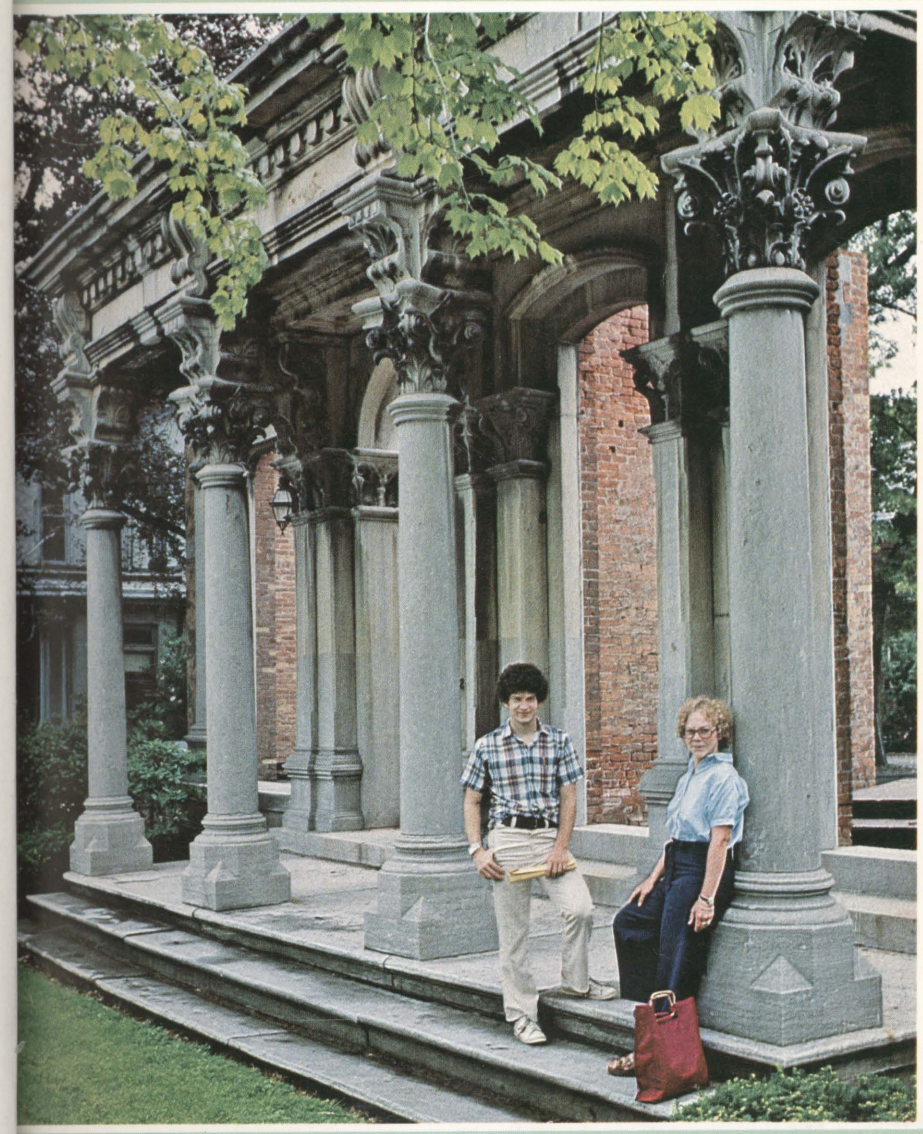
Wilkes College

1979–80 Bulletin



An Educated Man

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

possesses vision, for he knows that vision precedes all great attainments;

is aware of the diversity of ideas and beliefs that exist among men;

has faith in the power of ideals to shape the lives of men;

knows that man's progress requires intellectual vigor, moral courage, and physical endurance;

cultivates inner resources and spiritual strength, for they enrich his daily living and sustain him in times of crisis;

has ethical standards by which he lives;

respects the religious convictions of all men;

participates constructively in the social, economic, cultural, and political life of the community;

communicates ideas in a manner that assures understanding, for understanding unites men in their search for truth.

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

Eugene S. Farley Library — named in honor of the College's first presiden

"May all who study in these halls
gain vision to inspire,
conviction to sustain, and
wisdom to guide."

WILKES COLLEGE *Bulletin*

UNDERGRADUATE STUDIES

1979 - 1980

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 2,100 full-time day students and 500 part-time evening school students and over 300 graduate students.

From its inception the College has been dedicated to these twin goals — a sound and stimulating intellectual experience for students and a program of service to the community.

It was inevitable that the new college should be nonsectarian, for its purpose was to serve all students equally and its supporters wished the College to integrate itself with all constructive efforts in the community. It was believed that these ends could be served best by an independent college that was interdenominational in its influence and nondenominational in its control. With responsibility came a pressing desire to strengthen the work of the faculty, united in their belief that the intellectual and spiritual resources of the student are vigorous where the creative mind is free.

A college that wishes to serve all groups requires both a definite philosophy and a working policy. Wilkes College has been guided by the thought that unity in our community, our nation, and our world requires not only great vision but warm understanding of peoples. In its small circle Wilkes College brings together students of many faiths, backgrounds, and countries. It encourages them to maintain their convictions and their loyalties. It also encourages them to create friendships based upon respect for differences, and to adhere to those ideals that create unity and good will amidst diversity.

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 baccalaureate program in nursing is approved by the Pennsylvania State Board of Nurse Examiners and the Department of Nursing

is also a member of the Council of Baccalaureate and Higher Degree Programs, National League for Nursing. Graduates of this program are eligible for admission to the examination for licensure to practice professional nursing in any state.

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-Dormitory 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, madrigal singers, 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 ten men's and six women's varsity areas. The men's varsity program includes cross-country, football, soccer, swimming, basketball, wrestling, golf, tennis, lacrosse, and baseball. Varsity programs for women include field hockey, tennis, swimming, 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, the Association for Intercollegiate Athletics for Women, the Eastern Association for Intercollegiate Athletics, 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.

Educational Development Center

By mutual agreement with the Pennsylvania Department of Education, an arm of the Educational Development Center has been established on the campus of Wilkes College. The Center located at Wilkes has as its statewide mission the development of curriculum models in various disciplines for elementary and secondary education. At the local level the center has helped to plan the functions of local intermediate units and continues to work closely with the units to provide service to school districts in the area.

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 and group 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

Project Upward Bound is a remedial and motivational program for local secondary school students with ability to enter college.

Reading Improvement Center

The primary goal of the Reading Center is to improve reading skills and related language arts and study skills of elementary, secondary, and post-secondary students.

Upon admittance to the program each student will be given a series of reading, auditory, and visual acuity and perceptual tests which will be used to develop the student's individual program. This program is designed to attempt to correct known deficiencies and/or generally strengthen each student's reading ability. Sophisticated levels of analysis, critical application, and advanced study skills follow the development of basic motor skills.

Volunteers for Literacy

Volunteers for Literacy is an Adult Basic Education Program oriented toward helping adults learn to read and write. The program has two major components: English to Speakers of other Languages (ESOL), and basic reading and writing for non-literate adults.

ESOL

The ESOL Program consists of 15-hour weekend workshops in which tutors are trained to instruct non-English speaking adults in English. The program utilizes the Laubach Method, which involves a series of manuals designed for tutors to instruct functionally illiterate adult speakers of other languages in English. A student's text-workbook from The New Streamlined English Series parallels each teacher's manual. The teacher's manual instructs the tutor in emphasizing and communicating to the non-English speakers listening and speaking conversation skills on a one-to-one basis.

BASIC

This program involves a 10-hour workshop broken up into three evening sessions in which tutors are trained to teach non-literate adults. The Laubach Basic Method is utilized involving principles which establish sound-symbol relationships, learning through association, and use of repetition to strengthen the visual image.

Sigma XI

Sigma XI, the Scientific Research Society of North America, 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.

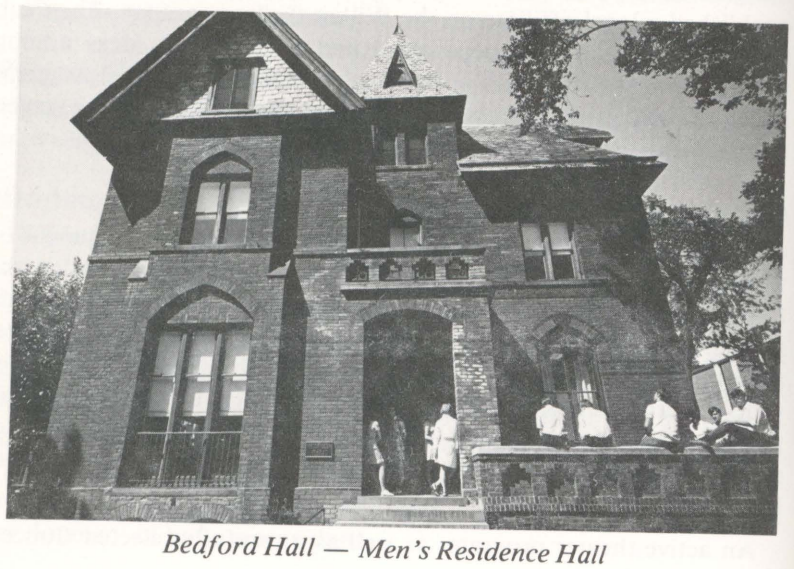
Cultural Activities

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 three-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. 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 the Town and Gown programs, presented by the Music Department faculty.

McClintock Hall — Women's Residence Hall



Bedford Hall — Men's Residence Hall

Policies and Objectives

Admissions
Counseling
Registration
Expenses

Financial Assistance
Scholarships
Trust Funds
Awards

Stark Learning Center

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.

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 $15 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. When an applicant has taken the exam more than once, the most recent score is the one which will be used as part of the evaluation process. Wilkes is a member of the College Entrance Examination Board.

Students communicating with the Educational Testing Center in Princeton, New Jersey, or in Los Angeles, California, should refer to the Wilkes College code number 2977.

Acceptance of Admission and Deposit

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

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, students and their families are encouraged to visit the College at their convenience. It is advisable to write for an appointment so that the appropriate deans may arrange to meet with them.

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

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 2.0 (C) at the beginning of the semester they first enroll at Wilkes. All courses with a grade of 2.0 (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 will arrange their scheduling and registration in consultation with the Department of Nursing.

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 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.

Advanced Course Standing

Students who have undertaken college-level courses in secondary school or students who have demonstrated ability in a particular subject area may request college credit for such work and permission to enter advanced courses. To qualify for advanced placement, the student must obtain the recommendation of the department involved based upon that department's criteria for granting such credit.

On the basis of comprehensive examinations, the College grants credits in certain courses to entering students who, by enrollment in advanced placement courses in secondary schools or self-study, can demonstrate mastery of the material covered in the courses involved. Interested persons may contact the chairpersons of the respective departments for further details.

CLEP (College Level Examination Program)

Wilkes College students may receive credit through the CLEP examinations.

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.

Freshman 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 freshmen 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 affect 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 chairpersons concerning his scholastic progress.

Student Records

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 Placement Office, 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.

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 by attending college strictly on weekends. For more information on the Weekend Program, contact the Director of Continuing Education.

Evening Division

The Evening Division offers educational opportunities to adults who cannot attend day classes. Students may register for courses in the Evening Division and earn credits toward an undergraduate degree. Graduate courses are also offered during the evening hours.

Students will confer with the Director of the Evening Division to arrange a course of study to meet their needs, abilities, and special requirements. During the semester students will consult with the Director of the Evening Division concerning their program.

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 Division.

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 Division

The faculty offers selected courses during two five-week day sessions and one eight-week evening session. The course offerings are listed each year in the Summer College Bulletin.

A student from Wilkes College who wishes to take summer work at

another institution must secure the approval of the Academic Standards Committee. Application in writing shall be made through the office of the appropriate dean.

Inquiries and information on course offerings should be directed to the Director of Continuing Education and Graduate Studies.

Graduate Division

Departments that offer graduate work are: Business Administration, Earth and Environmental Sciences, Education, English, Mathematics and Computer Science, Physics.

Information concerning admission to the Graduate Division may be obtained from the Office of the Director of Graduate Studies. The College issues a supplementary graduate bulletin.

Registration

Every student is expected to register on the dates specified in the College calendar. Students who register after these dates will pay a late registration fee of $10.

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

Expenses

Tuition

The flat tuition fee of $1,625 per semester (1979-80) will be charged to all students taking a course load of twelve to eighteen hours. A student who elects a heavier schedule than eighteen hours will be charged $110 for each additional credit hour.

Students enrolled in day or evening courses on a part-time basis, eleven or fewer hours, as well as students enrolled in the Summer Division will be charged $75 per credit hour.

Audit

A full-time enrolled student (12 hours or more) may audit a course for no additional charge. Part-time students may audit a course for one-half the regular tuition fee.

Fees

For courses that require individual faculty supervision or the addition of supplies and equipment it is necessary to charge nominal fees. These fees are listed in the Bulletin with the course description.

Medical technology students will be charged the regular College tuition in both the seventh and eighth semesters. The College will pay the hospital tuition charges.

The cost of individual instruction in applied music is $75 for full-time students (12 credits or more) for a series of fourteen half-hour lessons. The College accepts a limited number of part-time and special students for individual instruction in applied music for a series of fourteen half-hour lessons at a cost of $85 per semester.

A student activities fee of $30 provides for special programs, including plays, concerts, recitals, lectures, and home athletic events.

All graduating seniors will be charged a graduation fee of $40.

The cost of books and supplies will vary with the course of study, but will average approximately $75 to $150 per semester.

A Health Care Fee of $27 is required of each student. Part of this fee provides the student with a $1,500 Accident Insurance Plan. Sickness insurance is also available to all students on an optional basis. Protection is provided under both plans from September 1 to August 31 of the following year. The Health Care Fee is payable in full with the first semester charges. If sickness insurance is also desired the student should contact the Finance Office. The Health Care Fee of all resident students is prepaid as part of the dormitory fee.

Residence Halls

On-campus living is available to full-time single men and women students in separate men's and women's residence halls situated throughout the campus. 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, chairs, bureaus, and closets. Clean bed linen and towels are provided weekly. 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 Housing 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 $50 deposit by May 1 to be eligible to select a room. Housing contracts are binding for the full academic year (see Refunds). The

cost of room and board is $850 per semester. This charge includes the cost of health service, linen rental, room rent, and twenty meals per week. If a student notifies the Housing Office prior to August 1 of his intentions not to return to residence, the $50 residence hall deposit will be refunded. After August 1, no refund of this deposit is permitted.

Resident students are required to contract for board charges. Exception to this policy will not be made without formal recommendation from the College physician and approval of the Council of Deans.

Resident students are required to maintain a minimum balance of $50 on deposit for damage with the College so long as the student is enrolled. Charges for damage to College property, parking fines, 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 refundable portion of this deposit.

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

Transcripts

There is no charge for the first transcript requested. The student will pay a fee for each additional transcript.

Liability Insurance

Students enrolled in health care curricula are required to carry their own liability insurance, which is available through their professional organizations.

Payments

All payments for tuition, room and board, fees, etc., are to be made at the Finance Office, Parrish Hall, before classes begin. Several plans have been developed to assist students who are experiencing financial difficulties. Students may consult with the Director of Financial Aid for information regarding these plans, as well as other scholarship and loan programs.

Deferred Payment Plans

The College has authorized the operation of three plans through which costs of tuition and other educational expenses may be met from current family income. These loan agreements are to be repaid during the year through monthly repayment plans. Additional information can be secured through the Financial Aid Office or by writing to:

The Tuition Plan
Concord, New Hampshire 03301

EFI Management Program
36 South Wabash - Room 1000
Chicago, Illinois 60603

Insured Tuition Payment Plan
53 Beacon Street
Boston, Massachusetts 02108

Refunds

Students in good standing who withdraw from the College for adequate and satisfactory reasons are eligible to receive a one-half tuition refund so long as the withdrawal occurs during the first six weeks of the semester. After the first six weeks no refunds are allowed and the student is obligated for the full costs of the term.

Refund of dormitory charges will not be made except under demonstrated conditions beyond the control of the student, nor will any suspended or expelled student be entitled to any refunds whatsoever.

