as academic performance or musical ability.

Grants — Outright gift assistance that is not repayable by the recipient but is based on the demonstrated financial need of the applicant and the family.

Loans — Financial assistance for which the recipient assumes the obligation to repay the amount of the funds received, usually beginning some period of time after graduation or other cessation of study, at which time interest also begins to be charged.

Employment — Financial assistance that a student may earn by working on campus in part-time or full-time positions, and for which the employee is paid in the form of a monthly check.

College-Administered Programs

This classification includes all sources of aid for which the Financial Aid Office, except as noted below, determines who is eligible to receive the aid and the amount of the award. The student must be enrolled full-time as a regular student in an eligible degree or certificate program, must not hold a Bachelor's Degree, and must maintain satisfactory progress to be eligible for these programs. Also, for all Federal programs, the student must be a U.S. citizen or eligible non-citizen, have financial need, be registered with Selective Service as required by law, sign a Statement of Educational Purpose/Selective Service Registration form, not owe a refund on any Federal aid received to meet the cost of attending the College, and must not be in default on any Federal loan used to meet the cost of attending the College. Other specific eligibility requirements are described by program.

Federal Supplemental Educational Opportunity Grant (SEOG)

SEOG funds are provided by the Federal government to be awarded to students who demonstrate financial need. Grants may range from $200 to $2,000. Because of the limited funds, this grant is normally awarded to students whose family's contribution is less than $2,000.

Wilkes Achievement Scholarships

Achievement Scholarships are awarded to students who have demonstrated leadership ability and promise during their high school careers. The scholarship is renewable for three years provided the student continues to be active in leadership positions on campus and maintains a specific grade point average. A special committee reviews all admissions files to select qualified recipients.

Wilkes Act 101 Grant

Act 101 Grants are awarded to students through the "Operation Phoenix Program," which provides educational opportunities for educationally and economically disadvantaged students. Applicants must be residents of the Commonwealth of Pennsylvania and meet the requirements of the Higher Educational Equal Opportunity Act. These grants are available for the freshman and sophomore years; for the junior and senior years, students are eligible to apply for assistance through other College-administered programs. Interested students should contact the Admissions Office to determine initial eligibility for the ACT 101 program. The maximum grant is half-tuition.

Wilkes Dean's Scholarship

As a commitment to education in Wyoming Valley, Wilkes College provides a limited number of $500 scholarships to local students who have graduated in the top 10% of their high school class. Recipients are selected by a special committee from those applicants who have been accepted to Wilkes by December 15 of each year.

Wilkes Leadership Scholarship

Scholarship funds are allocated to the three major student publications (Beacon, Manuscript, and Amnicola) for distribution. Students are selected for these grants on the basis of the positions they hold within the publication staff. In addition, the presidents of student government, commuter council, and inter-residence hall council are each awarded scholarship aid. Students do not need to show financial need to be eligible for these scholarships.

Wilkes Music Scholarship

Limited scholarship funds are available to students who major in Music and who show extraordinary talent in the music field. Since this is a talent scholarship, financial need is not a factor in the determination of eligibility. Recipients are selected by the Music Department and therefore should contact the Music Department chairman for further details.

Wilkes Named Scholarship

Several thousand friends and alumni contribute to the scholarship fund of the College on an annual basis. Many friends have created scholarships and awards which bear the names of the donors or of persons whom they have memorialized by means of scholarships. Requirements for these very special scholarships vary greatly. Specific information regarding these scholarships is on pages 53-55 of this Bulletin. Students with specific interest in a particular named scholarship should call the Financial Aid Office for further details.

Wilkes Need-Based Grant

Wilkes College need-based grants are available to students with good records of achievement and performance in high school or college who cannot fully finance the cost of their education. These grants are supported by funds received from endowment income and gifts from alumni and friends of the College.

Wilkes Presidential Scholarship

Wilkes Presidential Scholarships are awarded without regard to financial need to students who have demonstrated truly outstanding academic achievement in high school. To be eligible for consideration, students must rank in the top 10% of their graduating class and achieve a minimum score of 1100 on the Scholastic Aptitude Test (SAT). Recipients are selected by a special subcommittee of the Admissions Committee.

Wilkes Room and Board Grants

Wilkes College offers a limited number of Room and Board Grants to those students who are the recipients of full three-year or four-year ROTC scholarships. Further information is available at the ROTC office.

Wilkes Trustee Scholarship

Six full-tuition scholarships are awarded annually to incoming freshmen of outstanding merit as judged by the College's Admissions Committee. To be considered for a Trustee Scholarship, students must rank in the top 5% of their graduating class and achieve minimum scores of 1200 on the Scholastic Aptitude Test (SAT). Recipients are selected by a special subcommittee of the Admissions Committee.

Wilkes Wrestling Scholarship

Because of the College's participation in Division I Wrestling, Wilkes College provides limited scholarship funds to outstanding wrestlers. Interested students should contact the wrestling coach for further information.

Federal National Direct Student Loan (NDSL)

The National Direct Student Loan Program, funded jointly by the Federal Government and the College, provides loans of up to $1,500 per year to students who demonstrate financial need. No interest is charged and no repayments are required while the student continues to be enrolled on at least a half-time basis at an eligible institution and for the first six months after termination of such enrollment. Interest at the rate of 5% per annum (Annual Percentage Rate) begins to accrue with the seventh month following termination of such enrollment.

Federal Nursing Student Loan

The Nursing Student Loan Program, funded jointly by the Federal Government and the College, provides loans of up to $2,500 per year to students enrolled in the Bachelor of Science degree program in Nursing. The program contains both deferment and cancellation provisions for borrowers. Interest at the rate of 6% per annum (Annual Percentage Rate) begins to accrue with the tenth month following termination of half-time enrollment within the Nursing program.

Gulf Oil Loan

The Gulf Oil Loan provides loans of up to $1,000 per year to junior and senior students who have exhausted all other means of obtaining financial assistance. The loan is interest-free while the student is enrolled on at least a half-time basis at Wilkes College, or is enrolled as a full-time student at another institution, and for three months following termination of enrollment. Interest, at the rate of 9% per annum (Annual Percentate Rate), begins to accrue with the fourth month following termination of enrollment; payments of principal and interest are made in monthly installments of not less than $30 over not more than a five-year period. No portion of the Gulf Student Loan may be cancelled or forgiven.

Rulison Evans Loans

Funds for this program were made available by a grant from the estate of Rulison Evans. This loan program is identical to the Gulf Oil Loan program described above.

Federal College Work-Study Program (CWSP)

The College Work-Study Program, funded jointly by the Federal Government and the College, provides students with the opportunity to work on campus and utilize these earnings to help meet educational costs. Students are paid minimum wage for hours worked and may not work more than 20 hours during any week in which classes are held and not more than 35 hours during periods in which no classes meet. Students are paid monthly by check. Limited CWSP funds are available to students who work for community non-profit organizations as part of the Cooperative Education Program. A list of available campus employment positions is maintained at the Career Services Center, Max Roth Hall.

Wilkes College Employment

The College Student Employment Program provides similar employment opportunities as does CWSP, except that funds for this program are provided solely by the College and students are not required to demonstrate financial need in order to participate in the College program. The rate of pay and payment procedures are identical to those of the College Work-Study Program. A list of available campus employment positions is maintained at the Career Services Center, Max Roth Hall.

Job Location Development Program (JLD)

The Federal government and the College support the operation of this department. Part-time, full-time, and summer employment opportunities are sought for students who wish to work off-campus. Students are paid by the employer for whom they work. For more information, interested students should contact JLD Office at Max Roth Hall.

Emergency Loan Fund

The Florence and Joseph A. Goldman Loan Fund has been created by the donors to assist juniors and seniors whose education may be interrupted by unexpected difficulties. The loan bears no interest and is to be repaid by the student at the earliest practical time so that other students may receive needed assistance from this revolving loan fund.

The Robert W. Hall Student Loan Fund was established bt Robert W. Hall, class of 1951, to assist students in meeting small emergency financial needs.

Other Programs

This category includes all sources of aid for which some Agency other than the College determines who is eligible to receive the aid and the amount of the award. However, the College Financial Aid Office is usually involved in the application and distribution process.

Federal Aid Programs

1. PELL GRANT is considered to be the foundation upon which all other financial aid is awarded. Awards ranging from $200 to $2,100 are available to those students who demonstrate financial need. The amount of individual grants is related directly to the student's aid index as determined by the Pell Grant program and the student's educational cost of attendance. All students who meet these requirements and who wish to apply for any financial assistance from the College or state grant programs must apply for the Pell Grant.

2. THE GUARANTEED STUDENT LOAN PROGRAM (GSL) enables students to borrow directly from their local bank, savings-and-loan association, or credit union without the necessity of providing collateral. The funds are obtained directly from the lender, and the Federal government pays all interest on the loan while the lender remains enrolled on at least a half-time basis and for six months after cessation of study. Students may apply for loans up to $2,500 per year (or the difference between costs and resources, whichever is less) with an aggregate lending level of $12,500 as an undergraduate student. Application forms and further information can be obtained from the applicant's local lender.

3. PLUS LOANS are available to parents of dependent undergraduate students, graduate/professional students, and to independent students.

Graduate/professional students and parents of undergraduate dependent students may borrow up to $3,000 per academic grade level with an aggregate lending level of $15,000. Independent undergraduate students may borrow up to $2,500 per academic grade level with an aggregate of $12,500. The yearly grade level and aggregate limits for independent undergraduate students include any Guaranteed Student Loan borrowings the student may have.

Repayment of these loans begins 60 days after the loan proceeds are disbursed. The current interest rate is 12%.

4. VETERANS ASSISTANCE PROGRAMS (VA) are authorized by law to provide a wide range of benefits to those who have served their country in the Armed Forces and in some cases to the dependent children of a veteran. 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.

5. AIR FORCE ROTC SCHOLARSHIPS are available to qualified applicants enrolled in the Air Force ROTC program. Each scholarship provides full tuition, laboratory and incidental fees, and full reimbursement of curriculum-required textbooks. In addition, scholarship cadets receive a non-taxable $100 each month during the school year while on scholarship status.

Pennsylvania Aid Programs

1. PENNSYLVANIA STATE GRANTS are administered by Pennsylvania Higher Education Assistance Agency (PHEAA). This grant assistance is provided to Pennsylvania residents based on the financial strength of the applicant's family. Students must be full-time during each semester in which they receive a State Grant. However, Senior students enrolled for 9 credits or more during one of their last two semesters may be eligible to receive the State Grant even though they are not enrolled full-time. Those students should contact the Financial Aid Office for more information. Eligible students must be high school graduates or have received a Pennsylvania GED.

2. PHEAA SCHOLARS IN EDUCATION AWARD (SEA) has been established to encourage students with high scholastic qualifications in mathematics and the sciences to enter the teaching profession. It is intended to alleviate the shortage of highly qualified new teachers in these subject areas in Pennsylvania. SEA funds range from a minimum of $1,500 to a maximum of 50% of annual tuition. Eligibility is based on academic achievement in high school or college, on class rank, on SAT or ACT scores, and on other related criteria. Minimum requirements include 1,000 SAT scores with 550 in mathematics, top one-fifth of high school class, and a 3.00 (B) average on a 4.00 (A) scale in science or mathematics. The awards are renewable each year throughout the undergraduate college career of the student as long as the renewal requirements are met.

If accepted as a SEA recipient, the student must sign a Teacher Commitment Agreement and a promissory note. The Agreement binds the student to teach a year of mathematics or science in a Pennsylvania secondary school for each year SEA funds were received. If the commitment is fulfilled, the awards are in effect scholarships. However, if the teaching commitment is not fulfilled, the awards are repayable as a loan, including interest charges.

3. THE PHEAA HELP LOAN is available to students who are prohibited or restricted in borrowing from the Guaranteed Student Loan program because of family income restrictions. The maximum amount that can be borrowed per academic year is $10,000. Loan interest rates will vary depending on the loan "package." Both Pennsylvania and out-of-state students are eligible to apply.

4. THE OFFICE OF VOCATIONAL REHABILITATION provides help for qualified students. Eligibility requirements should be discussed with the local service officer.

Other State Financial Aid Programs

Many other states provide financial assistance in the form of scholarships or grants for a resident of that State. Residents of states other than Pennsylvania should contact their high school guidance office for information pertaining to that particular State's aid programs. Students who reside in states

which allow their funds to be used in Pennsylvania are required to apply through the appropriate state agency. These states include Delaware, Connecticut, Maryland, Massachusetts, Rhode Island, Vermont, Ohio, and West Virginia.

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. In some instances, these funds are unused simply because students are not aware of their existence and availability. While it is not possible to list them here, reference publications are available in college and high school libraries that identify these programs and give application instructions and procedures.

Tuition Exchange Program

Wilkes College is a member of the Tuition Exchange Plan, a plan which provides limited opportunity for faculty children from one college to enjoy tuition benefits at another institution. Students who are dependents of College faculty, administration or staff should consult the Financial Aid Office to determine if they qualify for this program.

Financial Aid Academic Progress Policy

Introduction

The Higher Education Act of 1965 as amended by Congress in 1980 mandates institutions of higher education to establish standards of "satisfactory progress" for students receiving financial aid. These standards apply to all Federal aid programs including Pell Grants, Supplemental Educational Opportunity Grants, National Direct Student Loans, Guaranteed Student Loans, Federally Insured Student Loans, PLUS Loans, ALAS Loans, and College Work-Study. They also apply to Wilkes Need-Based Grants and to the Federal Nursing Loan Program.

In order to receive Title IV aid, any student who is otherwise eligible must meet the standards used by the institution to determine if a Title IV recipient is maintaining satisfactory progress in his or her course of study, regardless of whether the student had previously received Title IV aid.

Enrollment Status

Students enrolled for at least 12 undergraduate credits or 9 graduate credits per semester are considered to be full-time.

Students enrolled for at least 6 but less than 9 undergraduate credits or at least 6 but less than 9 graduate credits are considered to be half-time.

Students enrolled for at least 9 but less than 12 undergraduate credits are considered to be three-quarter time.

Satisfactory Progress

1. For full-time undergraduate students academic progress is defined as the successful completion of 24 credits per academic year.

2. For three-quarter-time undergraduate students academic progress is defined as the successful completion of 18 credits per academic year.

3. For one-half time undergraduate students academic progress is defined as the successful completion of 12 credits per academic year.

4. For full-time graduate students, academic progress is defined as the successful completion of 15 credits per academic year.

5. For part-time graduate students, academic progress is defined as the successful completion of 12 academic credits per academic year.

Students who have not met the credit requirement are not eligible for financial aid until the credit deficiency is made up.

In addition, students must meet the following minimum grade point average requirements:

1. At the end of the freshman year 1.70
2. At the end of the sophomore and junior years 2.00
3. Graduate students 3.00

Maximum Semesters of Financial Aid

Full-time undergraduate students may receive financial aid for a maximum of 10 semesters; three-quarter-time students may receive financial aid for a maximum of 14 semesters; half-time students may receive financial aid for a maximum of 20 semesters.

Full-time graduate students may receive financial aid for a maximum of 4 semesters; half-time students may receive financial aid for a maximum of 6 semesters.

Students pursuing a double major may be eligible for an extension of the time on an individual review basis.

The maximum semesters of eligibility for GLS and FISL, and PLUS/ALAS Loans vary from above (see section on student loans).

Procedure for Checking Satisfactory Academic Progress

At the end of each fall semester, aid recipients are reviewed to determine the number of credits completed. If a student has not completed at least half of the total credits required for the year, a warning letter is sent indicating the number of credits required for satisfactory progress, the number of credits completed, and the number of credits required to meet the satisfactory progress requirement.

At the end of the spring semester, aid recipients are again reviewed to determine if they have met the minimum credit requirement. If they have not, a

letter is sent to each informing them that they are not eligible for continued financial aid until the credit deficiency is made up.

The same procedure is followed regarding the minimum grade point average requirement.

Academic progress for spring-admit students is checked at the end of the spring semester. If they completed at least 12 credits for full-time, 9 credits for three-quarter-time, or 6 credits for half-time undergraduate study, or 8 credits for full-time or 6 credits for part-time graduate study, and meet the minimum grade point average requirement, they are considered to have made progress and will then be checked on the fall-spring basis indicated above. If the student did not complete sufficient credits or has not maintained the required grade point average, a warning letter would be sent and aid would be continued for the fall. At the end of the fall semester, the student's academic progress would be checked again for the completion of the 24 credits for full-time, 18 credits for three-quarter-time, and 12 credits for half-time undergraduate study, or 15 credits for full-time or 12 credits for part-time graduate study and grade point average. Aid would be continued for those students who have met both requirements; and they would then be checked on a fall-spring basis as indicated above. Students not making progress would be notified of their ineligibility to receive continued financial aid and informed of what they need to do to become eligible again.

Grade of Incomplete

Credits for a course in which a student has received a grade of incomplete are considered as **not** successfully completed. When the incomplete grade becomes a letter grade, a reevaluation of the number of credits earned is conducted to test for successful completion of the required number of credits. It is the student's responsibility to inform the Financial Aid Office of such a change of grade.

Course Withdrawal

Aid is granted to students according to the enrollment status as of the date the aid is applied to the account. Credits for a course from which a student has withdrawn subsequent to receiving aid are not considered as completed. If because of course withdrawal a student has not earned the minimum required credits the student is considered as not having made satisfactory progress.

Non-Credit Remedial Courses

No aid is granted for non-credit remedial courses and therefore they are not included in the determination of satisfactory academic progress.

Repeated Courses

Aid is granted for repeated course work and the credits earned are counted toward academic progress.

Challenge Credits

No aid is granted for credits which are earned through a challenge exam. However, credits earned in this manner will be included for the purpose of checking academic progress.

Reinstatement of Aid

Students may make up credit deficiency by attending summer sessions or other sessions without aid or may take credits at another accredited institution so long as they will be accepted toward the student's degree objective.

Once a student has made up credit deficiency, it is the student's responsibility to notify the Financial Aid Office and request that aid be reinstated.

Students may make up a grade point average deficiency by attending summer sessions or other sessions without aid. Once a student has reached the required GPA, it is the student's responsibility to notify the Financial Aid Office and request that aid be reinstated.

In both situations the Financial Aid Office will verify that the deficiency has been made up and award aid if appropriate. If the Financial Aid Office findings are inconsistent with the student's, the student will be contacted and the results explained.

Guaranteed Student Loan/Federally Insured Student Loan/PLUS Loan or ALAS Loan

The same policies for undergraduate and graduate students as stated above apply to recipients of these loans. The maximum number of semesters of aid does not apply. Program dollar limits supersede this policy.

Special Note to Undergraduate Students

It normally takes 124 credits to obtain a bachelor's degree. To graduate in four years, a student must enroll for a minimum of 15-16 credits per semester. Enrolling for 12 credits (minimum for full-time students) would extend graduation one to one and one-half years. There are some program limits that would make this last year difficult. For example, some programs have a limit of 8 semesters (part-time is proportionately more).

Appeals

Any student who has been terminated from Financial Aid has the opportunity to appeal such action. An appointment should first be made with the Director of Financial Aid for an initial review of the situation. If the student

feels a satisfactory decision had not been reached after this review and wishes to continue the appeal, a letter must be written to the chairman of the Financial Aid Committee and sent to the Financial Aid Office. The letter must contain the student's reason(s) for the appeal and why the student feels an exception to the general academic policy should be made.

The Financial Aid Committee will review each appeal on an individual basis at its regular monthly meeting. The Committee meets the first Tuesday of each month during the academic year except January.

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.

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 is March 15.

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 adviser, 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.

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.

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 Northeastern 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 major 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 SCHLOLARSHIP 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.

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.

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 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.

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 this 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 SLOMOWITZ 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.

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 was established in 1973 by members of the College administration and 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 presented each year 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 high 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 his 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 scholastic 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.

Special Endowments

THE TOM BIGLER CHAIR OF COMMUNICATIONS was created in 1986 by friends of Tom Bigler, broadcast journalist, editorial writer, and commentator, in recognition of his distinguished career in the communication arts. Upon the retirement of Mr. Bigler, the first occupant of the Chair, the endowment provides for successors to be selected from worthy senior members of the College faculty or from distinguished individuals in the field of communications outside the College. Holders of the Chair will be chosen by the President in consultation with the Academic Dean and members of the Department of Speech, Communications, and Theater Arts.

THE B. G. CARPENTER OUTSTANDING TEACHER AWARD has been established in recognition of the B. G. Carpenter family, whose members have been associated with activities in the Wyoming Valley for many years. The award is presented annually at the conclusion of each academic year to a member of the Wilkes College faculty in recognition of outstanding teaching.

THE W. S. CARPENTER MEMORIAL AWARD was established in 1965 by W. S. Carpenter, Jr., and his sons in memory of W. S. Carpenter, who was born in Wilkes-Barre on April 5, 1853, and lived in this community during his entire active business life. The fund was given to strengthen the work of the science division by subsidizing research projects, assisting the College in attaining able teachers, providing scholarships for outstanding students, providing lectures by speakers of national prominence, purchasing exceptional tools, apparatus, or other equipment for use in the science departments.

THE ALLAN HAMILTON DICKSON CHAIR OF ENGLISH LITERATURE was created by Dorothy Dickson Darte in memory of her father, Allan Hamilton Dickson, to encourage enlightened teaching, extended scholarship, and creative writing in the field of literature.

GILBERT S. McCLINTOCK was the chairman of the Junior College Committee of Bucknell University when Bucknell University in 1933 established the Junior College in Wilkes-Barre. As the first chairman of the Board of Trustees of Wilkes College, Attorney McClintock left his entire estate to Wilkes College with the understanding that the income shall be used to improve faculty salaries.

THE FRANK MEHM ENDOWMENT FOR FARLEY LIBRARY ACQUISITIONS was established in 1986 by Paul R. Mehm in remembrance of his brother Frank who died during his freshman year at Wyoming Seminary. The yearly income from this endowment, beginning in the 1985-86 academic year, will be used for the acquisition of books considered compatible with the needs of the Eugene S. Farley Library. Each book so acquired will have a fixed designation plate bearing the names: Frank and Paul Mehm.

Awards

At the end of the academic year a number of awards are presented to outstanding students in selected fields. These awards are presented either at Commencement or at a special awards luncheon held for the recipients.

Commencement Awards

ALUMNI AWARD FOR LEADERSHIP is given annually by the Wilkes College Alumni Association to the member of the graduating class considered by a special committee to have made the strongest contribution to student life and the student activities program of the College.

THE DISTINGUISHED YOUNG ALUMNUS AWARD is presented annually by the Wilkes College Alumni Association to those alumni who best exemplify the traditions of Wilkes College.

THE EUGENE S. FARLEY MEMORIAL ALUMNI AWARD is presented annually by the Wilkes College Alumni Association to those alumni who best exemplify the characteristics of an educated person.

HUMANITIES AWARD, established in 1958 by Miss Annette Evans, a member of the Board of Trustees, honors the man or woman in the graduating class who has demonstrated outstanding scholarship in the humanities and has participated constructively in cultural activities.

NATURAL SCIENCES AND MATHEMATICS AWARD is given annually to the graduate who has the highest academic achievements in his or her pursuit of knowledge across the breadth of the division.

SOCIAL SCIENCES AWARD, the Hugo Mailey Memorial Award, is given annually to that graduate in the social sciences who has best demonstrated overall abilities in scholarship, intellectual curiosity, and community service during his or her career at Wilkes College.

NADA VUJICA MEMORIAL AWARD, established in 1972 in memory of Nada Vujica, is given annually to a deserving international student of the graduating class.

THE MABLE SCOTT WANDELL AND STERLING LEROY WANDELL AWARD is presented to the man and woman graduate having attained the highest academic average for the four years at Wilkes College.

All-College Awards

THE ARTISTIC MERIT AWARD is presented annually to the graduating senior who has best demonstrated a broad commitment to the visual arts and has maintained a superior level of accomplishment.

THE ATHLETE OF THE YEAR AWARDS are presented annually to the athletes considered by the coaches to have been the most outstanding in athletics during the year.

THE PROFESSOR ALFRED W. BASTRESS AWARD is presented by the Chemistry Department to a graduating senior for proficiency in chemical research.

THE BIOLOGY RESEARCH AWARD is presented annually to the graduating senior who has demonstrated exceptional ability in a research project.

THE BIOLOGY DEPARTMENT SCHOLAR AWARD is presented annually to the graduating senior with the highest academic average.

THE BIOLOGICAL SOCIETY SOPHOMORE AWARD is presented annually to the sophomore major with the highest academic average.

THE BLOOD DONOR AWARD is presented annually to the women's residence hall, men's residence hall, and club with the highest percentage of participating students.

THE PROFESSOR CATHERINE H. BONE AWARD is presented by the Chemistry Department to a graduating senior for academic excellence and chemistry proficiency.

THE BRANDWENE AWARD in philosophy has been created by the family and friends of Mr. and Mrs. M. D. Brandwene. The award is given annually to a student who has demonstrated scholarly achievement in the Department of Philosophy. The student is selected by the faculty of this department.

THE CHEMISTRY FRESHMAN AWARD is presented annually to the freshman major with the highest scholastic average.

THE COMMERCE AND FINANCE DEPARTMENT AWARDS are presented annually to senior students for outstanding academic performance in Business Administration and Economics.

THE COMPUTER SCIENCE AWARD is presented annually to the senior who, in the opinion of the Mathematics and Computer Science faculty, has done the most outstanding work in the fulfillment of the major requirements in computer science.

THE COPERNICUS AWARD is presented annually to the student considered most outstanding in astronomy or a closely related field. This award is presented by the Polish Union in observance of the 500th anniversary of the Polish astronomer, Nicholaus Copernicus.

THE W. F. DOBSON AWARD IN ACCOUNTING is presented annually to the graduate who has made the most outstanding record in accounting during his four years at the College.

THE EARTH AND ENVIRONMENTAL SCIENCES ACADEMIC ACHIEVEMENT AWARD is given annually by the department faculty to an outstanding earth and environmental sciences graduating senior.

THE J. J. EBERS MEMORIAL AWARD is presented by the Institute of Electric and Electronic Engineers to the electrical engineering senior who, in the opinion of the Engineering Department, has demonstrated outstanding scholastic ability, professional interest, and leadership in the I.E.E.E. Student Branch at Wilkes.

THE ENGINEERING AWARD is presented annually to the graduate of the Engineering Department who has maintained an outstanding scholastic average, shown exceptional ability, and demonstrated professionalism throughout his or her college career.

THE ELECTRICAL ENGINEERING ACHIEVEMENT AWARD is presented by the faculty of the Engineering Department to the graduate who has demonstrated exceptional ability and maintained an excellent scholastic average in the field of electrical engineering.

THE MATERIALS ENGINEERING ACHIEVEMENT AWARD is presented by the faculty of the Engineering Department to the graduate who has demonstrated exceptional ability and maintained an excellent scholastic average in the field of materials engineering.

THE ENGLISH AWARD is given annually in honor of Frank J. J. Davies, former chairman of the Department of English, to an outstanding English major.

THE INTER-RESIDENCE HALL COUNCIL'S OUTSTANDING STUDENT AWARD is presented annually to the female and male resident students who have contributed most to residence hall life.

THE JOHN F. KENNEDY MEMORIAL AWARD is presented annually to the student who has indicated outstanding achievement in the social sciences.

THE LETTERWOMEN'S AWARD is presented annually to a woman who has been active in the letterwomen's club.

THE MATHEMATICS AWARD is presented annually to the senior who, in the opinion of the mathematics faculty, has done the most outstanding work in the fulfillment of the major requirements in mathematics.

THE TERESA JORDAN AND FRANK MEHM PRIZE, endowed by Paul R. Mehm to honor the memory of his parents, is awarded annually, with encased citation, to that undergraduate who, by vote of a select committee, most nearly represents the ideal respecting moral courage, unselfishness, and noteworthy extracurricular participation advancing the College on and off campus.

DEPARTMENT OF NURSING AWARDS are presented annually to senior students in nursing who have completed at least four semesters of full-time study at Wilkes College. The awards will be made to those students who have earned the highest academic achievement and the most outstanding scholastic average in nursing.

THE PENNSYLVANIA INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS AWARD is presented annually to a graduating senior who has received high grades in accounting and demonstrated qualities of leadership in other activities.

THE PHILOSOPHY DEPARTMENT AWARD is presented annually in memory of Stanko M. Vujica to the student beginning the study of philosophy who shows the greatest promise in and potential for continued achievement in philosophy.

PHI SIGMA TAU. Membership in Phi Sigma Tau, the national honor society in philosophy, is awarded each year to qualified students who have demonstrated excellence in scholarship and philosophical inquiry.

THE PHYSICS AWARD is presented annually to the graduate of the department who has maintained throughout his or her college career the highest average in physics courses.

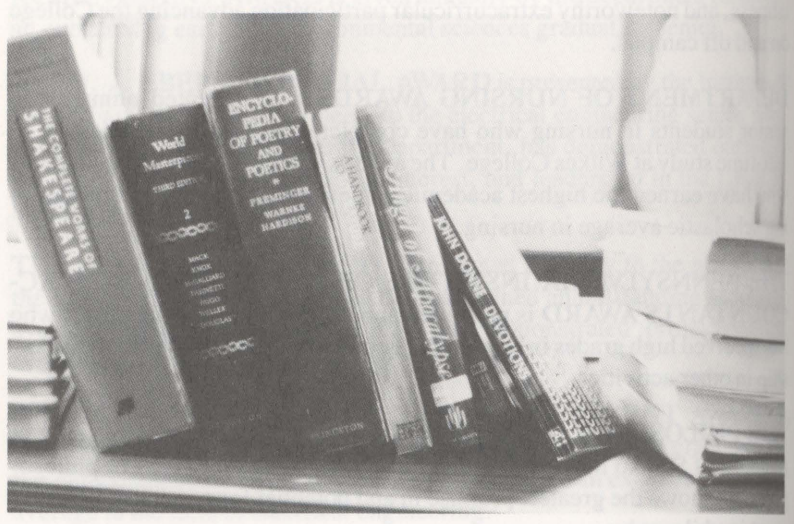
POLITICAL SCIENCE AWARD is presented annually to the senior political science major who has demonstrated proficiency in the social sciences and who has contributed significant services to the College and community.