Financial Assistance

To provide assistance for those who need financial help, the College receives substantial gifts from friends. These gifts provide scholarship aid to those who are already making every effort to help themselves.

In accepting any form of aid from the College, students accept an obligation to:

1. Maintain a good scholastic record.
2. Exert a constructive influence in the College and the community.
3. Participate constructively in an all-college activity of their own choice.

Inquiries and applications regarding all financial assistance programs should be initiated with the Director of Financial Aid.

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 shall submit confidential information pertaining to the applicant's financial needs and his/her record of achievement.

Wilkes College participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in the Col-

lege Scholarship Service subscribe to the principle that the amount of financial aid granted a student should be based on financial need. The College Scholarship Service assists colleges and universities in determining the student's need for financial assistance. All entering students applying for financial aid are required to submit a copy of the Financial Aid Form (FAF) to the College Scholarship Service, designating Wilkes College as one of the recipients, by February 1. The Financial Aid Form may be obtained from a secondary school guidance office or the College Scholarship Service, P. O. Box 176, Princeton, New Jersey 08540.

After the student has been accepted for admission and after a copy of the Financial Aid Form is received, the Committee on Financial Aid acts on all completed applications. Notification of action by the Committee is sent immediately.

Financial aid is awarded for a one-year period; however, aid will be renewed upon request, provided the request is supported by a good academic record, evidence of continued need, and constructive participation in at least one all-college activity of the student's choice.

Aid awarded to a student from sources outside the College must be reported to the College by the student. 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 aid awarded by outside sources.

Financial aid will be forfeited if the student at any time carries fewer hours than are normal for his course of study.

The amount of the aid is confidential. Any breach of this confidence shall terminate the award.

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 support is lacking, the College will seek to develop with the student a plan whereby his education may be continued through work, loans, and scholarships.

Scholarships

To assist qualified students, friends and alumni support a substantial scholarship fund that enables the College to more adequately serve its students. Wilkes College is dedicated to the belief that no student who is eligible for admission to the College should be denied the chance to begin a college education, nor forced to withdraw after matriculation for purely financial reasons.

A number of scholarships are awarded without regard to financial need to students of outstanding achievement. High school seniors who desire to be considered for a scholarship should apply in writing to the Dean of Admissions at the time of application for admission.

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.

Grants-in-Aid

Wilkes Scholarships

Wilkes Scholarship grants are available to students with good records of achievement and performance in high school or college who cannot finance fully the cost of their education. These funds, combined with those furnished by the State and Federal Governments, are offered to students in packages consisting usually of grants, loans, and work.

Basic Educational Opportunity Grants

Federal Grants ranging from $200 to $1,400 are available to those students who demonstrate need. The amount of individual grants is related directly to the student's eligibility index as determined by the Basic Grants Program and cost of education. Application forms are available at any Federal Office or the College Financial Aid Office.

Supplemental Educational Opportunity Grants

Federal grants ranging from $200 to $1,000 are available to those students demonstrating exceptional financial need who, except for this aid, would be unable to obtain a higher education. Although these grants are intended to supplement Basic Grants, these also may be awarded to students whose expected parental contribution, as determined by the College Scholarship Service, does not exceed one-half the student's educational costs.

State Scholarships

The Commonwealth of Pennsylvania offers direct grants to students meeting the criteria set forth by the Pennsylvania Higher Education Assistance Agency (PHEAA) program. High school students from other states wishing information concerning their state's program should contact their guidance counselor.

Air Force ROTC Scholarships

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.

Loans

Student Loan Funds

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 by Robert W. Hall, class of 1951, to assist students in meeting small emergency financial needs.

Gulf Oil Corporation Student Loan Fund

In 1972 the Gulf Oil Corporation established this revolving loan fund to make low-interest loans available to students who have exhausted all other means of obtaining financial assistance. Loans are interest-free while the student remains at the College and are to be repaid within five years after the student leaves Wilkes.

National Direct Student Loan Fund

Long-term, low-interest loans are available to students who demonstrate financial need. The amount of the loan is determined by need with a maximum of $1,000 per academic year. Interest and repayment are deferred until the student leaves school. The program includes cancellation benefits for graduates who teach in schools having a high concentration of students from low-income families or who teach handicapped children. Graduates who enter military service are also accorded cancellation privileges. Applicants will be notified by the Committee if their financial aid package includes a National Direct Student Loan.

Nursing Student Loans

Federal loans of up to $2,500, depending on demonstrated need, are available to students enrolled in the Department of Nursing. Interest and repayment are deferred until the student leaves school. Borrowers may cancel up to 85 per cent of the total loan, plus interest, if they are employed as a full-time registered nurse in any public or private non-profit agency, institution, or organization, or agree to serve as a registered nurse in an area designated as a shortage area. The actual

percentage of cancellation depends on the type of service performed and the number of years of such employment completed.

State Guaranty Loan Programs

Most states now operate guaranteed loan programs which enable students to borrow from their local banks to meet educational expenses. Ordinarily, no interest is charged while the student remains in school if the family's adjusted gross income is below $25,000, nor on that portion of the loan recommended by the Financial Aid Office after an evaluation of the financial need of the student. Applications and further information are available at the student's hometown bank, savings-and-loan association, or credit union participating in the program.

Employment

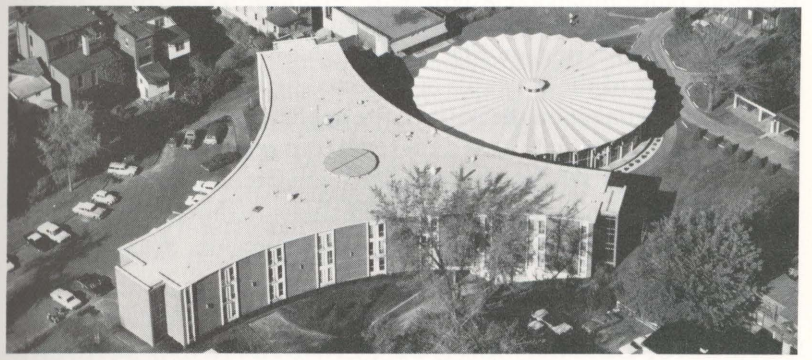
Part-Time Employment

The College cautions the student to limit off-campus work, especially during the freshman year, when working may result in academic failure.

However, part-time jobs in offices, stores, and industry are available for students wishing to earn part of their expenses. For such jobs the student will register with the College Placement Office.

College Employment

The College participates in the College Work-Study Program in conjunction with the Federal Government. Part-time employment, not to exceed 15 hours per week during class periods, is available in a variety of on-campus departments. Prospective employees must meet financial need requirements set forth by the Federal Government. Student-employees shall meet all obligations of their assignments or forfeit this help from the College.



Dining Complex and Pickering Hall

Trust Funds, Endowed Scholarships, and Awards

Founders of Scholarships

Some 1,000 friends contribute to the scholarship fund of the College on an annual basis. Other friends have created scholarships and awards which bear the names of the donors or of persons whom they have memorialized by means of a scholarship or other special recognition.

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 will be 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.

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.

WALTER S. CARPENTER SCHOLARSHIPS IN ENGINEERING are awarded annually to high school seniors planning on majoring in Materials Engineering or Electrical 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 Chairperson, 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 TRUST. Income from an endowed trust 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.

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

JOHN WELLES HOLLENBACK SCHOLARSHIP. Miss Anna Hollenback has created a scholarship in memory of her father, John Welles Hollenback.

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 shall be made on the basis of need and ability without regard for race or creed.

FRANCES AND LOUIS MASLOW MEMORIAL SCHOLARSHIP FUND 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.

DR. JAROSLAV G. MORAVEC MEMORIAL SCHOLARSHIP. The Dr. Jaroslav G. Moravec Memorial Scholarship Fund 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 will be awarded to a student for use during his/her senior year.

MABEL AND JOHN C. MOSTELLER SCHOLARSHIP FUND 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 per cent of their class in academic standing and who have passed a qualifying competitive examination administered by Wilkes College.

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 TRUST 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 FUND. Earnings from the fund provide a scholarship of $1,000 a year to a senior from Northwest Area High School who matriculates at the College. The recipient is 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.

WILLIAM B. SCHAEFFER MEMORIAL SCHOLARSHIPS. 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.

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, the student must demonstrate the ability to successfully complete the work of the College and must submit evidence of financial need.

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 will be awarded annually to a worthy student of high potential.

ANDREW J. SORDONI FOUNDATION SCHOLARSHIP. This scholarship is used to assist students of unusual promise and proven ability.

JESSIE STURDEVANT MEMORIAL SCHOLARSHIP is awarded to a student of unusual promise and ability and has been made available from a fund established by the late Miss Sturdevant.

MRS. LEWIS H. TAYLOR left a bequest to the College to be used in assisting students of outstanding scholastic ability who otherwise could not gain a college education.

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

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

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

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

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

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.

Annual Name Scholarships

M. W. WOOD SCHOLARSHIP. A half-tuition scholarship is awarded annually to a student of high scholastic ability and financial need.

RICHARD H. ROYER SCHOLARSHIP is awarded annually to a student who has demonstrated outstanding ability in his studies and in student activities.

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.

LOUIS SMITH SCHOLARSHIP FUND, established in September 1976 through the generous contributions of friends upon the retirement of Mr. Smith after 52 years as Federation and executive director of the Jewish Community Center of Wyoming Valley, is awarded annually to deserving Jewish students from this area attending Wilkes College.

College and Community Organizations

WILLITS COLEMAN MEMORIAL SCHOLARSHIP has been established in memory of Willits Coleman, a member of the Wilkes-Barre Rotary Club. The scholarship will be awarded to a senior who has demonstrated ability in the classroom and in student activities.

POLISH ROOM COMMITTEE SCHOLARSHIP was created to express appreciation of services rendered to Wilkes College and the community of Northeastern Pennsylvania by Dr. and Mrs. Joseph J. Kocyan. It is awarded annually to a student of Polish extraction who has graduated in the upper fifth of his high school class and tested above 600 on each part of the College Entrance Examination Board. The Director of Financial Aid, the Dean of Admissions, and a member of the Scholarship Committee shall select a qualified student and award the scholarship.

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

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

NEIL DADURKA MEMORIAL SCHOLARSHIP is awarded annually by the Wilkes College Lettermen's Club. The money for this scholarship is earned and donated by the Wilkes College Lettermen's Club. The scholarship itself is named in honor of Neil Dadurka, a former Wilkes athlete, who was killed while flying for the United States Marine Corps.

This half-tuition scholarship is given to an incoming freshman who is in need of financial aid and who is an outstanding athlete. The scholarship is given to enable an athlete to participate in the sport for which the scholarship is awarded.

ROBERT J. McBRIDE MEMORIAL SCHOLARSHIP is awarded annually to an incoming freshman. The award 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 half-tuition scholarship is awarded to a football player from the Greater Wyoming Valley Area selected by the football coaches and the athletic director of the College.

THETA DELTA RHO, the all-college women's service organization, offers a scholarship yearly to a woman student achieving a high score in a competitive examination conducted by the College.

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.

Commercial and Industrial Concerns

ARNOLD FOUNDATION. Arnold Biscontini, president, provides scholarship assistance to students who demonstrate need and academic achievement.

FRANK E. BALDWIN, INC., SCHOLARSHIP. A half-tuition scholarship is awarded annually to a student maintaining high academic standing and in need of financial assistance.

CONSOLIDATED CIGAR CORPORATION. This scholarship is awarded annually to students demonstrating scholarship and financial need.

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

MEDICO INDUSTRIES awards a partial tuition scholarship to a deserving student of high scholastic standing.

NELSON OF KINGSTON, INC., awards a one-half tuition scholarship to a student of high scholastic standing.

ADRIAN AND RICHARD PEARSALL have created a half-tuition scholarship which will be awarded to a high school graduate who has demonstrated leadership in scholastic and extracurricular activities and who without scholarship aid would be unable to attend college.

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

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.

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

Employees' Family Scholarships

THE LESLIE FAY SCHOLARSHIP is granted each year to the son or daughter of an employee of the Company whose record in high school and on the admissions tests has been outstanding.

A recipient of the scholarship will be selected on a competitive basis by the Scholarship Committee of Wilkes College. The scholarship will be retained by the student for the four years in college, provided his achievement and influence at Wilkes College are deemed outstanding by the faculty.

THE METROPOLITAN WIRE GOODS CORPORATION has created scholarships of $500, $300, or $200 at Wilkes College for the sons or daughters of its employees. To qualify for candidacy, a student must graduate in the upper half of his secondary school class, must test above 1100 on the S.A.T. portion of the C.E.E.B., and must demonstrate financial need.

The scholarship will be granted through the College to the applicant making the best record in high school and on the Scholastic Aptitude Test. To retain this scholarship, a student must make a strong academic record and must exert a constructive influence in the College.

Special Endowments

THE W. S. CARPENTER MEMORIAL AWARD FUND 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.

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

THE DEAN'S SCHOLARSHIP AWARD is granted to the man and woman in the graduating class who have excelled in scholarship throughout their four years at the College.

THE HUMANITIES AWARD is given each year in memory of Miss Annette Evans to the man or woman in the graduating class who has demonstrated outstanding scholarship in the humanities.

THE NATURAL SCIENCE AND MATHEMATICS AWARD is given annually in recognition of scholarship within the division of Natural Sciences and Mathematics.

THE SOCIAL SCIENCE AWARD is given each year in memory of Hugo V. Mailey to the man or woman in the graduating class who has demonstrated outstanding scholarship in the social sciences and has manifested intellectual curiosity and creative imagination.

ALUMNI AWARD FOR LEADERSHIP is given by the Wilkes College Alumni Association to the graduate considered by a special committee to have made the strongest contribution to the life of the College.

THE INTERNATIONAL STUDENT AWARD, established in 1972 in memory of Nada Vujica, is given annually to a deserving international student in the graduating class.

THE ALGEBRA AWARD recognizes annually a senior who achieves distinction in the study of higher algebra. This award is provided by the Northeastern Pennsylvania Association of Arab Americans.

All-College Awards

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

THE BEACON ATHLETE OF THE YEAR AWARD is presented annually to the athletes considered by the Beacon staff to have been the most outstanding in athletics during the year.

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 dormitory, men's dormitory, 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 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 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 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 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 ENGLISH AWARD is given annually in honor of Frank J. J. Davies, former chairperson of the Department of English, to an outstanding English major.

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 INTER-DORMITORY COUNCIL'S OUTSTANDING DORMITORY STUDENT AWARD is presented annually to the female and male dormitory students who have contributed most to dormitory 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 SCHOLARSHIP AWARD is presented annually to the woman who has been most outstanding in women's athletics.

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 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.

DEPARTMENT OF NURSING AWARD is presented annually to two students in nursing who have the highest academic achievement during their four years at the College and the most outstanding scholastic average in nursing.

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 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.

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 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.

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.

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.

Chase Hall on South River Street houses the Admissions office.

The Facilities of the College

Buildings and Plant

Dorothy Dickson Darte Hall and Center for the Performing Arts

Buildings and Plant

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

Eugene Shedden Farley Library

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

From 1947 to 1968 Kirby Hall, the former residence of Mr. and Mrs. Fred Morgan Kirby, was used as the College library. The building, first named the Kirby Home for Education, was presented to the College in 1941 as a gift of Allan Kirby, son of Wilkes-Barre's most generous benefactors. It is occupied presently by the English and Foreign Languages and Literatures department. The language laboratory (initiated by a gift of the graduating class of 1962), the Debate Union, and the Manuscript Society are also located there.

The Eugene Shedden Farley Library occupies the northwest corner of West South and South Franklin Streets. The four floors contain student study carrels; faculty research offices; media and microforms; special collection rooms. One room is devoted to Polish art treasures and exhibits of craftsmanship furnished by the Women's Committee for the Polish Room at Wilkes College; another contains books and papers from the estate of Attorney Gilbert McClintock; another holds memorabilia presented by Admiral Harold Stark; and there is a room dedicated in memory of Eleanor Coates Farley.

Library space has been provided for 300,000 volumes and study area for 500 students. Also, students may borrow books from twelve nearby libraries (public and private) through the interlibrary loan system.

Stark Hall of Science

The Departments of Biology, Chemistry, and Physics are housed in Stark Hall of Science, 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 and enlarged in 1963, so that it now provides approximately 85,000 square feet of modern classroom, laboratory, and office space. Complete facilities are included for undergraduate instruction and student research in all departments, and for graduate study in biology, chemistry, and in physics.

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.

Stark Learning Center

A new $7,000,000 Stark Learning Center connects with the Hall of Science. This facility provides classrooms, laboratory space, staff offices and studios for the programs in electrical and materials engineering, earth and environmental sciences, art, mathematics-computer science, nursing, and psychology.

Also located in the Learning Center 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.

Sordoni Art Gallery

The Sordoni Art Gallery, given to Wilkes College 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.

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.

Until 1965, theatrical activity was in Chase Theater, formerly the 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.

The College, in cooperation with the Wilkes-Barre Kiwanis Club, has presented a variety of theatrical productions, the proceeds from which have assisted in the establishment of the Wilkes-Barre Kiwanis Charitable Foundation.

Dorothy Dickson Darte Music Building

Faculty offices, studios, practice, and rehearsal rooms are located in the music center opened in the summer of 1969. This facility is integrated with the Center for the Performing Arts, completed in the fall of 1965.

The band and the choruses present concerts locally and on tour. The Department of Music has been host to Pennsylvania Collegiate Choral Festivals and Pennsylvania Intercollegiate Band Festivals. Nationally known music educators, clinicians, and performers have participated in workshop and classroom activities. Throughout the year solo recitals and ensemble concerts are presented by students and faculty before audiences from the College and the community.

Conyngham Gallery

The art club holds its annual Art Fair in the Conyngham Gallery, where the works of students and of local and professional artists are shown. The public is invited to the displays and exhibits. Opportunities are offered to the students to enter their works in local and regional competition.

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 2400. Recently, the College added modern training room facilities off campus adjacent to Kirby Park. Here also are located Ralston Field, named in honor of Wilkes' first athletic coach and present Dean of Student Affairs, and the playing fields for soccer, baseball, and hockey, as well as asphalt tennis courts and an archery range. All students are invited by the Jewish Community Center, on South River Street, and the YM-YWCA, on South Franklin Street, to use their swimming pools and bowling alleys. During the 1973 football season the Robert J. McBride Field House was dedicated at Ralston Field.

Guidance Center

The College maintains a testing center to assist the deans in their counseling of students. The College Testing Service is available at no charge to all Wilkes students and, for a fee, to members of the community. The testing center also provides assistance to the State Bureau of Rehabilitation and other agencies. The Guidance Center, on South River Street, was the law offices of the late Gilbert S. McClintock, the first Chairman of the Board of Trustees.

Career Planning and Placement Office

The Career Planning and Placement Office assists seniors in finding permanent employment in positions suitable to their talents and training. It also extends such assistance to any graduate of the College. The Office also assists students in securing part-time employment during the school year and during the summer.

To aid students in choosing an occupational goal, a Careers Library is available for browsing. The Library includes a large amount of occupational information, both printed and audio-visual, on a wide variety of careers, as well as self-directed materials for occupational aptitude exploration, company literature, and graduate school information.

Comfortable quarters are provided for representatives from industry, school systems, and from graduate schools to interview and discuss with students opportunities available to them.

All students seeking employment are invited to register with the Career Planning and Placement Office.

Full credentials are on file so that prospective employers may be given adequate information regarding the student.

Credentials and recommendations from faculty members are submitted to the office upon the request of either the student or the Career Planning and Placement Office.

The Career Planning and Placement Office is located in the Guidance Center, on South River Street, next to McClintock Hall. The Careers Library is located in the building behind the Guidance Center.

The Bookstore

Books, stationery, and supplies may be purchased at the College Bookstore in the lower level of Pickering Hall. The bookstore is operated on a cash basis. (The cost of books and supplies will vary with the course of study, but will average approximately $75 to $150 per semester.)

Student Union Building (S.U.B.)

The Student Union Building is a multi-functional unit available to clubs and organizations for student activity and for relaxation.

The Commons

The Commons, facing South Street, provides cafeteria service for commuting students and includes a lounge and recreation area.

Snack Bar

Cafeteria service is also provided at the College Snack Bar, behind Parrish Hall.

Offices of Administration

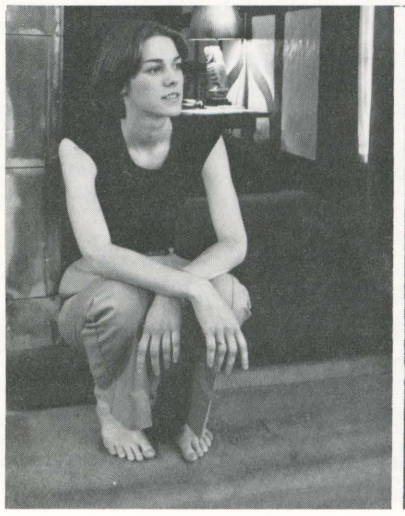
Chase Hall, 184 South River Street, the first building on the campus, was donated in 1937 by Admiral and Mrs. Harold R. Stark. On the first floor is the Dean of Admissions.

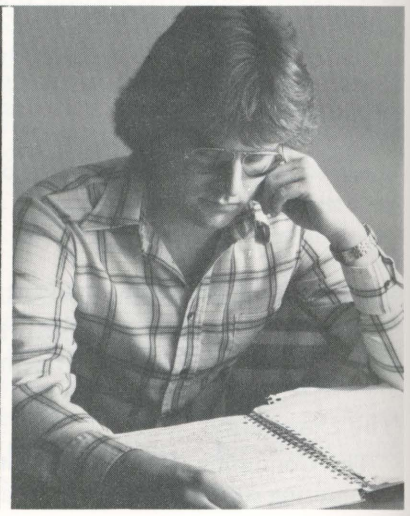
Weckesser Hall, 170 South Franklin Street, is the gift of Mr. and Mrs. Frederick J. Weckesser. The President, the Dean of Academic Affairs, and the Dean of External Affairs have their offices in Weckesser Hall. Also in Weckesser Hall are the Deans of Student Affairs, the Director of Athletics, the Alumni Office, the Public Relations Office, the Office of College Development, and the Director of Financial Aid.

Parrish Hall, formerly the Glen Alden Building of the Lehigh and Wilkes-Barre Coal Company, was acquired in 1958. The following offices are located at Parrish Hall: Finance Office, Business Office, Registrar's Office, Recorder's Office, and the Division of Continuing Education and Graduate Studies.

Pickering Hall, constructed in 1965, is the location of the Housing Office.

The Annette Evans Faculty and Alumni House, South River Street, is the home of the first president of the College. It currently provides space for alumni and faculty meetings and contains the offices of the Dean of Health Sciences and the Dean of Special Programs.





The Academic Program

Undergraduate Programs

Academic Requirements

Academic Majors and Course Descriptions

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 chairperson. In the Bachelor of Arts and Bachelor of Science degree programs the faculty encourages students to achieve intellectual, social, and spiritual development.

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
Business Education
Chemistry
Computer Science
Earth and
Environmental Sciences
Economics
Elementary Education
English
Foreign Languages:
French
German
Spanish
History
Individualized Studies
International Studies
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Social Science/
Urban Affairs
Sociology -
Anthropology

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
Earth and
Environmental Sciences
Engineering
Mathematics
Medical Technology
Music Education
Nursing
Physics

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 chairpersons of both departments to ensure that all requirements of the two majors are fulfilled.

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
4.0	Academic achievement of outstanding quality.
3.5	Academic achievement above high quality.
3.0	Academic achievement of high quality.
2.5	Academic achievement above acceptable quality in meeting requirements for graduation.
2.0	Academic achievement of acceptable quality in meeting requirements for graduation.
1.5	Academic achievement above the minimum quality required for credit.
1.0	Academic achievement of minimum quality required for credit.
0.0	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 201 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. 101	3	4	12	3
Eng. 101	3	0	0	0
Fr. 101	3	2.5	7.5	3
Hist. 101	3	1.5	4.5	3
Mus. 101	3	3	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

Grades and averages at the end of each semester of the four academic years indicate a student's progress. Unless the following minimum averages are met, a student's record is automatically reviewed by the Academic Standards Committee.

	General Average	Major Average
Freshman Year	1.60	1.60
Sophomore Year	1.90	1.90
Junior Year	2.00	2.00

If these minimum averages are not attained during each semester of the year indicated, the Academic Standards Committee will review the student's record and take action resulting in the student's being placed on probation or dismissed from the College.

Probation and Dismissal

A student placed on probation must attain the required grade average in the next semester or be subject to dismissal from the College.

Unless special permission is granted by the Academic Standards Committee, a student dropped for academic failure will not be considered for readmission until one year after being dropped.

If readmitted the student will still be on probation and shall be given one semester in which to prove his or her ability to continue in college.

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 chairperson 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.

Withdrawals

A student may drop any course through the tenth week of the semester. A mark of "W" will be recorded if the student has properly notified the instructor, his faculty adviser, and the appropriate dean.

A student who withdraws from a course after the tenth week of classes but who continues other courses will receive a zero unless the appropriate dean, faculty adviser, and instructor agree that the student be permitted to drop the course without prejudice, in which case a "W" will be recorded. Seven-week modular courses may be dropped through the sixth week of classes by following the same procedure.

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 and then will be allowed to register only as a non-matriculated student.

Students who withdraw from the College or drop courses should give prompt written or verbal notice to the appropriate dean or the Director of the Evening Division and to the instructor concerned, in order that their records may not unjustly show failure in courses.

Change of Major

Students who wish to transfer from one department to another shall obtain the approval of the adviser and the department chairperson. 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.

Transfer of Summer Credits

Students desiring to study at another college during the summer must secure prior approval from the chairpersons of the Wilkes College department in which the course is offered. The student must earn a grade of 2.00 or higher for the work to be credited toward graduation. In some cases it may be necessary for a student to take examinations before credit is granted.

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 students in their work at Wilkes College, such work to total at least 60 credits earned. The record of transfer students previous to their entrance at Wilkes must have been of **cum laude** quality to be eligible for consideration. Transfer students with fewer than 60 credits will be considered only when, for exceptional reasons, the chairperson of the department of the student's major recommends that this be done.

Requirements for Honors are:

Summa Cum Laude	3.80
Magna Cum Laude	3.50
Cum Laude	3.25

Graduation Requirements

All candidates for degrees and certificates 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 complete all subjects required for the degree as stated in the Bulletin in force at the time of admission to the program. All students must complete the last 30 credits in residence at the College.

2. They must obtain a minimum cumulative average of 2.00 for all courses.

3. They must obtain a minimum cumulative average of 2.00 for all subjects within their major.

4. They must satisfy all requirements pertaining to the physical education program.

5. They must demonstrate competence in written and spoken English.

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. 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.

A candidate for graduation during the senior year should report during the first week in January 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 Degree

Students who hold a degree from this or another accredited institution may be awarded a second baccalaureate degree in certain circumstances. One of the degrees must have a major in Commerce and Finance, Engineering, Music Education, or Nursing. Candidates for a second degree must earn at least thirty credits beyond those completed for the first degree; these thirty credits must be earned at Wilkes College.

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, Music Education, and Physics.

The General Core Requirements for all programs in the Bulletin are listed as "core elective" except English 101-102 and Physical Education 100, 105-106, which are specifically designated.

Required General Core Courses	**Credit Hours**
English 101-102	6
Physical Education 105-106	2
Physical Education 100 (four semesters)	0
Art 101 or Music 101 or Theater Arts 101	3

Distribution Areas

Humanities

Any three of the following four six-hour sequences: 18

- English 151-152
- History 101-102
- Philosophy 101 or 201, and one additional course in philosophy
- Foreign Languages 101-102 or 203-204 or at the competence level of the student.

Science/Mathematics

Any two of the following five departmental sequences: 12-16

- Biology 101-102 or other courses with permission of Biology Department.
- Chemistry 101-102, 105-230, 201-202 or other courses with permission of Chemistry Department.
- Earth and Environmental Sciences — any two courses of the set 101 through 105, or other courses with the prior permission of Earth and Environmental Sciences Department.
- Mathematics and Computer Science — any two courses in mathematics or computer science with the exception that Mathematics 100 must be followed by Mathematics 105 or Mathematics 111.
- Physics 101-102, 105-106, 201-202 or other courses with permission of Physics Department.

Social Sciences

Any two of the following four departmental sequences: 12

- Psychology 101-102 or other courses with permission of Psychology Department.
- Economics 101-102, 227-228, and other courses with permission of Commerce and Finance Department.
- Political Science 101-102 or other courses with permission of Political Science Department.
- Anthropology 101 (an upper level anthropology course may be substituted by permission of the department) **and** Sociology 101 (an upper level sociology course may be substituted by permission of the Sociology and Anthropology Department). Sociology 101 may be taken prior to Anthropology 101.

Total 53-57

Individual exceptions to the foregoing core must be approved by the Academic Standards Committee after consultation with the departments involved, the student, and the student's adviser.

Course Requirements in the Majors

Anthropology

(see Sociology and Anthropology)

Art

Associate Professor Sterling, chairperson; Professor Colson; Associate Professors D'Vorzon, Fuller, Simon; Assistant Professor Maxwell; Adjunct Professor Wodaski.

Students who major in art must complete a minimum of 41 credits in art. The following courses are required (with the recommended semester sequence):

First Semester—Art 201; **Second Semester**—Art 202, 208; **Third Semester**—Art 215, 220; **Fourth Semester**—Art 216, 221; **Fifth Semester**—Art 225, 233; **Sixth Semester**—Art 218; **Seventh Semester**—Art 252; in addition, one course in Art 241, 243, or 248; one 300-level art course; one free art elective.

Students seeking certification in Art Education (K-12) are required to take the following minimum program, resulting in a double major of art and education:

FIRST SEMESTER		SECOND SEMESTER	
Art 201	3	Art 202	3
Eng. 101	3	Art 208	3
Psy. 101	3	Eng. 102	3
Core electives	6	Psy. 102	3
P.E. 100	0	Core electives	6
P.E. 105	1	P.E. 100	0
	16		18
THIRD SEMESTER		**FOURTH SEMESTER**	
Art 215	3	Art 216	3
Art 220	3	Art 221	3
Ed. 101	½	Ed. 102	½
Ed. 201	3	Ed. 202	3
Phil. 101	3	Phil. 216	3
Core elective	3	Art 241, 243, or 248	3
P.E.100	0	P.E. 100	0
		P.E. 106	1
	15½		16½
FIFTH SEMESTER		**SIXTH SEMESTER**	
Art 225	3	Art 218	3
Art 233	3	Art 241, 243, or 248	3
Ed. 203	3	Ed. 204	3
Core electives	6	Core electives	6
	15		15
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
Ed. 380	15	Art 252	2
		Art (300-level)	3
		Core elective	3
		Electives	5
	15		13

Total minimum credits required for B.A. degree in Art — 124.

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 102. EXPERIENCING ART II **Three credits**
A continuation of Art 101. Depending upon the instructor, emphasis will be upon studio problems or upon a survey of art history.
Prerequisite: Art 101.

ART 201. 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 202. 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 208. FUNDAMENTALS OF COLOR AND DESIGN II **Three credits**
A continuation of Fundamentals of Color and Design I with a concentration on the similarities and differences between two and three dimensional design.
Prerequisite: Art 201.

ART 215. HISTORY OF ART 1 **Three credits**
A survey of the history of architecture, sculpture, and painting from the prehistoric period through the Gothic era.

ART 216. HISTORY OF ART II **Three credits**
A survey of the history of architecture, sculpture, and painting from the Renaissance through the nineteenth century.

ART 218. HISTORY OF MODERN ART **Three credits**
A survey of the development of architecture, sculpture, and painting from the late nineteenth century to the present.

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 202 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.
Prerequisite: Art 202 and 208, or permission of instructor.