THE RAYMOND R. RITZ MEMORIAL AWARD was established by Mrs. Hannah K. Ritz in memory of her husband. Initial funding of the award came from gifts received at the time of his death. It is presented annually to a graduating senior who demonstrates leadership potential in human services administration. The recipient is selected by the faculty of the Sociology Department.

THE SCHOLAR-ATHLETE AWARDS are presented annually to the senior man and senior woman participants in the Intercollegiate Athletic Program who have achieved the highest academic average.

THE WILKES COLLEGE CLUB OF THE SIGMA XI annually recognizes those seniors who have demonstrated research excellence.

THE WILKES COLLEGE THEATER AWARD is presented annually to the senior who has contributed significantly to the development of the theater.



The Facilities of the College

Academic and Cultural

Academic and Research

Academic and Recreational

Administrative

Academic and Cultural

The College is constantly seeking to implement and improve its facilities for instruction. The growing campus provides added classrooms, modern laboratories, and research facilities.

E. S. Farley Library

The library, completed in the summer of 1968, was named by the Trustees in honor of Dr. Eugene Shedden Farley, first president of Wilkes College.

Physical Facilities: The three-story, air-conditioned building, situated at the corner of South and South Franklin Streets, occupies a convenient, central location on campus. It provides comfortable study areas for over 450 students and some private study carrels for the faculty. The library also houses the Media Center with a spacious auditorium, Curriculum Laboratory of educational materials, seminar room, browsing room for newly acquired library books, micro-room for both micro-materials and reading/printing equipment, and four unique special collection rooms.

Collections: The library is one of the most important resource libraries in the region, with more than 180,000 volumes of books and bound journals, 1,250 current journal and newspaper subscriptions, about 500,000 units in microforms, and a steadily growing collection of audiovisual materials. The basic library collection provides a balanced core of materials to support the academic programs offered by the college and to meet the study and research needs of faculty and students. The library's retrospective collection of serials is one of the finest in the region. In addition, the library also has an extensive collection of research materials in English literature, American cultural history, and the history of science. All materials are shelved in open stacks and are readily available to students and faculty.

Services: The library is open seven days a week for a total of 91 hours. Reference service by qualified library personnel is available during most hours. Group library orientation, workshops, and sessions of bibliographic instruction for particular courses are conducted regularly by the librarians. Online searching of commercial databases is available by appointment through the reference department. Through the library's membership in the Northeastern Pennsylvania Bibliographic Center (NEPBC), Wilkes faculty and students may have direct access to the collections of various regional academic, public, and medical libraries. The library is also a member of the Interlibrary Loan System of the Online Computer Library Center (OCLC), which is a nationwide network of thousands of research, academic, public and special libraries. Through this network, the Wilkes library has instant access to the holdings information of all participating libraries. Faculty and students are encouraged to utilize these extended facilities. In addition, the library is currently installing a fully-integrated, automated library system, which includes both an online public access catalog and an automated circulation system.

Dorothy Dickson Darte Center for the Performing Arts

A fully equipped, 500-seat cultural center is the gift of Dorothy Dickson Darte. The site, with a view of the Susquehanna River and Kirby Park, was deeded to the College by the Wyoming Valley Society of Arts and Sciences.

Formerly, theatrical activity was in Chase Theater, a carriage house behind Chase Hall, presented to the College in 1937 by Admiral and Mrs. Harold R. Stark as a memorial to Fred M. Chase and his wife, the sister of Admiral Stark.

Dedicated in October 1965, Dorothy Dickson Darte Center for the Performing Arts contains a scene shop, dressing rooms, rehearsal areas, costume rooms, hydraulic lift forestage, patch panel with 246 circuits, and a ten-scene preset with 60 dimmers.

The College continues to join with community organizations, such as the Women's Committee for the Polish Room at Wilkes College, the Wilkes-Barre Chapter of Hadassah, the Martin Luther King Committee for Social Justice, in the presentation of cultural programs at Darte Center. Proceeds from the College's musical comedy productions, sponsored by Wilkes-Barre Kiwanis Club, have assisted in the establishment of the Kiwanis Charitable Foundation.

Dorothy Dickson Darte Music Building

Faculty offices, studios, classrooms, practice and rehearsal rooms are housed in the Darte Music Building, opened in the summer of 1969 as the second phase of the Center for the Performing Arts. Concerts and recitals are presented at Gies Recital Hall, located in the lower level of the Music Building, and are open to the public.

Sordoni Art Gallery

The Sordoni Art Gallery, given to Wilkes College in 1973 by the Andrew J. Sordoni Foundation, Inc., to encourage the appreciation of art, is located in the Stark Learning Center on South River Street. The main purpose of this professionally equipped gallery is to present art exhibitions of a professional caliber to enrich the lives of both the Wilkes College community and the people of Northeastern Pennsylvania. Exhibitions are supplemented by lectures, tours, demonstrations, and related arts programs.

A growing permanent collection embraces all media: specifically, nineteenth and twentieth century American and European paintings, and a print collection which includes old masters and contemporary artists. The permanent collection is a valuable study facility for students at Wilkes College as well as for the community.

Academic and Research

Stark Learning Center

The Departments of Art, Biology, Chemistry, Earth and Environmental Science, Education, Engineering, Mathematics and Computer Science, Philosophy, Physics, and Psychology are housed in Stark Learning Center. Named in honor of the late Admiral Harold R. Stark, former Chief of Naval Operations and former Honorary Chairman of the Board of Trustees of the College, this building was completed in 1958. The center was greatly enlarged in 1973, so that it now provides approximately 85,000 square feet of modern classroom, laboratory, studio, and office space.

In addition to the usual instructional facilities, faculty, graduate students, and selected undergraduate students conduct research programs, many with industrial or governmental financial support.

Outside sponsors of recent research programs included the National Science Foundation, the Pennsylvania Heart Association, the National Institutes of Health, the United States Air Force, the Petroleum Research Fund of the American Chemical Society, and numerous private industries and individuals.

Also located here is the Computer Center. The facilities and services of the Computer are available to students and faculty who are involved in computer programming, research, and large-scale problem-solving.

Computer Center

John Koch, Academic Computing Director; Cheryl Scalese, MIS Director; Carl Hurst, Systems Manager; John Janczek, Asst. Systems Manager; Deborah Yedinak, Information Specialist; Karen Harrison, Kirk Nunemacher, Matthew Zukoski, Programmer; Jean Zampetti, Office Manager.

The academic and administrative functions of the College are fully supported by the Computer Center 24 hours a day and seven days a week. This service includes the automation of the College's library operation. The Center also supports external projects and institutions through a variety of programs and applications. The major portion of computer facilities is located in Stark Learning Center.

Academic support provides assistance to faculty as well as students in the area of program conversion and development. The Data General MV10000 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 wordprocessing (TIPS), engineering (SPICE, ANSYS, SUPREM), statistics (SPSS, MINITAB, BMDP), science (IMSL), simulation (SLAM II), and a variety of applications including CAD.

The services provided to the administration include the design, development, and maintenance of programs and databases necessary for the operation and management of the institution. The Hewlett Packard 3000/68 with 5-MBytes of memory and 1.6-GBytes of disc space supports 72 terminals used by all administrative offices in their daily operation.

A variety of microcomputers (Apple //e, Apple Macintosh, and IBM PC) are available in clusters throughout SLC and in some laboratories. They are used 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 variety of software including wordprocessing, graphics, CAD, spreadsheet, database management, and simulation.

Academic and Recreational

Gymnasium and Outdoor Athletic Plant

Completed in September of 1950, the Gymnasium is well equipped for intramural and intercollegiate athletic events. It has a seating capacity of 2,000. Recently, the College added training room facilities off campus adjacent to Kirby Park. Here also are located Ralston Field, named in honor of Wilkes' first athletic coach and former Dean of Student Affairs, and the playing fields for soccer, baseball, and hockey, as well as asphalt tennis courts. During the 1973 football season the Robert J. McBride Field House was dedicated at Ralston Field.

Conyngham Student Center

The Student Center, South River Street, refurnished by the Conyngham family and by their friends, is a multi-functional unit available to clubs and organizations for student activities and for relaxation. Cafeteria service is provided for commuting students. The College Infirmary is on the second floor. The student art gallery is located nearby in Evans Hall.

Administrative

Testing Center

The College maintains a testing center to assist the deans in their counseling of students. The College Testing Service also is available, at no charge, to all Wilkes students and, for a fee, to members of the community. The Center also provides services to business, industry, state, and federal agencies. The College Testing Service is available, without fee, to Wilkes College alumni and members of their family.

The Center is located in Ross Hall, 251 South River Street.

Career Services

The Office of Career Services is the liaison between the College and potential employers in business, industry, government, and educational institutions. A wide variety of services are offered to assist students at all stages of their career development. No appointment is usually necessary and students are encouraged to participate in this service program by registering with the Office, located at Max Roth Center, 215 South Franklin Street.

Typical services of the office 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. Cooperative Education internships for academic credit and institutional work/study jobs are also available to qualified students. However, first-year students are particularly advised not to consider part-time employment until they have had an adequate opportunity to determine the time needed to fully meet academic requirements.

Flexibility and planning are essential for choosing a major and determining career goals. A Career Resource Library is available to identify the variety of career options for students in any major, and the Career Services Office exists to help the student effectively negotiate these and other career planning tasks.

Each year Wilkes College participates in Career Day, a program sponsored jointly by the area colleges during the fall semester. At this event, over a hundred organizations send employer representatives to meet with students about available career opportunities. In addition, Career Exchange, a program sponsored each spring semester, allows students to meet with Wilkes College alumni and conduct information interviews to facilitate career planning.

Registrants are urged to regularly update their credentials file and keep the office advised of their activities.

The Bookstore

New and used books, stationery, and supplies may be purchased at the College Bookstore in the lower level of Pickering Hall. The bookstore accepts cash, personal checks, Visa or MasterCard. The cost of books and supplies will vary with the course of study, but will average approximately $100 to $150 per semester.

Offices of Administration

Chase Hall, 184 South River Street, the first building on the campus, was donated in 1937 by Admiral and Mrs. Harold R. Stark. On the first floor is the Dean of Admissions, on the second is the Director of Evening, Summer, and Weekend College.

Weckesser Hall, 170 South Franklin Street, is the gift of Mr. and Mrs. Frederick J. Weckesser. The President, the Vice President of Academic Affairs, Associate Vice President of Academic Affairs, and the Vice President of Advancement have their offices in Weckesser Hall. Also in Weckesser Hall are the Deans of Student Affairs, the Director of Community Relations, the Director of Foundations and Grants Management, the Director of Sports Information, the Public Relations and Publications Office, the Word Processing and Duplication Center, the Assistant Dean for Special Projects.

Robert S. Capin Hall, formerly Franklin Hall, 165 South Franklin Street, contains the office of the Dean of the College of Arts and Sciences.

Sturdevant Hall, 129 South Franklin Street, contains the following offices: Finance Office, Business Office, Registrar's Office, Recorder's Office, Upward Bound, and the Financial Aid Office.

Pickering Hall, Wright Street, was constructed in 1965 and is the location of the Residence Life Office.

Ross Hall, 251 South River Street, contains the College Testing Service, the Anthracite and Community Development Institute, Small Business Development Center, and the Institute of Regional Affairs.

Stark Learning Center, South River Street, contains the offices of the Dean of the School of Engineering and Physical Sciences, the Director of Institutional Grants and Research, and the Director of the Sordoni Art Gallery.

Max Roth Center, 215 South Franklin Street, contains the Office of Career Services, the Dean of Graduate Studies and Continuing Education, and the Personnel Office.

The Annette Evans Faculty and Alumni House, South River Street, provides rooms for faculty to meet informally and contains the offices of the Director of Alumni Relations.

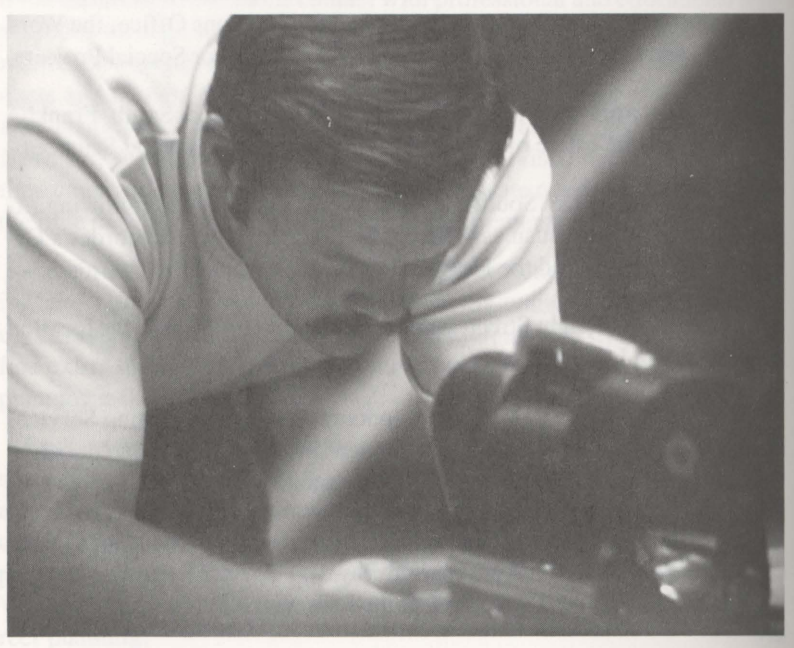
William L. Evans Residence Hall, 110 South River Street, contains the office of the Dean of Health Sciences.

Kirby Hall, 202 South River Street, contains the Act 101 Offices, the Academic Support Center, and the Writing Laboratory.

Bedford Hall, corner South River and South Streets, contains the office of the Dean of the School of Business and Economics.

Dorothy Dickson Darte Center for the Performing Arts, corner West River and South Streets, contains the office of the Director of Cultural Activities.

Conyngham Student Center, South River Street, contains the offices of the Director of Student Activities and the College Health Service.



The Academic Program

Undergraduate Degree Programs

Degree programs have been carefully designed so that students may meet the entrance requirements of graduate and professional schools. Students planning to go to graduate school should consult as early as possible with their department chairman. In the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, and Bachelor of Science degree programs the faculty encourages students to achieve intellectual, social, and spiritual development.

Objectives of the Educational Program at Wilkes College

The Curriculum consists of a broad spectrum of courses in the liberal arts and sciences designed to enhance intellectual, emotional, social, and physical development. Wilkes College is committed to the ideal of preparing men and women for enlightened and responsible leadership in society. It believes that a liberally educated person, in addition to having depth of knowledge in one or more areas:

1. understands and appreciates the ways knowledge is acquired and used, values knowledge for its own sake and for its application, and continues to learn throughout life;
2. thinks analytically and logically, and addresses problems and seeks solutions independently and objectively;
3. writes and speaks effectively and clearly;
4. understands the place of imagination in human experience and seeks to think and act creatively;
5. has an aesthetic sensibility enhanced by an awareness of the arts;
6. has considered and understood moral and ethical problems, seeks to create and nurture a value system, and makes discriminating moral choices;
7. understands the history and cultural heritage of the western world and seeks to preserve and improve the best of that heritage;
8. understands other cultures, appreciates cultural differences, and respects diversity of ideas and beliefs;
9. understands the nature of man and society and the basic concepts and methods of social science;
10. understands the nature of the physical and biological worlds, the relationship between science and technology, and the method of scientific inquiry;
11. understands the importance of physical well-being and cultivates life-long recreational activities.

In order to meet the educational objectives, each student develops a curricular plan in consultation with his or her adviser. The student's curricular plan must include core requirements in skills, arts, humanities, social sciences, mathematics and natural sciences as well as the requirements of the major field.

Bachelor of Arts Degree

Programs leading to the Bachelor of Arts degree are primarily concerned with the cultivation of an understanding of our civilization and of the people who have created it and lived in it. Studies center around cultures and events, thoughts and institutions, art and science. Programs are designed to create breadth and perspective as opposed to more specialized skills.

A liberal arts program must acquaint the student with the nature and extent of knowledge in all the principal fields. The student will carry on explorations in the humanities, social sciences, and sciences.

Selection of a Major

To provide depth of knowledge, some concentration is required. It is essential that the major field of concentration be elected before the beginning of the junior year.

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

- Art
- Biology
- Chemistry
- Communication Studies
- Computer Science
- Earth and Environmental Sciences
- Economics
- English
- Foreign Language
  - French
  - German
  - Spanish
- History
- Individualized Studies
- International Studies
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Social Science
- Sociology
- Theater Arts

Bachelor of Science Degree

The Bachelor of Science degree programs require more concentration within a restricted area of human thought and activity. Although these programs emphasize knowledge and skill in special fields, a basic program of general education is coupled with this specialized effort.

Selection of a Major

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

- Biology
- Chemistry
- Commerce and Finance
  - (a) Accounting
  - (b) Business Administration
- Computer Science
- Computer Information Systems
- Earth and Environmental Sciences
- Engineering
  - (a) Electrical Engineering
  - (b) Engineering Management
  - (c) Environmental Engineering
  - (d) Materials Engineering
- Individualized Studies
- Mathematics
- Medical Technology
- Nursing
- Physics

Selection of a Minor

Students may choose minor fields from among the following: Accounting, Art, Biology, Business Administration, Chemistry, Communication Studies, Computer Science, Earth and Environmental Sciences, Economics, English, Foreign Languages, History, Management Information Systems, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology, Statistics, Theater Arts.

Teacher Education

Students who wish to prepare for teaching select an appropriate major and plan their programs to include courses needed for certification. Such students are urged to seek advice and counsel in the Education Department. See page 105 for a listing of courses required for certification.

Double Major

Students who wish to complete the requirements in two programs may elect to graduate with a double major. The student must declare intent to graduate with a double major by completing the appropriate form available at the Registrar's Office. It is the student's responsibility to seek the approval of the chairmen of both departments to ensure that all requirements of the two majors are fulfilled.

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.

Academic Requirements

Grades

The primary purpose of any marking system is to inform the student of his achievement. Marks 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

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.

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

Course	Credit Hrs. Carried	Grade	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 points earned			33	
Average 33 ÷ 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.

Class Standing

Freshmen, defined as students who have attempted fewer than thirty-six credits, must maintain a minimum 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 required will automatically be placed on academic probation.

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. 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 Committee 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 Dean of Student Affairs Office 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.

Attendance

Attendance at all classes is expected. Repeated absence is deemed 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 dean and the department chairman concerned.

Student Load

No students shall be allowed to carry an overload without the approval of the adviser and the appropriate dean. An overload will be permitted only for students with an average grade record of 3.00 or special need.

Credit for Life Experiences

Wilkes College recognizes that students occasionally have gained experiences during their lifetime which correspond to academic requirements. Where such correspondence is shown to exist, the College will grant appropriate academic credit. This credit may not be applied to core requirements or to courses required by the major. Moreover, the faculty has recommended that students make every effort to gain academic credit by other, more traditional routes such as challenge examinations, advanced placement examinations, CLEP or any arrangement which a particular department may have for testing out of courses.

When all other routes are exhausted, the student may submit a petition for academic credit for "life experiences." Specifically excluded from consideration as "life experiences" are courses taken at any college or university, whether or not such courses are transferrable to Wilkes.

The procedure for petitioning for academic credits for "life experiences" is outlined below. The form the petition should take is also outlined.

1. a. Name and date of birth.
   b. High school and year of graduation.
   c. Academic credits earned from any higher educational institution and degree awarded (if any).
   d. Formal training courses attended which were conducted by business, industrial, or military organizations.
   e. Occupational experience, including the name of the organization, dates of employment, duties and responsibilities, and reason for leaving the employer.
   f. Degree sought at Wilkes College and major area of study.
   g. Number of academic credits sought through life experience and the justification for the request. The justification must include a detailed description of the experiences for which academic credit is requested, independent verification of the role and evaluation of the performance of the petitioner in that role and a summary of the other routes through which credit has been sought, including reasons why credit was not granted via these alternate routes. The independent

verification of the petitioner's role and evaluations of performance may take the form of letters of recommendation and employment records such as promotions and salary raises. Letters of recommendation must be from individuals well acquainted with the petitioner's life experiences for which academic credit is requested.

2. The petition must have the approval of the chairman of the applicant's major department. This approval must be clearly stated and be a part of the formal petition.

3. The petition must have the approval of the department in which the credits are to be granted (if such a department can be identified). This approval must be clearly stated and be a part of the formal petition.

4. The petition must be submitted to the chairman of the Academic Standards Committee who will assign it to the Subcommittee for Life Experiences for consideration and recommendation.

   a. The subcommittee will consist of an appointed chairman and two other members.

   b. The recommendation of the subcommittee will be submitted to the chairman of the Academic Standards Committee to be discussed and acted upon by the Committee. The Committee may approve, modify, or reject the recommendation.

A maximum of thirty credits may be granted for "life experiences." The Subcommittee for Life Experiences and the Academic Standards Committee may both alter the number of credits granted compared to the number of credits requested in the petition.

Petitions should be submitted no later than one semester prior to the time the credits are needed. Petitions submitted later than this will not be considered. A petition submitted which is returned to the petitioner for clarification, expansion, or correction is not considered as formally submitted; only petitions accepted for consideration will count for determination of the date of submission.

Cooperative Education Program

Cooperative Education is a process which formally integrates a student's academic studies with productive work experiences in employing organizations. The word "cooperative" is used to mean a cooperative relationship between the employer and the College.

Through alternating semesters of full-time study and full-time professional work experience, students earn credit and, in many cases, a salary while gaining valuable experience in a work environment that is important to the student's total education. The student may earn 12 credit hours for a full-time professional semester.

In addition to the full-time alternating program of work and study, the College offers a "parallel program." This program combines work and

study during the same academic term. The student registers for a reduced load and spends 15-30 hours in a professional setting. In the parallel program, a student may earn 3-9 credits for a professional semester part-time.

No more than a total of 24 credits may be obtained in the Cooperative Education Program. A maximum of six semester hours of this work may be obtained in a given participating department, with departmental approval.

Cooperative Education credit will appear on the student's transcript as Cooperative Education 301 for 3 credits, 302 for 6 credits, 303 for 9 credits, and 304 for 12 credits. If some of the credit is taken in a participating department, a special department course number will appear.

The program is open to students of the College meeting the following requirements:

1. Full-time undergraduate student
2. Sophomore class standing or above
3. Minimum 2.00 grade point average
4. Signed permission of the student's adviser and department chairman prior to placement

Modifications of any internship requirements for credit must be previously approved in writing by the student's department chairman and the Cooperative Education Office.

All interested students should contact the Cooperative Education Office, Cherylynn Gibson, director, at the Annette Evans Alumni House (146 S. River Street) as early as possible to facilitate internship placements. Internships are available throughout the United States summer, spring, and/or fall.

Auditing Courses

Auditing courses is a practice designed primarily for the purpose of allowing a student to expand his educational opportunities beyond the limitations imposed by courses taken in fulfillment of normal 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" in all cases.

Students auditing courses will maintain 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.

Withdrawals

A student may withdraw from any course through the sixth week of instruction, notifying his instructor, his adviser, and the appropriate Dean of Student Affairs of his intentions prior to withdrawal. 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, the faculty adviser, and the appropriate Dean of Student Affairs. Students not fulfilling these requirements and not satisfactorily completing the course will receive a grade of "0."

No student who has been advised to withdraw from the College's day school for academic reasons will be permitted to register in the Evening Division without the approval of the Academic Standards Committee.

Change of Major

Students who wish to transfer from one department to another shall obtain the approval of the adviser 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 Deans' Offices.

Transfer of Credits

Wilkes College 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.

Dean's List

The faculty gives recognition for high quality work. Candidates for the Dean's List, published at the end of each term, must obtain a 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.

Honors

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

To graduate with honors from Wilkes College, a transfer student must have completed a minimum of 60 credits with the cumulative average at Wilkes College equal to the honors received.

Requirements for Honors are:

Summa Cum Laude	3.80
Magna Cum Laude	3.50
Cum Laude	3.25

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.

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

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

B.A., B.F.A., B.M., and B.S. Degree Program Requirements

The following pages describe specific courses and requirements for each degree major. The student is responsible for meeting the requirements of his or her major program.

During the senior year a candidate for graduation should report during the first week in November to the Office of the Registrar to submit an order for a diploma, review requirements for a degree, and complete other necessary forms required of candidates for degrees.

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.

General Core Requirements

The General Core Requirements consist of a broad spectrum of courses in the liberal arts and sciences. These courses, which are central in a liberal arts education, are required of all Wilkes College students in both the B.A. and B.S. programs except the B.S. programs in Engineering, Medical Technology, and Physics, and the Bachelor of Music program. **(Note: Music majors should take the following: 18 credits in the Humanities, including English 101, 102; 12 credits in the Social Sciences, including Psychology 101-102; 6 credits in Science/Mathematics.)**

The General Core Requirements for all programs in the Bulletin are listed as "core elective" except English 101, 102, and Physical Education, which are specifically designated.

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 credit

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 and Anthropology with no more than two in any one discipline.

Mathematics/Science 12-16 credits

Any two of the following (at least 12 credits)

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

Courses required in one's major may also be used to fulfill core requirements.

Total 45-65 credits

Description of Courses

The academic departments at Wilkes College are administered under three divisions: The College of Arts and Sciences, the School of Business and Economics, and the School of Engineering and Physical Sciences. Departmental course descriptions are grouped accordingly.

The College of Arts and Sciences includes the following departments:

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

The School of Business and Economics includes the following departments:

Accounting
Business Administration
Economics

The School of Engineering and Physical Sciences includes the departments of:

Earth and Environmental Sciences
Engineering
Physics

The College of Arts and Sciences

James Rodechko, Dean.

The academic departments within the College of Arts and Sciences assume responsibility for the curricula of the traditional liberal arts: 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.

Art

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

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

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

Minor in Art: A minimum of 18 credits in any art courses other than Art 101.

The Department of Art offers programs leading to the B.A. degree and the B.F.A. (Bachelor of Fine Arts) degree. The B.A. curriculum requires a minimum of 41 credits in art. It provides a broad foundation in art, while allowing the student exceptional latitude to pursue studies in other areas of interest. 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 art, particularly within a chosen discipline. Areas of concentration include Communication Design, Painting, Photography, Printmaking, Sculpture, and 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 of the art education component. (Please consult the department for course sequences in art education.)

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 246;

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

Any student admitted to the College may begin work toward the B.F.A, but B.F.A. candidates should be aware that standards of performance will intensify at the advanced levels in their chosen concentrations. Formal intention to pursue the B.F.A. must be submitted at least one year before grad-

uation. Final acceptance into the B.F.A. program requires submission of a satisfactory portfolio, normally in the sophomore or junior year. B.F.A. graduates will also submit a written analysis and photographic survey of their work for graduation.

Additional requirements for all students majoring in art: portfolio review by the art faculty at the end of the sophomore and junior years; and presentation of a senior exhibition. **(Note: Transfer students must submit a portfolio for Department review.)**

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 adviser. The exhibition may be presented either in the fall or spring term.

Biology

Professor Turoczi, chairman; Associate Professors Hayes, Houseknecht; Assistant Professors Klemow, Long.

Total credits required for either B.A. or B.S. degree with major in Biology — 121.

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

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.

FIRST SEMESTER

	B.A.	B.S.
Bio 121	4	4
Chm 115	4	4
Eng 101	3	3
Mth 105 or 111	4	4
PE 100	0	0
	15	15

SECOND SEMESTER

	B.A.	B.S.
Bio 122	4	4
Chm 116	4	4
Eng 102	3	3
Mth 106 or 112	4	4
PE 100	0	0
	15	15

THIRD SEMESTER

	B.A.	B.S.
Bio 223	4	4
Chm 231	4	4
Core Electives	6	6
PE 100	0	0
	14	14

FOURTH SEMESTER

	B.A.	B.S.
Bio 224	4	4
Chm 232	4	4
Core Electives	6	6
PE 100	0	0
	14	14

FIFTH SEMESTER

	B.A.	B.S.
Bio 397*	1	1
Bio Elective/Research	3	6
Phy 105	4	4
Core Electives	6	3
Elective**	3	—
Mth 150	—	3
	16-17	16-17

SIXTH SEMESTER

	B.A.	B.S.
Bio 397*	1	1
Bio Elective/Research	3	6
Phy 106	4	4
Core Electives	6	3
Elective**	3	—
Computer Science Elective	—	3
	16-17	16-17

SEVENTH SEMESTER

	B.A.	B.S.
Bio Elective/Research	3	3
Core Electives	6	6
Electives**	6	6
	15	15

EIGHTH SEMESTER

	B.A.	B.S.
Bio Elective/Research	3	3
Core Electives	3	9
Electives**	9	3
	15	15

*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.

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.

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 micro-organisms to disease and its prevention, control, and treatment. It considers the effects of microbes within the body and the body's reaction to them. Lecture, three hours a week; laboratory, three hours a week. Laboratory fee: $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 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.