ART 225. PRINTMAKING I **Three credits**
An introduction of relief, intaglio, and planographic techniques including block printing, etching, lithography, and silk screen.
Prerequisite: Art 202 and 208, or permission of instructor.

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.
Prerequisite: Art 202 and 208, or permission of instructor.

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: $10.

ART 241. METALWORK AND JEWELRY **Three credits**
A course in basic metalwork, enameling, and jewelry techniques and design. Lecture, two hours; studio, two hours.
Prerequisite: Art 202 and 208, or permission of instructor.

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: $15.

ART 245. BATIK **Three credits**
An exploration of both traditional and contemporary methods of the batik process of fabric enhancement. Fee: $10.

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 252. CONTEMPORARY DESIGN **Two credits**
A study of contemporary design in advertising, graphics, industrial design, architecture, and landscaping.
Prerequisite: Art 202 and 208, or permission of instructor.

ART 260. ART IN THE ELEMENTARY CLASSROOM **Three 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.

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: $10.

ART 310. TOPICS IN ART HISTORY **One to three credits**
Special topics in the history, theory, and criticism of the visual arts.

ART 316. HISTORY OF ITALIAN RENAISSANCE ART **Three credits**
A study of Italian art and architecture from the beginning of the 14th century to the end of the 16th century.

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: $10.
Prerequisite: Art 233 or permission of instructor.

ART 344. CERAMICS II **Three credits**
Advanced work in both hand-built and wheel-thrown ceramics. Fee: $15.
Prerequisite: Art 243.

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

ART 380. TOPICS IN STUDIO ART **One to three credits**
Special topics in various studio disciplines. (Fee upon application.)

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 chairperson is required.

ART 397. SEMINAR **(Maximum of three credits per student) One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Permission of department chairperson is required.

Biology

Associate Professor Turoczi, chairperson; Professor Reif; Associate Professors Hayes, Houseknecht, Ogren; Assistant Professors Doty, Erickson, Rigley.

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 or continue with graduate study in biology.

In 1972 the Department of Biology introduced a sequence of courses in introductory biology which are common to all of the department's curricula. Thus, eight seven-week modules are now scheduled for the first four semesters, as listed in the Bulletin under biological course numbers 201 through 208. These modules make possible the studying of what was formerly three years of work in biology in only two years, and prepare the student for the many elective courses which are offered in the junior and senior years.

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. 301, 316, 385
(2) Organismic — Bio. 303, 304, 305, 310, 313
(3) Populational — Bio. 309, 311, 340
(4) Molecular/Cellular — Bio. 302, 306, 307, 308, 312, 315

For science majors, other than biology majors, the Department of Biology recognizes that individualized biology module selections may be more appropriate than a generalized module sequence; therefore, such students are advised to consult with the Department of Biology.

FIRST SEMESTER

	B.A.	B.S.
Bio. 201-202	5	5
Chem. 115	4	4
Eng. 101	3	3
Math. 105	4	4
P.E. 100	0	0
	16	16

SECOND SEMESTER

	B.A.	B.S.
Bio. 203-204	5	5
Chem. 116	4	4
Eng. 102	3	3
Math. 106	4	4
P.E. 100	0	0
	16	16

THIRD SEMESTER

	B.A.	B.S.
Bio. 205-206	5	5
Chem. 231	4	4
Core Electives	6	6
P.E. 105	1	1
P.E. 100	0	0
	16	16

FOURTH SEMESTER

	B.A.	B.S.
Bio. 207-208	5	5
Chem. 232	4	4
Core Electives	6	6
P.E. 106	1	1
P.E. 100	0	0
	16	16

FIFTH SEMESTER

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

SIXTH SEMESTER

	B.A.	B.S.
Bio. 397*	1	1
Bio. Elective/Research	3	6
Phys. 106	4	4
Core Electives	6	3
Elective	3	—
C.S. 123	—	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.

Note: A standardized examination is administered upon completion of the eight modules (201 through 208) at the end of the fourth semester to all majors in the Department of Biology.

Total credits required for either B.A. or B.S. degree with major in Biology — 127.

BIO. 101-102. BIOLOGICAL SCIENCE **Three credits each**
Biological Science is a survey course intended for students who take no other course in biology. It presents the essential general information about plants and animals, explains fundamental laws governing the biological world, and emphasizes their relationship to man. Class, three hours a week.

BIO. 113. MICROBIOLOGY **Four credits**
This course presents the basic principles of bacteriology and the relationship of micro-organisms to disease and its prevention, control, and treatment. It considers the effects of microbes within the body and the body's reaction to them. Lecture, three hours a week; laboratory, three hours a week. Fee: $30.

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. Fee: $30 each course.

BIO. 201. PRINCIPLES OF MODERN BIOLOGY **Two and one-half credits**
This course provides an introduction to the basic physical and biochemical properties of life, and a survey of representative plant and animal types. Fee: $20.

BIO. 202. CHORDATE ANATOMY **Two and one-half credits**
This course is a study of the principle organ systems of representative chordates. Evolution and taxonomy of the phylum Chordata are emphasized. Fee: $20.

BIO. 203. EMBRYOLOGY **Two and one-half credits**
Embryology is the study of the early development of animals. Growth is traced from the egg to later stages in the life of the frog, chick, and man. Fee: $20.

BIO. 204. HISTOLOGY **Two and one-half credits**
Histology is the study of tissues and the arrangement of tissues to form organs and organ systems. The material included in this course is restricted to vertebrate structures. Fee: $20.

BIO. 205. GENETICS **Two and one-half credits**
Genetics is the study of the inheritance of normal characters and the variation of these characters in plants and animals. Fee: $20.

BIO. 206. GENERAL PHYSIOLOGY **Two and one-half credits**
Physiology is the study of the physical and chemical activities of all living organisms. Fee: $20.

BIO. 207. MICROBIOLOGY **Two and one-half credits**
Microbiology is the scientific study of micro-organisms. The fundamental characteristics of procaryotes and eucaryotes are discussed. Biology of viruses and principles of infection and immunity are included. Fee: $20.

BIO. 208. ECOLOGY **Two and one-half credits**
Ecology is the study of the interrelationships between organisms, singly and collectively, and their environment. Fee: $20.

BIO. 301. GENERAL BOTANY **Three credits**

This course in Botany presents a broad survey of the major divisions of the plant kingdom (excluding bacteria and fungi), from the standpoints of classification, habitat, life cycles, structure, development, evolution, and physiology. Emphasis is placed on the higher land plants. Lecture, two hours a week; laboratory, three hours a week. Fee: $30.

BIO. 302. ENDOCRINOLOGY **Three credits**

Endocrinology is a study of the endocrine system and its secretions. The roles of hormonal integration in the regulation and coordination of life processes and functions are considered extensively, together with neuroendocrine physiology and mechanisms of hormone action. Emphasis is placed on the mammalian system with reference to comparative forms. Fee: $30.

Prerequisite: Bio. 201-208, or permission of instructor.

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. Fee: $30.

Prerequisite: Bio. 201-208, 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. Fee: $30.

Prerequisite: Bio. 201-208, 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. Fee: $30.

Prerequisite: Bio. 201-208, or permission of instructor.

BIO. 306. NEUROBIOLOGY **Three credits**

This course is a study of the functional aspects of excitable cells and nervous systems of living animals. Laboratory includes techniques in the stimulation and recording of excitable cells and organs. Fee: $30.

Prerequisite: Bio. 201-208, 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. Fee: $30.

Prerequisite: Bio. 201-208, or permission of instructor.

BIO. 308. ADVANCED GENETICS **Three credits**

This course is a study of plant and animal genetic systems with respect to contemporary literature, techniques, and modes of analysis. Fee: $30.

Prerequisite: Bio. 201-208, 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.

Prerequisite: Bio. 201-208, 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. Fee: $30.

Prerequisite: Bio. 201-208, or permission of instructor.

BIO. 311. POPULATION AND COMMUNITY ECOLOGY **Three credits**

This course is a study of populations and communities as living systems integrated with their environments. Field investigations of local plant and animal assemblages constitute a major portion of the course. Lecture, two hours; laboratory, three hours a week. Fee: $30.

Prerequisite: Bio. 201-208, or permission of instructor.

BIO. 312. COMPARATIVE PHYSIOLOGY **Three credits**

Comparative Physiology provides an extensive consideration of the physiology of organs and organ systems in comparative animal forms. Emphasis is placed on the similarities and differences in which related and/or divergent forms have solved various physiological problems. Lecture, two hours; laboratory, three hours a week. Fee: $30.

Prerequisite: Bio. 201-208, 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. Fee: $30.

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. 201-208, Chem. 237-238, or permission of instructor.

BIO. 316. PLANT PHYSIOLOGY **Three credits**

This course will provide a strong correlation between plant structural and functional considerations in a general phylogenetic context. Laboratory activities will expand upon techniques developed in other physiology courses. Lecture, two hours; laboratory, three hours. Fee: $30.

Prerequisite: Bio. 201-208, 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. Fee: $30.

Prerequisite: Bio. 201-208, or permission of instructor

BIO. 385. FLORISTIC BIOLOGY **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.

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: Approval of department chairperson is required.

BIO. 397. SEMINAR **One credit**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairperson is required.

BIO. 398. TOPICS **Three credits**

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

Chemistry

Professor Bohning, chairperson; Professors Faut, Rozelle, Salley, Stine, Swain; Assistant Professor Jahngen.

The chemistry curriculum is planned to provide thorough training in the fundamentals of the science and to contribute to the general education of the student. Graduates with a B.S. degree may enter industry immediately upon graduation or may continue their studies in graduate school. The B.A. degree is designed for the student interested in a major in chemistry in preparation for a career in teaching, medicine, dentistry, technical sales, technical librarianship, technical translator, etc. The student will choose electives after consultation with his adviser.

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 full membership in the Society at graduation.

FIRST SEMESTER	B.A.	B.S.
Chem. 115	4	4
Eng. 101	3	3
Math. 111	4	4
Core Elective	3	3
P.E. 100	0	0
P.E. 105	1	1
	15	15

SECOND SEMESTER	B.A.	B.S.
Chem. 116	4	4
Eng. 102	3	3
Math. 112	4	4
Core Elective	3	3
P.E. 100	0	0
P.E. 106	1	1
	15	15

THIRD SEMESTER	B.A.	B.S.
Chem. 231	4	4
Math. 211	4	4
Phys. 201	4	4
Core Elective	3	3
P.E. 100	0	0
Elective	3	3
	18	18

FOURTH SEMESTER	B.A.	B.S.
Chem. 222	4	4
Chem. 232	4	4
Math. 212	—	4
Phys. 202	4	4
P.E. 100	0	0
Core Elective	3	—
	15	16

FIFTH SEMESTER	B.A.	B.S.
Chem. 221	4	4
Chem. 251	4	4
Phys. 203	3	3
Core Electives	6	6
	17	17

SIXTH SEMESTER	B.A.	B.S.
Chem. 252	—	4
Chem. 274	—	4
Chem. 276	3	3
Core Electives	6	6
Electives	9	—
	18	17

SEVENTH SEMESTER	B.A.	B.S.
Chem. 397	1	1
Core Electives	6	6
Electives	9	9
	16	16

EIGHTH SEMESTER	B.A.	B.S.
Chem. 397	1	1
Core Electives	3	6
Electives	12	9
	16	16

Chemistry majors must demonstrate competence in a foreign language through the Foreign Language 204 level. No more than six credit hours may be counted in fulfillment of the core requirements.

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 select a minimum of three 300-level courses in the Chemistry department.

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

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

Total credits required for B.A. and B.S. degree with major in Chemistry—130.

CHEM. 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 the pocket calculator.

CHEM. 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 Chem. 102, Chem. 101.

CHEM. 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. Fee: $25.

CHEM. 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. Fee: $25.

CHEM. 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. Fee: $25.

Prerequisite: Chem. 115.

CHEM. 118. CHEMISTRY FOR ENGINEERS **Three credits**

An introduction to chemical equilibria, electrochemistry, metallurgy, and the chemistry of selected metals and nonmetals. Class, two hours a week; laboratory, three hours a week. Fee: $25.

Prerequisite: Chem. 115, engineering majors only.

CHEM. 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. Fee: $25.

Prerequisite: Chem. 111 or 115.

CHEM. 221. 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. Fee: $35.

Prerequisite: Chem. 116, or permission of instructor.

CHEM. 222. SYSTEMATIC INORGANIC CHEMISTRY **Four credits**

A systematic description of the chemistry of the elements based on fundamental chemical principles. Fundamental techniques of inorganic synthesis. Class, three hours a week; laboratory, three hours a week. Fee: $25.

Prerequisite: Chem. 116, or permission of instructor.

CHEM. 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. Fee: $25.

CHEM. 232. ORGANIC CHEMISTRY II **Four credits**

A continuation of Chem. 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. Fee: $25.

CHEM. 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. The quantum chemistry of some simple systems is studied. Chemical kinetics is introduced. Class, three hours a week; laboratory, three hours a week. Fee: $25.

Prerequisite: Chem. 116, Math. 106 or Math 211, Phys. 106 or Phys. 202.

CHEM. 252. PHYSICAL CHEMISTRY II **Four credits**

Theoretical kinetics, kinetic molecular theory, and nuclear chemistry are studied in detail. 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: $25.

Prerequisite: Chem. 251.

CHEM. 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, and ultraviolet visible spectroscopy. Additional methods include electrophoreses, liquid chromatography, vapor pressure osmometry, and mass spectroscopy. Fee: $35.

Prerequisite: Chem. 222, 232, 251.

CHEM. 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 (Chem. 395-396) is included. Class, two hours a week; library laboratory, three hours a week.

Prerequisite: Completion of twenty-four chemistry credits.

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

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

Prerequisite: Chem. 252.

CHEM. 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: Chem. 231, 252.

CHEM. 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: $35.

Prerequisite: Chem. 252.

CHEM. 356. ADVANCED PHYSICAL CHEMISTRY **Three credits**

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

Prequisite: Chem. 252.

CHEM. 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: Chem. 231.

CHEM. 362. BIOCHEMISTRY II **Three credits**
A study of metabolism with emphasis on metabolic regulation.
Prerequisite: Chem. 361.

CHEM. 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: $25 each course.
Prerequisite: Chem. 276.

CHEM. 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 chairperson is required.

CHEM. 398. TOPICS **Three credits**
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 chairperson.

Commerce and Finance

The Commerce and Finance Department offers a B.S. degree program which provides for a variety of alternative career choices:

Accounting

Associate Professor Williams, acting chairperson; Professors Capin, Werner; Associate Professor Pawlenok; Assistant Professors Gettinger, Hall, Moran, Morrison.

Major in Accounting

FIRST SEMESTER		SECOND SEMESTER	
Acct. 101	3	Acct. 102	3
B.A. 101	3	C.S. 124	3
Eng. 101	3	Eng. 102	3
Core Electives	6	Core Electives	6
P.E. 100	0	P.E. 100	0
P.E. 105	1	P.E. 106	1
	16		16
THIRD SEMESTER		**FOURTH SEMESTER**	
Acct. 111	3	Acct. 112	3
B.A. 231	3	B.A. 232	3
Ec. 101	3	Ec. 102	3
Core Electives	6	Core Electives	6
Speech 101	3	P.E. 100	0
P.E. 100	0		
	18		15

FIFTH SEMESTER		SIXTH SEMESTER	
Acct. 201	3	Acct. 204	3
Acct. 241	3	Acct. 242	3
Ec. 201	3	Ec. 228	3
Ec. 231	3	Ec. 232	3
Core Electives	6	Core Electives	6
	18		18
SEVENTH SEMESTER		**EIGHTH SEMESTER**	
Acct. 221	3	Acct. 252	3
Acct. 231	3	B.A. 226	3
B.A. 209	3	Electives[1]	6
B.A. 225	3		
B.A. 251	3		
Elective[1]	3		
	18		12

Note: Accounting courses should be taken in sequence.

Total minimum credits required for B.S. degree with a major in Accounting — 130.

ACCT. 101. ELEMENTARY ACCOUNTING I **Three credits**
Fundamental theory of debits and credits; problems of classification and interpretation of financial data; technique of recording; preparation of financial statements. Class, three hours a week; tutorial, two hours a week.

ACCT. 102. ELEMENTARY ACCOUNTING II **Three credits**
A continuation of Acct. 101. Principles of partnership and corporation accounting; introduction to departmental, manufacturing, and branch accounting; financial analyses of statements. Class, three hours a week; tutorial, two hours a week.

ACCT. 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. Class, three hours a week; tutorial, two hours a week.

ACCT. 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. Class, three hours a week; tutorial, two hours a week.

ACCT. 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 discussed.

ACCT. 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.

[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.

ACCT. 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. Class, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 112, or approval of instructor.

ACCT. 222. TAXES II — **Three credits**

Tax accounting for installment and deferred payment sales; Federal tax returns for partnerships; fiduciaries and corporations; miscellaneous Federal and Pennsylvania corporate taxes. Class, three hours a week.

Prerequisite: Acct. 221.

ACCT. 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. Class, three hours a week.

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

A comprehensive review of partnerships; special procedures and problems of installment sales, consignments, home office and branch relationships; introduction to accounting for business combinations and consolidations. Class, three hours a week.

equisite: Acct. 112.

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

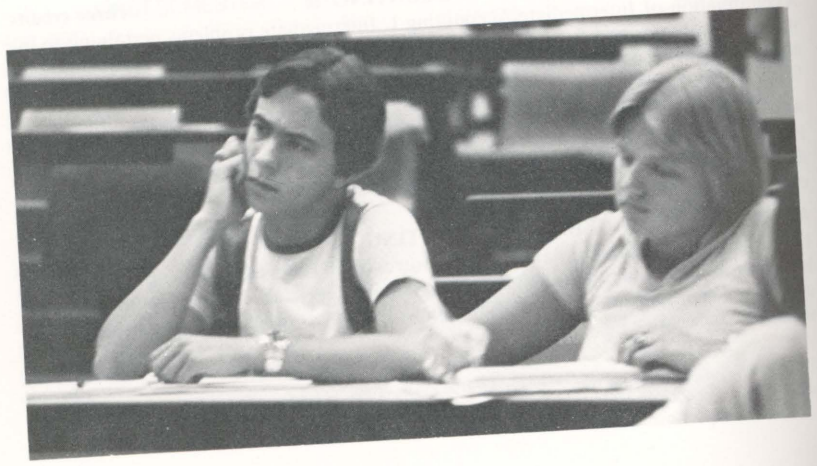
A detailed analysis of the problems of consolidations; analysis of the procedure in accounting for bankruptcies, receiverships, estates and trusts, foreign exchange, and governmental units. Class, three hours a week.

Prerequisite: Acct. 241 and permission of instructor.

ACCT. 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 public 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 course approved by the Commerce and Finance Department.

NOTE: Accounting courses should be taken in sequence.



Business Administration

Associate Professor Williams, acting chairperson; Professors Elliot, Farrar, Werner; Associate Professors Engel, Gera; Assistant Professors Chmiola, Cooney, Gurdin.

Major in Business Administration

FIRST SEMESTER		SECOND SEMESTER	
Acct. 101	3	Acct. 102	3
B.A. 101	3	Eng. 102	3
Eng. 101	3	Speech 101	3
Core Electives	6	Core Electives	9
P.E. 100	0	P.E. 100	0
P.E. 105	1		
	16		18

THIRD SEMESTER		FOURTH SEMESTER	
B.A. 231	3	B.A. 232	3
Ec. 101	3	Ec. 102	3
Core Electives	9	Core Electives	9
P.E. 100	0	P.E. 100	0
		P.E. 106	1
	15		16

FIFTH SEMESTER		SIXTH SEMESTER	
B.A. 251	3	B.A. 222	3
Ec. 201	3	B.A. 252 or 254	3
Ec. 231	3	Ec. 228 or	
Core Elective	3	C. & F. elective	3
Electives	6	Ec. 232	3
		Core Elective	3
		Elective	3
	18		18

SEVENTH SEMESTER		EIGHTH SEMESTER	
B.A. 209	3	B.A. and Ec. electives	12
B.A. 225	3	Elective	3
B.A. and Ec. electives	9		
Elective	3		
	18		15

Total minimum credits required for B.S. degree with a major in Business Administration — 133.

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

Acct. 111 — Intermediate Accounting I
Acct. 112 — Intermediate Accounting II
B.A. 220 — Real Estate
B.A. 226 — Investments
B.A. 240 — Property Insurance
B.A. 241 — Life Insurance
C.S. 124 — COBOL Programming
C.S. 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 — Economic Analysis
Ec. 252 — Introduction to Mathematical Economics
Math. 105 — Introductory Calculus I
Math. 106 — Introductory Calculus II

ECONOMICS

B.A. 217 — Logistics and Distribution Management
C.S. 123 — FORTRAN Programming
C.S. 223 — Advanced Programming — FORTRAN
C.S. 224 — Advanced COBOL and File Management
Ec. 212 — Government & Business
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 — Economic Analysis
Ec. 245 — Consumer Economics
Ec. 252 — Introduction to Mathematical Economics
Ec. 395-396 — Research
Math. 105 — Introductory Calculus I
Math. 106 — Introductory Calculus II

MANAGEMENT AND INDUSTRIAL RELATIONS

Acct. 201 — Cost Accounting
Acct. 204 — Managerial Accounting
B.A. 217 — Logistics & Distribution Management
B.A. 240 — Property Insurance
B.A. 241 — Life Insurance
B.A. 252 — Operations & System Management **or**
B.A. 254 — Organizational Design & Behavior
B.A. 256 — Business Policies & Corporate Responsibility
C.S. 124 — COBOL Programming
C.S. 224 — Advanced COBOL and File Management
Ec. 222 — American Labor Movement
Ec. 223 — Collective Bargaining
Math. 105 — Introductory Calculus I
Math. 106 — Introductory Calculus II
Math. 262 — Operations Research
P.S. 207 — Public Administration
P.S. 222 — International Relations
Psy. 232 — Human Behavior
Psy. 242 — Psychological Tests **or**
Psy. 243 — Industrial Psychology
Soc. 265 — Sociology of Industry

MARKETING

B.A. 114 — Salesmanship
B.A. 216 — Advertising
B.A. 217 — Logistics & Distribution Management
B.A. 240 — Property Insurance
B.A. 241 — Life Insurance
B.A. 261 — Principles of Retailing
B.A. 264 — Retail Buying
C.S. 124 — COBOL Programming
C.S. 224 — Advanced COBOL & File Management
Ec. 224 — Economic Development
Ec. 225 — International Trade
Ec. 226 — International Investment and Finance
Ec. 245 — Consumer Economics
Math. 105 — Introductory Calculus I
Math. 106 — Introductory Calculus II
P.S. 222 — International Relations
Psy. 232 — Human Behavior
Psy. 243 — Industrial Psychology
Soc. 265 — Sociology of Industry

B.A. 101. INTRODUCTION TO BUSINESS **Three credits**
Designed to orient freshman students to the framework within which business enterprises function in the economy. Stress is placed on decision-making, small business operation, and problems of financial resources.

B.A. 114. SALESMANSHIP **Three credits**
The art of selling; the motive behind all buying; creation of interest and desire; presentation of services; meeting objections; types of customers.

B.A. 115. MATHEMATICS OF BUSINESS AND FINANCE **Three credits**
This course will include progressions, logarithms, per cent, interest, discounts, equation of value, annuities, sinking funds, depreciation, taxes, profit and loss.

B.A. 209. BUSINESS CORRESPONDENCE AND REPORTS **Three credits**
Fundamental principles of business writing with emphasis on letters and reports.

B.A. 216. ADVERTISING **Three credits**
A study of basic principles of advertising. Elements of advertising; a survey of different departments of advertising work, including copy, art, display, engraving, trademarks, and media. Analysis of current advertisements. Advertising as a social force.

B.A. 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.

B.A. 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.

B.A. 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.

B.A. 225. MANAGERIAL FINANCE **Three credits**
A study of the economic principles underlying the capital structure of modern business enterprise. Consideration given to alternate types of business organization, corporate securities, and financial policies involved in promotion, disposition of net earnings, working capital and short-term financing, mergers, expansion, financial readjustments, and reorganization.

B.A. 226. INVESTMENTS **Three credits**
Consideration of leading types of investments, tests, and investment programs; financial reports of leading companies, forecasting methods and agencies, stock exchanges, brokerage houses, methods of buying and selling securities, fraudulent promotions and their detection. Laboratory work and case studies.

B.A. 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.

B.A. 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.

B.A. 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.

B.A. 240. PROPERTY INSURANCE **Three credits**
This course is a study of the fundamentals of fire, casualty, and marine insurance.

B.A. 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.

B.A. 251. PRINCIPLES OF MANAGEMENT **Three credits**
Nature and evolution of management thought. Fundamental universal concepts covered: decision-making, policy formulation, planning, organizing, staffing, actuating, communicating, directing, controlling, etc. Views management as process of integrating knowledge developed by many disciplines. Social and ethical dimensions of the management process summarized.

B.A. 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.

B.A. 254. ORGANIZATIONAL DESIGN AND BEHAVIOR **Three credits**
Current organizational principles of authority, responsibility, leadership, span of control, departmentalization, line/staff relationships, decentralization, committees, staffing, directing, and work groups, with emphasis on behavioral science applications.

B.A. 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.

B.A. 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.

B.A. 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.

B.A. 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.

B.A. 397. SEMINAR (Maximum of three credits per student) **One to three credits**
Presentations and discussions of selected topics.

Economics

Associate Professor Williams, acting chairperson; Professors Elliot, Farrar, Taylor, Werner; Associate Professors DeYoung, Engel.

Students who major in economics are required to complete twenty-four hours of work in economics beyond Ec. 101-102 in addition to the general requirements for the B.A. degree. 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 Math. 105, 106 and, if necessary, Math. 100.

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

EC. 101. PRINCIPLES OF ECONOMICS I **Three credits**
An introductory course which 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 are pointed out. The course provides orientation in the broad field of economics and makes use of the analytical trends by means of which the student can understand the economic problems of his environment.

EC. 102. PRINCIPLES OF ECONOMICS II **Three credits**
This course is a logical sequence to Ec. 101. It is based upon a broad microeconomic foundation concentrated on such units as the firm, the industry, and the consumer.

EC. 201. MONEY AND BANKING **Three credits**
A study of money, credit, and banking operations. Development of American monetary and banking system. Central banking and the Federal Reserve System. Instruments of monetary control. Financial intermediaries. Monetary standards and international monetary relations.

EC. 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.

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 is 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 and analysis of the theories of economic development. Guidelines are provided for development policy in various underdeveloped areas of the world. Objective comparisons are made which deal with factors that underlie the transition from economic backwardness to sustained economic growth.

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 & 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 GENERAL STATISTICS **Three credits**
A course in statistical methods and their application. A collection and interpretation of statistical data, frequency distribution and measures of central tendency, fitting the normal curve, analysis of variance. Lecture, three hours; laboratory, two hours. Fee: $15.

EC. 232. ECONOMIC STATISTICS **Three credits**
A continuation of Ec. 231. This course will include time-series analysis, construction of index numbers, methods of correlation analysis, multiple and partial correlation, and test of significance for samples; Chi-square test. Lecture, three hours; laboratory, two hours. Fee: $15.

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; consumption minima; problems of the individual consumer as affected by income, taxes; consumer habits and standards of living are investigated. A study is made of the trends in consumption, income disposition, and marketing and pricing of consumer goods. Relationships between government activities and the consumer are studied.

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.

Computer Science

Professor Wong, chairperson; Professor T. Richards; Associate Professors Earl, Merrill, Salsburg, Sours, Tillman; Assistant Professors DeCosmo, Koch, Parker; Adjunct Professor Mantione.

A program of study leading to a B.A. or B.S. degree with a major in computer science is administered by the Department of Mathematics and Computer Science. It is designed to prepare students for graduate studies in computer science or for careers in the computing and data processing field.

Since the program is application-oriented, all students are strongly advised to acquire competence, through attainment of a double major or election of a cluster of well-chosen electives, 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 chairperson.

Common requirements for B.A. and B.S. degrees:	**credit hours**
(1) The general core requirements listed on page 49, except the science / mathematics area which is specified below.	41
(2) C.S. 123, 124, 223 or 224, 227, 322	15
(3) Math. 111, 112, 202, and 211	15

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: C.S. 262, 321, and 324.	12
(6A) Free electives	33

Additional requirements for B.S. degree:	**credit hours**
(4S) Phys. 201 and a two-semester sequence in Biology, Chemistry, Earth and Environmental Sciences, or Physics courses numbered above 200 or Phys. 201-202 and at least three credits in Biology, Chemistry, Engineering, Earth and Environmental Sciences, or Physics courses numbered above 200, Phil. 350, or Phil. 352.	11
(5S) Any five courses in Computer Science or Mathematics numbered above 200, including at least two among C.S. 320, 323, 326, and 328.	15
(6S) Free electives	30

Minimum total credit requirements for computer science major:

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

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

C.S. 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 Math. 102. Fee: $10. (same as Engr. 241)

Offered every fall semester.

C.S. 123. FORTRAN PROGRAMMING — **Three credits**

Introduction to computer programming using the FORTRAN IV language. The computer is used to solve problems geared to the individual interest of the students. Fee: $25. (same as Engr. 244)

Offered every fall, spring, and summer.

C.S. 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: $25.

Offered every fall, spring, and summer.

C.S. 223. ADVANCED PROGRAMMING: FORTRAN — **Three credits**

A study of advanced programming techniques using FORTRAN IV. Topics include advanced data types, program optimization, and the use of various storage devices. Fee: $25. (same as Engr. 245)

Prerequisite: C.S. 123 / Engr. 244.

Offered every spring semester.

C.S. 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: $25.

Prerequisite: C.S. 124.

Offered every spring and summer.

C.S. 227. 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. (same as E.E. 343)
Prerequisite: C.S. 223/Engr. 245 or C.S. 224.
Offered every fall semester.

C.S. 262. OPERATIONS RESEARCH **Three credits**
Mathematical modeling of and solution algorithms for optimization problems of the following types: linear programming (including duality and sensitivity analysis); transportation, transshipment and assignment problems; network models (including shortest route, critical path, and maximal flow problems); dynamic programming. (same as Math. 262)
Prerequisite: Some elementary knowledge of matrices.
Offered every spring.

C.S. 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 E.E. 341)
Prerequisite: E.E. 211 or Phys. 202
Offered in the fall semester of even years.

C.S. 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 others.
Prerequisite: C.S. 223/Engr. 245 or C.S. 224.
Offered in the fall semester of even years.

C.S. 322. 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. Fee: $25. (same as Engr. 342)
Prerequisite: C.S. 223/Engr. 245 or C.S. 224.
Offered every spring semester.

C.S. 323. FORMAL LANGUAGES & AUTOMATA THEORY **Three credits**
This course formalizes many topics encountered in previous computing courses. Topics include alphabets, languages, grammars, finite automata, regular expressions and type 3 grammars, context-free languages, push-down automata.
Prerequisite: Math. 202.
Offered in the fall semester of even years.

C.S. 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: C.S. 224.
Offered in the fall semester of odd years.

C.S. 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: C.S. 324.
Offered in the spring semester of even years.

C.S. 326. OPERATING SYSTEM PRINCIPLES **Three credits**
Analysis of the computer operating systems including Batch, Timesharing, and Real-time systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices. (same as E.E. 344)
Prerequisite: C.S. 227/E.E. 343.
Offered in the fall semester of odd years.

C.S. 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: C.S. 227/E.E. 343 and C.S. 323.
Offered in the spring semester of odd years.

C.S. 328. ANALYSIS OF ALGORITHMS **Three credits**
Theoretical anaylsis of various algorithms. Topics include sorting, searching, selection, matrix multiplication and multiplication of real numbers.
Prerequisite: C.S. 227/E.E. 343.
Offered in the fall semester of even years.

C.S. 329. MICROCOMPUTER OPERATION AND DESIGN **Three credits**
Microprocessor architecture, microcomputer design, and peripheral interfacing. Micro-programming, soft-ware 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: $25. (see E.E. 342)
Prerequisite: C.S. 320/E.E. 341.
Offered in the spring semester of odd years.