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; Adjunct Professor Piatt; Lecturer Cohen.

Total credits for a degree with a major in Chemistry — 130.

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 advisers.

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. Certain restrictions on electives are given after the semester sequences.

Recommended Course Sequence for Chemistry Degrees

FIRST SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 115	4	4	4
Eng 101	3	3	3
Mth 111	4	4	4
Core Elective	3	3	3
PE 100	0	0	0
Elective	3	3	—
CS 123	—	—	3
	17	17	17

SECOND SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 116	4	4	4
Eng 102	3	3	3
Mth 112	4	4	4
Core Elective	3	3	3
PE 100	0	0	0
CS 225	—	—	4
	14	14	18

THIRD SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 231	4	4	4
Mth 211	4	4	4
Phy 201	4	4	4
Core Elective	3	3	—
PE 100	0	0	0
Elective	3	3	—
CS 227	—	—	3
	18	18	15

FOURTH SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 222	4	4	4
Chm 232	4	4	4
Mth 212	—	4	—
Phy 202	4	4	4
PE 100	0	0	0
Core Elective	3	—	—
Mth 202	—	—	3
CS 322	—	—	3
	15	16	18

FIFTH SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 241	4	4	4
Chm 251	4	4	4
Phy 203	3	3	3
Core Electives	6	6	6
	17	17	17

SIXTH SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 252	4	4	4
Chm 274	—	4	—
Chm 276	3	3	3
Core Electives	6	6	3
Electives	5	—	—
Chm 397	—	—	1
CS 124	—	—	3
CS Elective	—	—	3
	18	17	17

SEVENTH SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 397	1	1	—
Chm 325	—	3	—
Core Electives	6	6	9
Electives	9	6	3
CS Elective	—	—	6
	16	16	18

EIGHTH SEMESTER

	B.A.	B.S.	B.A. (double major)
Chm 397	1	1	1
Core Elective	3	6	9
Electives	12	9	3
CS Elective	—	—	3
	16	16	16

Credit distribution

	B.A.	B.S.	B.A. (double major)
Chemistry Credits	43	50	43
Mathematics Credits	12	16	15
Physics Credits	11	11	11
Core Credits	39	39	39
Computer Science Credits	6	6	28
Free Elective Credits	19	8	—
Total Credits	130	130	136

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

B.S. degree students must elect a minimum of two 300-level chemistry courses 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.

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.

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

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; optional 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; optional 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; optional 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. 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; optional problem session, one hour a week. Fee: $35.

Prerequisite: Chm 111 or 115.

CHM 222. SYSTEMATIC INORGANIC CHEMISTRY **Four 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; laboratory, three hours a week. Fee: $35.

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 **Four 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. Fee: $45.

Prerequisite: Chm 222, 232, 251.

CHM 276. THE HISTORY AND LITERATURE OF CHEMISTRY **Three credits**

The nature and use of the important sources of chemical information. The historical foundation of modern chemistry is considered through the development of the literature. Laboratory problems emphasize techniques of information retrieval from journals, abstracts, and other source material. Literature preparation for Independent Research (Chm 395-396) is included. Class, two hours a week; library laboratory, three hours a week.

Prerequisite: Completion of twenty-four chemistry credits.

CHM 325. ADVANCED INORGANIC CHEMISTRY **Three credits**

Introduction to ligand field theory; chemistry of the first transition series, organometallic, and II acceptor compounds; mechanisms of inorganic reactions.

Prerequisite: Chm 222 and 252.

CHM 335. ADVANCED ORGANIC CHEMISTRY **Three credits**

An intensive treatment of the concepts of physical organic chemistry with emphasis on the mechanisms of homogeneous organic reactions and the physiochemical methods for determining the structure of organic molecules.

Prerequisite: Chm 232.

CHM 344. ADVANCED ANALYTICAL CHEMISTRY **Four credits**

The theory and application of modern techniques and instrumental procedures, such as spectrophotometric, electro-analytical, and chromatographic. Theory and practice of analysis of more complex materials. Class, two hours a week; laboratory, six hours a week. Fee: $45.

Prerequisite: Chm 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 356. ADVANCED PHYSICAL CHEMISTRY **Three credits**

A detailed examination of statistical thermodynamics, advanced kinetics, quantum theory, and spectroscopy.

Prerequisite: Chm 252.

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 **One credit**

Presentations and discussions of selected topics in chemistry conducted by senior chemistry majors, staff, and visiting lecturers. All chemistry majors are encouraged to attend the meetings.

Prerequisite: Approval of department chairman is required.

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

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

Prerequisite: Permission of instructor.

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.

Computer Science

Professor Sours, chairman; Professor Emeritus T. Richards; Professors Merrill, Tillman, Wong; Associate Professors Berard, DeCosmo, Earl, Koch, Salsburg; Assistant Professors C. Anderson, S. Anderson, Simmons; Adjunct Professor Mantione; Instructors Kenney, Plavchak.

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 major program is designed to prepare students for graduate studies in computer science or for careers in the computing and data processing field.

The Department of Mathematics and Computer Science also offers a variety of programs in mathematics and statistics (see page 128).

Major in Computer Science

Since the major program is application-oriented, all students are strongly advised to acquire competence, through attainment of a double major or minor in an area that lends itself to meaningful computer applications. The B.A. option is intended for those who lean toward the management and social sciences, whereas the B.S. option allows for greater concentration of electives in the engineering and physical sciences.

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

Common requirements for B.A. and B.S. degrees:		**credit hours**
(1)	The general core requirements listed on pages 80-81, except the science/mathematics area which is specified below.	33
(2)	CS 123, 124, 225, 227, 230	16
(3)	Mth 111, 112, 202, and 214	14

Additional requirements for B.A. degree:		**credit hours**
(4A)	Any three courses, including a two-semester sequence, in Biology, Chemistry, Earth and Environmental Sciences, or Physics.	9
(5A)	Any four courses in Computer Science or Mathematics numbered above 200, including at least two among CS 262, 321, and 324.	12
(6A)	Free electives (must include Eng 101 and 102, unless exempted)	39

Additional requirements for B.S. degree:		**credit hours**
(4S)	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 number above 200 except that Bio 121, 122, Chm 115, 116, or 118 are acceptable in this requirement.	11
(5S)	Any five courses in Computer Science or Mathematics numbered above 200, including at least two among CS 320, 323, 326, 328, and 330.	15
(6S)	Free electives (must include Eng 101 and 102, unless exempted)	36

Minimum total credit requirements for computer science major:

B.A.	(1)+(2)+(3)+(4A)+(5A)+(6A)	123
B.S.	(1)+(2)+(3)+(4S)+(5S)+(6S)	125

The department recommends the following sequence of courses for computer science majors in the freshman and sophomore years:

FIRST SEMESTER		SECOND SEMESTER	
Mth 111	4	Mth 112	4
CS 123	3	CS 225	4
Eng 101	3	Eng 102	3
Electives	6	Electives	6
PE 100	0	PE 100	0
	16		17
THIRD SEMESTER		**FOURTH SEMESTER**	
Mth 202	3	Mth 214	3
CS 227	3	CS 230	3
CS 124	3	Electives	9
Electives	6	PE 100	0
PE 100	0		
	15		15

Minor in Computer Science

Total credits required for minor — 22.

Required courses	**credit hours**
CS 123, CS 124, CS 225, CS 227	13

Electives: any one of the following matched triples: 9

a. CS 224, CS 324, CS 325
b. CS 230, CS 262, CS 321
c. CS 230, CS 320, CS 329
d. CS 230, CS 323, CS 327
e. CS 230, CS 323, CS 328
f. CS 230, CS 326, CS 330
g. CS 230, CS 328, CS 364

Major in Computer Information Systems

(Offered in cooperation with the Department of Commerce and Finance)

Minimum total credits required for the CIS major — 122.

The Computer Information Systems 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.

Students majoring in Computer Information Systems are not permitted to get a minor in Management Information Systems.

Requirements for the Major Program in Computer Information Systems

A. Major Requirements (24 credits)		**credit hours**
CS 115	Survey of Computing & Data Processing	3
CS 123	FORTRAN Programming	3
CS 124	COBOL Programming	3
CS 224	Advanced COBOL & File Management	3
CS 324	Systems Analysis	3
CS 325	Database Management	3
Computer Science/Mathematics Electives:		6
	At least two courses chosen from:	
CS 260	Linear Programming (3)	
CS 262	Operations Research (3)	
CS 321	Simulation & Data Analysis (3)	
CS 335	Advanced Database Concepts (3)	
Mth 354	Statistical Methodology (3)	

B. Supporting Business Courses (21 credits)		
Acc 101	Elementary Accounting I	3
Acc 102	Elementary Accounting II	3
BA 222	Marketing	3
BA 225	Managerial Finance	3
BA 251	Principles of Management	3
BA 252	Operations & Systems Management	3
Additional Business Electives:		3
	At least one course chosen from:	
BA 254	Organizational Design & Behavior (3)	
BA 256	Business Policies & Corporate Responsibility (3)	

C. Mathematics Courses (11 credits)		**credit hours**
Mth 105	Calculus for Life, Managerial & Social Sciences I	4
Mth 106	Calculus for Life, Managerial & Social Sciences II	4
Mth 150	Elementary Statistics	3

D. Additional Requirements (6 credits)		6
Spc 101	Fundamentals of Speech (3)	
Eng 202	Technical Writing (3)	

E. Core Requirements (39 credits) 39

This includes all of the general core requirements listed on pages 80-81 of the current Bulletin except that half of the Mathematics/ Science requirement is automatically satisfied in item #C above.

F. Free Electives (21 credits) 21

Must include Eng 101-102 unless exempted.

Suggested Semester-by-Semester Outline of the Computer Information Systems

Major Program

FIRST SEMESTER		SECOND SEMESTER	
Eng 101	3	Eng 102	3
CS 115	3	CS 124	3
Mth 105	4	Mth 106	4
Acc 101	3	Acc 102	3
Core Elective	3	Core Elective	3
PE 100	0	PE 100	0
	16		16
THIRD SEMESTER		**FOURTH SEMESTER**	
CS 224	3	CS 123	3
BA 251	3	BA 252	3
Mth 150	3	Core Elective	3
Core Electives	6	Core Electives	6
PE 100	0	PE 100	0
	15		15
FIFTH SEMESTER		**SIXTH SEMESTER**	
CS 324	3	CS 325	3
BA 225	3	BA 222	3
Core Electives	6	Core Electives	6
Free Elective	3	Free Elective	3
	15		15
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
CS/Mth Elective	3	CS/Mth Elective	3
Spc 101/Eng 202	3	BA 254/BA 256	3
Free Electives	9	Free Electives	9
	15		15

Minor in Management Information Systems

(Offered in cooperation with the Department of Commerce and Finance)

Minimum total credits required for minor — 21.

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

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 122. BASIC PROGRAMMING — **One credit**

Introduction to computer programming using the BASIC language, the principal high level language of microcomputers and processors. A maximum of three credits will be allowed for this course and Mth 102. Not open to students who have prior credit in CS 123. Fee: $30. (same as Egr 241)

Offered every summer.

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 semester.

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 245.

Offered every spring semester.

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 every other fall.

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 semester.

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 semester.

CS 325. DATA BASE 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 semester.

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 semester.

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 every fall semester.

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; Professor Emeritus Hammer; Professors Darte, Fahmy; Associate Professor Johnson; Assistant Professors B. Bellucci, Placek, Polacheck.

The Education Department offers programs leading to teacher certification in art, biology, chemistry, communication, 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.

Secondary school teaching certification candidates must complete their teaching major and 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; two science sequences; 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 83 (art) or pages 141-143 (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.

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 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 102.

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 transcripted 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.

History and Political Science

Professor Berlatsky, chairman; Professors Emeriti Kaslas, Leach; Professors Cox, Driscoll, Hartdagen, Rodechko, Shao; Assistant Professors Behuniak-Long, Berg, Meyers, Tuhy; Adjunct Professor Thomas.

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.

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. Information about career possibilities may be obtained in the History Department office (Room 20, Franklin Hall).

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

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.

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

HST 315. ANCIENT HISTORY: NEAR EAST **Three credits**
The birth of civilization in Mesopotamia and Egypt. Babylonian, Persian, and Judaic backgrounds of western civilization. Attention will also be paid to certain lesser civilizations, with emphasis on the role of archaeology.

HST 316. ANCIENT HISTORY: CLASSICAL WORLD **Three credits**
The direct Greco-Roman antecedents for western civilization will be developed, beginning with Mycenae, through Homer, the Golden Age, Hellenistic world, and the rise and fall of Rome. Emphasis will be on the cultural contributions of each group and period to our present world.

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.

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.

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.

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.

HST 326. URBAN HISTORY **Three credits**
A survey of the origins and development of the modern city. Primary emphasis is given to the evolution of the city in America and its influence on American society and culture. Reference is made to the cities of modern Europe and Asia primarily for comparative purposes.

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.

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

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.

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.

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.

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.

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.

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.

HST 351. MEDIEVAL EUROPE **Three credits**
Consideration will be given to political, economic, and cultural institutions and activities, and intellectual development in Medieval Europe to the early Renaissance.

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.

HST 353. AGE OF ABSOLUTISM **Three credits**
The political, social, economic, intellectual, and cultural development of Europe and dependencies from 1600 to about 1750.

HST 354. THE ERA OF THE FRENCH REVOLUTION AND NAPOLEON **Three credits**
A study of the structure of the Ancien Regime and an examination of the causes, events, and consequences of the French Revolution culminating in the Napoleonic Empire.

HST 355. EUROPE IN THE NINETEENTH CENTURY **Three credits**
A study of the political, social, and cultural development of Europe from the Congress of Vienna to World War I.

HST 356. EUROPE 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.

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.

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.

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.

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.

HST 367. HISTORY OF MODERN INDIA **Three credits**
A study of the political, social, and economic development of the Indian sub-continent since 1500.

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.

HST 382. HISTORY OF LATIN AMERICA **Three credits**
This course is a survey of the development of Latin American political, cultural, and economic life, from ancient times, through the Iberic colonization and period of independence, to the tumultuous era of the mid and late 20th century.

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.

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.

Political Science

The Department offers a major and minor in Political Science. There is also a possibility to take the major with a concentration in Public Administration and Policy. Certain areas of political science and history are a significant part of the International Studies major. For a description of this program, see listing in the section under Special Degree Programs. Students interested in Pre-Law should see page 116.

Requirements for a major in Political Science:

Total hours for graduation: 120, including 45-65 hours of core requirements.

Total hours in Political Science: 33, including the six hours in the introductory courses.

Required courses: PS 102, 105, 238.

Distribution requirements: Three credit hours (one course) in each of the five substantive fields of Political Science: American Politics: Public Administration; Comparative and International Politics; Political Theory and Law, exclusive of PS 238; and Public Policy. Total — 15 credits.

Electives in Political Science: 9 credits.

In fulfilling the distribution requirements and electives, no more than three credit hours may be double counted in the core or in a minor in another discipline.

Cognate courses required: None, but students should consult with their advisers concerning courses strongly recommended for their areas of interest. Students planning on graduate work should take Statistics, should learn the uses of the computer, and, in some cases, a foreign language. Students interested in law should take Accounting.

Requirements for a major in Political Science with a Concentration in Public Administration and Policy:

Total hours for graduation: 120, including 45-65 hours of core requirements.

Total hours in Political Science: 39, including the six hours in the introductory courses.

Required courses: PS 102, 105, 218, 316, 318, 353, 354, and a Topics in Public Policy. Total — 24 hours.

Distribution Requirements: Three credit hours (one course) must be selected from each of the following two groupings. An additional three credit hours (one course) must be selected from either grouping:

(1) PS 205, 310, 311, 314.

(2) PS 307, 331, 356, Ec 236.

Total — 9 credit hours.

Electives: 6 credit hours in Political Science, which must **not** be in the above groupings. PS 394 (Practicum) is strongly recommended.

Cognate courses required: Statistics and Ec 101.

Requirements for a minor in Political Science: 21 credit hours. PS 102, 105, and 15 hours from courses above the 100 level. Of these 15 credits, at least 6, but no more than 9, must be selected from one of the sub-fields of Political Science (American Politics; Public Administration; Comparative and International Politics; Political Theory and Law; and Public Policy).

I. Introductory Courses

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.

PS 105. MODERN POLITICAL SYSTEMS **Three credits**

An introductory survey of the major political systems of the world, the problems and the prospects of the developing countries, and the relations between the nations of the world.

II. American Politics

PS 203. THE AMERICAN PARTY SYSTEM **Three credits**

Analysis of the history, process, and changing dynamics of the political party system in the U.S. Focus is on the Republican and Democratic parties and prospects for realignment, with attention to the growing significance of "independents."

Prerequisite: PS 102 or consent of instructor.

Offered in alternate years.

PS 205. AMERICAN STATE AND LOCAL POLITICS IN THE FEDERAL SYSTEM **Three credits**

Analysis of the structures and processes of state and local governments within the constitutional framework of a changing Federal system. Emphasis is on institutional and political processes and functions, and on interrelationships between local, state, and Federal policies and agencies.

Prerequisite: PS 102 or consent of instructor.

Offered in alternate years.

PS 303. POLITICAL BEHAVIOR **Three credits**

Macro-analysis of public opinion, political socialization and participation, and voting behavior.

Prerequisite: PS 102 and PS 238 or Mth 150, or consent of instructor.

Offered in alternate years.

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.

III. Public Administration

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.

EC 236. PUBLIC FINANCE **Three credits**

See description under Economics.

PS 310. PROBLEMS IN METROPOLITAN AREAS **Three credits**
An examination of the politics and processes of contemporary urban government with special emphasis on the complex problems presented by the changing distribution of population in metropolitan areas.
Prerequisite: PS 102 or consent of instructor.
Offered in alternate years.

PS 311. PROBLEMS IN LOCAL GOVERNMENT AND ADMINISTRATION **Three credits**
Identification of the major problems in administration of local government. Study of the accepted methods, skills, and techniques of management of local functions and services. Emphasis on practical applications.
Prerequisite: PS 102 or consent of instructor.
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, or 205, or 310 or 311.
Offered in alternate years.

PS 316. GOVERNMENT BUDGETING **Three credits**
An examination of the political and administrative aspects of the governmental 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.

IV. Comparative and International Politics

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 Britian, France, West Germany, and Japan with some attention to the Scandanavian 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.

PS 327. INTERNATIONAL RELATIONS **Three credits**
Survey of essential elements in international relations, such as national power, imperialism, balance of power, collective security, international law, international organization, and problems of peace.
Prerequisite: PS 105 or consent of instructor.
Offered in alternate years.

HST 328. U.S. FOREIGN POLICY **Three credits**
See description under History.

V. Political Theory and Law

PHL 230. SOCIAL AND POLITICAL PHILOSOPHY **Three credits**
See description under Philosophy.

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 331. CONSTITUTIONAL LAW I **Three credits**
Study of the 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.

VI. Public Policy

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 POLICY-MAKING **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 356. JUDICIAL PROCESS AND POLICY **Three credits**

Analysis of the major role played by the judicial branch in the overall American public policy-making process. Combination of lecture and discussion, presentations determined by instructor and students.

Prerequisite: PS 102 or consent of instructor.

Offered in alternate years.

PS 198/298/398. TOPICS IN PUBLIC POLICY **Variable credit**

See description under Topics in Area VII.

VII. Special Studies

PS 394. PRACTICUM **Three to six credits**

Internship or similar experience in an 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 **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., will be offered also.

Prerequisite: Permission of department, criterion depending on topic.

Pre-Law

Students who wish to enter the legal profession are not required to follow a carefully structured curriculum. Rather, the successful pursuit of the majors listed below, in addition to a number of relevant elective courses, will adequately prepare a student for law school. Notice the stress placed on History and Political Science, Economics and Business (especially Accounting), Philosophy (Logic) and Speech (Argumentation and Debate, etc.). Further information concerning law school, the legal profession, or pre-law study may be obtained from Professor Berlatsky, Department of History and Political Science.

Recommended Curriculum for Students Interested in Law School

Students interested in law school should take the following courses in the core requirements for the B.A. degree:

Eng 101-102	Composition	6
Eng 151-152	Western World Literature	6
Phl 101, 152	Intro. to Philosophy, Intro. to Logic	6
Hst 101-102	World Civilization	6
Ec 101-102	Intro. to Economics	6
PS 102, 105	Intro. to Political Science	6
Mth 150 and CS course	Elementary Statistics and Computer Programming	6

Plus the additional core requirements specified on page 80 of this Bulletin.

Total Hours in the Core	45-65

Additional Elective courses recommended for Pre-Law:

Spc 101	Fundamentals of Speech	3
Spc 202 *or* 205	Business and Professional Speaking *or* Argumentation and Debate	3
Hst 207-208	American History	6
PS 331-332	Constitutional Law	6
Acc 101-102	Elementary Accounting	6
PS 235 *or* Phl 230	American Political Thought *or* Social and Political Philosophy	3
Eng 201	Advanced Composition	4
Acc 111-112 *or*	Accounting if major interest is corporate law;	6
Soc—Ant 101	Sociology — Anthropology if major interest is social service law	
Additional Advanced Course in English, Philosophy, History, Political Science, Economics field — **not** selected as major		3
Total Distributional Credits		39

During the sophomore year, students should select a discipline major. Recommended majors and the number of hours in addition to courses in that field already above are as follows:

English (Literature concentration)	24
English (Writing concentration)	21
Economics	24
History	18
Philosophy	21
Political Science	18
Sociology	24
Electives — depending on choice of science and of major	3-12
Total	120 or 121

(A student may select a different major, for example, one of the Sciences or Business Administration, but this would require completion of a considerable number of credit hours beyond 121.)

Language and Literature

Professor Karpinich, chairman; Professors Emeritae Lord, Marban; Professors Fiester, Gutin, Rizzo; Associate Professors R. Heaman, Terry; Assistant Professor Martin; Instructor Evans.

Total minimum credits required for B.A. degree — 120.

The Department of Language and Literature offers a variety of programs for students interested in language and the language arts: they may major in English, in French, in German, in Spanish, in Communication Studies, or in Theater Arts. 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.

English

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 the 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.

Minor. 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.

Certification. Students may be certified as public school teachers in English or in Communication with concentrations in literature, writing, speech, or theater arts. 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 advisers.

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.

Modern Foreign Languages

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

A major in any of the modern foreign languages 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, in Spanish, 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 a foreign language may elect a five-year program of study leading to a Master of Business Administration. 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 any of the foreign languages shall consist of eighteen credit hours in one language beyond 102.

French

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 Moliére. May be repeated for credit.
Prerequisite: Fr 301-302 or permission of instructor.

German

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.

Spanish

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.

Russian

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.

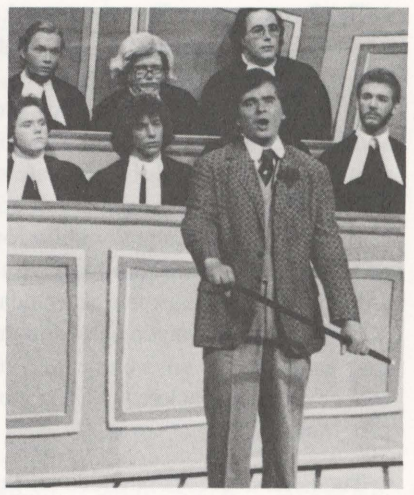
Other Languages

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.

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.

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.



Mathematics

Professor Sours, chairman; Professor Emeritus T. Richards; Professors Merrill, Tillman, Wong; Associate Professors Berard, DeCosmo, B. Earl, Koch, Parker, Salsburg; Assistant Professors C. Anderson, S. Anderson, Simmons; Instructors Kenney, Plavchak; Adjunct Professor Mantione.

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. A combined five-year B.S.-M.S. degree program in mathematics is offered (see Special Programs, page 225). Descriptions of graduate programs are contained 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 98).

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 graduate 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 allows for greater concentration of physical and engineering science electives. Both B.A. and B.S. programs are available in all three tracks.

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.

Common requirements for B.A. and B.S. degrees: **credit hours**

(1) The general core requirements listed on pages 80-81, except the science/mathematics area which is specified below. 33

(2) Mth 111, 112, 202, 212, 214, 311, 331, and 351 29

(3) CS 123 or 124 3

Additional requirements: **credit hours**

(4A) Any three courses, including a two-semester sequence, in Biology, Chemistry, Earth and Environmental Sciences, or Physics. 9

(4S) Phy 201 and a two-semester sequence in Biology, Chemistry, Earth and Environmental Sciences, or Physics. 11

or

Phy 201-202 and at least three credits in Biology, Chemistry, Earth and Environmental Sciences, Physics, Phl 350 or Phl 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.

Other major and/or education requirements	**AM**	**GM**	**TC**
Mth 211	4	4	
Mth 203 and 343			6
Ed 101, 102, 201, 202, 371, and 380			25
Mth 342, 413, or 432		3	
Mth 262, 314, 352, 361, 362, or 364	6	3	3
Any mathematics or computer science course numbered above 200	3(B.A.) 6(B.S.)	3(B.A.) 6(B.S.)	0(B.A.) 6(B.S.)
(5) Subtotal of other major and/or educational requirements	13(B.A.) 16(B.S.)	13(B.A.) 16(B.S.)	34(B.A.) 40(B.S.)
(6) Free electives (must include Eng 101-102, unless exempted)	38(B.A.) 35(B.S.)	38(B.A.) 35(B.S.)	17(B.A.) 11(B.S.)

Minimum total credit requirements for mathematics major:

B.A. (1)+(2)+(3)+(4A)+(5)+(6) 125

B.S. (1)+(2)+(3)+(4S)+(5)+(6) 127

The department recommends the following sequence of courses for mathematics majors in the freshman and sophomore years:

FIRST SEMESTER		SECOND SEMESTER	
Mth 111	4	Mth 112	4
CS 123 or CS 124	3	Eng 102	3
Eng 101	3	Electives*	9
Electives*	6	PE 100	0
PE 100	0		
	16		16
THIRD SEMESTER		**FOURTH SEMESTER**	
Mth 202	3	Mth 212	4
Mth 211	4	Mth 214	3
Phy 201 (B.S.)	3-4	Science	3-4
or other science		Electives	6
Electives	6	PE 100	0
PE 100	0		
	16-17		16-17

*Students seeking teacher certification should elect Psychology 101-102.

Minor in Mathematics

Total credits required for minor — 22.

Required Courses:	**credit hours**
Mth 111-112; 202; 211 or 212; 311 or 331	19
Electives:	
Any 300-level course in mathematics	3

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.

Total credits required for minor — 23.

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	3

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 every 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 every 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 spring.

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 LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS **Four credits**

Topics include: Matrices; determinants; vector spaces; linear transformations; eigenvalues and eigenvectors; first order, linear higher order, and systems of differential equations.

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**

Vector spaces, linear transformations, matrices, determinants, bilinear and quadratic forms, matrix polynomials.

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 every 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 every 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 every other fall.

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 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.

Music

Assistant Professor Campbell, chairman; Professor Emerita A. Liva; Professors Chapline, Gasbarro; Associate Professors Garber, Santos; Assistant Professors Newson, Reiprich; Adjunct Professors Congleton, Hannigan, Harrington, Heinze, E. Liva, Metzger, Nowak, Sanderson, Teubner.

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.

Besides training in music, students are expected to participate in the rich intellectual life of the College and to develop further dimensions of the liberally-educated person. The expansion of comprehension and perception beyond merely a mechanical craft is a primary objective of the department. Its goal is to prepare musicians for professional careers in teaching, performing, and non-traditional disciplines through broad yet intensive studies. By doing so, their potentialities will be developed to the highest possible degree of excellence in their respective fields while expanding their intellectual and creative capacities beyond the dimension of musical art.

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. The extent of intellectual interests outside of the domain of music will vary with the background and temperament of each student. The cross-fertilization of their discipline through contact with common problems in other liberal arts is extremely fruitful. Its intellectual-creative enhancement is self-evident.

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	3	Eng 102	3
Foreign Language***	3	Foreign Language***	3
PE 100	0	PE 100	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	0	PE 100	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	3	Psy 102	3
Core	3	Core	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
Electives	3	Electives	4
Core	6	Core	6
	15		16

*Public performance required.

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	3	Eng 102	3
Core	3	Core	3
PE 100	0	PE 100	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 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	3	Psy 102	3
PE 100	0	PE 100	0
	15		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	6	Core	6
	16		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
Electives***	6	Electives***	6
Core	3	Core	3
	15		15

*Mus 131, if applied string or music education major (string concentration).
**Public performance required.
***Six elective credits must be non-music.

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	3	Eng 102	3
Core	3	Core	3
PE 100	0	PE 100	0
	16		18

*Either one may be chosen.

THIRD SEMESTER

Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Minor)*	0
Mus 125 Ensemble (Major)	0
Mus 200 Applied Performance	2
Mus 203 Comp. Musicianship III	2
Mus 205 Harmonic Foundations III	3
Mus 207 Analysis of Music III	3
Mus 212 Keyboard Accompanying	2
Psy 101	3
PE 100	0
	15

*Either one may be chosen.

FOURTH SEMESTER

Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Minor)*	1
Mus 125 Ensemble (Major)	1
Mus 200 Applied Performance	2
Mus 204 Comp. Musicianship IV	2
Mus 206 Harmonic Foundations IV	3
Mus 208 Analysis of Music IV	3
Mus 213 Accompanying Practicum	1
Psy 102	3
PE 100	0
	16

FIFTH SEMESTER

Mus 000 Recital Attendance	0
Mus 125 Ensemble	0
Mus 128 Chamber Performance*	1
Mus 214 Accompanying Practicum	1
Mus 260 Conducting I	2
Mus 300 Applied Performance	2
Mus 305 Composition & Orchestration	2
Mus 309 Pedagogy (Piano)	3
Core	6
	17

*Public performance required.