C.S. 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 Math. 364)
Prerequisite: C.S. 123/E.E. 244 and Math. 211 or permission of instructor.
Offered every spring semester.

C.S. 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 C.S. 370 and a maximum of twelve credits in C.S. 370 and Cooperative Education 301-302-303-304 toward the graduation requirement.
Prerequisite: Senior standing and approval of the department.

C.S. 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.

Earth and Environmental Sciences

Associate Professor Berryman, chairperson; Assistant Professor Case; Instructor Redmond.

The department offers B.S. and B.A. degree programs incorporating concepts in both the earth and environmental science areas. The B.S. degree program requires 124 credits, including liberal arts courses; work in each of the basic sciences (mathematics, chemistry, biology, and physics); training in each of the earth sciences; and advanced study in either earth sciences (geology, oceanography, and meteorology) or environmental sciences (land use, water quality, air pollution, and ecology). This program may appeal to those with an interest in environmental monitoring or graduate work in an earth or environmental science.

The B.A. degree program requires 124.5 credits, including liberal arts courses; introductions to the basic sciences; training in both the earth and environmental areas; and a concentration of coursework in the social sciences. This program may appeal to those with an interest in one of the various aspects of environmental planning. Both degree programs emphasize an interdisciplinary approach to the subject matter and include both laboratory and field work.

E. & E.S. 101. ASTRONOMY **Three credits**
Survey of major astronomical concepts and features. Topics covered include stars, constellations, galaxies, sun, planets, and satellites. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 102. GEOLOGY **Three credits**
Survey of major geological concepts and features. Topics covered include origin of earth, rocks and minerals, earthquakes, erosion, continental motion. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 103. METEOROLOGY **Three credits**
Survey of major atmospheric concepts and features. Topics covered include temperature, precipitation, wind, weather, maps, weather phenomena, and climate. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 104. OCEANOGRAPHY **Three credits**
Survey of major oceanic concepts and features. Topics covered include water properties, ocean structure, surface currents, deep flow, waves, marine life, shore features. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 105. ENVIRONMENTAL AWARENESS **Three credits**
A survey of the effects of human activity on the ecosystem. Topics covered include air pollution, water pollution, solid waste disposal, endangered species, and global food, energy, and population problems. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 190. WORLD PHYSICAL GEOGRAPHY **Three credits**
Global patterns of major earth features are described. Causes, variations, and interactions of land forms, vegetation, ocean and atmospheric circulation, settlement, and resources are discussed. Intended for an interdisciplinary audience. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 195. MAPPING AND SENSING **Three credits**
Study of maps; their construction, interpretation, and use. Also, study of sensing techniques (manual and remote) for gathering mapped information. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 201. PRINCIPLES OF EARTH SCIENCE **Four credits**
Thorough grounding in the geophysical principles underlying astronomy, meteorology, geology, and oceanography. Intended primarily for science majors. Three hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 211. PHYSICAL GEOLOGY **Three credits**
Description, analysis, and laboratory studies of earth materials, structures, and processes; earth's surface features, interior, age, and origin. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 212. HISTORICAL GEOLOGY **Three credits**
The methods of historical geology; record of earth history; the history of life; theory and lab. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 221. AIR QUALITY **Three credits**
A study of atmospheric pollutants, their sources and effects. Lecture topics include primary and secondary pollutants, stability and plume behavior, monitoring, standards, and inadvertant weather and climate modification. Three hours lecture.
Prerequisite: E. & E.S. 251 or consent of instructor.

E. & E.S. 222. WATER QUALITY **Three credits**
The waters of lakes, rivers, oceans, and rainfall are discussed. Topics covered include distribution of dissolved substances, carbonate and metal equilibria, nitrogen cycling, chelation, corrosion, and the role of micro-organisms. Three hours lecture.
Prerequisite: Chem. 111 or 116.

E. & E.S. 251. SYNOPTIC METEOROLOGY **Three credits**
Topics include weather systems, weather phenomena, thunderstorms, thermodynamic diagrams, jet stream, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 252. DYNAMIC METEOROLOGY **Three credits**
Topics include themodynamics; heat, moisture, and momentum transfer; and atmospheric forces and motion fields. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 281. PLANETARY ASTRONOMY **Three credits**
Topics include Kepler's laws, origin of the solar system, members of the solar system, rockets, orbital mechanics, and remote sensing techniques. Emphasis is given to planetary probes and their results. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 282. STELLAR ASTRONOMY **Three credits**
Topics include telescopes, cosmology, galaxies, nebula, spectroscopy, and celestial sphere coordinate system. Emphasis is given to stellar evolution and nuclear processes. Intended for science majors. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 311. POPULATION AND COMMUNITY ECOLOGY **Three credits**
A study of populations and communities as living systems integrated with their environment. Field investigations of local plant and animal assemblages will constitute a major portion of the course. Two hours lecture and one three-hour laboratory. Fee: $20.

Prerequisite: Bio 208.

E. & E.S. 320. HYDROLOGY **Three credits**
The physical elements and processes which constitute the hydrologic cycle are examined with emphasis on the relationships of land and water. Special topics include floods and flood control, water resources, water uses, and water pollution problems. Two hours lecture and two hours laboratory. Fee: $20.

E. & E.S. 325. 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: E. & E.S. 251.

E. & E.S. 330. ENVIRONMENTAL QUALITY MEASUREMENTS **Four credits**
Training in the instrumentation and analytical techniques used in monitoring and assessing the environment. Water, soil, and air measurements are made in the laboratory and in the field. Two hours lecture and four hours laboratory. Fee: $30.

Prerequisite: Chem. 116.

E. & E.S. 331. ADVANCED ENVIRONMENTAL QUALITY MEASUREMENTS **Four credits**
A continuation of E. & E.S. 330 with emphasis on water pollution and treatment technologies. Included are eutrophication; sewage pollution and treatment; acid mine drainage; herbicide, pesticide, and oil pollution; radiochemistry of water; and thermal water pollution. Two hours lecture and four hours laboratory. Fee: $30.

Prerequisite: E. & E.S. 330.

E. & E.S. 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: $20.

Prerequisite: Consent of instructor.

E. & E.S. 350. ENVIRONMENTAL DEVELOPMENT **Three credits**
Presents a framework through which environmental planning and management techniques are applied to metropolitan areas. Emphasis is placed on preservation of air, water, and land resources within developing and redeveloping metropolitan environments. Three hours lecture.

Prerequisite: Consent of instructor.

E. & E.S. 360. OCEAN SCIENCE **Three credits**
A study of the fundamentals of oceanography including physical, chemical, and biological aspects. Intended for science majors. Three hours lecture.

Prerequisite: Upper-class standing and consent of instructor.

E. & E.S. 370. GEOMORPHOLOGY **Three credits**
A study of the human role in changing the surface of the earth with emphasis on the utilization of geologic and hydrologic information in land-use planning. Remote sensing techniques and field investigations will constitute a major portion of the course. Two hours lecture and one three-hour laboratory. Fee: $20.

Prerequisite: E. & E.S. 211 and 320.

E. & E.S. 375. GEOCHEMISTRY **Three credits**
Chemical properties of earth materials. Origin and abundance of the chemical elements and their distribution. Mineral equilibria. Stable and radioactive isotope variations due to geologic processes. Two hours lecture and two hours laboratory. Fee: $20.

Prerequisite: E. & E.S. 211, Chem. 116, or consent of instructor.

E. & E.S. 381. MINERALOGY **Three credits**
Ionic structure of minerals; physical properties and external form as consequences of structure; determination of minerals by physical tests. Two hours lecture and two hours laboratory. Fee: $20.

Prerequisite: E. & E.S. 211 and Chem. 111 or 115.

E. & E.S. 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: $20.

Prerequisites: E. & E.S. 211 and 381 or consent of instructor.

E. & E.S. 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 chairperson.

E. & E.S. 394. FIELD STUDY **One to three credits**
On-site study of an earth or environmental problem or situation incorporating field documentation and investigation techniques. May be repeated for credit when no duplication of experience results.

E. & E.S. 395-396. INDEPENDENT RESEARCH I & II **One to threee 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: Approval of department chairperson and upper-class standing.

E. & E.S. 397. PROFESSIONAL SEMINAR **One to three credits**
This extended program presents faculty, guest, and student lectures on current issues in the earth and environmental sciences. Also included is career planning information. For three credits, a student lecture presentation is required.

E. & E.S. 398. TOPICS **One to three credits**
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. Available for undergraduate credit only.

E. & E.S. 401-402. ADVANCED TOPICS I & II **One to three credits each**
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.

Prerequisite: Senior or graduate standing.

Education

Professor Hammer, chairperson; Professor Darte; Associate Professors Barone, Bellucci, Fahmy, Gera, Siles; Assistant Professors Giordano, Johnson.

Students wishing to prepare for public school teaching in business subjects or music complete the B.S. program described for these subjects. Prospective elementary school teachers complete the B.A. program.

Prospective secondary school teachers:

a. may elect to major in Anthropology, Biology, Chemistry, Economics, English, Foreign Languages, History, Mathematics, Physics, Political Science, Psychology, or Sociology. Students who major in Economics, History, Political Science, Psychology, or Sociology must complete the Social Studies Certification Program. A description of the program is given below.

b. must complete the **second** major in education which includes twenty-five credits:

Ed. 101-102, Practicum in Education . . . . . one credit
Ed. 201, Introduction to Education . . . . . three credits
Ed. 202, Educational Psychology . . . . . three credits
Ed. 203, Special Methods of Teaching . . . . . three credits
Ed. 380, Professional Semester in Education . . . . . fifteen credits

Admission to this **second** major requires satisfactory completion of Ed. 101, 102, 201, and 202; a cumulative G.P.A. of 2.30; recommendation by the major department; recommendation by the Dean of Student Affairs; and recommendation by the Teacher Education Committee.

Transfer students must take at least one course in education at Wilkes College prior to enrolling in the professional semester. Teacher certification requirements for most states may be met at Wilkes College. Students are expected to familiarize themselves with specific state requirements.

Business Education

Programs in Business Education offer a variety of career options. Students may select the two-year program leading to a certificate of proficiency in secretarial or clerical work. Those who complete this program may continue on into the degree program without loss of credit.

Certificate of Proficiency

General Core Requirements . . . . . 29 credits

Eng. 101-102 (six credits), P.E. 100 (four semesters), P.E. 105-106 (two credits), HUMANITIES: Hist. 101-102 (six credits), SCIENCE/MATHEMATICS: see page 49 (six credits), SOCIAL SCIENCES: Ec. 101 (three credits), Psy. 101-102 (six credits).

Major Courses . . . . . 16 credits
Acct. 101-102 (six credits)
Bus. Ed. 107-108, 201-202, 205 (ten credits)

Correlative Courses . . . . . 12 credits
B.A. 115, 231-232 (nine credits)
Speech 101 (three credits)

Elective Courses (one set required) . . . . . 10-12 credits
Set A: Bus. Ed. 105-106, 207, 208 (ten credits)
Set B: Acct. 111-112 (six credits)
B.A. 209, 114 or 216 or 222 or 264 (six credits)

Total credits required for certificate — 67-69.

B.S. Degree — Major in Business Education

This curriculum combines preparation for business careers with a baccalaureate program in the liberal arts. Students who do not seek certification for secondary school teaching are not required to complete the professional work in education.

General Core Requirements . . . . . 53 credits
Students should elect Ec. 101-102* and Psy. 101-102 to fulfill the Social Sciences component.

Major Requirements . . . . . 25-33 credits
Acct. 101, 102; B.A. 261; Bus. Ed. 107, 108, 205; Ec. 101, 102* plus at least two of these sets: (a) Acct. 111, 112; (b) Bus. Ed. 201, 202; (c) Bus. Ed. 105, 106, 207, 208; (d) two of these: B.A. 114, 216, 222, 264.

Correlative Requirements . . . . . 21 credits
B.A. 115, 209, 231, 232, 251, 252, 254 or 256; Speech 101.

Electives . . . . . 17-25 credits
Students seeking certification for teaching will elect Ed. 101-102, 201, 202, 203B, 380; other students must complete a second major.

Total minimum credits required for B.S. degree with major in Business Education — 124 credits.

B.A. Degree — Major in Elementary Education

General Core Requirements . . . . . 53 credits

Major Requirements . . . . . 40 credits
Ed. 101, 102, 201, 202, 203D, 204D, 251, 252, 253, 254, 380.

Correlative Requirements . . . . . 15 credits
Math. 232, 243; Psy. 221; Science (a second 101-102 sequence).

Electives in one Department other than Education . . . . . 12 credits

Total minimum credits required for B.A. degree with major in Elementary Education — 120 credits.

A suggested schedule for completing these requirements may be obtained in the Education department office.

*The six credits for Ec. 101-102 are counted in the General Core Requirements.

Social Studies Certification Program

General Core Requirements . . . . . 53-57 credits
Hist. 101-102 and Psy. 101-102 must be taken as part of the core or as electives.

Major in a Social Science . . . . . 24 credits
Anthropology, Economics, History, Political Science, or Sociology.

Professional Education Courses. . . . . . 18 credits
Ed. 201, 202, 330.

Social Science Electives . . . . . 15 credits
Courses in at least two of the social sciences enumerated above other than the major. Each program must include Anth. 101, Ec. 101, Ec. 227 or 228, P.S. 102, and Soc. 101.

Electives (to complete degree requirements).

A suggested schedule for completing these requirements may be obtained in the Education Department office.

ED. 101-102-103-104-105-106. PRACTICUM IN EDUCATION **One-half 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. 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 B — Business (Grades 7-12)
Section C — Communication/English (Grades 7-12)
Section D — Elementary (Grades K-6)
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 B — Business (Grades 7-12)
Section C — Communication/English (Grades 7-12)
Section D — Elementary (Grades K-6)
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. 251. THE TEACHING OF ELEMENTARY READING **Three credits**

ED. 252. THE TEACHING OF ELEMENTARY MATHEMATICS **Three credits**

ED. 253. THE TEACHING OF ELEMENTARY SCIENCE **Three credits**

ED. 254. THE TEACHING OF ELEMENTARY SOCIAL STUDIES **Three credits**

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. 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. 370. SPECIAL PROJECTS **Three credits**

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: $25.
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 chairperson 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 chairperson is required.

ED. 398. TOPICS IN EDUCATION — **Three credits**

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

BUS. ED. 100. PERSONAL TYPEWRITING — **No credit**

Designed as a one-semester elective for all students, regardless of major, except Business Education and Secretarial Science majors. Emphasis will be on attaining basic typewriting skill, the typing of personal and business letters, term papers, and manuscripts. Four hours per week. Fee: $50.

BUS. ED. 105. ELEMENTARY SHORTHAND — **Two credits**

Presentation, development, and completion of principles of Gregg Shorthand, Diamond Jubilee Series. Consideration given to non-shorthand factors of transcription, as spelling, punctuation, grammar, and word usage. Introduction to dictation and transcription skills. Four hours a week. One hour lecture, three hours laboratory.

BUS. ED. 106. INTERMEDIATE SHORTHAND — **Two credits**

Review and strengthen knowledge of Gregg Shorthand, Diamond Jubilee Series shorthand theory. Development of new word-building power through progressive skill-building dictation. Extending knowledge and skill in basic elements of transcription. Four hours each week. One hour lecture, three hours laboratory.

Prerequisite: Bus. Ed. 105, or approval of instructor.

BUS. ED 107. ELEMENTARY TYPEWRITING — **Two credits**

Mastery of the techniques of touch typewriting. Emphasis is placed on skill-building practices with proper techniques through motivating drills and timed writings. Learning to type simple problems on a production basis such as memorandums, personal communications, tabulations, business letters, outlines, manuscripts, and composing. Four hours each week. One hour lecture, three hours laboratory. Fee: $15.

BUS. ED. 108. INTERMEDIATE TYPEWRITING — **Two credits**

Building typewriting competence by strengthening basic and problem skills. Developing higher degree of proficiency through speed and accuracy timed writings, and production typing problems, such as business letters with special features; special communication forms; technical papers and business reports; tables; business forms; and executive communications. Four hours each week. One hour lecture, three hours laboratory. Fee: $15.