SIXTH SEMESTER

Mus 000 Recital Attendance	0
Mus 125 Ensemble	1
Mus 128 Chamber Performance*	1
Mus 215 Accompanying Practicum	1
Mus 261 or 262 Conducting II	2
Mus 300 Applied Performance	2
Mus 301 Recital	0
Mus 306 20th Century Theory	2
Core	6
	15

SEVENTH SEMESTER

Mus 000 Recital Attendance	0
Mus 125 Ensemble	0
Mus 128 Chamber Performance	1
Mus 400 Applied Performance	2
Mus 409 Keyboard Literature	3
Core	3
Electives**	6
	15

*Public performance required.
**Six elective credits must be non-music.

EIGHTH SEMESTER

Mus 000 Recital Attendance	0
Mus 125 Ensemble	1
Mus 400 Applied Performance	2
Mus 401 Recital	0
Mus 410 Chamber Literature	3
Core	3
Electives**	6
	15

Bachelor of Music — Music Education

Vocal Track (with certification)

Degree completed with 136 semester credits.

FIRST SEMESTER

Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0
Mus 100 Applied Performance (Major)	2
Mus 103 Comp. Musicianship I	2
Mus 105 Harmonic Foundations I	3
Mus 107 Analysis of Music I	3
Mus 121 or 131 Ensemble (Minor)*	0
Mus 125 Ensemble (Major)	0
Eng 101	3
Core	3
PE 100	0
	16

*Either one may be chosen.

SECOND SEMESTER

Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0
Mus 100 Applied Performance (Major)	2
Mus 104 Comp. Musicianship II	2
Mus 106 Harmonic Foundations II	3
Mus 108 Analysis of Music II	3
Mus 121 or 131 Ensemble (Minor)*	1
Mus 125 Ensemble (Major)	1
Eng 102	3
Core	3
PE 100	0
	18

THIRD SEMESTER

Mus 000 Recital Attendance	0
Mus 011 Functional Guitar*	0
Mus 121 or 131 Ensemble (Minor)**	0
Mus 125 Ensemble (Major)	0
Mus 200 Applied Performance (Major)	1
Mus 200 Applied Performance (Minor)	1
Mus 203 Comp. Musicianship III	2
Mus 205 Harmonic Foundations III	3
Mus 207 Analysis of Music III	3
Mus 258 Vocal Methods	2
Mus 260 Conducting I	2
Psy 101	3
PE 100	0
	17

*If choral, elementary, or general music concentration.
**Either one may be chosen.

FOURTH SEMESTER

Mus 000 Recital Attendance	0
Mus 011 Functional Guitar*	0
Mus 121 or 131 Ensemble (Minor)**	1
Mus 125 Ensemble (Major)	1
Mus 200 Applied Performance (Major)	1
Mus 200 Applied Performance (Minor)	1
Mus 204 Comp. Musicianship IV	2
Mus 206 Harmonic Foundations IV	3
Mus 208 Analysis of Music IV	3
Mus 259 Voice Diction	2
Psy 102	3
PE 100	0
	17

FIFTH SEMESTER

Mus 000 Recital Attendance	0
Mus 125 Ensemble (Major)	0
Mus 250 Teaching of Elementary Music	2
Mus 254-257 Instrumental Methods*	2
Mus 261 Conducting II	2
Mus 300 Applied Performance (Major)	1
Mus 300 Applied Performance (Minor)	1
Ed 201 Introduction to Education	3
Core	6
	17

*Student elects two of four instrumental methods courses.

SIXTH SEMESTER

Mus 000 Recital Attendance	0
Mus 125 Ensemble (Major)	1
Mus 252 Teaching of General Music	2
Mus 263 Adv. Choral Conducting III	2
Mus 300 Applied Performance (Major)	1
Mus 300 Applied Performance (Minor)	1
Ed 202 Educational Psychology	3
Core	6
	16

SEVENTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 125 Ensemble (Major)	0
Mus 351 Teaching of Sec. Choral Music**	2
Mus 352 Teaching of Sec. Instr. Music	2
Mus 400 Applied Performance (Major)	2
Ed 382 Intern Teaching	11
	17

EIGHTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 125 Ensemble (Major)	1
Mus 254-257 Instrumental Methods*	2
Mus 400 Applied Performance (Major)	2
Mus 401 Recital	0
Ed 381 Professional Practicum***	4
Core	9
	18

*Student elects two of four instrumental methods courses.
**Accelerated courses.
***Credited from seventh semester.

Bachelor of Music — Music Education

Instrumental Track (with certification)

Degree completed with 136 semester credits.

FIRST SEMESTER	
Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0
Mus 100 Applied Performance (Major)	2
Mus 103 Comp. Musicianship I	2
Mus 105 Harmonic Foundations I	3
Mus 107 Analysis of Music I	3
Mus 121 or 131 Ensemble (Major)*	0
Mus 125 Ensemble (Minor)	0
Eng 101	3
Core	3
PE 100	0
	16

SECOND SEMESTER	
Mus 000 Recital Attendance	0
Mus 010 Functional Piano	0
Mus 100 Applied Performance (Major)	2
Mus 104 Comp. Musicianship II	2
Mus 106 Harmonic Foundations II	3
Mus 108 Analysis of Music	3
Mus 121 or 131 Ensemble (Major)*	1
Mus 125 Ensemble (Minor)	1
Eng 102	3
Core	3
PE 100	0
	18

THIRD SEMESTER	
Mus 000 Recital Attendance	0
Mus 011 Functional Guitar**	0
Mus 121 or 131 Ensemble (Major)*	0
Mus 125 Ensemble (Minor)	0
Mus 200 Applied Performance (Major)	1
Mus 200 Applied Performance (Minor)	1
Mus 203 Comp. Musicianship III	2
Mus 205 Harmonic Foundations III	3
Mus 207 Analysis of Music III	3
Mus 254 Instrumental Methods	2
Mus 260 Conducting I	2
Psy 101	3
PE 100	0
	17

FOURTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 011 Functional Guitar**	0
Mus 121 or 131 Ensemble (Major)*	1
Mus 125 Ensemble (Minor)	1
Mus 200 Applied Performance (Major)	1
Mus 200 Applied Performance (Minor)	1
Mus 204 Comp. Musicianship IV	2
Mus 206 Harmonic Foundations IV	3
Mus 208 Analysis of Music IV	3
Mus 255 Instrumental Methods	2
Psy 102	3
PE 100	0
	17

FIFTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	0
Mus 250 Teaching of Elementary Music	2
Mus 256 Instrumental Methods	2
Mus 261 or 262 Conducting II	2
Mus 300 Applied Performance (Major)	1
Mus 300 Applied Performance (Minor)	1
Ed 201 Introduction to Education	3
Core	6
	17

SIXTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	1
Mus 257 Instrumental Methods	2
Mus 264 Adv. Conducting III	2
Mus 300 Applied Performance (Major)	1
Mus 300 Applied Performance (Minor)	1
Ed 202 Educational Psychology	3
Core	6
	16

*Mus 131, if applied string or music education major (string concentration).
**If elementary or general music concentration.

SEVENTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	0
Mus 351 Teaching of Sec. Choral Music**	2
Mus 352 Teaching of Sec. Choral Music**	2
Mus 400 Applied Performance (Major)	2
Ed 382 Intern Teaching	11
	17

EIGHTH SEMESTER	
Mus 000 Recital Attendance	0
Mus 121 or 131 Ensemble (Major)*	1
Mus 252 Teaching of General Music	2
Mus 400 Applied Performance (Major)	2
Mus 401 Recital	0
Ed 381 Professional Practicum***	4
Core	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 101-102.

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 307-315. 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

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

Assistant Professor Kolanowski, acting chairman; Professor Nehring; Associate Professors Druffner, Grabo, Harrison; Assistant Professors Anselmi, Baker, Crowley, Desmond, Fischer, Gloman, Godek, Gunderman, Hamlin, Kolanowski, Nally, Notarianni, O'Toole, Russin, Saueraker, Schreiber, Simons, Steelman, Telban, Zack, Zuraw; Instructor Jezewski; Adjunct Professors Babcock, Kasputis.

Total minimum credits required for B.S. degree with a major in Nursing — 129.

Philosophy of Nursing

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.

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.

Clinical Resources

Written agreements with the cooperating hospitals and agencies in Northeastern Pennsylvania insure clinical facilities for the student's practice, which is concurrent with the classroom theory.

The cooperating hospitals which are utilized include: (1) Community Medical Center, Scranton; (2) Hazleton State Hospital; (3) Hazleton/St. Joseph's Medical Center; (4) Mercy, Wilkes-Barre; (5) Nesbitt Memorial; (6) NPW Medical Center; (7) Scranton State; (8) Veterans Administration Medical Center; (9) Wilkes-Barre General; (10) Mercy Hospital, Scranton.

The community agencies utilized include: (1) Child Development Council; (2) Home Health Services of Luzerne County; (3) Home Call of Northeastern Pennsylvania; (4) Hospice St. John; (5) Maternal Health Services of Northeastern Pennsylvania; (6) Mental Health/Mental Retardation Centers of Luzerne/Wyoming Counties; (7) Northeastern Pennsylvania Health Services; (8) Pennsylvania Department of Health; (9) Rural Health Corporation of Northeastern Pennsylvania clinics; and (10) Visiting Nurses Association and Home Health Maintenance Organization, Scranton.

STUDENTS ARE RESPONSIBLE FOR THEIR OWN TRANSPORTATION TO ASSIGNED CLINICAL AREAS.

Expenses of the Nursing 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 include: uniforms (including scrub clothes at some clinical agencies), student name pins, yearly physical examinations, immunizations, dental and eye examinations, NLN achievement tests, comprehensive test, liability (malpractice) insurance, transportation to assigned clinical areas, and, at the student's request, the College nursing pin upon completion of the program. A price list for the above items may be obtained at the Department of Nursing.

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.

Physical Examination

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 1. This form is in addition to (and separate from) the College health form. Students should read the form carefully and be sure it is completed before returning it. If mailed to the Department, please send registered mail, return receipt requested. Failure to have all examinations completed and documented by August 1 results in a $25 late fee.

Comprehensive Examinations

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.

Advanced Placement by Examination

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 department chairman or her designate to plan their program before acceptance into the Wilkes nursing program can be completed.

Registered nurse students are required to complete Nursing 102 (computer number for three credits of Nursing 201), plus one three-credit nursing elective course in lieu of Nursing 201, Introduction to Nursing (six credits), presented to basic and transfer students.

Students may be admitted for either full-time or part-time study and may challenge, in the proper sequence, twenty-four credits of nursing courses plus nutrition. Upon approval of the petition and acceptance of the fee for each course, the student will receive study materials and directions. Examinations may not be repeated. After the student has successfully completed the examination, credits are recorded on the student's official records.

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 Nurse Examiners may take 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.

Curriculum

The nursing curriculum covers a four-year academic period and totals 129 credits. It includes integrated nursing courses, electives, and the general core requirements.

Satisfactory completion of all courses listed in the freshman year is required and is prerequisite to entering the nursing program. Only with the permission of the chairman of the Nursing Department may changes be made.

In accordance with College policy, students who have completed 36 credit hours must maintain a minimum 2.00 in both their major and cumulative grade point averages. The major G.P.A. is computed on N201, N202, N203, N204, N301, N302, N303, and N305. Nursing electives are not used in computing the department major G.P.A.

Nursing courses are introduced in the sophomore year. Satisfactory clinical performance is an essential component of each nursing course. A grade of 2.00 is required in **all** clinical nursing courses to progress through the program. A student may repeat one nursing course without prejudice. A subsequent failure of any clinical nursing course is deemed sufficient cause for dismissal from the program.

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.

B.S. Degree with a Major in Nursing

FIRST SEMESTER		SECOND SEMESTER	
Bio 115	4	Bio 116	4
Chm 111	4	Chm 130	4
Eng 101	3	Eng 102	3
Psy 101	3	Psy 102	3
Soc 101 or Ant 101	3	Soc 275	3
PE 100	0	Mth competency[1]	0
		PE 100	0
	17		17
THIRD SEMESTER		**FOURTH SEMESTER**	
Bio 113	4	Nsg 202 Nursing Care of the Young Client	8
Nsg 200 Nutrition	3	Core Elective	3
Nsg 201 Intro. to Nursing	6	Mth 150 or Core Elective	3
Core Elective or Mth 150	3	Elective	3
PE 100	0	PE 100	0
	16		17
FIFTH SEMESTER		**SIXTH SEMESTER**	
Nsg 203 Nursing Care of the Adult Client I	8	Nsg 204 Nursing Care of the Adult Client II	8
Core Elective or Mth 150	3	Core Elective or Mth 150	3
Elective	3	Elective	3
	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 Elective	3	Nsg 303 Contemporary Issues in Nursing or Elective	3
Nsg 305 Research in Nursing	3	Core Elective	3
Core Elective	3	Elective	3
	17		17

[1]Math. competency must be obtained during the freshman year. It is 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 102, 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 the young families 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 and their families to maintain optimum wellness and to resolve selected medical and surgical problems. Nursing theory as related to the bio-psychosocial aspects of adult care is correlated with clinical practice in adult care health 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 pharmocologic 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 301. NURSING CARE OF THE OLDER CLIENT **Eight credits**

The nursing process is utilized in the care of the older adult family member. Content reflects the major changes accompanying the aging process, as well as the interactive effects of multiple pathological conditions. 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.

Corequisite: Nsg 301 or Nsg 302.

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: Senior Nursing majors or RN students.

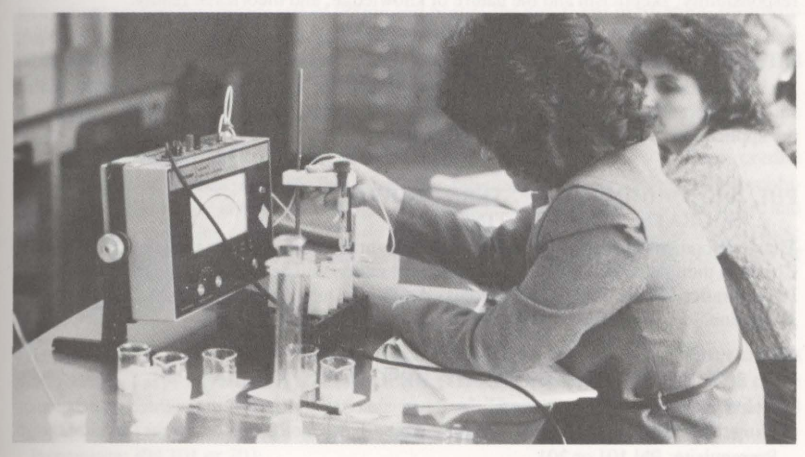
NSG 395-396. INDEPENDENT STUDY **One to three credits**

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.



Philosophy

Associate Professor Henson, chairman; Professor Kay.

Total minimum credits required for B.A. degree — 121.

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 advisers 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).

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. STUDIED 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 an opportunity to participate in a physical activity 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 101-102-201-202 for the PE 100 series.

PE 101. INTERCOLLEGIATE ATHLETICS **No credit**
This course is limited to students participating in intercollegiate athletics, cheerleaders, majorettes, 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 PROBLEMS **Two credits**
A study of present-day health problems. The course undertakes to help students enjoy maximum health and happiness through a better understanding of themselves, their relationships with other people, and their functioning 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. Two hours each week.

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.

Psychology

Associate Professor Charnetski, chairman; Professor Riley; Associate Professor Stetten; Assistant Professor Bohlander; Adjunct Professor Kanner.

Total minimum credits for B.A. degree — 121.

Psy 101-102 are the starting point for the psychology program and must be taken by all psychology majors. There is no substitution for Psy 102.* These two courses do not count toward the 24 credit hours of psychology required of majors. In addition to Psy 101-102 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. Grades earned in all psychology courses are used in computation of major field average.

It is required that the student take at least one course from each of the Interest Areas below.

Interest Area I.
Psy 211-212 Experimental Psychology
Psy 203 Contemporary Psychological Theories
Psy 213 Physiological Psychology
Psy 214 Sensory and Perceptual Processes

Interest Area II.
Psy 221 Developmental Psychology
Psy 232 Human Behavior
Psy 331 Abnormal Psychology
Psy 255 Social Psychology

Interest Area III.
Psy 242 Psychological Tests
Psy 243 Industrial Psychology
Psy 245 Clinical Psychology

Minor in Psychology

Total minimum credit hours required in the minor — 18. Required courses in the minor:

Psy 101-102 (General Psychology)
Psy 215 (Research Design and Analysis)

*Students transferring to the College and who have had a three credit course in General Psychology and three other courses in psychology may, with permission of the chairman of Psychology, be excused from Psy 102.

PSY 101-102. GENERAL PSYCHOLOGY **Three credits each**
An introduction to the field of psychology with emphasis on objectives 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.

PSY 201. ADVANCED GENERAL PSYCHOLOGY **Three credits**
A more detailed study of topics treated only superficially in the introductory course. There will be emphasis on contemporary readings.
Prerequisite: Psy 101-102.

PSY 203. CONTEMPORARY PSYCHOLOGICAL THEORIES **Three credits**
An examination of current theories in psychology, with emphasis upon the major systematic and "miniature" learning theories.
Prerequisite: Psy 101-102.

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 101-102.

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 101-102; 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 101-102.

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 101-102.

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 101-102.

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 101-102.

PSY 243. INDUSTRIAL PSYCHOLOGY **Three credits**
A survey of the applied areas of personnel, organizational, human factors, and consumer psychology.
Prerequisite: Psy 101-102.

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 101-102, 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 101-102.

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 101-102; 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.

Sociology and Anthropology

Assistant Professor Natzke, chairman; Associate Professor Brown; Assistant Professors Garr, Tutwiler; Adjunct Professor Tomkiewicz.

Total minimum credits required for B.A. degree — 121.

The student is responsible for meeting the General Core Requirements. Soc 101 and Ant 101 are required for the major in sociology, but are not accepted as credit hours toward the major. They may, however, be used to fulfill the Core Requirements. Students who intend to major or minor in sociology are requested to consult with the department chairman, who will assign them to an adviser. Additional requirements pertaining to the departmental programs are specified below.

Sociology Major

A major in sociology consists of twenty-four hours, and shall include Soc 255, 370, 380. It is strongly recommended that Mth 150 be taken if the student is planning graduate study. Phl 230 and/or 350 may be taken for credit toward the major.

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 105.

Anthropology

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.

Sociology

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 aberation. 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 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.

Speech, Communications, and Theater Arts

Associate Professor Tucker, chairman; Professor Emeritus Holm; Associate Professors Groh, Kinney; Assistant Professors Elmes, O'Neill, Schulman; Endowed Chair, Bigler; Engineer, Brigido.

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 cocurricular activities that our graduates will be able to apply their abilities to everyday 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 following curriculum also affords the student ample room to explore other disciplines.

Concentrations

There are five areas in which a student may concentrate. All majors must pick a concentration and fulfill the requirements of that concentration. Please note these requirements vary from one concentration to another.

Requirements common to all concentrations

A. College Requirements:

Total minimum credits required for B.A. degree — 120.
All majors, regardless of concentration, must fulfill the College's core requirements. It is suggested these courses be chosen in conjunction with a departmental adviser.

B. Departmental Requirements:

All majors must fulfill specific departmental requirements. The courses chosen 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 322. Communication Research Methods —
(not required of Theater Arts concentrators)
Sct 397. Senior Seminar

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

Areas of concentration

A. **Rhetoric and Public Communication** — 36 credits

This concentration introduces students to the history, principles, and practices of traditional rhetoric. The rhetoric/public communication concentration derives its theoretical foundation in the works of classical rhetoric, and, therefore, is in line with Wilkes College's commitment to the traditional liberal arts. It is a performance-centered concentration, in which students research, write, deliver, and analyze public discourse. Each course emphasizes adaption of messages to diverse audiences, usually found in formal, deliberative settings. Such a concentration is designed to prepare students for graduate school in rhetoric and public address, and for careers in such fields as political communication, broadcasting, and sales.

(1) Students will take 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

(2) **Writing Requirement.** Normally, rhetoric/public communication students will satisfy the department's writing requirement by taking English 201, Advanced Composition, and either Sct 260, Basic Newswriting or Sct 225, Media Criticism.

(3) **Political Communication Track.** Students who are interested in careers in political communication must satisfy the fifteen credit requirement in the concentration, complete the six credit writing requirement, and take three political science courses at the 200-level or above. The actual courses will be selected in consultation with the adviser.

B. **Interpersonal and Organizational Communication** — 36 credits

This concentration introduces students to the theory, skills, and application of face-to-face communication in interpersonal, small group, organizational, and public settings. The theoretical foundation in this area 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. Such a concentration is designed to prepare students for careers in "Applied Communications" such as in public relations, corporate communication, health communication, and human resource development and training.

(1) Students will take 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

(2) **Writing Requirement.** The six credit writing requirement will normally be satisfied by

Sct 260. Basic Newswriting, and either
Eng 201. Advanced Composition **or**
Eng 202. Technical Writing

(3) **Public Relations Track.** The Public Relations Society of America has developed guidelines for undergraduate curricula in public relations. The following courses were selected to conform to PRSA guidelines. Students interested in public relations careers will take:

Sct 202. Interpersonal Communication
Sct 203. Small Group Communication
Sct 206. Business and Professional Speaking
Sct 252. Internship or Co-op in Public Relations
Sct 260. Basic Newswriting
Sct 302. Public Relations
Sct 303. Organizational Communication
Eng 201. Advanced Composition **or**
Eng 202. Technical Writing
Art/Sct 254. Publication Design **or**
BA 216. Advertising

C. **Concentration in Telecommunications** — 39 credits

This concentration introduces students to the history, economics, regulation, and function 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/visual media.

(1) All concentrators must take Sct 220, Introduction to Telecommunications.

(2) Concentrators will take 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

(3) **Writing Requirement.** Normally, students with this concentration will satisfy the department's writing requirement by taking either Sct 225, Media Criticism or Sct 260, Basic Newswriting; and English 201, Advanced Composition.

D. **Journalism** — 36 credits

The concentration in Journalism 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.

(1) Concentrators must take 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

(2) **Writing Requirement.** The writing requirement for this concentration will be satisfied by

Sct 260. Basic Newswriting and
Eng 201. Advanced Composition

E. **Theater Arts** — 45 credits

The Department of Speech, Communications, and Theater Arts offers a major in Theater Arts for students interested in theater and in the relationship between theater and other fields of human communication.

Students who major in Theater Arts, that is, choose a concentration in Theater Arts within SCT, are trained in theater practice, dramatic literature, and communication skills. Both through their own theatrical pursuits and through the crit-

ical 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. The curriculum in Theater Arts, augmented by the cooperative effort with King's College, intends to prepare students for graduate school in theater, for work in regional and professional theater, for teaching theater in elementary and secondary schools, and for careers in communications and the arts. Student participation in departmental productions and in approved theater internships is, in addition to the curriculum in Theater Arts, essential for degree preparation.

(1) **Core.** Students will adhere to the College core requirements. They are strongly advised to take a foreign language as part of the core and to fulfill the fine arts requirement outside of Theater Arts. Theater Arts students are required to take English 151-152 in the sophomore year; this will partially fulfill the humanities core.

(2) **Literature/Criticism/History.** In addition to English 151-152, Theater Arts students are required to take all the following courses:

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

(3) **Production/Performance.** All Theater Arts students must take the following courses as well:

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 I

(4) **Electives.** Students must complete an additional six credits in SCT. Students interested in performance should take advanced performance courses; students interested in technical theater should take advanced technical courses; students applying for secondary school certification must take Sct 348 and one other course; all students are encouraged to take Sct 252 (Internship), although only three credits of the internship will help fulfill the departmental requirements. Applicable Sct courses are: 144B, 205, 242, 243, 244, 245, 346, 347, 348, 398.

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, newswriting, 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. THEATRE 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. THEATRE 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.

The School of Business and Economics

Theodore Engel, Dean

The School of Business and Economics offers a variety of undergraduate programs leading to a B.S. or B.A. in Accounting, Business Administration, and 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 and Master of Health Service Administration.

Accounting

Associate Professor Broadt; Assistant Professors C. Chisarick, Cordora, Croop, B. Tucker.

Total minimum credits required for B.S. degree with a major in Accounting — 129.

The Accounting Minor

Upon completion of six credit-hours of prerequisites (Acc 101-102), an additional eighteen credits would be required. The minor program would be composed of Acc 111-112, and twelve credits in accounting.

Major in Accounting

FIRST SEMESTER		SECOND SEMESTER	
Acc 101	3	Acc 102	3
BA 101	3	CS 115	3
Eng 101	3	Eng 102	3
Core Electives*	6	Core Electives	6
PE 100	0	PE 100	0
	15		15
THIRD SEMESTER		**FOURTH SEMESTER**	
Acc 111	3	Acc 112	3
BA 231	3	BA 232	3
Ec 101	3	Ec 102	3
Core Electives	6	Core Electives	6
Spc 101	3	PE 100	0
PE 100	0		
	18		15

*Mth 101 and 102 are required of all accounting majors.

FIFTH SEMESTER		SIXTH SEMESTER	
Acc 201	3	Acc 204	3
Acc 241	3	Acc 242	3
BA 209	3	Ec 232	3
Ec 231	3	Elective[1]	3
Core Electives	6	Core Electives	6
	18		18
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
Acc 221	3	Acc 252	3
Acc 231	3	BA 226	3
BA 225	3	Electives[1]	6
BA 251	3		12
Ec 201	3		
Elective[1]	3		
	18		

[1]Students intending to sit for the New York State C.P.A. examinations should elect subjects in the humanities. All students should choose electives from outside the major field.

ACC 101. ELEMENTARY ACCOUNTING I **Three credits**
Introduction and development of the accounting cycle; problems of classification and interpretation of financial data; techniques of recording; preparation of financial data; preparation of financial statements. Fee: $20.

ACC 102. ELEMENTARY ACCOUNTING II **Three credits**
Introduction of basic accounting theory; accounting for payrolls, partnerships, corporations, investments, and long-term liabilities; funds flow analysis and financial statement analysis. Fee: $20.
Prerequisite: Acc 101.

ACC 111. 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 102.

ACC 112. 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 102.

ACC 201. 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 102.

ACC 204. MANAGERIAL ACCOUNTING **Three credits**
Uses of accounting data in planning and controlling business activities. Includes problem areas in accountability, cost and profit analysis, pricing decisions, capital investment problems, and quantitative techniques. The tax consequences of business decisions are discussed.
Prerequisite: Acc 102.

ACC 221. TAXES I — **Three credits**

The preparation of Federal income tax returns for individuals based on current law, regulations, and court decisions; problems of inclusion and exclusion from income; gains and losses from sales and exchanges; allowable deductions.

Prerequisite: Acc 112, or approval of instructor.

ACC 222. TAXES II — **Three credits**

Tax accounting for corporations, partnerships, and fiduciaries including corporate organizations, 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 112, or approval of instructor.

ACC 241. ADVANCED ACCOUNTING I — **Three credits**

Introduction to accounting for business combinations; a detailed analysis of the problems of consolidations; special procedures and problems of home office and branch relationships; and accounting for foreign operations.

Prerequisite: Acc 111 and 112.

ACC 242. ADVANCED ACCOUNTING II — **Three credits**

A comprehensive review of partnerships; analysis of the procedure in accounting for governmental units, nonprofit organizations, estates and trusts, and bankruptcies.

Prerequisite: Acc 111 and 112.

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.

NOTE: Accounting courses should be taken in sequence.

Business Administration

Professor Farrar; Associate Professor Engel, Gera; Assistant Professors Cordora, Gurdin, Lewis; Adjunct Professor Chmiola.

Total minimum credits required for B.S. degree with a major in Business Administration — 126.

Major in Business Administration

FIRST SEMESTER		SECOND SEMESTER	
Acc 101	3	Acc 102	3
Eng 101	3	Eng 102	3
Core Electives	9	Sct 101	3
PE 100	0	Core Electives	6
	15	PE 100	0
			15
THIRD SEMESTER		**FOURTH SEMESTER**	
BA 231	3	BA 232	3
Ec 101	3	Ec 102	3
Mth 101*	3	Mth 102*	3
Core Electives	6	Core Electives	6
PE 100	0	PE 100	0
	15	CS 115, 123, or 124	3
			18
FIFTH SEMESTER		**SIXTH SEMESTER**	
BA 209	3	BA 222	3
BA 251	3	BA 252 or 254	3
Ec 201	3	Ec 232	3
Ec 231	3	Core Elective	3
Core Elective	3	Elective	3
Elective	3		15
	18		
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
BA 225	3	BA and Ec electives	12
BA and Ec electives	6	Elective	3
Electives	6		15
	15		

*Student enrolls in higher mathematics sequence if similar course work was taken in high school.

Students who major in business administration will select their electives from the following. At least six courses in one of these groups are required of students concentrating in this field.