Prerequisite: Bus. Ed. 107, or approval of instructor.

BUS. ED. 201. ADVANCED TYPEWRITING I — **One credit**

Increased emphasis is placed on higher speed and accuracy. Measuring of production skill competencies. A series of simulated on-the-job experiences in which a minimum of direction and a maximum of realism are provided. Advanced skills applied to typing in general, accounting, and executive offices. Three hours laboratory. Fee: $15.

Prerequisite: Bus. Ed. 108.

BUS. ED. 202. ADVANCED TYPEWRITING II — **One credit**

Continuation of speed and accuracy development and reinforcement. Independent specialized production typing, with high degree of speed and accuracy on simulated on-the-job experience: technical, professional (medical, legal, scientific) and government offices. Three hours laboratory. Fee: $15.

Prerequisite: Bus. Ed. 201.

BUS. ED. 205. OFFICE PROCEDURES AND BUSINESS MACHINES — **Four credits**

A study of technical procedures in typical business and professional offices; analysis of personal and professional requirements for office personnel; a general survey and comparison of major office machines classifications; administrative machine procurement problems and procedures; operation and use of office machines and equipment. Eight hours a week. Two hours lecture, six hours laboratory. Fee: $15.

Prerequisite: Approval of instructor.

BUS. ED. 207. ADVANCED SHORTHAND I — **Three credits**

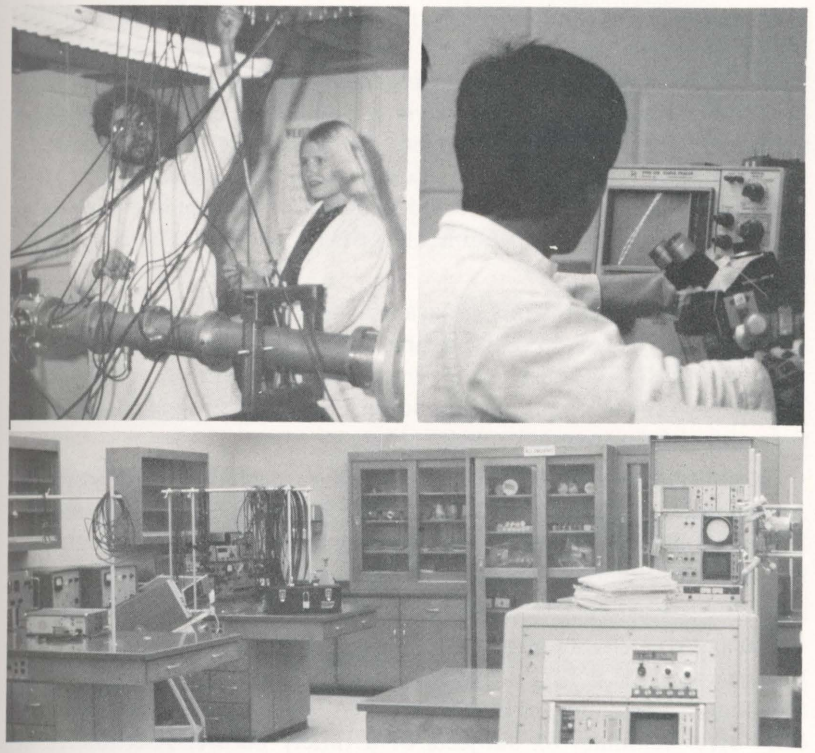
Mastering of Gregg Shorthand Diamond Jubilee Series theory. Progressive speed forcing and speed building, reinforcement, and control dictation given. Building transcription quality and speed. Five hours each week. Two hours lecture, three hours laboratory.

Prerequisite: Bus. Ed. 106.

BUS. ED. 208. ADVANCED SHORTHAND II — **Three credits**

Development of shorthand facility and transcription competency when working with highly specialized material. The specialized areas of dictation and transcription are: medical, legal, technical and scientific, international trade, and congressional. Emphasis is placed on specialized terminology. Five hours each week. Two hours lecture, three hours laboratory.

Prerequisite: Bus. Ed. 207.



Engineering facilities for study and research.

Engineering

Professor Nejib, chairperson; Emeritus Professor Thomas; Professor Hostler; Associate Professors Aston, Orehotsky; Assistant Professors Afrashteh, Koch, Natarajan, Parker; Adjunct Professor Osadchy; Assistant Petyak.

The Department of Engineering offers **four-year programs** in Electrical Engineering and Materials Engineering leading to the Bachelor of Science degree. The programs provide a broad foundation in a number of important areas in addition to specialization in one or more. Students can choose to concentrate in **bioengineering, electronic material, computer engineering, electronic and logic circuit design, microwaves, antenna systems, or semiconductor devices and applications.**

Specialization in engineering is achieved through the technical electives. With the approval of his or her faculty adviser a student with special career goals may substitute the appropriate electives.

A five-year B.A./B.S. program in engineering is also available. This program offers a student the opportunity to obtain broader education in the arts or sciences, while completing the requirements for a degree in engineering. The program allows the student to spread his or her engineering studies over a five-year period, rather than within the typical four-year period. Upon successful completion of this program, the student is awarded the combined degrees of Bachelor of Arts in a discipline and Bachelor of Science in a particular branch of engineering. A double major track with other science disciplines is also available.

A student may enter this program at any time during the first six semesters of one of the engineering B.S. programs. A student may also enter this program from other programs offered by the College. The timing for this change is, of course, critical because of the sequential nature of the courses in engineering.

In addition the Department offers **two-year academic programs** in Aeronautics Engineering, Chemical Engineering, Civil Engineering, Industrial and Management Engineering, and Mechanical Engineering. Upon completion of the second year, students in any of these programs may transfer to the junior year at other engineering schools.

The student chapters of the Institute of Electrical and Electronic Engineers (I.E.E.E.), the American Society for Metals (A.S.M.) and the Engineering Club, in conjunction with the Department, periodically offer seminars on subjects of a timely nature. Attendance at these seminars is mandatory for completion of degree requirements.

Students intending to major in engineering are encouraged to be prepared in the basic sciences and to take calculus (Math. 111) in the first term of the freshman year.

FIRST YEAR COMMON TO ALL ENGINEERING PROGRAMS

FIRST SEMESTER		SECOND SEMESTER	
Chem. 115 Elements and Compounds	4	Chem. 118 Chemistry for Engineers	3
Eng. 101 Composition	3	Eng. 102 Composition	3
Engr. 111 Introduction to Engineering	4	Engr. 244 Fortran IV	3
Math. 111 Calculus I	4	Math. 112 Calculus II	4
P.E. 105 Hygiene	1	Phys. 201 General Physics II	4
P.E. 100 Physical Education	0	P.E. 106 Hygiene	1
	16	P.E. 100 Physical Education	0
			18

Two-Year Academic Programs

Aerospace Engineering
Civil Engineering
Mechanical Engineering

THIRD SEMESTER		FOURTH SEMESTER	
E.E. 211 Circuit Theory I	3	Engr. 232 Strength of Materials	3
Engr. 231 Static and Dynamics	3	or 224 Heat Transfer	3
Engr. 283 Measurement Lab. I	1	Engr. 284 Measurement Lab. II	1
Math. 211 Intro. to Differential Equations	4	Ma.E. 210 Materials Engineering	3
Phys. 202 General Physics II	4	Math. 212 Multivariable Calculus	4
Liberal Studies	3	Phys. 203 General Physics III	3
	18	Liberal Studies	3
			17

Chemical Engineering

THIRD SEMESTER		FOURTH SEMESTER	
Chem. 221 Inorganic Quant. Analysis	4	Chem. 222 Sys. Inorganic Chemistry	4
E.E. 211 Circuit Theory I	3	Engr. 284 Measurement Lab. II	1
Engr. 283 Measurement Lab. I	1	Ma.E. 210 Materials Engineering	3
Math. 211 Intro. to Differential Equations	4	Math. 212 Multivariable Calculus	4
Phys. 202 General Physics II	4	Phys. 203 General Physics III	3
Liberal Studies	3	Liberal Studies	3
	19		18

Industrial and Management Engineering

THIRD SEMESTER		FOURTH SEMESTER	
E.E. 211 Circuit Theory I	3	B.A. 252 Operations & Systems Man.	3
Engr. 231 Statics and Dynamics	3	or Liberal Studies	3
Engr. 283 Measurement Lab. I	1	Engr. 232 Strength of Materials	3
Math. 211 Intro. to Differential Equations	4	or 224 Heat Transfer	3
Phys. 202 General Physics II	4	Engr. 284 Measurement Lab. II	1
Liberal Studies	3	Ma.E. 210 Materials Engineering	3
	18	Math. 212 Multivariable Calculus	4
		Liberal Studies	3
			17

B.S. Degree Programs

Electrical & Materials Engineering

Second Year

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

Electrical Engineering

Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
E.E. 251 Electronics I	4	E.E. 252 Electronics II	4
E.E. 331 Electromagnetics I	4	E.E. 332 Electromagnetics II	4
E.E. Elective	6	E.E. 272 Solid State Devices	3
Liberal Studies	3	E.E. Elective	3
		Liberal Studies	3
	17		17

Electrical Engineering

Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
E.E. 335 Microwaves & Antenna Systems	3	E.E. 320 Electric Machines	4
E.E. 381 Advanced Microelectronics Lab.	4	E.E. 382 Communication & Antenna Lab.	4
E.E. 397 Senior Seminar	1	E.E. 397 Senior Seminar	1
E.E. Elective	6	E.E. Elective	3
Liberal Studies	3	Liberal Studies	6
	17		18

1. Total minimum credits for B.S. degree — 138.
2. Students desiring computer or bioengineering concentrations should consult their adviser for proper E.E. electives.
3. E.E. 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.
4. Liberal Studies electives can be taken in all areas, with nine of the credits being in the humanities and nine in the social sciences.

Materials Engineering

Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
Chem. 221 Inorganic Quant. Analysis	4	Chem. 222 Sys. Inorganic Chemistry	4
Ma.E. 311 X-Ray Diffraction	4	Ma.E. 332 Engineering Polymers	3
or 321 Thermo & Phase Equilibria I	3	or 322 Thermo & Phase Equilibria II	3
Ma.E. 241 Physical Metallurgy	3	Ma.E. 342 Mechanical Metallurgy	3
or 231 Ceramics	3	or 234 Electrochemistry	3
E.E. 271 Physical Electronics	3	Ma.E. Elective	3
Liberal Studies	3	Liberal Studies	3
	16-17		16

Materials Engineering

Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
Ma.E. 311 X-Ray Diffraction	4	Ma.E. 332 Engineering Polymers	3
or 321 Thermo & Phase Equilibria I	3	or 322 Thermo & Phase Equilibria II	3
Ma.E. 241 Physical Metallurgy	3	Ma.E. 342 Mechanical Metallurgy	3
or 231 Ceramics	3	or 234 Electrochemistry	3
Ma.E. 381 Advanced Laboratory	3	Ma.E. 397 Seminar	1
Ma.E. 397 Seminar	1	Ma.E. Elective	3
Ma.E. Elective	3	Liberal Studies	6
Liberal Studies	3		
	16-17		16

1. Total minimum credits for B.S. degree — 134.
2. Students desiring electronic materials concentration should select the sequence E.E. 251, 272, 381, and Liberal Studies electives.
3. Ma.E. 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.
4. Liberal Studies electives can be taken in all areas, with nine of the credits being in the humanities and nine in the social sciences.

General Engineering

ENGR. 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; 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.

ENGR. 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: Phys. 201.

ENGR. 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.

Prerequisite: Phys. 201.

ENGR. 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: Engr. 231.

ENGR. 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: $10. (see C.S. 122)

ENGR. 244. FORTRAN IV — **Three credits**

Introduction to computer programming using the FORTRAN IV language. The computer is used to solve problems geared to the individual interest of the students. Three hours lecture per week. Fee: $25. (see C.S. 123)

ENGR. 245. ADVANCED FORTRAN — **Three credits**

A study of advanced programming techniques using FORTRAN IV. Topics include: advanced data types, program optimization, and the use of various storage devices. Three hours lecture per week. Fee: $25. (see C.S. 223)

Prerequisite: Engr. 244/C.S. 123.

ENGR. 283-284. ENGINEERING MEASUREMENT LAB I, II — **One credit**

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.

ENGR. 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: $25. (see C.S. 322)

Prerequisite: Engr. 245/C.S. 223.

ENGR. 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.

Electrical Engineering

E.E. 211-212. CIRCUIT THEORY I, II — **Three credits each**

Formulation of circuit equations and theorems. Various techniques for circuit analysis. Time and frequency domain analysis. Natural modes, initial conditions, and forced response. Two-part circuit descriptions and characterizations. Transfer functions and terminal behavior of linear network. Fourier, series, and integral computer methods in analysis. Three hours lecture per week.

Prerequisite: Math. 112.

E.E. 251-252. ELECTRONICS I, II — **Four credits each**

The development of operating principles and terminal characteristics of electronic devices, particularly semiconductor devices. Amplifiers, oscillators, and rectifiers at audio and radio frequencies. Modulation and detection. Design considerations for small and large signals. The design of complete systems using such subsystems. Three hours lecture and one three-hour laboratory a week. Fee: $20 a semester.

Prerequisite: E.E. 212.

E.E. 271. PHYSICAL ELECTRONICS — **Three credits**

Structure of the solid state, wave mechanics, statistics, band theory of solids, semiconductors and semiconductor electronics. Emission (thermionic, field, and photo-), photoconductivity and luminescence. Diodes, transistors, and other devices. Dielectrics, non-linear optics, piezoelectrics, ferroelectrics, ferro, and ferrimagnetism. Three hours class a week.

Prerequisite: Ma.E. 210, Phys. 203.

E.E. 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: Ma.E. 210, Phys. 203.

E.E. 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.

E.E. 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: $20.

Prerequisite: E.E. 331.

E.E. 331-332. ELECTROMAGNETICS I, II — **Four credits each**

Vector analysis applied to static and magnetic fields.Development of Maxwell's equations and boundary-value problems. Plane wave propagation and reflection and boundaries, the Poynting Theorem. Guided TEM, TE, and TM waves. Transmission lines and strip lines. Impedance transformation and Smith Charts. Waveguides and losses. Radiation from dipole antenna. Three hours lecture and one three-hour laboratory a week. Fee: $20 each semester.

Prerequisite: Math. 212, Phys. 202.

E.E. 335. MICROWAVES AND ANTENNA SYSTEMS — **Three credits**

Wave propagation in waveguides, resonant cavities and passive microwave devices. 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: E.E. 332.

E.E. 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 C.S. 320)

Prerequisites: E.E. 211 or Phys. 202.

E.E. 342. MICROCOMPUTER OPERATION AND DESIGN **Three credits**
Microprocessor architecture, microcomputer design, and peripheral interfacing. Microprogramming, soft-ware 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: $25. (same as C.S. 329)

Prerequisite: E.E. 341/C.S. 320.

E.E. 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 C.S. 227)

Prerequisite: Engr. 245.

E.E. 344. OPERATING SYSTEM PRINCIPLES **Three credits**
Analysis of the computer operating systems including Batch, Timesharing, and Real-time 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 C.S. 326)

Prerequisite: E.E. 343/C.S. 227.

E.E. 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: E.E. 212.

E.E. 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: E.E. 271.

E.E. 381. ADVANCED MICROELECTRONICS LAB **Four credits**
The theoretical and practical aspects of techniques utilized in the fabrication of semiconductor 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: $25.

Prerequisite: Senior standing.

E.E. 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. Coherent optical wave generation and modulation. Laser communication. One hour lecture and one six-hour laboratory a week. Fee: $25.

Prerequisite: Senior standing.

E.E. 395-396. INDEPENDENT RESEARCH **One to three credits each**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

Prerequisite: Approval of department chairperson is required.

E.E. 397. SEMINAR (Maximum of three credits per student) **One to three credits**
Presentations and discussions of selected topics.

Prerequisite: Senior standing or by special permission.