BANKING AND FINANCE

Acc 111 — Intermediate Accounting I
Acc 112 — Intermediate Accounting II
BA 220 — Real Estate
BA 226 — Investments
BA 240 — Property Insurance
BA 241 — Life Insurance
CS 115 — Survey of Computers and Data Processing
CS 124 — COBOL Programming
CS 224 — Advanced COBOL and File Management
Ec 224 — Economic Development
Ec 225 — International Trade
Ec 226 — International Investment and Finance
Ec 236 — Public Finance
Ec 241 — Microeconomics I
Ec 251 — Macroeconomics I
Ec 252 — Macroeconomics II
Mth 105 — Introductory Calculus I
Mth 106 — Introductory Calculus II

ECONOMICS

BA 212 — Government and Business
BA 217 — Logistics and Distribution Management
CS 115 — Survey of Computers and Data Processing
CS 123 — FORTRAN Programming
CS 223 — Advanced Programming — FORTRAN
CS 224 — Advanced COBOL and File Management
Ec 222 — American Labor Movement
Ec 223 — Collective Bargaining
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 America
Ec 229 — Comparative Economic Systems
Ec 230 — Business Cycles
Ec 236 — Public Finance
Ec 241 — Microeconomics I
Ec 242 — Microeconomics II
Ec 245 — Consumer Economics
Ec 251 — Macroeconomics I
Ec 252 — Macroeconomics II
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
Acc 204 — Managerial Accounting
BA 217 — Logistics and Distribution Management
BA 240 — Property Insurance
BA 241 — Life Insurance
BA 252 — Operations and System Management **or**
BA 254 — Organizational Design and Behavior
BA 256 — Business Policies and Corporate Responsibility
BA 395-396 — Independent Research
CS 115 — Survey of Computers and Data Processing
CS 124 — COBOL Programming
CS 224 — Advanced COBOL and File Management
Ec 222 — American Labor Movement
Ec 223 — Collective Bargaining
Mth 105 — Introductory Calculus I
Mth 106 — Introductory Calculus II
Mth 262 — Operations Research
PS 218 — Public Administration
PS 327 — International Relations
Psy 232 — Human Behavior
Psy 242 — Psychological Tests **or**
Psy 243 — Industrial Psychology
Soc 265 — Sociology of Industry

MARKETING

BA 114 — Salesmanship
BA 216 — Advertising
BA 217 — Logistics and Distribution Management
BA 222 — Marketing
BA 240 — Property Insurance
BA 241 — Life Insurance
BA 261 — Principles of Retailing
BA 264 — Retail Buying
BA 395-396 — Independent Research
BA 398 — Topics
CS 115 — Survey of Computers and Data Processing
CS 123 — FORTRAN Programming
CS 224 — Advanced COBOL and File Management
Ec 224 — Economic Development
Ec 225 — International Trade
Ec 226 — International Investment and Finance
CS 124 — COBOL Programming
Ec 245 — Consumer Economics
Mth 105 — Introductory Calculus I
Mth 106 — Introductory Calculus II
PS 222 — International Relations
Psy 232 — Human Behavior
Psy 243 — Industrial Psychology
Soc 265 — Sociology of Industry

Business Administration Minor (Prerequisite: Ec 101, 102)

1. **Finance**

Required: Acc 101 Elementary Acc
Acc 102 Elementary Acc
BA 225 Managerial Finance
BA 226 Investments

Electives: Two of the following:

Ec 201 Money and Banking
Ec 226 International Investment and Finance
Ec 236 Public Finance
BA 241 Life Insurance

2. **Marketing**

Required: BA 222 Principles of Marketing

Electives: Five of the following:

BA 114 Salesmanship
BA 216 Advertising
BA 217 Logistics
BA 231 Intro. to Contracts & Sales
BA 261 Principles of Retailing
BA 264 Retail Buying
CS 123 Fortran Programming
Ec 245 Consumer Economics

3. **Management**

Required: Acc 101 Elementary Acct.
Acc 102 Elementary Acct.
BA 251 Principles of Management
BA 254 Organiz. Design & Behavior

Electives: Two of the following:

BA 225 Managerial Finance
BA 252 Op. Sys. & Mgmt.
BA 256 Bus. Pol. & Corp. Responsibility
Ec 223 Collective Bargaining

4. **Quantitative Business Analysis.** If this area is chosen, the student should be advised to take Mth 105-106, or Mth 111-112 as a sequence in the Math/Science core.

Required: BA 115 Math. of Bus. & Fin.
BA 252 Op. Sys. & Mgmt.
Ec 232 Statistics

Electives: Three of the following:

Ec 230 Business Cycles
Ec 241 Micro
Ec 242 Advanced Micro
CS 123 Fortran
CS 223 Advanced Fortran

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 115. MATHEMATICS OF BUSINESS AND FINANCE **Three credits**
A survey of mathematical aids to decision-making in the areas of: quantitative business models, negotiable instruments, annuities, insurance, debt extinction, marketable securities, asset and liability capitalization, accounting, and financial planning.

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 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 R. Werner; Professors Farrar, Taylor; Associate Professors DeYoung, Williams; Assistant Professor Cordora.

Total minimum credits required for B.A. degree with a major in Economics — 121.

Students who major in economics are required to complete twenty-four hours of work in economics beyond Ec 101-102 in addition to the core requirements. Selection and scheduling of these courses will be done in consultation with the student's adviser. The twenty-four hours in economics which the major must carry include Ec 201, 231, 232, 241, and 251. Students who elect a program in economics should take Mth 105, 106, and, if necessary, Mth 100.

Students choosing to minor in Economics must choose one of 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

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 Bretten 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.

School of Engineering and Physical Sciences

DEAN Dr. Umid R. Nejib

ASSOCIATE DEAN Dr. Brian Redmond

DEPARTMENT CHAIRMEN

Earth & Environmental Sciences	Dr. Redmond
Engineering	Dr. Nejib
Physics	Dr. Bellas

PROGRAM COORDINATORS

Earth & Environmental Sciences	Dr. Redmond
Electrical Engineering	Dr. Syrcos
Environmental Engineering	Dr. Case
Engineering Management	Dr. Yan
Materials Engineering	Dr. Janecek
Medical & Health Physics	Dr. Maxwell
Physics	Dr. Maxwell
Teaching Certification	Dr. Placek
Earth & Space Science	
Physics	

COMMITTEE CHAIRMEN

Admissions & Standards	Dr. Farooq
Graduate Studies	Dr. Kucirka

"Our goal is to produce good people — young men and women who learn to think to the point where thinking is a habit; who have been exposed to and encouraged to develop and live by a set of values; who have developed methods and approaches to the intelligent application of knowledge and, last but not least, who accept the virtue of work as a vehicle of service and the will to work as a self-discipline."

John Karakash, Ph.D.
Trustee Emeritus

Earth & Environmental Sciences

Associate Professor Redmond; Assistant Professor Case; Adjunct Professors Bailey, Donahoe, Smith, Toothill.

The Department of Earth & 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 analysis aspects of the Earth & 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 EES.

The B.A. degree program emphasizes human interactions with the Earth & 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 & Space Science.

A minor can be obtained by students with a demonstrated expertise in Earth & Environmental Sciences as determined by the Earth & Environmental Sciences faculty. The minimum requirement can be met by students who have completed 18 EES credits (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.

B.A. in Earth & 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
PE 100 Physical Education	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
Humanities Elective	3	3	3	6
Social Science Elective	3	—	—	3
	17	17	17	17
SECOND SEMESTER				
Eng 102 Composition	3	3	3	3
Mth 106 Intro. to Calculus II	4	4	4	0
PE 100 Physical Education	0	0	0	0
Bio 122 Modern Biology II	4	4	4	—
Ec 102 Economics II	—	—	3	—
PS 105 Modern Political Systems	—	3	—	—
Ed 102 Practicum in Education	—	—	—	1
Core Arts Elective	—	—	—	3
Humanities Elective	3	3	3	6
Social Science Elective	3	—	—	3
	17	17	17	16
THIRD SEMESTER				
EES 194 Intro. to Field Study	1	1	1	1
EES 211 Physical Geology	4	4	4	4
Phy 105 Intro. to Physics	4	4	4	4
PE 100 Physical Education	0	0	0	0
Acc 101 Elementary Accounting I	—	—	3	—
Psy 101 General Psychology I	—	—	—	3
Eng 151 Western World Literature I	3	—	—	—
Spc 101 Fund. of Speech	3	—	—	—
PS 218 Intro. to Public Administration	—	3	—	—
Computer Science Elective	—	—	—	3
Humanities Elective	—	3	3	—
	15	15	15	15

FOURTH SEMESTER	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
EES 230 Ocean Science	4	4	4	4
EES 212 Historical Geology	—	—	—	3
Phy 106 Intro. to Physics	4	4	4	4
PE 100 Physical Education	0	0	0	0
Acc 102 Elementary Accounting II	—	—	3	—
Psy 102 General Psychology II	—	—	—	3
Ed 203i Special Methods of Teaching in the Sciences	—	—	—	3
Eng 152 Western World Literature II	3	—	—	—
Computer Science Elective	3	3	—	—
Humanities Elective	—	3	3	—
Statistics Elective	3	3	3	—
	17	17	17	17

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	—	—	—
Ed 201 Intro. to Education	—	—	—	3
Computer Science Elective	—	—	3	—
Free Elective	3	3	—	3
Humanities Elective	—	—	—	3
Social Science Elective	3	3	3	—
Political Science Elective	—	3	—	—
	17	17	17	17

SIXTH SEMESTER				
EES 240 Principles of Environmental Science	4	4	4	4
EES 252 Climatology	—	—	—	3
BA 254 Organizational Design & Behavior	—	—	3	—
Eng 202 Technical Writing	3	—	—	—
Ed 202 Educational Psychology	—	—	—	3
PS 354 Administrative Policy-Making	—	3	—	—
EES Elective	3	3	3	3
Free Elective	3	3	3	—
Humanities Elective	—	—	—	3
Social Science Elective	3	3	3	—
	16	16	16	16

SEVENTH SEMESTER	TECHNICAL WRITING	POLITICAL SCIENCE	BUSINESS ADMIN.	EARTH & SPACE SCIENCE ED.
EES 391 Senior Projects I	1	1	1	—
Ed 371 The Individual in the Classroom	—	—	—	3
Ed 380 Professional Semester in Education	—	—	—	15
Eng 391 Projects in Writing	3	—	—	—
Spc 101 Fundamentals of Speech	—	3	—	—
BA Elective	—	—	3	—
Core Arts Elective	3	3	3	—
EES Elective	3	3	3	—
English Elective	3	—	—	—
Free Elective	—	—	3	—
Humanities Elective	3	3	3	—
Political Science Elective	—	3	—	—
	16	16	16	18

EIGHTH SEMESTER				
EES 392 Senior Projects II	2	2	2	2
EES 280 Principles of Astronomy	—	—	—	4
BA Elective	—	—	3	—
EES Elective	6	6	6	3
English Elective	3	—	—	—
Free Elective	—	—	—	3
Humanities Elective	3	3	3	—
Political Science Elective	—	3	—	—
	14	14	14	12
Total minimum credits for B.A. degree —	**129**	**129**	**129**	**128**

B.S. in Earth & Environmental Sciences

FIRST SEMESTER		SECOND SEMESTER	
Eng 101 Composition	3	Eng 102 Composition	3
Bio 121 Modern Biology I	4	Bio 122 Modern Biology II	4
Mth 111 Calculus I	4	Mth 112 Calculus II	4
PE 100 Physical Education	0	PE 100 Physical Education	0
Humanities Elective	3	Humanities Elective	3
Social Sciences Elective	3	Social Sciences Elective	3
	17		17
THIRD SEMESTER		**FOURTH SEMESTER**	
EES 211 Physical Geology	4	EES 230 Ocean Science	4
EES 194 Intro. to Field Study	1	Computer Science Elective	3
Egr 111 Intro. to Engineering	4	Statistics Elective	3
Phy 105 Introductory Physics	4	Phy 106 Introductory Physics	4
PE 100 Physical Education	0	PE 100 Physical Education	0
Humanities Elective	3	Humanities Elective	3
	16		17
FIFTH SEMESTER		**SIXTH SEMESTER**	
Chm 115 Elements & Compounds	4	Chm 116 Chemical Reaction	4
EES 251 Synoptic Meteorology	4	EES 240 Principles of Environmental Science	4
Phy 221 Instrumentation	3	EES Electives	5
EES Elective	3	Social Science Elective	3
Social Science Elective	3		16
	17		
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
EES 391 Senior Projects I	1	EES 392 Senior Projects II	2
EES Elective	3	EES Elective	3
Core Arts Elective	3	Humanities Elective	3
Humanities Elective	3	Free Electives	6
Free Electives	6		14
	16		

Total minimum credits for B.S. degree — 130.

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 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 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 three hours laboratory. Fee: $40.
Prerequisite: EES 211.

EES 325. DYNAMIC METEOROLOGY **Three credits**
Topics include themodynamics; 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 three 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 three 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 three 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 three 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. Fee: $40.
Prerequisite: EES 211 and 381.

EES 391. SENIOR PROJECTS I **One credit**
Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper and detailed progress report are required.
Prerequisite: Senior standing in EES.

EES 392. SENIOR PROJECTS II **Two credits**
Design and development of selected projects in earth and environmental sciences and other related fields under the direction of a staff member. Technical as well as economical factors will be considered in the design. A professional paper to be presented and discussed in an open forum is required.
Prerequisite: EES 391 or approval of the instructor.

EES 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. 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 Emeritus Thomas; Professors Faut, Hostler, Kaska, Nejib, Orehotsky; Associate Professors Arora, Koch, Maxwell, Parashar, Syrcos; Assistant Professors Case, Choudhry, Dolny, Farooq, Ghorieshi, Janecek, Kucirka, Mohseni, Razavi, Srinivasan, Yeroushalmi, Yan; Adjunct Professor Osadchy; Lecturer Petyak; Technical Support Staff: Lawrence, Lennox, Sarnecki, Sickler.

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 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 (ACerS), 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.

FIRST YEAR COMMON TO ALL ENGINEERING PROGRAMS

FIRST SEMESTER		SECOND SEMESTER	
Chm 115 Elements and Compounds	4	Chm 118 Chemistry for Engineers	3
Eng 101 Composition	3	Eng 102 Composition	3
Egr 111 Introduction to Engineering	4	Egr 244 Fortran	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
PE 100 Physical Education	0	Phy 201 General Physics I	4
	15	PE 100 Physical Education	0
			17

Two-Year Academic Programs

Aerospace Engineering
Civil Engineering
Mechanical Engineering

THIRD SEMESTER		FOURTH SEMESTER	
EE 211 Circuit Theory I	3	Egr 232 or 224	3
Egr 231 Statics & Dynamics	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	Liberal Studies	3
	18		17

Chemical Engineering

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	Liberal Studies	3
	19		17-18

Industrial Engineering

THIRD SEMESTER		FOURTH SEMESTER	
EE 211 Circuit Theory I	3	BA 252 Operations & Systems Man.	3
Egr 231 Statics & Dynamics	3	or Liberal Studies	
Egr 283 Measurement Lab. I	1	Egr 232 or 224	3
Mth 211 Intro. to Differential Equations	4	Egr 284 Measurement Lab. II	1
Phy 202 General Physics II	4	MaE 210 Materials Engineering	3
Liberal Studies	3	Mth 212 Multivariable Calculus	4
	18	Liberal Studies	3
			17

Four-Year Academic Programs

Electrical Engineering
Second Year

THIRD SEMESTER		FOURTH SEMESTER	
EE 211 Circuit Theory I	3	EE 212 Circuit Theory II	3
Egr 231 Statics & Dynamics	3	Egr 232 Strength of Materials	3
Egr 283 Measurement Lab. I	1	or 224 Heat Transfer	
Mth 211 Intro. to Differential Equations	4	Egr 284 Measurement Lab. II	1
Phy 202 General Physics II	4	MaE 210 Materials Engineering	3
Liberal Studies	3	Mth 212 Multivariable Calculus	4
	18	Phy 203 General Physics III	3
			17

Electrical Engineering
Third Year

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 Elective	3	EE 272 Solid State Devices	3
Liberal Studies	6	EE Elective	3
	17	Liberal Studies	3
			17

Electrical Engineering
Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
EE 320 Electric Machines	4	EE 382 Adv. Comm. & Antenna Lab.	4
EE 335 Microwaves & Antenna Systems	3	EE 392 Senior Projects II	2
EE 381 Advanced Microelectronics Lab.	4	EE Electives	6
EE 391 Senior Projects I	1	Liberal Studies	3
EE Elective	3		
Liberal Studies	3		
	18		15

Total minimum credits for B.S. degree — 134.

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: Microcomputers; Control; Instrumentation; Power; Communication. Students desiring computer, bioengineering, or other concentrations should consult their adviser for proper EE electives.

Liberal Studies constitute a total of nine credits in the humanities and nine in the social sciences.

Four-Year Academic Programs

EnvironmentalEngineering
Second Year

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
Egr 231 Statics & Dynamics	3	MaE 210 Materials Engineering	3
Egr 283 Measurement Lab. I	1	Egr 284 Measurement Lab. II	1
EE 211 Circuit Theory I	3	EES 251 Synoptic Meteorology	4
Liberal Studies	3	Liberal Studies	3
	18		18

Environmental Engineering
Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
Bio 121 Modern Biology I	4	Bio 122 Modern Biology II	4
or Chm 231 Organic Chm I		or Chm 232 Organic Chm II	
EES 211 Physical Geology	4	EES 240 Princ. of Env. Sci.	4
EES 310 Air Quality	3	Egr 224 Heat Transfer	3
Egr 233 Fluid Mechanics	3	Egr 232 Strength of Materials	3
Liberal Studies	3	MaE 234 Electrochemistry	3
		or Liberal Studies	
	17		17

Environmental Engineering
Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
Egr 391 Senior Projects I	1	Egr 392 Senior Projects II	2
EES 330 EQM I	4	EES 331 EQM II	4
EES 320 Hydrology	3	EES 394 Field Study	1
EES 350 Env. Development	3	Technical Elective	3
Technical Elective	3	Liberal Studies	3
Liberal Studies	3	or MaE 234 Electrochemistry	
	17		16

Total minimum credits for B.S. degree — 135.

Technical Electives are to be chosen from engineering courses numbered 200 or above. Consult your adviser for proper Biology sequencing.

Liberal Studies constitute a total of nine credits in the humanities and nine credits in the social sciences, including PS 102 and one PS course numbered 200 or above.

Four-Year Academic Programs

Materials Engineering
Second Year

THIRD SEMESTER		FOURTH SEMESTER	
EE 211 Circuit Theory I	3	Egr 224 Heat & 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
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	MaE 210 Materials Engineering	3
	18		17

Materials Engineering
Third Year

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	
EE 271 Physical Electronics	3	MaE Elective	3
Liberal Studies	3	Liberal Studies	3
	16-17		15-16

Materials Engineering
Fourth Year

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		
	17-16		17

Total minimum credits for B.S. degree — 133.

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, 381, and Liberal Studies electives.

Liberal Studies constitute a total of nine credits in the humanities and nine in the social sciences.

Four-Year Academic Programs

Engineering Management
Second Year

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
Egr 283 Measurement Lab. I	1	Egr 284 Measurement Lab. II	1
Mth 211 Differential Equations	4	Mth 150 Statistics	3
Phy 202 General Physics I	4	Acc 101 Accounting I	3
Ec 101 Economics I	3	Ec 102 Economics II	3
	18		16

Engineering Management
Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
Egr 371 Analysis & Prog. Methods	3	Egr 376 Engineering & Management Models	3
BA 225 Managerial Finance	3	BA 231 Business Law — Contracts or 232 Business Law — Corp.	3
BA 251 Principles of Management	3	Technical Electives	6
Technical Electives	6	Liberal Studies	6
Liberal Studies	3		18
	18		

Engineering Management
Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
BA 222 Marketing	3	EES 240 Princ. of Env. Sci.	4
Technical Electives	6	Technical Electives	6
Engineering Management Elective	3	Engineering Management Elective	3
Egr 391 Senior Projects I	1	Egr 392 Senior Projects II	2
Liberal Studies	3		
	16		15

Total minimum credits for B.S. degree — 133.

Technical Electives must be courses in approved engineering and science preference program.
Engineering Management Electives may be in engineering management, independent research, case studies, or internship.
Liberal Studies must include at least nine credits in the humanities.

General Engineering

EGR 111. INTRODUCTION TO ENGINEERING **Four credits**
A general introduction to the techniques of engineering analysis. Emphasis on: methods of solving engineering problems; data presentation and interpretation including graphs, schematics, and P.C. layouts; fundamentals of drafting and CAD systems; vectors and vectors algebra; matrices and matrix operation. Introduction to computer logic, structure, and programming. Problem solving using computers. Four hours lecture-recitation per week. Fee: $10.

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 241. BASIC PROGRAMMING **One credit**
Introduction to computer programming using the BASIC language, the principal high level language of microcomputers and minicomputers. One hour lecture per week. Fee: $20. (see CS 122)

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: $35. (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: $35. (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: $20 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: $35. (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 251. ELECTRONICS I **Three credits**
The development of operating principles and teroinal 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: $35.

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: $35.

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 luminescene. 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**

Transistor processes and types, properties of semiconductors, junction characteristics and theory. Junction transistor characteristics and theory. High-current effects and low frequency feedback effects. Low frequency and high frequency hybrid parameters. Three hours class a week.

Prerequisite: MaE 210 and Phy 203.

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 212.

EE 320. ELECTRIC MACHINES **Four credits**

Principles of electromagnetic and electrostatic energy conversion and their application to develop a unified treatment of electric machinery. Idealized machines and transformers. Engineering considerations applied to d.c. and a.c. machines. Three hours lecture and one three-hour laboratory a week. Fee: $30.

Prerequisite: EE 331.

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: $30.

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: $30.

Prerequisite: EE 333.

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: $35. (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. (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 212 and EE 252.

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. ADVANCED 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: $35.
Prerequisite: Senior engineering standing.

EE 382. ADVANCED 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: $35.
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 Emeritus Donahoe; Professors Bellas, Hostler, Orehotsky; Associate Professors Bailey, Maxwell, Placek; Assistant Professor Kucirka.

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.

B.A. in Physics

FIRST SEMESTER		SECOND SEMESTER	
Eng 101 Composition	3	Eng 102 Composition	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
or 105 Intro. to Calculus I		or 106 Intro. to Calculus II	
PE 100 Physical Education	0	PE 100 Physical Education	0
Core Electives	9-10	Core Electives	9-10
	16-17		16-17
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 Gen. Phys. I	4	Phy 202 Gen. Phys. II	4
PE 100 Physical Education	0	PE 100 Physical Education	0
Core Electives	3-6	Core Electives	3-6
	15-18		15-18
FIFTH SEMESTER		**SIXTH SEMESTER**	
Phy 203 Gen. Phys. III	3	Computer Science Elective	3
Phy 221 Elect. Instrumentation	3	Statistics Elective	3
Core Elective	3	Core Elective	3
Electives	7-9	Electives	7-9
	16-18		16-18
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
Phy 391 Senior Projects I	1	Phy 392 Senior Projects II	2
Core Elective	3	Electives	15
Electives	12		
	16		17

Total minimum credits for B.A. degree — 127.

Electives — A minimum of 12 credits must be chosen from physics courses numbered 200 or above.

B.S. in Physics

FIRST SEMESTER		SECOND SEMESTER	
Eng 101 Composition	3	Eng 102 Composition	3
Mth 111 Calculus I	4	Mth 112 Calculus II	4
Phy 201 Gen. Phys. I	4	Phy 202 Gen. Phys. II	4
PE 100 Physical Education	0	Computer Science Elective	3
Core Electives	6	PE 100 Physical Education	0
		Core Elective	3
	17		17
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 203 Gen. Phys. III	3	Phy 330 Optics	4
Phy 221 Elect. Instrumentation	3	Phy 340 Thermodynamics	3
PE 100 Physical Education	0	PE 100 Physical Education	0
Core Elective	3		
	17		15
FIFTH SEMESTER		**SIXTH SEMESTER**	
Phy 301 Math. in Phys. & Sciences	3	Phy 302 Math. in Phys. & Sciences	3
or Mth 361 Intro. Applied Math I		or Mth 362 Intro. Applied Math II	
Phy 211 Statics & Dynamics	3	Phy 310 Mechanics	3
Phy 331 E & M I	3	Phy 332 E & M II	3
Phy 333 E & M Lab I	1	Phy 334 E & M Lab II	1
Core Electives	6	Core Electives	6
	16		16
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
Phy 361 Atomic Physics	3	Phy 380 Nuclear Physics	3
Phy 363 Atomic Physics Lab	1	Phy 382 Nuclear Physics Lab	1
Phy 391 Senior Projects I	1	Phy 392 Senior Projects II	2
Phy 351 Quantum Mechanics	3	Electives	6
Electives	4-6	Core Electives	6
Core Electives	3		
	15-17		18

Total minimum credits for B.S. degree — 131.

Core Electives — Computer science courses may be substituted for the last two semesters of language with the approval of the Academic Standards Committee.

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.

B.S. in Medical & Health Physics

FIRST SEMESTER	
Eng 101 Composition	3
Mth 111 Calculus I	4
Phy 201 Gen. Phys. I	4
PE 100 Physical Education	0
Core Electives	6
	17

SECOND SEMESTER	
Eng 102 Composition	3
Mth 112 Calculus II	4
Phy 202 Gen. Phys. II	4
Computer Science Elective	3
PE 100 Physical Education	0
Core Elective	3
	17

THIRD SEMESTER	
Chm 115 Elements & Compounds	4
Mth 211 Differential Equations	4
Phy 203 Gen. Phys. III	3
Phy 221 Elect. Instrumentation	3
PE 100 Physical Education	0
Core Elective	3
	17

FOURTH SEMESTER	
Chm 116 Chemical Reaction	4
Egr 250 Biomedical Engr.	3
Phy 330 Optics	4
PE 100 Physical Education	0
Core Electives	6
	17

FIFTH SEMESTER	
Bio 115 Human Anat. & Phys.	4
Chm 231 Organic Chem. I	4
Phy 323 X-Ray Diffraction	4-3
or Elective	
Core Elective	3
	15-14

SIXTH SEMESTER	
Bio 116 Human Anat. & Phys.	4
Chm 232 Organic Chem. II	4
Elective	3
Core Electives	6
	17

SEVENTH SEMESTER	
Phy 325 Med. & Health Phys. I	3
Phy 361 Atomic Physics	3
Phy 363 Atomic Physics Lab	1
Phy 390 Practicum	3
Phy 391 Senior Projects I	1
Elective	3-4
or Phy 323 X-Ray Diffraction	
Core Elective	3
	17-18

EIGHTH SEMESTER	
Phy 326 Med. & Health Phys. II	3
Phy 380 Nuclear Physics	3
Phy 382 Nuclear Physics Lab	1
Phy 390 Practicum	3
Phy 392 Senior Projects II	2
Core Elective	3
	15

Total minimum credits for B.S. degree — 132.

Core Electives — Computer science courses may be substituted for the last two semesters of language with the approval of the Academic Standards Committee.

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 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 amsted 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, Schroedinger'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 blackbody 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, recriprocal 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 Moessbauer 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: $35.

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.

Special Programs

Special Degree Programs

Health Sciences Programs

Division of Graduate Studies

Non-Degree Programs

Division of Continuing Education

Special Degree Programs

Pre-Professional Degree Program

Four years of undergraduate study ordinarily are required to qualify for the Bachelor's degree. Wilkes College makes an exception to this requirement for medical and dental students.

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

Five-Year B.A. in History and M.A. in Business Administration

The five-year program leading to a bachelor of arts degree in history and a master's degree in business administration enables students to combine the advantages of a traditional liberal arts curriculum with the career options offered through a professional business program.

Candidates for the program must fulfill the 30 credit hour history baccalaureate requirement and the 27 credit hour M.B.A. prerequisite which includes basic courses in accounting, business law, corporation finance, economics, marketing, money and banking, and statistics. At the conclusion of four years (121 credit hours) the student receives the B.A. in History and is prepared to undertake the M.B.A.

The graduate curriculum requires 30 credits specifically oriented toward business administration. In addition to a 15-credit core requirement, the candidate takes an additional 15 credits in one of five areas: marketing, managerial science, labor, accounting, or finance.

Information about the program may be obtained at the History Department office in Capin Hall or at the School of Business and Economics office in Bedford Hall.

Five-Year B.S.-M.S. Degree — Mathematics Major

This program is designed for those who wish to attain a B.S. and an M.S. degree with a major in Mathematics at Wilkes and will enable them to complete all requirements for both degrees in at most five years. A mathematics major may apply for admission into this combined program during the sixth or the seventh term if he has a minimum average of 3.00 in all mathematics courses numbered above 300 and an overall average of 2.60 at the time of application. A form for this purpose is available from the department chairman.

All requirements for both degrees must be met. In addition, Mth 511 and 532 are required. No credit shall be counted in both degree programs. Scheduling will be done so that the student will be eligible to receive a B.S. degree at the end of four years.

Medical Technology

Total credits required in Medical Technology — 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.

FIRST SEMESTER		SECOND SEMESTER	
Bio 121	4	Bio 122	4
Chm 115	4	Chm 116	4
Eng 101	3	Eng 102	3
Mth 105 or 111	4	Mth 106 or 112	4
PE 100	0	PE 100	0
	15		15

THIRD SEMESTER		FOURTH SEMESTER	
Bio 223	4	Bio 224	4
Chm 231	4	Chm 232	4
Humanities Core Electives	6	Humanities Core Electives	6
Social Science Core Elective	3	Social Science Core Elective	3
PE 100	0	PE 100	0
	17		17
FIFTH SEMESTER		**SIXTH SEMESTER**	
Bio 303	3	Bio 313	3
Bio 397*	1	Bio 341	3
Chm 241	4	Bio 397*	1
Computer Science Elective 123	3	Mth 150	3
Phy 105	4	Phy 106	4
Social Science or Humanities Elective	3	Social Science or Humanities Elective	3
	17-18		16-17

*Only one semester of Bio 397 is required but it must be taken in either the fifth or sixth semester.

MEDICAL TECHNOLOGY PROFESSIONAL STUDY YEAR

The 30 credits supplied by the twelve months' clinical training are divided into the following courses:

	Credit Hrs.
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
	30

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 adviser, 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

The interdisciplinary major in International Studies 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 123, of which 45-65 are the core requirements. Foreign language competency through the level of 204 (two years of college foreign language) is required. Since only six hours of foreign language may be counted in the Humanities sequences of the core, a student who enters with no foreign language may have to take an additional six hours which will have to count as electives.

For this major, the following courses at the introductory level are required, most of which can be counted in the core: History 101-102; Economics 101-102; Political Science 105; Anthropology 101; and Foreign Language — 204 competence.

The following courses are the "Core" of the International Studies program and are required of all International Studies majors:

Ec 227, 228 (Economic Geography) . . . . . .6 credit hrs.
Ec 224, 225, 226, or 229 (Economic Development, International trade, International Investment and Finance, Comparative Economic Systems) . . . . . .3 credit hrs.
Ant 270 (Cultural Anthropology) . . . . . .3 credit hrs.
PS 327 (International Relations) . . . . . .3 credit hrs.
A year of foreign language beyond 204, or a second language . . . . . .6 credit hrs.

Total credit hours for I. S. Core . . . . . .21 credits

Before completing the International Studies core, students should select the area of concentration in which 12 more credits are required. Options for this concentration are Business, Economics, Politics, or a cultural area, such as Western Europe, Latin America, Soviet Union, China, etc. Specific courses in Business, Economics, Political Science, History, Anthropology, and Language will be worked out with the student's adviser and approved by the International Studies Committee. Lists of possible courses for each concentration are on file with the International Studies adviser.

Students in the International Studies major have 32-36 credit hours of electives. Students are strongly 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. However, no more than two courses may be counted in both the International Studies major and a discipline major.

Advising for this major is in the History and Political Science Department.

Health Sciences Programs

Wilkes College/Temple University College of Allied Health Professions Program

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
Occupational Therapy
Health Records Administration
Medical Technology
Nursing

Successful completion of the selected program at the College of Allied Health Professions will lead to the Bachelor of Science degree from Temple University.

The Wilkes College–Temple University programs require four years of study. This includes the completion of the first two years of study or the equivalent at Wilkes College and the final two years at Temple University College of Allied Health Professions. Academic preparation at Wilkes College will differ somewhat for each program, however; general requirements for all programs are listed below:

Science

8 Semester Hours — General Biology

Humanities

6 Semester Hours — English Composition

Social Science

3 Semester Hours — Sociology
3 Semester Hours — Psychology

Specific requirements of Wilkes College for each program will be built into a matriculating student's program.

Wilkes College/Temple University School of Dentistry Program

The affiliated dentistry program, which is designed to educate dentists to serve in the underserved areas of greater Pennsylvania, requires completion of three years at Wilkes College and four years at Temple University School of Dentistry.

All students in the program shall satisfy the general core education requirements including Psy 101-102 and the mathematics, chemistry, physics, and biology courses which are listed in the following six semesters.

The remaining credits in the first three years may be used for depth education in an academic discipline or for other electives.

A student completing three years of academic preparation at Wilkes College in the program and one year of successful work at Temple University School of Dentistry will be awarded a Bachelor of Science degree by Wilkes College. The components of the Bachelor of Science degree shall be: (1) completion of 92-108 credits at Wilkes College; (2) transfer of thirty credits in science electives selected from the courses given at Temple University School of Dentistry.

A student should declare a major at Wilkes College and, having been assigned an academic adviser, progress through the first three years in the major. If after three years the student is not chosen to enter the Temple University School of Dentistry, then he or she may complete the last year at Wilkes College and receive a baccalaureate degree as every other student does who completes an academic program satisfactorily.

A Joint Selection Committee of Wilkes College faculty and Temple University School of Dentistry faculty will select students for entrance into the dentistry component of the program. Both cognitive and non-cognitive criteria will be utilized in the selection process.

FIRST SEMESTER		SECOND SEMESTER	
Bio 121	4	Bio 122	4
Chm 115	4	Chm 116	4
Eng 101	3	Eng 102	3
Mth 105 or 111	4	Mth 106 or 112	4
Elective	0-3	Elective	0-3
PE 100	0	PE 100	0
		Health Profession Orientation	0
	15-18		15-18

THIRD SEMESTER	
Chm 231	4
Psy 101	3
Electives	8-11
PE 100	0
	15-18

FOURTH SEMESTER	
Chm 232	4
Psy 102	3
Electives	8-11
PE 100	0
Health Profession Orientation	0
	15-18

FIFTH SEMESTER	
Phy 105 or 201	4
Electives	12-14
	16-18

SIXTH SEMESTER	
Phy 106 or 202	4
Electives	12-14
	16-18

Total electives available . . . . . .40-56 credits
In addition . . . . . .one year at Temple University School of Dentistry

Wilkes College/Pennsylvania College of Optometry Program

The program requires completion of three years at Wilkes College and four years at Pennsylvania College of Optometry.

All students in the program shall satisfy the general core requirements. Note, however, that Psy 101-102 and the mathematics, chemistry, physics, and biology courses including courses in microbiology and statistics are required and not optional.

The remaining credits in the first three years may be used for depth education in an academic discipline or for other electives.

A student completing three years of academic preparation at Wilkes College in the program and one year of successful work at Pennsylvania College of Optometry will be awarded a Bachelor of Science degree by Wilkes College. The components of that degree shall be: (1) completion of 92-108 credits at Wilkes College; (2) transfer of thirty credits in science electives selected from the courses given at Pennsylvania College of Optometry.

A student should declare a major at Wilkes College and, having been assigned an academic adviser, progress through the first three years in the major. If after three years the student is not chosen to go to Pennsylvania College of Optometry, then he or she may complete the last year at Wilkes College and receive a baccalaureate degree as every other student does who completes an academic program satisfactorily.

A Joint Selection Committee of Wilkes College faculty and Pennsylvania College of Optometry faculty will select students for entrance into the optometry component of the program.

FIRST SEMESTER	
Bio 121	4
Chm 115	4
Eng 101	3
Mth 105 or 111	4
Elective	0-3
PE 100	0
	15-18

SECOND SEMESTER	
Bio 122	4
Chm 116	4
Eng 102	3
Mth 106 or 112	4
Elective	0-3
PE 100	0
Health Profession Orientation	0
	15-18

THIRD SEMESTER	
Chm 231	4
Psy 101	3
Electives	8-11
PE 100	0
	15-18

FOURTH SEMESTER	
Chm 232	4
Psy 102	3
Electives	8-11
PE 100	0
Health Profession Orientation	0
	15-18

FIFTH SEMESTER	
Phy 201	4
Electives	12-14
	16-18

SIXTH SEMESTER	
Phy 202	4
Electives	12-14
	16-18

Total electives available . . . . . .40-56 credits
Required beyond above: Mth 150 . . . . . .3 credits
Credits available for other courses . . . . . .37-53 credits
In addition . . . . . .one year at Pennsylvania College of Optometry

Wilkes College/Temple University Pharmacy Program

The program is a five year program leading to a Bachelor of Science degree in Pharmacy at Temple University. The first two years are taken at Wilkes College and the last three years at Temple University.

Ten students will enter Temple University School of Pharmacy each year and will be selected by a Joint Selection Committee of Wilkes College and Temple University faculty. This committee is a sub-committee of the School of Pharmacy Admissions Committee and recommends candidates to the latter committee for admission.

A high level of academic work is required for entrance into the pharmacy school. Non-cognitive criteria are also considered for admission.

Students who do not apply at the end of their second year at Wilkes College may apply after their third year.

All students must satisfactorily complete an English proficiency test at the end of two years at Wilkes College. The test will be administered by Temple University and is a Temple University requirement.

Two years at Wilkes College

FIRST SEMESTER		SECOND SEMESTER	
Bio 121	4	Bio 122	4
Chm 115	4	Chm 116	4
Eng 101	3	Eng 102	3
Mth 105 or 111	4	Mth 106 or 112	4
Elective	0-3	Elective	0-3
	15-18		15-18

THIRD SEMESTER		FOURTH SEMESTER	
Chm 231	4	Chm 232	4
Phy 105 or 201	4	Phy 106 or 202	4
Ec 101	3	Electives	8-10
Electives	5-7		
	16-18		16-18

All Physical Education requirements must be met at Wilkes College.

Three years must be completed at Temple University School of Pharmacy.

The final year will include clinical clerkships in hospital and/or community pharmacies.

Wilkes College/Pennsylvania College of Podiatric Medicine Program

The program requires completion of three years at Wilkes College and four years at Pennsylvania College of Podiatric Medicine.

All students in the program shall satisfy the general core requirements. Note, however, that Psy 101-102 and the mathematics, chemistry, physics, and biology courses are required.

The remaining credits in the first three years may be used for depth education in an academic discipline or for other electives.

A student completing three years of academic preparation at Wilkes College in the program and one year of successful work at Pennsylvania College of Podiatric Medicine will be awarded a Bachelor of Science degree by Wilkes College. The components of that degree shall be: (1) completion of 92-108 credits at Wilkes College; (2) transfer of thirty credits in science electives selected from the courses given at Pennsylvania College of Podiatric Medicine.

A student should declare a major at Wilkes College and, having been assigned an academic adviser, progress through the first three years in the major. If after three years the student is not chosen to go to Pennsylvania College of Podiatric Medicine, then he or she may complete the last year at Wilkes College and receive a baccalaureate degree as every other student does who completes an academic program satisfactorily. A Joint Selection Committee of Wilkes College faculty and Pennsylvania College of Podiatric Medicine faculty will select students for entrance into the podiatric medicine component of the program.

FIRST SEMESTER		SECOND SEMESTER	
Bio 121	4	Bio 122	4
Chm 115	4	Chm 116	4
Eng 101	3	Eng 102	3
Mth 105 or 111	4	Mth 106 or 112	4
Elective	0-3	Elective	0-3
PE 100	0	PE 100	0
		Health Profession Orientation	0
	15-18		15-18

THIRD SEMESTER		FOURTH SEMESTER	
Chm 231	4	Chm 232	4
Psy 101	3	Psy 102	3
Electives	8-11	Electives	8-11
PE 100	0	PE 100	0
		Health Profession Orientation	0
	15-18		15-18

FIFTH SEMESTER		SIXTH SEMESTER	
Phy 105 or 201	4	Phy 106 or 202	4
Electives	12-14	Electives	12-14
	16-18		16-18

Total electives available . . . . . .40-56 credits
In addition . . . . . .one year at Pennsylvania College of Podiatric Medicine

Division of Graduate Studies

Wilkes College Division of Graduate Studies offers a wide range of quality programs in the fields of Business Administration, Biology, Chemistry, Earth and Environmental Sciences, Education, Engineering, Health Service Administration, Mathematics, and Physics.

In the area of the Master of Business Administration there are various concentrations such as Accounting, Finance, Labor, Health Care, Managerial Sciences, and Marketing. In the area of Education there are three degrees: Elementary Education, Secondary Education, Master of Sciences in Education. There is a Master of Science Degree in Electrical Engineering.

Wilkes graduate programs offer flexible schedules and high quality faculty academicians and professionally established teacher-practitioners. Classes are scheduled conveniently for both full-time and working students. Weekend programs are available.

Further information concerning admission to Graduate Studies is available at the Graduate Studies office, Max Roth Center.

Dr. Mahmoud H. Fahmy, *Dean*
Division of Graduate Studies
and Continuing Education
Wilkes College
Wilkes-Barre, PA 18766
Telephone: (717) 824-4651, Ext. 226

The College issues a supplementary graduate bulletin.

Special Non-Degree Programs

Aerospace Studies

Professor Billings, chairman; Associate Professor Luther; Assistant Professors Lynn, Zimmerman.

Air Force Reserve Officer Training Corps Program

The Air Force ROTC (AFROTC) participates with Wilkes College in a program which allows students upon graduation to earn commissions in the United States Air Force.

A student may elect to enroll in either a four-year or two-year AFROTC program. A four-year cadet enrolls in the General Military Course (GMC) during the first two years of college and the Professional Officer Course (POC) during the last two years. This program is open to all incoming freshmen or individuals with four years of college remaining. The two-year program is open to all students who have two academic years remaining at either the undergraduate or graduate level or a combination of the two. Two-year cadets must apply for POC entry early in their sophomore year.

To enter the POC, students must pass a physical examination, an officer qualification test, and have an acceptable academic rating. In addition, four-year cadets must successfully complete a four-week field training program, and two-year cadets must successfully complete a six-week field training program during the summer prior to entry into the POC.

Members of either the four-year or two-year program are eligible to compete for full-tuition AFROTC scholarships. See details under "Air Force ROTC Scholarships" in this Bulletin.

Uniforms, equipment, and textbooks for AFROTC work are supplied by Wilkes College and the United States Air Force. All POC students and GMC students with scholarships receive a $100 per month tax-free allowance.

Students who complete successfully the POC are commissioned as second lieutenants in the United States Air Force Reserve. They serve on active duty in the Air Force in a specialty they have chosen consistent with Air Force needs. Qualified students have the opportunity to compete for entry into an Air Force training program in many areas such as nursing, computer science, engineering, pilot, missile, navigator, etc.

Four semester hours of credit may be earned in the GMC and 12 semester hours in the POC. There is also a one semester hour course for pilot and navigator candidates.

All courses are conducted at Wilkes College.

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 one semester of a foreign language.

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. Non-scholarship 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.

Flight Screening Program (FSP)

The FSP is designed primarily for cadets in the POC who intend to enter Air Force pilot training upon graduation. 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. Transportation, room, board, and flight instruction are at government expense. The FSP is normally conducted in conjunction with the summer field training program.

Advanced Training Program

This program allows POC members to visit a USAF base and work with an active duty officer in their specialty between their junior and senior year.

Leadership Laboratory

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 life and work of an Air Force junior officer.

Field Training

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.

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.

Division of Continuing Education

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.

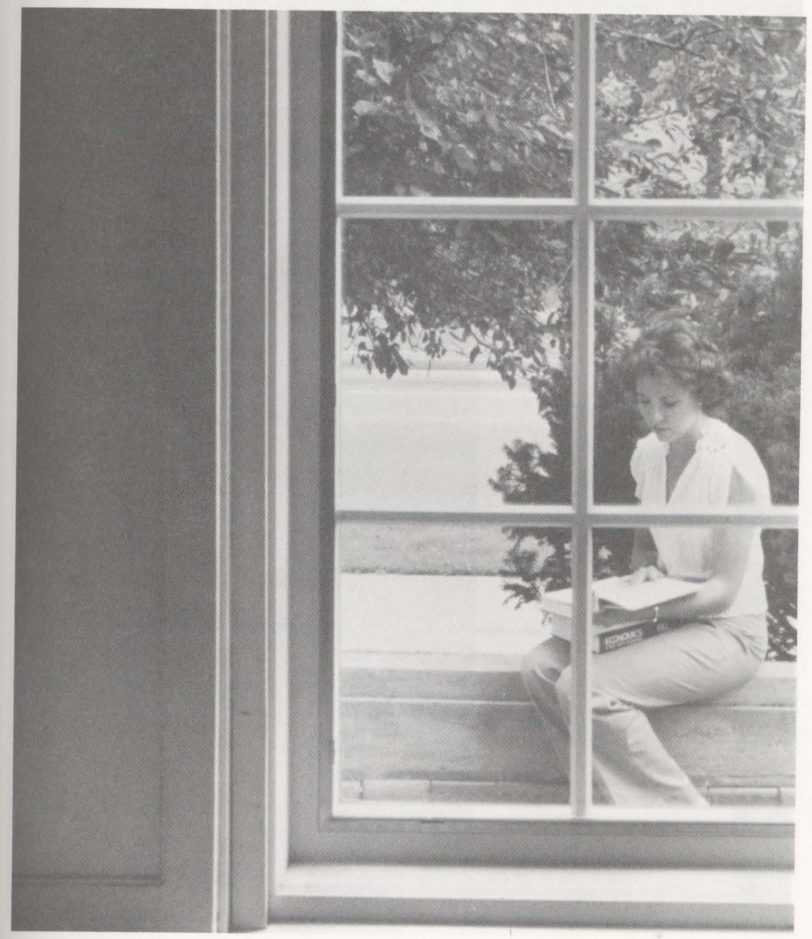
Placing its strongest emphasis on quality, the Continuing Education Division offers a flexible schedule, excellent facilities, and a prestigious faculty which accommodates the growing needs of agencies, organizations, and individuals.

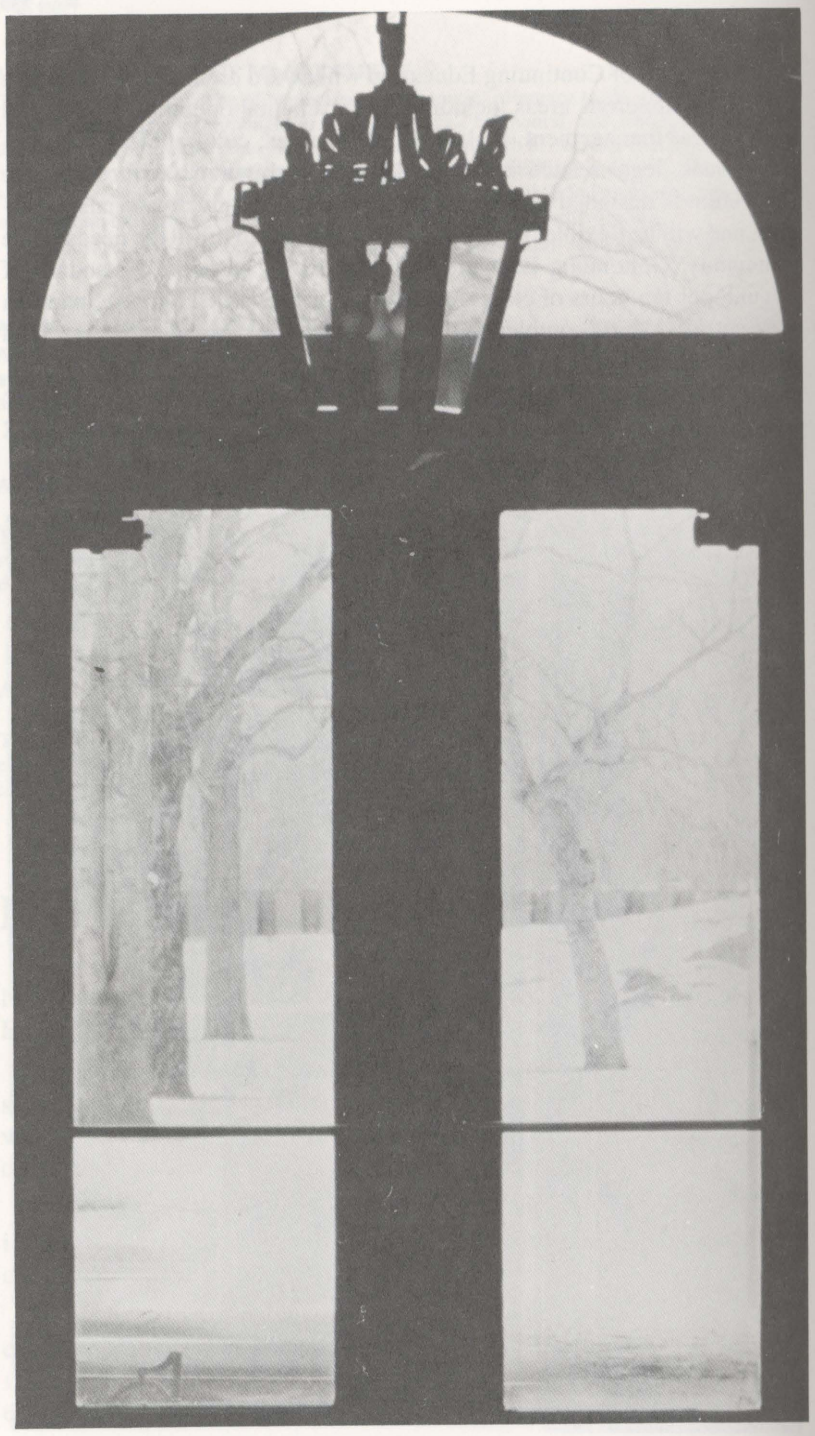
The Wilkes non-degree program provides training and development services to business, industry, government, associations, professionals, and individuals.

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 Division of Continuing Education will award credits for non-degree training in numerous areas including: governmental operations, industrial and business management, real estate, 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 (CEUs), based on a standard of one unit per ten hours of classroom contact, are awarded to participants in these courses. Upon completion of each course, the participant is presented with a certificate on record of the CEUs earned.

THE DIVISION OF CONTINUING EDUCATION IS A MEMBER OF THE NATIONAL REGISTRY FOR CONTINUING EDUCATION AND THE COUNCIL ON THE CONTINUING EDUCATION UNIT.





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Harold J. Rose, Jr.
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Keith Spalding
Norman E. Weiss

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Richard L. Pearsall
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Student Affairs
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Beverly B. Hiscox
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Arnold S. Rifkin
Joseph J. Savitz
Elizabeth A. Slaughter
Stephen Sordoni

Faculty/Trustee
William L. Conyngham
Eugene Roth
Elizabeth A. Slaughter (alternate)

Ex Officio On All Committees
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Administration

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B.A. California, Los Angeles, B. Litt. Oxford, Ph.D. Cornell

GERALD E. HARTDAGEN, Vice President for Academic Affairs and Dean of the Faculty

RICHARD F. CHARLES, Vice President for College Advancement

PAUL A. O'HOP, SR., Vice President for Business Affairs and Auxiliary Enterprises

Vice President for Academic Affairs and Dean of the Faculty

GERALD E. HARTDAGEN (1979), Vice President for Academic Affairs and Dean of the Faculty
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ROBERT J. HEAMAN (1969), Associate Dean of Academic Affairs
B.A. Detroit, M.A., Ph.D. Michigan

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DORIS E. BARKER (1965), Registrar
Wyoming Seminary Dean's School of Business

BARBARA BELLUCCI (1984), Director of Microcomputer Education, Regional Computer Resource Center
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JOSEPH T. BELLUCCI (1967), Project Director of Title III
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JOSEPH J. CHMIOLA (1979), Director of the Small Business Institute
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CHERYL GIBSON (1977), Director of Cooperative Education
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ARTHUR J. HOOVER (1955), Dean of Student Affairs
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JOSEPH H. KANNER (1949), Director of Testing Service
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BARBARA KING (1980), Director of Evening, Summer, & Weekend College
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THOMAS J. LYNOTT (1981), Director of Anthracite and Community Development Institute
B.S., M.S. Scranton

P. ROBERT PAUSTIAN (1984), Director of the Library
B.A., M.A. Missouri, M.A. Kansas

DEBRA PRATER (1981), Director of the Academic Support Center
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JOHN G. REESE (1955), Director of Athletics
B.S., M.Ed. Pennsylvania State

RALPH B. ROZELLE (1962), Dean of Health Sciences
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MARY SUPEY (1984), Director of Health Services
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BERNARD J. VINOVRSKI (1986), Dean of Admissions
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AMY WIEDEMER (1985), Director of Student Activities
B.A. University of Pittsburgh-Johnstown, M.S. Indiana University of Pennsylvania

JOHN P. WHITBY (1947), Director of Act 101 Program
B.S. Bloomsburg, M.S. Columbia

Vice President for College Advancement

RICHARD F. CHARLES (1984), Vice President for College Advancement
A.B. Franklin and Marshall

ELIZABETH C. ACKOUREY (1985), Director of Annual Giving
B.S. College Misericordia

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JOHN PESTA (1981), Receiving, Director of Purchasing
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PHILIP R. TUHY (1960), Campus Planner
B.A. Valparaiso, M.G.A. Pennsylvania

Academic Officers

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GERALD E. HARTDAGEN — Vice President for Academic Affairs and Dean of Faculty

Academic Deans and Chairmen 1986-1987

ROBERT J. HEAMAN — Associate Dean of Academic Affairs
JOHN F. MEYERS — Associate Dean of Academic Affairs

JAMES P. RODECHKO — Dean, College of Arts and Sciences
THEODORE J. ENGEL — Dean, School of Business and Economics
UMID R. NEJIB — Dean, School of Engineering and Physical Sciences

DAVID G. BILLINGS — Aerospace Studies
WILLIAM H. STERLING — Art
LESTER J. TUROCZI — Biology
HOWARD SWAIN — Chemistry
THEODORE J. ENGEL — Commerce and Finance
BRIAN REDMOND — Earth & Environmental Sciences
JOSEPH T. BELLUCCI — Education
UMID R. NEJIB — Engineering
JOEL BERLATSKY — History/Political Science
WALTER KARPINICH — Language & Literature
RICHARD E. SOURS — Mathematics/Computer Science
JEROME W. CAMPBELL — Music
ANN MARIE KOLANOWSKI (Acting) — Nursing
DONALD A. HENSON — Philosophy
PHILIP L. WINGERT — Physical Education & Hygiene
FREDERIC E. BELLAS — Physics
CARL J. CHARNETSKI — Psychology
JOHN H. NATZKE — Sociology/Anthropology
DAVID E. TUCKER — Speech, Communications, & Theater Arts
P. ROBERT PAUSTIAN — Library

Office of Admissions

BERNARD J. VINOVRSKI, Dean of Admissions

KIM ALANSKY, Assistant Dean of Admissions
HELEN BALMER, Assistant Dean of Admissions and Coordinator of Transfer Students
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BARBARA KING, Director of Evening, Summer, & Weekend College
ANN MARIE PARRY, Assistant to the Coordinator of Transfer Students

Student Affairs

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PAUL S. ADAMS, Associate Dean of Student Affairs
JANE LAMPE-GROH, Associate Dean of Student Affairs

EUGENE DOMZALSKI, Director of Career Services
CHERYL GIBSON, Director of Cooperative Education
JOSEPH KANNER, Director of Testing Service
JOHN G. REESE, Director of Athletics
MARY SUPEY, Director of Health Services
SUSAN TOMALIS, Associate Director, Residence Life
AMY WIEDEMER, Director of Student Activities
_____, Psychological Counselor

E. S. Farley Library

P. ROBERT PAUSTIAN, Director of the Library

JAMES BERG, Library Systems Officer
HEIDI SELECKY, Orders and Budget Officer
CHARMAINE PIAVIS, Acquisitions Assistant

CATHERINE SCHAPPERT, Public Services Librarian
FREDERICK KROHLE, Reference and Collections Librarian
JOSEPH ERDICK, Information Services Librarian
JEAN KRYESKI, Public Services Assistant
MEI-LIN KANG, Circulation Supervisor (night)

LORNA DARTE, Cataloging Librarian
ANN FRETTY, Cataloging Technician
DOREEN BILSKI, Cataloging Technician

SUE TOPFER, Serials Librarian
MARY WATKINS, Serials Technician

Coaching Staff

JOHN G. REESE, Athletic Director and Head Wrestling Coach

PHILIP L. WINGERT, Assistant Athletic Director and Head Soccer Coach

MICHAEL AED, Athletic Trainer
ROBERT DULIBA, Head Baseball Coach
JODI B. KEST, Head Women's Basketball Coach
WILLIAM UNSWORTH, Head Football Coach

Administrative Support

MICHAEL AED, Athletic Trainer
KAREN ALBEROLA, Student Accounts Coordinator
KIM ALANSKY, Assistant Dean of Admissions
MARY ARGENIO, A/A, Business Office
HELEN BALMER, Assistant Dean of Admissions and Coordinator of Transfer Students
CARL BRIGIDO, Engineer, Telecommunications
MARGARET CORBETT, A/A, President's Office
CAROL DEMPSEY, Assistant Director, S.B.D.C.
ROBERT DULIBA, Head Grounds Keeper, Athletic Field
THOMAS DUNSMUIR, Technician, Gymnasium
FRANCES FRENCH, Assistant to the Comptroller
HARRIET FREW, A/A, Registrar's Office
ADELAIDE GODEK, Director, Nursing Learning Laboratory
THOMAS HARDING, Assistant Dean of Admissions
KAREN HARRISON, Programmer, Computer Center
PATRICIA HEAMAN, Director, Writing Laboratory
RONALD HINDS, Technician, Printing
SUSAN HRITZAK, Assistant Director, Office of Career Services
CARL HURST, Systems Manager, Computer Center
JOSEPH KANNER, Director of Testing Service
MARY KAYTROSH, Recorder
JODI B. KEST, Head Women's Basketball Coach
ELIZABETH KWAK, Technician, Health Services
GARY LAWRENCE, Technician, E.T.S.
JAMES LENNOX, Technician, E.T.S.
MARY LORUSSO, Assistant Personnel Director
MELISSA MEYERS, Assistant Director, Public Relations
EDWARD MOYER, Assistant Director, Financial Aid
KIRK NUNEMACHER, Programmer, Computer Center
JOHN PESTA, Technician, Receiving
BRUCE PHAIR, Technician Coordinator, C.P.A.
GEORGE SARNECKY, Technician, E.T.S.
CATHERINE SCHAPPERT, Public Services Librarian
HEIDI SELECKY, Orders and Budget Officer, Library
LARRY SICKLER, Technician, E.T.S.
MARGARET SINCLAIR, A/A, Finance Office
RONALD SLUSSER, Business Analyst, S.B.D.C.
HENRY STEUBEN, Preparation Supervisor, Biology
MARY SUPEY, Director of Health Services
THOMAS J. THOMAS, Counselor, Upward Bound
SUSAN TOMALIS, Assistant Director, Residence Life
SUE TOPFER, Serials Librarian
WILLIAM UNSWORTH, Head Men's Football Coach
ROBERT URBAN, Technician, Receiving
JOYCE WONG, Science Specialist, Academic Support Center
DEBORAH YEDINAK, Technician, Computer Center
PATRICIA YOSCHAK, Tutor Coordinator, Academic Support Center
RITA ZULA, A/A, Finance Office

Faculty

In alphabetical order, with date of appointment following the name.

CHRISTOPHER N. BREISETH (1984), Professor of History/President
B.A. California, Los Angeles, B. Litt. Oxford, Ph.D. Cornell

GERALD E. HARTDAGEN (1979), Professor of History/Vice President for Academic Affairs and Dean of Faculty
B.A. Maryland, M.A., Ph.D. Northwestern

* * * * * * * * * * * * * * * * *

CLAUDE W. ANDERSON, III, (1981), Assistant Professor of Mathematics/Computer Science
B.S. CIT, M.S., Ph.D. Illinois at Urbana

STEPHEN L. ANDERSON (1983), Assistant Professor of Mathematics/Computer Science
B.A. Utah, Ph.D. Brown

KATHERINE K. ANSELMI (1982), Assistant Professor of Nursing
B.A., B.S. Wilkes, M.S. Pennsylvania

VIJAY K. ARORA (1985), Associate Professor of Engineering
B.S.c, M.S.c Kurukshetra University (India), M.S. Western Michigan, M.S., Ph.D. Colorado

FRANK G. BAILEY (1968), Associate Professor of Physics
B.S. Pennsylvania, M.S. Stevens, M.A. Columbia, Ph.D. Polytechnic Institute of Brooklyn

PAMELA S. BAKER (1983), Assistant Professor of Nursing
B.A., B.S. Wilkes, M.S. Pennsylvania

SUSAN BEHUNIAK-LONG (1985), Assistant Professor of History and Political Science
B.A. St. Bonaventure, M.A., Ph.D. SUNY, Albany

FREDERIC E. BELLAS (1961), Professor of Physics
B.S., M.S., Ph.D. Pennsylvania State

JOSEPH T. BELLUCCI (1967), Professor of Education
B.S. Scranton, M.Ed., Ed.D. Lehigh

LOUISE McNERTNEY BERARD (1980), Associate Professor of Mathematics/Computer Science
B.S. King's, Ph.D. Brown

JAMES P. BERG (1965), Assistant Professor of History
B.A. Harvard, B.D., M.Div. Lutheran Seminary, M.A. Pennsylvania

TOM BIGLER (1986), Professor of Communications

JOEL BERLATSKY (1970), Professor of History
B.A. Carleton, M.A. Brown, Ph.D. Northwestern

DAVID G. BILLINGS, Professor of Aerospace Studies
B.S. Louisville, M.S. Arkansas

ROBERT W. BOHLANDER (1979), Assistant Professor of Psychology
B.A. Lebanon Valley, Ph.D. Rochester

JAMES J. BOHNING (1959), Professor of Chemistry
B.S. Valparaiso, M.S. New York, Ph.D. Northeastern

KENNETH A. BROADT (1980), Associate Professor of Accounting
B.S. Bloomsburg, M.S. Bucknell, C.P.A. State of Pennsylvania

BRUCE W. BROWN (1978), Associate Professor of Sociology/Anthropology
B.A. SUNY, Plattsburgh, M.A., Ph.D. New Hampshire

JEROME W. CAMPBELL (1979), Assistant Professor of Music
B.M., M.M. Boston

JAMES MICHAEL CASE (1978), Assistant Professor of Earth and Environmental Sciences
B.S. Duke, M.S., Ph.D. Dalhousie, Halifax

RICHARD B. CHAPLINE (1959), Professor of Music
B.S., M.S. Juilliard; Fulbright Fellow, Staatliche Hochschule für Musik Koln, Germany, 1954-1955, 1955-1956

CARL J. CHARNETSKI (1976), Associate Professor of Psychology
B.A. Wilkes, M.A., Ph.D. Temple

CYNTHIA J. CHISARICK (1981), Assistant Professor of Accounting
B.S. Wilkes, C.P.A. State of Pennsylvania, M.B.A. Scranton

JOSEPH J. CHMIOLA (1979), Assistant Professor of Business Administration
B.A., M.B.A. Wilkes

VASUNDHRA CHOUDHRY (1984), Assistant Professor of Engineering
B.S. Delhi, M.S., Ph.D. Indian Institute of Technology Kanpur

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B.S., M.B.A. Wilkes

HAROLD E. COX (1963), Professor of History
B.A. William and Mary, M.A., Ph.D. Virginia

DOROTHY B. CRAIG (1983), Assistant Professor of Nursing
B.S. Wilkes, M.S. Misericordia

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B.S., M.B.A. Wilkes, C.M.A. Inst. of Management Accounting

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FRANCK G. DARTE, II, (1968), Professor of Education
B.A. Yale, M.S., Ed.D. Pennsylvania

LORNA C. DARTE (1969), Associate Professor of Library Science
B.A. George Washington, M.S. Drexel Institute of Technology

JAMES G. DeCOSMO (1962), Associate Professor of Mathematics/Computer Science
B.S. West Chester, M.S. Adelphi

LINDA DESMOND (1982), Assistant Professor of Nursing
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THEODORE J. ENGEL (1966), Associate Professor of Business Administration
B.B.A., M.A. Miami

DAVID W. EVANS (1984), Instructor of Language and Literature
B.A. Wilkes, M.A. Claremont

MAHMOUD H. FAHMY (1968), Professor of Education
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M. UMAR FAROOQ (1983), Assistant Professor of Engineering
B.S. Forman, Pakistan, M.S. Panjab, Pakistan, M.S. London, England, Ph.D. Birkbeck, London

WELTON FARRAR (1948), Professor of Economics
B.S., M.S. Pennsylvania

OWEN D. FAUT (1967), Professor of Chemistry
B.S. Muhlenberg, Ph.D. M.I.T.

BENJAMIN F. FIESTER, JR., (1956), Professor of English
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WILLIAM R. GASBARRO (1958), Professor of Music
B.S. Juilliard, M.A. Columbia

GEORGE GERA (1958), Associate Professor of Business Administration and Business Education
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JAMAL GHORIESHI (1984), Assistant Professor of Engineering
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B. ALENE HARRISON (1980), Associate Professor of Nursing
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UMID R. NEJIB (1965), Professor of Engineering
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ROBERT C. RILEY (1949), Professor of Psychology
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B.A. Hofstra, M.A., Ph.D. Connecticut

RALPH B. ROZELLE (1962), Professor of Chemistry
B.S. Wilkes, Ph.D. Alfred

ANN W. RUSSIN (1984), Assistant Professor of Nursing
B.S. Cornell, M.S. Misericordia

FRANCIS J. SALLEY (1950), Professor of Chemistry
B.S. St. Joseph's, M.S. Pennsylvania

JOSEPH H. SALSBURG (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 Hygiene
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 Hygiene
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

JOHN W. SIMMONS, II, (1982), Assistant Professor of Mathematics/Computer Science
B.S. Samford, M.A., Ph.D. Indiana

HERBERT B. SIMON (1969), Associate Professor of Art
B.A., M.A. New York

JOANN M. SIMONS (1983), Assistant Professor of Nursing
B.S. Marywood, M.S. SUNY, Binghamton

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

GEORGE P. SYRCOS (1983), Associate Professor of Engineering
B.S. Heald Engineering, M.S. Widener, Ph.D. Rutgers

WAGIHA ABDEL-GAWAD TAYLOR (1969), Professor of Economics
B.A. Alexandria, M.A. Brown, Ph.D. Clark

SHARON G. TELBAN (1975), Assistant Professor in Nursing
B.S., M.S. Wilkes, M.S. Pennsylvania State

LEE C. TERRY (1968), Associate 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

BARBARA L. TUCKER (1986), Assistant Professor of Accounting
B.A. Wittenberg, M.S. James Madison

DAVID E. TUCKER (1985), Associate Professor of Speech, Communications, and Theater Arts
B.A. Wittenberg, M.A., Ph.D. Bowling Green State

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), Instructor of Sociology/Anthropology
B.A. Macalester College, M.A. SUNY, Binghamton

HOWARD J. WILLIAMS (1973), Associate Professor of Economics
B.S. Wilkes, M.A., Ph.D. Pennsylvania State

BING K. WONG (1968), Professor of Mathematics/Computer Science
B.A. Kansas State at Pittsburgh, M.A., Ph.D. Illinois

JIA-HER YAN (1985), Assistant Professor of Engineering
B.S. Tunghai University (Taiwan), M.S., Ph.D. Pittsburgh

THOMAS J. YARCHESKI (1985), Associate Professor of Commerce and Finance
B.A. Wagner, Ph.D. Iowa

MORAD K. YEROUSHALMI (1981), Assistant Professor of Engineering
B.S. Arya-Mehr, Iran, M.S., Ph.D. Drexel

CAROL W. ZACK (1983), Assistant Professor of Nursing
B.S. Bloomsburg, M.S. Pennsylvania State, M.S. Wilkes

KARL ZIMMERMAN (1985), Assistant Professor of Aerospace Science
B.S., M.A. Bloomsburg

BETTY P. ZURAW (1980), Assistant Professor of Nursing
B.S. Hunter, M.A. Columbia

Adjunct Faculty

CHARLES R. ABATE (1966), Accounting
B.S., M.B.A. Wilkes

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

MADELINE 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

JOSEPH H. KANNER (1949), Psychology
B.A. Bucknell, M.A. New School for Social Research

MADELYN KOCH (1984), Mathematics/Computer Science
B.S. Bucknell

C. WARREN KOEHL (1981), Medical Director
School of Medical Technology, Wilkes-Barre General Hospital

DEBORAH L. JOHNSON (1982), Educational Coordinator
School of Medical Technology, Allentown Hospital Association

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

HELEN M. RUANE (1974), Educational Coordinator
School of Medical Technology, Wilkes-Barre General Hospital

MORRIS N. SLATER (1984), English
B.S. Manitoba

TOM TOMKIEWICZ (1980), Sociology
B.A. Wilkes, M.S. Marywood

DONALD K. WEAVER (1981), Medical Director
School of Medical Technology, The Williamsport Hospital

DONALD R. WEAVER (1981), Medical Director
Medical Technology Program, Robert Packer Hospital

President Emeritus

ROBERT S. CAPIN
Professor of Accounting, and President from 1975-1984. M.B.A. Lehigh

Emeriti

MARIAN E. ALEXANDER
Assistant Professor of Nursing, Emerita. M.S. Simmons

MICHAEL J. BARONE
Associate Professor of Education, Emeritus. M.S. Bucknell

CATHERINE H. BONE
Assistant Professor of Chemistry, Emerita. M.S. Pennsylvania State

ELWOOD DISQUE
Associate Professor of German, Emeritus. B.A. Dickinson

FRANCIS J. DONAHOE
Professor of Physics, Emeritus. Ph.D. Pennsylvania

JEAN M. DRISCOLL
Professor of Political Science, Emerita. Ph.D. Northwestern

EUGENE L. HAMMER
Professor of Education, Emeritus. Ed.D. Columbia

KLAUS HOLM
Associate Professor of Theater Arts, Emeritus. M.F.A. Yale

BRONIS KASLAS
Professor of History, Emeritus. Ph.D. Strasbourg

DAVID M. LEACH
Professor of History, Emeritus. Ph.D. Rochester

ANNE VANKO LIVA
Associate Professor of Music, Emerita. Juilliard

CHARLOTTE V. LORD
Professor of English, Emerita. Ph.D. Pennsylvania

HILDA A. MARBAN
Professor of Foreign Languages, Emerita. Ph.D. Havana, Ph.D. Virginia

RUTH W. McHENRY
Professor of Nursing, Emerita. M.A. Columbia

LEOTA NEVIL
Assistant Professor of Library Science, Emerita. M.S. Wilkes

GEORGE F. RALSTON
Dean of Student Affairs, Emeritus. M.A. Columbia

CHARLES B. REIF
Professor of Biology, Emeritus. Ph.D. Minnesota

J. PHILIP RICHARDS
Associate Professor of Art, Emeritus. B.F.A. Syracuse

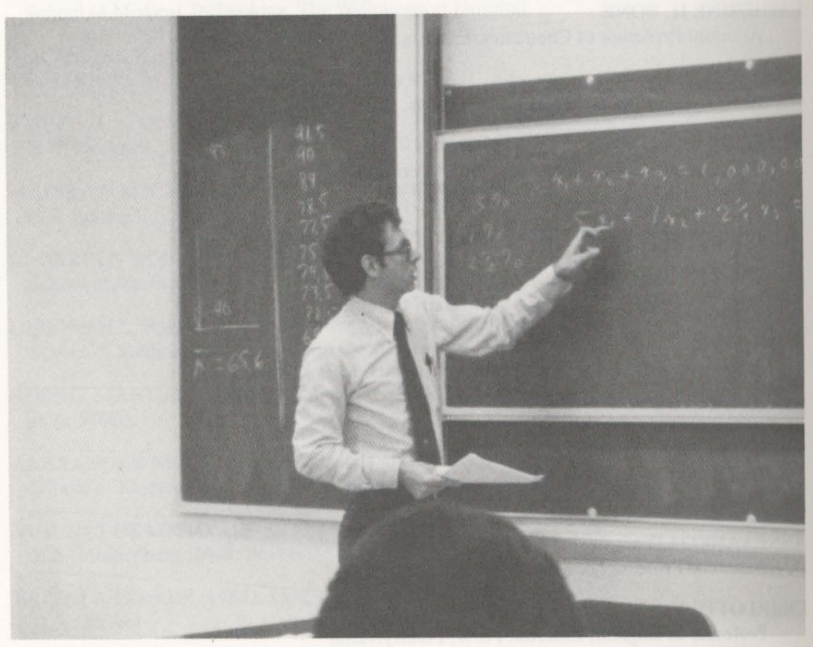
THOMAS R. RICHARDS
Professor of Mathematics, Emeritus. M.S. Bucknell

RUTH T. ROBERTS
Instructor of English, Emerita. B.A. Goucher

CROMWELL E. THOMAS
Associate Professor of Engineering, Emeritus. B.S. Washington and Lee

ROBERT E. WERNER
Professor of Economics, Emeritus. Ph.D. Wisconsin

ROY E. WILLIAMS
Professor of Philosophy, Emeritus. Ph.D. Drew



Standing Committees of the Faculty

The following are the Faculty Committee assignments made for the academic year 1986-87. The President is ex officio on all Committees except Committees on Academic Freedom.

Academic Freedom

Mediation
Wilbur Hayes (1989)
James DeCosmo (1988)
Robert Riley (1987)
Lee Terry, Alt. (1987)

Faculty-Trustee
Frank Salley (1989)
Bradford Kinney, Alt. (1989)
Walter Placek (1988)

Academic Standards

John Natzke, Chair (1987)
Jean Steelman (1989)
Herbert Garber (1989)
Joseph Salsburg (1988)
Virginia Nehring (1988)
Frederick Krohle (1987)
Gerald Hartdagen
Arthur Hoover

Admissions

Kenneth Klemow, Chair (1987)
Jerome Kucirka (1989)
Edwin Johnson (1988)
Carol Zack (1987)
Cynthia Chisarick (1987)
Edward Moyer
Bernard Vinovrski

Athletic

Joel Berlatsky, Chair (1987)
Gay Meyers (1989)
Stephen Tillman (1989)
John Orehotsky (1988)
Amy Wiedemer
Phil Wingert

Curriculum

Lee Terry, Chair (1988)
Michael O'Neill (1989)
Bing Wong (1989)
Alene Harrison (1988)
Ann Marie Kolanowski (1987)
Willian Sterling (1987)
Sharon Telban (1987)
Robert Heaman
Jane Lampe

Faculty Policy

Fred Croop (1989)
William Stine (1989)
Francis Salley (1988)
Welton Farrar (1987)

Financial Aid

Walter Placek, Chair (1987)
Michael Case (1989)
Lorna Darte (1989)
Kenneth Lewis (1988)
Roosevelt Newson (1987)
Rachael Lohman
Bernard Vinovrski

Graduate Studies

Kenneth Broadt, Chair (1989)
Thomas Yarcheski (1989)
Paul O'Hop (1989)
Thomas Kaska (1988)
Dorothy Craig (1987)
Linda Desmond (1987)
Barbara Bellucci
Mahmoud Fahmy

Library

John Simmons, Chair (1987)
John Janecek (1989)
Bruce Reiprich (1989)
Ann Russin (1988)
George Gera (1987)
Robert Paustian
Catherine Schappert

Student Life

Suzanne Druffner, Chair (1987)
Robert Bohlander (1989)
Katherine Anselmi (1989)
Lester Turoczi (1988)
Joann Simons (1987)
Paul Adams
Sue Topfer

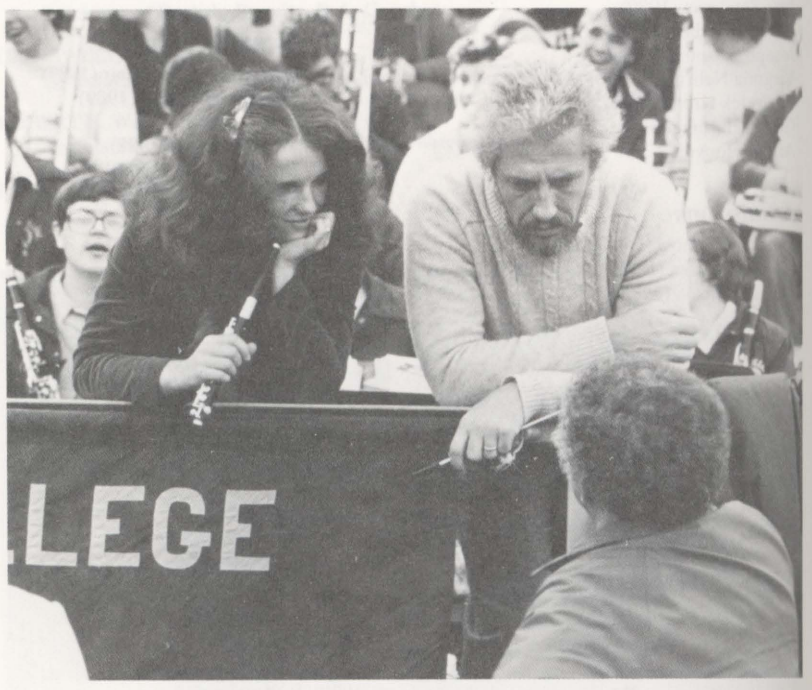
Student Publications
Jane Elmes, Chair (1989)
David Evans (1988)
Joyce Hamlin (1988)
Nancy Nally (1987)
Rose Ann Cordora (1987)
Anne Graham
Jane Manganella

Teacher Recognition and Effectiveness
Suzanne Fischer, Chair (1987)
Susan Behuniak-Long (1989)
M. Umar Farooq (1989)
Pamela Baker (1988)
Walter Karpinich (1987)
Patricia Heaman
Debra Prater

Tenure and Promotion
Humanities
Richard Fuller, Secretary (1989)
Jerome Campbell (1989)

Natural Sciences and Mathematics
Judith Schreiber (1988)
Howard Swain (1988)

Social Sciences
Carl Charnetski, Chair (1987)
Robert DeYoung (1987)



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Wilkes College

WILKES-BARRE • PENNSYLVANIA • 18766
717•824-9890

1986

Fall Semester

Evening and Weekend College
Undergraduate Programs

Wilkes College

Wilkes College Fall Semester 1986

— GENERAL INFORMATION —

Calendar for Fall Semester 1986

Registration for Evening College and Part-Time Day-School Students:

Monday, Aug. 25 . . . . . .8:30 a.m. to 8:00 p.m.
Tuesday, Aug. 26 . . . . . .8:30 a.m. to 8:00 p.m.
Wednesday, Aug. 27 . . . . . .Classes begin at 8:00 a.m.
Monday, Sept. 1 (Labor Day) . . . . . .Classes are in session
Friday, Oct. 10. . . . . .Fall recess begins at 5:00 p.m.
Wednesday, Oct. 15 . . . . . .Classes resume at 8:00 a.m.
Tues., Nov. 25 . . . . .Thanksgiving recess begins at 10:00 p.m.
Monday, Dec. 1 . . . . . .Classes resume at 8:00 a.m.
Tuesday, Dec. 9. . . . . .Classes end at 10:00 p.m.
Thur., Dec. 11 thru Fri., Dec. 19 . . . . . .Final Examinations

Weekend College (at Keystone Junior College)

Sept. 12 to Dec. 14 (including Final Examinations)
Final Registration . . . . . .September 12
(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.

Admissions

Application for admission to Wilkes College as an evening college; part-time day-school or weekend college student should be made to the Office of Evening, Summer and Weekend College, 129 South Franklin Street, Wilkes-Barre, Pennsylvania 18766. Application for admission to Wilkes College as a full-time undergraduate student should be made to the Dean of Admissions.

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

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 $130 per credit. Fees: $3.00 per credit hour general college fee.

Undergraduate students who register for 12 through 18 credits pay a flat tuition fee of $2,995 per semester. (Students who take more than 18 credits pay $130 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**

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.

Admissions

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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 367.

Degree Programs

Bachelor of Arts:

- Art
- Art Management
- Biology
- Chemistry
- Communication Studies
- Computer Information Systems
- Computer Science
- Earth & Environmental Sciences
- Economics
- English
- Foreign Languages
- History
- Individualized Studies
- International Relations
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Sociology
- Theater Arts

Bachelor of Science:

- Accounting
- Biology
- Business Administration
- Chemistry
- Computer Science
- Earth & Environmental Sciences
- Engineering
  - (a) Electrical Engineering
  - (b) Engineering Management
  - (c) Environmental Engineering
  - (d) Materials Engineering
- Individualized Studies
- Mathematics
- Medical Technology
- Medical & Health Physics
- Nursing
- Physics

Bachelor of Fine Arts
Bachelor of Music

Undergraduates

lish 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.

Information

For further information, write or call:

Barbara E. King, Director
Evening, Summer and Weekend College
Wilkes College
129 South Franklin Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651, Ext. 380
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

Undergraduate Division

EVENING COLLEGE CLASSES

August 27 — December 19, 1986

REGISTRATION (Sturdevant Hall, First Floor)
129 S. Franklin Street

Monday, August 25 . . . . . .8:30 a.m.-8:00 p.m.

Tuesday, August 26 . . . . . .8:30 a.m.-8:00 p.m.

EARLY REGISTRATION WILL BE ACCEPTED

8:30 A.M. - 4:30 P.M. AFTER AUGUST 1, 1986

Course	Description	Room	Day & Hour	Credits
ACCOUNTING:				
ACC 101-E	Elementary Accounting I	DDD 201	M **6:30-9:30**	3
ACC 102-E	Elementary Accounting II (Prereq: ACC 101)	DDD 202	M **6:30-9:30**	3
ACC 111-E	Intermediate Accounting I (Prereq: ACC 102)	DDD 201	W **6:30-9:30**	3
ACC 201-E	Cost Accounting I (Prereq: ACC 102)	DDD 201	T **6:30-9:30**	3
ACC 221-E	Taxes I (Prereq: ACC 112 or approval of instructor)	Bdf 12	W **6:30-9:30**	3
ACC 241-E	Advanced Accounting I (Prereq: ACC 111 & 112)	DDD 202	W **6:30-9:30**	3
AEROSPACE STUDIES:				
AS 000-E	Leadership Laboratory	Armory	T **7:00-9:00**	0
AS 101-E	U.S. Military in Contemporary World I	SLC 160	Th **5:00-5:50**	1
AS 201-E	The Development of Air Power I	SLC 147	Th **5:30-6:20**	1
ANTHROPOLOGY:				
ANT 101-E	Introduction to Anthropology	SLC 359	W **6:30-9:30**	3
ART:				
Art 101-E	Experiencing Art	SLC 3	M **6:30-9:30**	3
Art 245-E	Surface Design I	SLC 105	M **6:30-9:30**	3
BUSINESS ADMINISTRATION:				
BA 101-E	Introduction to Business	SLC 270	W **6:30-9:30**	3
BA 209-E	Business Correspondence & Reports	Bdf 12	M **6:30-9:30**	3
BA 225-E	Managerial Finance	SLC 270	Th **6:30-9:30**	3
BA 231-E	Business Law — Contracts	SLC 207	M **6:30-9:30**	3
BA 241-E	Life Insurance	SLC 270	T **6:30-9:30**	3
BA 251-E	Principles of Management	SLC 409	T **6:30-9:30**	3
BA 261-E	Principles of Retailing	SLC 207	T **6:30-9:30**	3
COMPUTER SCIENCE:				
CS 115-E	Survey of Computers and Data Processing	SLC 403	M W **6:30-7:45**	3
CS 225-E	Advanced Programming – PASCAL (Prereq: CS 123 or EGR 244) Fee: $45.	SLC 405	M W **6:30-8:15**	4
CS 320-E	Logic and Switching Circuits (Prereq: EE 211)	SLC 403	T Th **6:30-7:50**	3
EARTH & ENVIRONMENTAL SCIENCES:				
E ES 115-E	Survey of Geology	SLC 380	Th **6:00-7:45**	3
E ES 115-E1	Laboratory Fee: $35.	SLC 435	Th **8:00-10:00**	3
E ES 398-E	Topics: Soils	SLC 434	M **6:30-9:30**	3
ECONOMICS:				
EC 101-E	Principles of Economics I	SLC 207	W **6:30-9:30**	3
EC 102-E	Principles of Economics II	DDD 101	W **6:30-9:30**	3
EC 201-E	Money & Banking	SLC 318	W **6:30-9:30**	3
MAE 321-E	Thermo & Phase Equilibria I (Prereq: MAE 210)	SLC 147	T **6:30-9:30**	3
ENGLISH:				
Eng 101-E	Composition I	SLC 209	M **6:30-9:30**	3
Eng 151-E	Western World Literature I (Prereq: Eng 102 or equivalent in composition)	SLC 209	T **6:30-9:30**	3
Eng 151-E1	Western World Literature I (Prereq: Eng 102 or equivalent in composition)	SLC 359	Th **6:30-9:30**	3
Eng 220-A	History of the English Language (Prereq: Eng 152 or 254)	DDD 201	T Th **4:00-5:15**	3
Eng 325-E	Shakespeare (Prereq: Eng 152 or 254)	SLC 359	M **6:30-9:30**	3
HISTORY:				
HST 101-E	World Civilization I	Capin 15	T **6:30-9:30**	3
HST 102-E	World Civilization II	SLC 318	Th **6:30-9:30**	3
HST 328-E	History of U.S. Foreign Policy	Capin 15	M **6:30-9:30**	3
HST 376-E	World War II	SLC 424	W **6:30-9:30**	3
MATHEMATICS:				
MTH 101-E	Fundamentals of Mathematics I	SLC 405	M W **8:00-9:30**	3
MTH 111-E	Calculus I (Prereq: MTH 100 or at least three years of high school mathematics including Geometry, Algebra II, and topics in Trigonometry)	SLC 411	M W **6:30-8:30**	4
MTH 112-E	Calculus II	SLC 411	T Th **6:30-8:30**	4
MTH 211-E	Elementary Differential Equations (Prereq: MTH 112)	SLC 409	M W **6:30-8:30**	4
MUSIC:				
MUS 101-E	Introduction to Music I	DDD 218	T **6:30-9:30**	3
MUS 250-E	Teaching of Elementary Music	DDD 218	M **6:30-8:30**	2
MUS 397-E	Seminar (Prereq: Approval of department chairman)	TBA	T **6:00-7:00**	1
NURSING:				
NSG 200-E	Principles of Normal Nutrition (Prereq: CHM 130) (Coreq: NSG 201)	SLC 359	T **6:00-9:00**	3
NSG 201-E	Introduction to Nursing (Prereq: BIO 116, CHM 130, PSY 102, SOC 275, MTH competency) (Coreq: NSG 200, BIO 113) Fee: $75.	SLC 347	M **7:30-9:30**	6
NSG 201-E1	Discussion	SLC 347	M **6:30-7:20**	0
NSG 201-E2	Discussion	SLC 334	M **6:30-7:20**	0
NSG 203-E	Nursing Care of the Adult Client I (Prereq: NSG 202) Fee: $75.	SLC 380	M W **6:00-7:50**	8
NSG 271-E	Health Care Terminology	SLC 380	Th **6:00-7:50**	1
NSG 272-E	Clinical Applications of Pharmacology (Prereq: Junior & Senior NSG student's and R.N.'s)	SLC 342	T **6:30-9:30**	3
NSG 301-E	Nursing Care of the Older Client (Prereq: NSG 204) Fee: $75.	SLC 101	M W **6:00-7:50**	8
NSG 303-E	Issues & Trends in Nursing	SLC 347	Th **6:00-9:00**	3

WEEKEND COLLEGE CLASSES
Fall, 1986

on the campus of Keystone Junior College
La Plume, Pennsylvania
September 12 - December 14, 1986

Calendar — Fall, 1986

September	12, 13, 14
*September	26, 27, 28
October	17, 18, 19
November	7, 8, 9
*November	21, 22, 23
December	12, 13, 14

*2-week interval between classes

A Schedule	B Schedule	C Schedule
Fri. **6:30-8:30**	Sat. 8:00-10:00	Sat. **6:00-8:00**
Sat. 10:10-**12:10**	Sat. **1:00-3:00**	Sun. 8:00-10:00
Sat. **3:10-5:10**	Sun. 10:10-**12:10**	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	Room	Schedule	Credits
ACCOUNTING:				
ACC 201-W	Cost Accounting	L-108	C	3
BIOLOGY:				
BIO 113-W	Microbiology	Cap 315	A&B	4
BIO 113-W1	Laboratory Fee: $35.	Cap 201		0
BUSINESS ADMINISTRATION:				
BA 225-W	Managerial Finance	L-108	B	3
BA 251-W	Principles of Management	L-214	A	3
EC 223-W	Collective Bargaining	L-315	B	3
EC 241-W	Microeconomics I	L-107	A	3
PHYSICS:				
PHY 101-W	Physical Science I	L-107	B	3
PSYCHOLOGY:				
PSY 242-W	Psychological Tests	Cap 315	C	3
PSY 331-W	Abnormal Psychology	L-315	A	3
SOCIOLOGY:				
SOC 250-W	Social Stratification	L-417	B	3

EC 201-E	Money & Banking	SLC 318	W **6:30-9:30**	3
EC 227-E	Economic Geography of North America, Europe and the Soviet Union	Bfd 13	W **6:30-9:30**	3
EC 231-E	Applied Economic Statistics I — (Prereq: EC 101-102 and 6 hrs. of mathematics)	DDD 202	T **6:30-9:30**	3
EC 231-E1	Laboratory Fee: $20.	DDD 202	Th **4:00-5:45**	0
EC 251-E	Macroeconomics I	Bdf 11	M **6:30-9:30**	3
EDUCATION:				
ED 301-E	Health, Physical Education & Safety	SLC 311	M **6:30-8:30**	2
ED 361-E	Early Childhood Education	SLC 311	W **6:30-9:30**	3
ED 398-E	Using the Macintosh Computer	SLC 134	T **6:00-8:00**	3
ENGINEERING:				
E E 211-E	Circuit Theory I (Prereq: MTH 112)	SLC 403	T Th **8:00-9:30**	3
E E 251-E	Electronics I (Prereq: E E 212)	SLC 403	M W **8:00-9:30**	3
E E 253-E	Electronics Laboratory I (Prereq: To be taken with or after E E 251) Fee: $45.	SLC 125	Th **6:30-9:30**	1
E E 271-E	Physical Electronics (Prereq: MAE 210, PHY 203)	SLC 27	M W **6:30-9:00**	3
E E 320-E	Electric Machines (Prereq: E E 331)	SLC 405	T Th **8:00-9:30**	4
E E 320-E1	Laboratory Fee: $40.	SLC 291	W **6:30-9:30**	0
E E 331-E	Electromagnetics I (Prereq: MTH 211 & PHY 202)	SLC 166	M W **6:30-7:50**	3
E E 333-E	Electromagnetics Laboratory I (Prereq: To be taken with or after E E 331) Fee: $40.	SLC 159	T **6:30-9:30**	1
E E 335-E	Microwaves & Antenna Systems (Prereq: E E 332)	SLC 127	T Th**6:30-7:50**	3
E E 341-E	Logic & Switching Circuits (Prereq: E E 211)	SLC 403	T Th **6:30-7:50**	3
E E 381-E1	Advanced Microelectronics Lab (Prereq: Senior engineering standing) Fee: $45.	SLC 22	M **5:00-10:45**	4
E E 381-E2	Advanced Microelectronics Lab (Prereq: Senior engineering standing) Fee: $45.	SLC 22	W **5:00-10:45**	4
E E 397-E	Senior Seminar (Prereq: Senior engineering standing)	TBA	TBA	1
E E 397-E1	Senior Seminar (Prereq: Senior engineering standing)	TBA	TBA	1
E E 397-E2	Senior Seminar (Prereq: Senior engineering standing)	TBA	TBA	1
EGR 231-E	Statics & Dynamics (Prereq: PHY 201)	SLC 1	M W **6:30-7:50**	3
EGR 247-E	Advanced Programming – PASCAL (Prereq: EGR 244/CS 123) Fee: $45.	SLC 405	M W **6:30-8:15**	4
EGR 283-E	Measurement Lab I Fee: $30.	SLC 23	Th **6:30-8:30**	1
EGR 397-E	Senior Seminar (Prereq: Senior engineering standing)	TBA	TBA	1
EGR 397-E1	Senior Seminar (Prereq: Senior engineering standing)	TBA	TBA	1
EGR 397-E2	Senior Seminar (Prereq: Senior engineering standing)	TBA	TBA	1
MAE 210-E	Introduction to Materials Engineering (Prereq: EGR 231 or PHY 201)	SLC 1	T Th **6:30-7:50**	3
NSG 303-E	Issues & Trends in Nursing (Prereq: NSG 204) (Coreq: NSG 301 or 302)	SLC 347	Th **6:00-9:00**	3
NSG 305-E	Introduction to Research (Prereq: NSG 204, MTH 150)	SLC 334	T **6:30-9:30**	3
NSG 307-E	Physical Assessment (Prereq: Junior & Senior NSG Majors or R.N.'s)	SLC 318	M **6:30-9:30**	3
PHILOSOPHY:				
PHL 298-E	Business Ethics (Prereq: PHL 101 or 201)	SLC 317	T Th **6:30-7:45**	3
PHYSICAL EDUCATION:				
PE 310-E	Treating Athletic Injuries	SLC 316	M **6:30-9:30**	3
PHYSICS:				
PHY 101-E	Physical Science I	SLC 166	Th **6:30-7:45**	3
PHY 101-E1	Discussion	SLC 166	Th **8:30-9:30**	0
PHY 101-E2	Discussion	SLC 166	Th **9:30-10:30**	0
PHY 105-E	Introduction Physics I Laboratory	SLC 151	W **6:30-9:30**	0
PHY 201-E	General Physics I	SLC 424	M **6:30-8:30**	4
PHY 201-*E	Laboratory Fee: $40.	SLC 151	W **6:30-9:30**	0
PHY 201-E1	Discussion	SLC 424	M **8:30-9:30**	0
PHY 202-*E	General Physics II Laboratory (Prereq: PHY 201) Fee: $40.	SLC 149	T **6:30-9:30**	0
PHY 210-E	Introduction to Materials Engineering (Prereq: PHY 201 or EGR 231)	SLC 1	T Th **6:30-8:00**	3
PHY 211-E	Statics and Dynamics (Prereq: PHY 201, MTH 112)	SLC 1	M W **6:30-7:50**	3
PHY 331-E	Electricity & Magnetism I (Prereq: MTH 211, PHY 202)	SLC 166	M W **6:30-8:00**	3
PHY 333-E	Electricity & Magnetism I Laboratory Fee: $40.	SLC 159	T **6:30-9:30**	1
POLITICAL SCIENCE:				
P S 102-E	Introduction to American Politics	SLC 204	W **6:30-9:30**	3
P S 105-E	Modern Political Systems	SLC 207	Th **6:30-9:30**	3
P S 354-E	Administrative Policy Making (Prereq: P S 102 & 218 or consent of instructor)	SLC 316	T **6:30-9:30**	3
PSYCHOLOGY:				
PSY 101-E	General Psychology I	SLC 334	Th **6:30-9:30**	3
PSY 325-E	The Exceptional Individual (Prereq: PSY 101-102)	SLC 347	T **6:30-9:30**	3
PSY 397-E	Contemporary Issues in Psychology	SLC 160	M **6:30-9:30**	3
SOCIOLOGY:				
SOC 101-E	Introduction to Sociology	SLC 204	T **6:30-9:30**	3
SOC 251-E	Fields of Social Work (Prereq: SOC 101 or ANT 101, or PSY 101-102, or approval of instructor)	SLC 209	Th **6:30-9:30**	3
SOC 370-E	Methods of Research in Sociology (Prereq: SOC 101 or approval of instructor)	SLC 270	M **6:30-9:30**	3
SPANISH:				
SP 101-E	Elementary Spanish I	SLC 342	M **6:30-9:30**	3
SPEECH/COMMUNICATIONS/THEATER:				
SCT 260-E	Basic Newswriting (Prereq: SCT 102) Fee: $20.	SLC 133	W **6:30-9:30**	3

COURSES AT HAZLETON STATE GENERAL HOSPITAL

Hazleton, Pennsylvania
August 27 - December 19, 1986

Course	Description	Room	Time	Credits
ENGLISH:				
Eng 151-H	Western World Literature I	Ed Bldg	T **1:00-3:45**	3
SOCIOLOGY:				
Soc 398-H	Interventive Strategies	Ed Bldg	T **6:30-9:30**	3

DAY CLASSES

August 27 - December 19, 1986

Part-time students interested in day-school classes should contact the Office of Evening, Summer and Weekend College.

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 information, contact **Ms. Anne Graham**
824-4651, Ext 367

For further information, contact:

BARBARA E. KING, *Director*
Evening, Summer and
Weekend College
WILKES COLLEGE
129 S. Franklin Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380
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

Spring

Graduate Studies

WILKES COLLEGE
SPRING SEMESTER, 1987

Graduate Studies

SPRING 1987 (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 315G-A	Molecular Biology (Prereq: BIO 121-122, CHEM 231-232 or permission of instructor)	SLC 359	MWF 10-10:50	Turoczi	3
BIO 317G-A	Ecology (Prereq: BIO 121-122 or permission of instructor) Lab Fee: $35	SLC 359	MWF **1-1:50**	Klemow	3
BIO 319G-A	Plant Diversity (Prereq: BIO 121-122, 223-224 or permission of instructor)	SLC 359	TTh **1-1:50**	Klemow	3
BIO 319G-A	Lab Lab Fee: $35	SLC 365	W **2-5**	Klemow	
BIO 341G-A	*Immunology and* Immunochemistry (Prereq: BIO 121-122 or permission of instructor)	SLC 359	MW 11-11:50	Bottjer	3
BIO 341G-A1	Lab Lab Fee: $35	SLC 305	T **2-5**	Bottjer	
BIO 397G-A	Seminar	SLC 359	Th **3-4:50**	Bottjer	3
BIO 398G-A	Topics: Mammalian Physiology (Prereq: BIO 121-122 or permission of instructor)	SLC 359	MW 9-9:50	Long	3
BIO 398G-A1	Lab Lab Fee: $35	SLC 377	Th 8-11	Long	

CHEMISTRY

CHEM 325G-E	Advanced Inorganic (Prereq: CHEM 222 and 252)	SLC 147	Th **6:30-9:30**	Heyden	3
CHEM 362G-A	Biochemistry II (Prereq: CHEM 232)	SLC 147	TTh **1-2:15**	Stine	3

EDUCATION

ED 404-A	Intern Teaching - Elem.	TBA	TBA	TBA	3
ED 404-B	Intern Teaching - Sec.	TBA	TBA	TBA	3
ED 510	Psychological Foundations of Education	SLC 204	MW **4-5:30**	Ginsberg	3
ED 511	Philosophical Foundations of Education	SLC 411	M **6-9**	Fahmy	3
ED 522	Ed. Statistics and Computer Simulation	SLC 424	M **4:30-7:30**	Bellucci	3
ED 531	Children's Literature	SLC 204	T **4:30-6:15**	G. Meyers	3
ED 531-A1	Lab	TBA	TBA	G. Meyers	3
ED 532-A	Problems in Elementary Education I - Mathematics	KBY 102	W **6-9**	Polocheck	3
ED 532-D	Problems in Elementary Education I - Social Studies	KBY 102	T **6-9**	Darte	3
ED 550	Project T.E.A.C.H.	TBA	TBA	Staff	3
ED 551	Project P.R.I.D.E.	TBA	TBA	Staff	3
ED 552	Teaching Through Learning Channels	TBA	TBA	Staff	3
ED 582	Instructional Programming in Pascal	SLC 424	M **7-10**	Pryor	3
ED 598	Topics: Creativity in the Elementary Classroom	SLC 160	M **6-9**	Polacheck	3

EDUCATION COURSES WITH SPECIAL INTEREST

ED 533-B	Problems in Elementary Education II - Science	SLC 150	M **6-9**	Placek	3
ED 580-E	Computer Literacy Elementary	SLC 127	W **6-9**	Pryor	3
ED 580-E1	Computer Literacy Secondary	SLC 127	M **6-9**	Koch	3

ENGLISH

ENG 382G-A	American Lit. II (Prereq: ENG 152 or 254)	BDF 11	TTh **3-4:15**	Gutin	3
ENG 384G-A	American Drama (Prereq: ENG 152 or 254)	CPA 9	MWF 9-9:50	O'Neill	3
ENG 450G-A	Romantic & Victorian Literature	KBY 102	MWF 10-10:50	Terry	3
ENG 470-E	Modern British Literature	KBY 302	T **6-9**	P. Heaman	3

HISTORY/POLITICAL SCIENCE

HST 321-E	American Social History	SLC 316	M **6:30-9:30**	Cox	3
HST 342-A	British Empire II	SLC 316	MWF 10-10:50	Berlatsky	3
HST 356-A	Europe in the 20th Century	SLC 342	MWF 9-9:50	Shao	3
HST 398-A	Topics: The Holocaust	SLC 209	TTh 9:30-10:45	Spiar	3
HST 398-B	Topics: The Constitution 200 Years	SLC 207	MWF **1-1:50**	Behuniak-Long	3
PS 314-A	Planning in Urban Development	BDF 12	TTh 9:30-10:15	Tuhy	3
PS 316-A	Government Budgeting	SLC 160	T **6:30-9:30**	Tuhy	3
PS 325-A	Politics of Developing Areas	SLC 209	MWF 12-**12:50**	Bauzon	3
PS 398-A	Topics: Women and the Law	SLC 209	MWF **1-2:15**	Behuniak-Long	3
PS 398-B	Topics: The Constitution 200 Years	SLC 207	TTh **1-2:15**	Behuniak-Long	3

MATHEMATICS/COMPUTER SCIENCE

MATH 352G-A	Probability and Statistics II	SLC 405	TTh 9:30-10:45	Berard	3

SCHOOL OF BUSINESS AND ECONOMICS

BUSINESS ADMINISTRATION

Course	Description	Room	Day & Hour	Instructor	Credit
ACCT 503-E	Managerial Accounting (Prereq: ACCT 101, ACCT 102, BA 225)	TBA	Th **6-9**	Croop	3
ACCT 542-E	Financial and Tax Planning	TBA	T **6-9**	Chisarick	3
BA 507-E	Business & Society (Prereq: BA 231)	SLC 209	Th **6-9**	Raspen	3
BA 507-E1	Business & Society (Prereq: BA 231)	SLC 311	Th **6-9**	Farrar	3
BA 512-E	Price Policy and Procedure	BDF 12	T **6-9**	Taylor	3
BA 521-E	Organizational Theory	SLC 347	T **6-9**	K. Lewis	3
BA 522-E	Quantitative Aspects of Management	SLC 342	Th **6-9**	K. Lewis	3
BA 550-E	Topics: Entrepreneurship	BDF 12	W **6-9**	Lohman	3
BA 550-E1	Topics: SBA	TBA	TBA	Chmiola	3
BA 552-E	Financial Managament	SLC 342	M **6-9**	Engel	3

ECONOMICS

EC 505-E	Managerial Statistics (Prereq: EC 231)	DDD 101	M **6-9**	Cordora	3
EC 506-E	Labor-Management Economics	SLC 347	W **6-9**	Chmiola	3
EC 510-E	Managerial Economics (Prereq: EC 101, EC 102, BA 502, EC 505)	SLC 359	M **6-9**	H. Williams	3
EC 510-E1	Managerial Economics (Prereq: EC 101, EC 102, BA 502, EC 505)	SLC 342	W **6-9**	H. Williams	3

HEALTH SERVICE ADMINISTRATION (MHA)

HSA 502-E	Financial Management Sem. for Health-Care Providers	SLC 316	T **6-9**	Menichello	3
HSA 504-E	Strategic Planning for Health-Care Institutions	DDD 101	Th **6-9**	Healey	3
HSA 512-E	Long-Term Care Administration	SLC 311	M **6-9**	Clark	3
HSA 522-E	Market Research and Information Systems	TBA	W **6-9**	Atzrott	3
HSA 531-E	Acct. for Health-Care Institutions	SLC 204	W **6-9**	Grabo	3
HSA 540-E	Labor/Management Relations in Health-Care	TBA		Healy	3

Dates:
Jan. 23, 24
Feb. 6, 7
Mar. 6, 7, 27, 28
May 1, 2

Weekends:
Fridays:
6-9
Saturdays:
9-**12**
1-4

SCHOOL OF ENGINEERING AND PHYSICAL SCIENCES

ENGINEERING

Course	Description	Room	Day & Hour	Instructor	Credit
EE 398G-A	Topics: Power Systems Analysis	SLC 207	MWF **12-12:50**	Srinivasan	3
EE 398G-E	Topics: Interface Network Design	SLC 223	T **6-7:50**	Mohseni	3
EE 398G-E1	Lab Lab Fee: $35	SLC 222	Th **6-7:50**	Mohseni	
MAE 398G-E	Topics: Advanced Phase Diagrams	SLC 240	Th **6:30-9:15**	Janecek	3
EE 414G-E	Control Systems	SLC 403	TTh **8-9:15**	Ghoreishi	3
EE 432G-E	Electromagnetic Fields & Waves	SLC 223	Th **6:30-9:30**	Hostler	3
EE 482G-E	Adv. Communication & Antenna Lab	SLC 224	M **5-11**	Janaswamy	3
EE 482G-E1	Adv. Communication & Antenna Lab	SLC 224	W **5-11**	Armand	3
EE 498G-E	Topics: Integrated Circuit Design	SLC 223	M **6:30-9:15**	Choudhry	3

PHYSICS

PHY 302G-A	Mathematical Methods II	SLC	TTh 8-9:15	Bellas	3
PHY 310G-A	Analytical Mechanics	TBA	MWF 10-10:50	Maxwell	3
PHY 332G-A	Electricity and Magnetism II	TBA	MWF 11-11:50	Chorieski	4
PHY 334G-A	Lab	TBA	M 8-10:50	Kucirka	1
PHY 340G-A	Thermodynamics	TBA	TTh 9:30-10:50	Bellas	3
PHY 380G-A	Nuclear Physics	TBA	MWF **12-12:50**	Staff	3
PHY 382G-A	Lab	SLC 42	W **2:30-5:20**	Maxwell	1
PHY 396G-A	Ind. Research	TBA	TBA	Staff	1
PHY 396G-B	Ind. Research	TBA	TBA	Staff	2
PHY 396G-C	Ind. Research	TBA	TBA	Staff	3
PHY 432G-E	Electromagnetic Fields & Waves	SLC 223	Th **6:30-9:30**	Hostler	3

Special Features

Wilkes College Master degree in Health Administration is accredited and formally approved by the Division of Academic Program Approval, Department of Education of the Commonwealth of Pennsylvania. Wilkes College is a member of the Association of University Programs in Health Administration (AUPHA).

The Wilkes College Master of Business Administration has been extended to the Allentown area. Courses are offered at Allentown College.

University of Pennsylvania in cooperation with Wilkes College is offering a doctorate of Educational Leadership program on the Wilkes campus.

The Division of Graduate Studies and Continuing Education is offering a variety of non-

COLLEGE OF ARTS AND SCIENCES

BIOLOGY

Course	Description	Room	Day & Hour	Instructor	Credit
BIO 315G-A	Molecular Biology (Prereq: BIO 121-122, CHEM 231-232 or permission of instructor)	SLC 359	MWF 10-10:50	Turoczi	3
BIO 317G-A	Ecology (Prereq: BIO 121-122 or permission of instructor) Lab Fee: $35	SLC 359	MWF **1-1:50**	Klemow	3
BIO 319G-A	Plant Diversity (Prereq: BIO 121-122, 223-224 or permission of instructor)	SLC 359	TTh **1-1:50**	Klemow	3
BIO 319G-A	Lab Lab Fee: $35	SLC 365	W **2-5**	Klemow	
BIO 341G-A	Immunology and Immunochemistry (Prereq: BIO 121-122 or permission of instructor)	SLC 359	MW 11-11:50	Bottjer	3
BIO 341G-A1	Lab Lab Fee: $35	SLC 305	T **2-5**	Bottjer	
BIO 397G-A	Seminar	SLC 359	Th **3-4:50**	Bottjer	3
BIO 398G-A	Topics: Mammalian Physiology (Prereq: BIO 121-122 or permission of instructor)	SLC 359	MW 9-9:50	Long	3
BIO 398G-A1	Lab Lab Fee: $35	SLC 377	Th 8-11	Long	

CHEMISTRY

CHEM 325G-E	Advanced Inorganic (Prereq: CHEM 222 and 252)	SLC 147	Th **6:30-9:30**	Heyden	3
CHEM 362G-A	Biochemistry II (Prereq: CHEM 232)	SLC 147	TTh **1-2:15**	Stine	3

EDUCATION

ED 404-A	Intern Teaching - Elem.	TBA	TBA	TBA	3
ED 404-B	Intern Teaching - Sec.	TBA	TBA	TBA	3
ED 510	Psychological Foundations of Education	SLC 204	MW **4-5:30**	Ginsberg	3
ED 511	Philosophical Foundations of Education	SLC 411	M **6-9**	Fahmy	3
ED 522	Ed. Statistics and Computer Simulation	SLC 424	M **4:30-7:30**	Bellucci	3
ED 531	Children's Literature	SLC 204	T **4:30-6:15**	G. Meyers	3
ED 531-A1	Lab	TBA	TBA	G. Meyers	3
ED 532-A	Problems in Elementary Education I - Mathematics	KBY 102	W **6-9**	Polocheck	3
ED 532-D	Problems in Elementary Education I - Social Studies	KBY 102	T **6-9**	Darte	3
ED 550	Project T.E.A.C.H.	TBA	TBA	Staff	3
ED 551	Project P.R.I.D.E.	TBA	TBA	Staff	3
ED 552	Teaching Through Learning Channels	TBA	TBA	Staff	3
ED 582	Instructional Programming in Pascal	SLC 424	M **7-10**	Pryor	3
ED 598	Topics: Creativity in the Elementary Classroom	SLC 160	M **6-9**	Polacheck	3

EDUCATION COURSES WITH SPECIAL INTEREST

ED 533-B	Problems in Elementary Education II - Science	SLC 150	M **6-9**	Placek	3
ED 580-E	Computer Literacy Elementary	SLC 127	W **6-9**	Pryor	3
ED 580-E1	Computer Literacy Secondary	SLC 127	M **6-9**	Koch	3

ENGLISH

ENG 382G-A	American Lit. II (Prereq: ENG 152 or 254)	BDF 11	TTh **3-4:15**	Gutin	3
ENG 384G-A	American Drama (Prereq: ENG 152 or 254)	CPA 9	MWF 9-9:50	O'Neill	3
ENG 450G-A	Romantic & Victorian Literature	KBY 102	MWF 10-10:50	Terry	3
ENG 470-E	Modern British Literature	KBY 302	T **6-9**	P. Heaman	3

HISTORY/POLITICAL SCIENCE

HST 321-E	American Social History	SLC 316	M **6:30-9:30**	Cox	3
HST 342-A	British Empire II	SLC 316	MWF 10-10:50	Berlatsky	3
HST 356-A	Europe in the 20th Century	SLC 342	MWF 9-9:50	Shao	3
HST 398-A	Topics: The Holocaust	SLC 209	TTh 9:30-10:45	Spiar	3
HST 398-B	Topics: The Constitution 200 Years	SLC 207	MWF **1-1:50**	Behuniak-Long	3
PS 314-A	Planning in Urban Development	BDF 12	TTh 9:30-10:15	Tuhy	3
PS 316-A	Government Budgeting	SLC 160	T **6:30-9:30**	Tuhy	3
PS 325-A	Politics of Developing Areas	SLC 209	MWF 12-**12:50**	Bauzon	3
PS 398-A	Topics: Women and the Law	SLC 209	MWF **1-2:15**	Behuniak-Long	3
PS 398-B	Topics: The Constitution 200 Years	SLC 207	TTh **1-2:15**	Behuniak-Long	3

MATHEMATICS/COMPUTER SCIENCE

MATH 352G-A	Probability and Statistics II	SLC 405	TTh 9:30-10:45	Berard	3
MATH 362G-A	Introduction to Applied Math II	SLC 405	MWF 9-9:50	Staff	3
MATH 364G-A	Numerical Analysis (Prereq: A course in elementary differential equations and knowledge of Fortran)	SLC 409	MWF 11-11:50	Sours	3
MATH 432G-A	Introduction to Abstract Algebra II (Prereq: MATH 331)	SLC 405	TTh **1-2:15**	Berard	3
CS 327G-A	Compiler Design (Prereq: CS 227 and 323)	SLC 409	MWF **2-2:50**	Simmons	3

BA 521-E	Organizational Theory	SLC 347	T **6-9**	K. Lewis	3
BA 522-E	Quantitative Aspects of Management	SLC 342	Th **6-9**	K. Lewis	3
BA 550-E	Topics: Entrepreneurship	BDF 12	W **6-9**	Lohman	3
BA 550-E1	Topics: SBA	TBA	TBA	Chmiola	3
BA 552-E	Financial Managament	SLC 342	M **6-9**	Engel	3

ECONOMICS

EC 505-E	Managerial Statistics (Prereq: EC 231)	DDD 101	M **6-9**	Cordora	3
EC 506-E	Labor-Management Economics	SLC 347	W **6-9**	Chmiola	3
EC 510-E	Managerial Economics (Prereq: EC 101, EC 102, BA 502, EC 505)	SLC 359	M **6-9**	H. Williams	3
EC 510-E1	Managerial Economics (Prereq: EC 101, EC 102, BA 502, EC 505)	SLC 342	W **6-9**	H. Williams	3

HEALTH SERVICE ADMINISTRATION (MHA)

HSA 502-E	Financial Management Sem. for Health-Care Providers	SLC 316	T **6-9**	Menichello	3
HSA 504-E	Strategic Planning for Health-Care Institutions	DDD 101	Th **6-9**	Healey	3
HSA 512-E	Long-Term Care Administration	SLC 311	M **6-9**	Clark	3
HSA 522-E	Market Research and Information Systems	TBA	W **6-9**	Atzrott	3
HSA 531-E	Acct. for Health-Care Institutions	SLC 204	W **6-9**	Grabo	3
HSA 540-E	Labor/Management Relations in Health-Care	TBA		Healy	3

Dates:
Jan. 23, 24
Feb. 6, 7
Mar. 6, 7, 27, 28
May 1, 2

Weekends:
Fridays:
6-9
Saturdays:
9-**12**
1-4

SCHOOL OF ENGINEERING AND PHYSICAL SCIENCES

ENGINEERING

Course	Description	Room	Day & Hour	Instructor	Credit
EE 398G-A	Topics: Power Systems Analysis	SLC 207	MWF **12-12:50**	Srinivasan	3
EE 398G-E	Topics: Interface Network Design	SLC 223	T **6-7:50**	Mohseni	3
EE 398G-E1	Lab Lab Fee: $35	SLC 222	Th **6-7:50**	Mohseni	
MAE 398G-E	Topics: Advanced Phase Diagrams	SLC 240	Th **6:30-9:15**	Janecek	3
EE 414G-E	Control Systems	SLC 403	TTh **8-9:15**	Ghoreishi	3
EE 432G-E	Electromagnetic Fields & Waves	SLC 223	Th **6:30-9:30**	Hostler	3
EE 482G-E	Adv. Communication & Antenna Lab	SLC 224	M **5-11**	Janaswamy	3
EE 482G-E1	Adv. Communication & Antenna Lab	SLC 224	W **5-11**	Armand	3
EE 498G-E	Topics: Integrated Circuit Design	SLC 223	M **6:30-9:15**	Choudhry	3

PHYSICS

PHY 302G-A	Mathematical Methods II	SLC	TTh 8-9:15	Bellas	3
PHY 310G-A	Analytical Mechanics	TBA	MWF 10-10:50	Maxwell	3
PHY 332G-A	Electricity and Magnetism II	TBA	MWF 11-11:50	Chorieski	4
PHY 334G-A	Lab	TBA	M 8-10:50	Kucirka	1
PHY 340G-A	Thermodynamics	TBA	TTh 9:30-10:50	Bellas	3
PHY 380G-A	Nuclear Physics	TBA	MWF **12-12:50**	Staff	3
PHY 382G-A	Lab	SLC 42	W **2:30-5:20**	Maxwell	1
PHY 396G-A	Ind. Research	TBA	TBA	Staff	1
PHY 396G-B	Ind. Research	TBA	TBA	Staff	2
PHY 396G-C	Ind. Research	TBA	TBA	Staff	3
PHY 432G-E	Electromagnetic Fields & Waves	SLC 223	Th **6:30-9:30**	Hostler	3

Special Features

Wilkes College Master degree in Health Administration is accredited and formally approved by the Division of Academic Program Approval, Department of Education of the Commonwealth of Pennsylvania. Wilkes College is a member of the Association of University Programs in Health Administration (AUPHA).

The Wilkes College Master of Business Administration has been extended to the Allentown area. Courses are offered at Allentown College.

University of Pennsylvania in cooperation with Wilkes College is offering a doctorate of Educational Leadership program on the Wilkes campus.

The Division of Graduate Studies and Continuing Education is offering a variety of non-credit courses, workshops and seminars in professional development, cultural enrichment, and personal improvement. (There is a special brochure for the Continuing Education offerings.) Wilkes College Continuing Education is a member of the National Registry for Continuing Education and the Council on the Continuing Education Unit. For further information, call 824-4651, extension 225.