E.E. 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 and architecture; power systems and generation. May be repeated for credit. Three hours lecture each week.

Prerequisite: Junior or Senior standing.

Materials Engineering

MA.E. 210. INTRODUCTION TO MATERIALS SCIENCE **Three credits**
Introduction to the properties and the crystal structure of materials. Fundamentals of iron, steel, and non-ferrous materials. The behavior of materials in environmental conditions. Three hours lecture a week.

Prerequisite: Engr. 231 or Phys. 201.

MA.E. 231. CERAMICS **Three credits**
Structure and properties of ceramic crystalline solids, glasses,and clays. Ceramic phase diagrams. Preparation and industrial utilization of ceramic materials. Three hours lecture a week.

Prerequisite: Junior standing.

MA.E. 234. ELECTROCHEMISTRY **Three credits**
Fundamentals of electrochemistry and the application of electrochemical concepts to corrosion, batteries, fuel cells, electroplating, and electrolytic industries. Three hours lecture a week.

Prerequisite: Junior standing.

MA.E. 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. Three hours lecture a week.

Prerequisite: Ma.E. 210.

MA.E. 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.

MA.E. 311. X-RAY DIFFRACTION **Four credits**
Crystallography. Properties of X-rays. Diffraction theory. Crystal structure analysis. Reciprocal lattice concepts. Debye-Scherer and Preferred Orientation Techniques. Lane, Rotating, Weissenberg and Precession Single Crystal Methods.Three hours lecture and one three-hour laboratory a week. Fee: $25.

Prerequisite: Ma.E. 210 or Phys. 203.

MA.E. 321-322. THERMODYNAMICS AND PHASE EQUILIBRIA I, II **Three credits each**
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: Ma.E. 210.

MA.E. 332. ENGINEERING POLYMERS **Three credits**
Introduction to high polymers as an engineering material and the mechanical, electrical, and optical properties of polymers. Three hours lecture a week.
Prerequisite: Ma.E. 210.

MA.E. 342. MECHANICAL METALLURGY **Three credits**
The mechanical properties of materials including: elasticity, plasticity, anelasticity, viscoelasticity, dislocation theory, fracture, fatigue, deformation of single crystal and polycrystalline materials, testing and plastic forming of materials. Three hours lecture a week.
Prerequisite: Ma.E. 210 or Phys. 203.

MA.E. 371. CRYSTALLINE ANISOTROPY **Three credits**
Groundwork of crystal physics and transformation of second-rank tensors. Paramagnetic and diamagnetic susceptibility. Electric polarization. Stress, strain, and thermal expansion. Elasticity and fourth-rank tensors. Matrices. Thermodynamics of equilibrium thermal conductivity, and thermoelectricity. Three hours lecture a week.
Prerequisite: E.E. 271.

MA.E. 381-382. ADVANCED ENGINEERING LABORATORY I, II **Three credits each**
The application of X-ray methods in materials engineering, X-ray spectrometers and spectrochemical analysis. Techniques for quantitative analysis. The electron probe and microanalysis. Techniques for quantitative analysis. Applications. Two three-hour laboratories a week. Fee: $25 per semester.
Prerequisite: Senior standing.

MA.E. 395-396. INDEPENDENT RESEARCH **One to three credits each**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

MA.E. 397. SEMINAR **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Senior standing, or by special permission.

MA.E. 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 standing.

Language and Literature

Professor Kaska, chairperson; Professors Fiester, Gutin, Rizzo; Associate Professors Belic, Groh, R. Heaman, Marban, Terry; Assistant Professors Ayres, Fox, Holm, Karpinich, Kinney, Leslie, Jr., Powlick, Siegfried; Instructors Hardie, Weal; Adjunct Professors Halliday, (fall), P. Heaman, Lord, Pawlush.

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 literature courses. These must include at least one course in a major writer, one course in either the novel or drama, two period courses in literature before 1900, and one seminar.

Honors. 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 12 in linguistics.

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.

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

ENG. 99. ENGLISH AS A SECOND LANGUAGE **No credit**
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 and 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 chairperson 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 chairperson is required.

ENG. 398. TOPICS **Three credits**
A study of special topics in English and American literature.
Prerequisite: Eng. 152 or 254.

Communication Studies

The major in Communication Studies provides a broad background in the liberal arts as well as in communication. It seeks to develop an understanding of the process of communication in the context of broad historical and cultural concerns, at the same time that it seeks to enhance basic skills in writing and in speaking. The program is designed to prepare students for careers in such diverse fields as newspaper work, public relations, broadcasting, business, and teaching.

Students who major in Communication Studies must fulfill all of the core requirements for the Bachelor of Arts degree. As part of the core, however, they must select Eng. 151, 253, and 254 in their sophomore year. Students who select concentrations in Organizational

Communication, Journalism, or Broadcasting must take six of their required twelve science-mathematics credits in one of the following introductory sequences in Computer Science: C.S. 123-223 (Fortran); C.S. 124-224 (Cobol); C.S. 123 (Fortran) and C.S. 124 (Cobol); or C.S. 123 (or 124) **and** Math. 150 (Elementary Statistics).

Other program requirements follow:

1. Speech 101 and Communication 101.
2. One course in linguistics: Eng. 220, 222, 225, or 226.
3. One advanced writing course: Eng. 201, 202, or 203.
4. Three advanced literature courses beyond Eng. 254 or 152.
5. Communications 305 in the senior year.
6. Three advanced courses, 200-level or above, from the following disciplines: philosophy, political science, history, sociology, anthropology, and economics.
7. A concentration as follows:
   a. **Speech.** Fifteen hours from among existing speech courses and Communication 201, Interpersonal Communication, and Communication 202, Group Communication.
   b. **Communication Theory.** Fifteen hours as follows: Communication 201, Interpersonal Communication; Communication 202, Group Communication; Communication 205, Mass Media; Speech 301, Rhetoric; and Communication 301, Communication Theory.
   c. **Organizational Communication.** Fifteen hours as follows: Communication 202, Group Communication; Speech 202, Business and Professional Speaking; Communication 215, Public Relations; Communication 211, Journalism: Basic News Writing; Communication 252, Internship.
   d. **Journalism.** Fifteen hours as follows: Communication 205, Mass Media; Communication 211, Journalism: Basic News Writing; Communication 212, Journalism: Editing and Advanced News Writing; any one of Communication 241, Broadcast Journalism, or Art 270, Photography, or Communication 298, Topics (in specialized news writing, if offered); Communication 252, Internship.
   e. **Broadcasting.** Eighteen hours as follows: Communication 205, Mass Media; Communication 240, Introduction to Broadcasting; Communication 241, Broadcast Journalism; Communication 245, Broadcast Production; Communication 246, Broadcast Management; Communication 252, Internship.

Summary:

	Credit hours
Core	56
Speech 101 and Communication 101	6
Language and Literature	15
Communication Studies (Broadcasting)	15 or 18
Communication 305	3
Electives (nine credit hours must be advanced courses from the following disciplines: philosophy, political science, history, sociology, anthropology, and economics)	27 or 24
Total:	**122**

Communication Studies

COMMUNICATION 101. PRINCIPLES OF COMMUNICATION **Three credits**
A study of the theory and process of communication.

COMMUNICATION 201. INTERPERSONAL COMMUNICATION **Three credits**
A study of theories and models of interpersonal communication.

COMMUNICATION 202. GROUP COMMUNICATION **Three credits**
A study of the principles, methods, and types of small-group communication and its role in the democratic process.

COMMUNICATION 205. MASS MEDIA **Three credits**
A study of the mass media and their role in contemporary society.

COMMUNICATION 211. JOURNALISM: BASIC NEWS WRITING **Three credits**
A study of the basic techniques and responsibilities of gathering and writing news. Fee: $15.
Prerequisite: Eng. 102.

COMMUNICATION 212. JOURNALISM: EDITING AND ADVANCED NEWS WRITING **Three credits**
A study of specialized reporting and introduction to the principles of news editing. Fee: $15.
Prerequisite: Communication 211.

COMMUNICATION 215. PUBLIC RELATIONS **Three credits**
A study of the principles and practices of public relations.

COMMUNICATION 240. INTRODUCTION TO BROADCASTING **Three credits**
The history, technology, law, and business of the broadcast industry, with experience in the organization and operation of a radio station, particularly the creation and presentation of radio programming. Lecture and laboratory.

COMMUNICATION 241. BROADCAST JOURNALISM **Three credits**
A study of the principles and methods of broadcast journalism.

COMMUNICATION 245. BROADCAST MANAGEMENT **Three credits**
An introduction to the principles and procedures of broadcast management.

COMMUNICATION 246. BROADCAST PRODUCTION **Three credits**
An introduction to the principles and practices of broadcast production.

COMMUNICATION 252. INTERNSHIP **Three credits**
A supervised program of work and study. Students are assigned to a member of the Pennsylvania Newspaper Publishers Association; a licensed radio or television news staff; or a public relations office or firm. They will work out a schedule of fifteen hours of professional work per week, and spend two additional hours each week in conference with their instructor and others in the program.
Prerequisite: Communication 212 or 240.

COMMUNICATION 298. TOPICS **Three credits**
A study of special topics in communication.
Prerequisite: Permission of department.

COMMUNICATION 301. COMMUNICATION THEORY **Three credits**
A study of representative theories of human communication.

COMMUNICATION 305. COMMUNICATIONS IN AN OPEN SOCIETY **Three credits**
A study of the normative role of communications in an open society; required of all concentrations.

COMMUNICATION 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent research of select subjects of problems in communication.
Prerequisite: Permission of department.

COMMUNICATION 397. SEMINAR **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Permission of department.

Theater Arts

The major in Theater Arts introduces the student to the fundamentals of theater, and provides opportunities for the development of skills in performance, production, design, and criticism. It prepares students for teaching and for graduate study, and may lead to a career in professional theater.

The major requires a total of forty-five credit hours in theater and literature:

1. History and dramatic literature:	Credit Hrs.
Th. Arts 201. Fundamentals of Play Structure and Criticism	3
Th. Arts 331-332. Theater History	6
Eng. 325. Shakespeare	3
Eng. 321. Early English Drama; Eng. 341. Restoration and Eighteenth Century Drama; Eng. 374. Modern Drama; Eng. 384. American Drama	6
	18

	Credit Hrs.
2. Studio:	
Th. Arts 131. Speech for the Stage	3
Th. Arts 141. Production	3
Th. Arts 211-212. Acting I & II	6
Th. Arts 243. Lighting for the Stage	3
Th. Arts 344. Scene Design	3
Th. Arts 351-352 Directing I & II	6
Th. Arts 380. Theater Workshop	3
	27

Students interested primarily in production or design may choose six credit hours in advanced courses in design or production in place of Acting II and Directing II.

Students must complete all of the requirements of the Bachelor of Arts degree. As part of the core, however, they must take Eng. 151, 253, and 254 in their sophomore year. They may elect Th. Arts 101, but the credits will not count toward the total required of the major.

TH. ARTS 101. 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.

TH. ARTS 131. SPEECH FOR THE STAGE **Three credits**
The student will receive instruction and experience in diction, delivery, and interpretation. Classroom exercises will be assigned.

TH. ARTS 141. PRODUCTION **Three credits**
The student will explore the many facets of theatrical production. He will learn to translate the concept of the designer into physical actuality and will learn to adapt a production to the requirements of a stage. Class and workshop.

TH. ARTS 201. FUNDAMENTALS OF PLAY STRUCTURE AND CRITICISM **Three credits**
The student will analyze and evaluate plays for stage presentation.

TH. ARTS 211. ACTING I **Three credits**
Basic acting techniques. Students will study the art of creating a variety of characters for the stage through use of vocal interpretation and physical movement.

TH. ARTS 212. ACTING II **Three credits**
A study of major theories, aims, and styles of acting. The student will extend his acting range and experience by performing various roles in selected dramatic scenes.

TH. ARTS 331. THEATER HISTORY I **Three credits**
The student will study the historical development and background of theatrical art from ancient times through the seventeenth century.

TH. ARTS 332. THEATER HISTORY II **Three credits**
The student will study the historical development and background of theatrical art from the eighteenth century to the present.

TH. ARTS 343. LIGHTING FOR THE STAGE **Three credits**
The student will learn the principles of lighting a show so that he may use these principles in either simple or sophisticated lighting systems. He will work with instruments and equipment of the lighting technician.

TH. ARTS 344. SCENE DESIGN **Three credits**
The student will study the nature and function of scenic art. Emphasis will be on contemporary theories and techniques.

TH. ARTS 351. DIRECTING I **Three credits**
The student will be introduced to the principles of directing, including play selection, composition, casting, blocking, and rehearsing. Class and workshop.

TH. ARTS 352. DIRECTING II **Three credits**
A study of special problems of directing. Students will direct a one-act play.

TH. ARTS 380. THEATER WORKSHOP **Three credits**
This course provides an opportunity to prepare the full production of a short play for an audience. The student will cast and direct the play, plan and supervise the lighting, design, and construction for the production. The student will work closely with members of the theater staff.

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

TH. ARTS 397. SEMINAR (Maximum of three credits per student) **One to three credits**
Presentations and discussions of selected topics.

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

Speech

SPEECH 101. FUNDAMENTALS OF SPEECH **Three credits**
Introduction to the theory and practice of public address; preparation and delivery of short speeches.

SPEECH 102. VOICE AND DICTION **Three credits**
A study of voice production and articulation; analysis of regional speech differences and standards.
Prerequisite: Speech 101.

SPEECH 201. ADVANCED PUBLIC SPEAKING **Three credits**
Study of rhetorical strategies and models of speech composition; preparation and presentation of specific forms of public address.
Prerequisite: Speech 101.

SPEECH 202. BUSINESS AND PROFESSIONAL SPEAKING **Three credits**
A study of the needs and problems of business and professional speaking; preparation and delivery of short speeches; interview and conference techniques.
Prerequisite: Speech 101.

SPEECH 205. ARGUMENTATION AND DEBATE **Three credits**
Training in the fundamentals of argumentation and debate. Practice in gathering and organizing evidence and supporting materials.
Prerequisite: Speech 101.

SPEECH 206. ORAL INTERPRETATION **Three credits**
An approach to literature that combines analysis with interpretative oral performance.
Prerequisite: Speech 101.

SPEECH 301. RHETORIC **Three credits**
A study of the foundations and development of rhetorical theory.
Prerequisite: Speech 101.

SPEECH 302. PERSUASION **Three credits**
A study of the theories and techniques of persuasion.
Prerequisite: Speech 101.

SPEECH 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study of select subjects or problems in speech and speech communication.
Prerequisite: Permission of department.

SPEECH 398. TOPICS **One to three credits**
A study of special topics in speech.
Prerequisite: Permission of department.

Modern Foreign Languages

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 206, 207, 208, 320, and 350; and in addition to the required twenty-four credit hours, 390 and English 222.

French

FR. 101. ELEMENTARY FRENCH **Three credits**
Introduction to French grammar; practice in reading, writing, and speaking the language. Students presenting two or more units from high school in French will not be granted credit for this course.

FR. 102. ELEMENTARY FRENCH **Three credits**
Continuation of Fr. 101. Students presenting two or more units from high school in French will not be granted credit for this course.
Prerequisite: Fr. 101, or the equivalent.

FR. 203. INTERMEDIATE FRENCH **Three credits**
Review of grammar; practice in oral and written French; selected readings of modern French prose.
Prerequisite: Fr. 102, or the equivalent.

FR. 204. INTERMEDIATE FRENCH **Three credits**
Continuation of Fr. 203. Reading of works representative of French life and history; practice in writing and speaking.
Prerequisite: Fr. 203, or the equivalent.

FR. 206. FRENCH CONVERSATION **Three credits**
Intensive practice in the spoken language, with emphasis on idiomatic usage. Use of records and language laboratory to acquire fluency in speaking French.
Prerequisite: Fr. 204, or the equivalent.

FR. 207. LINGUISTICS **Three credits**
An intensive study of the phonology, morphology, and syntax of French.
Prerequisite: Fr. 204 and Eng. 222.

FR. 208. CULTURE AND CIVILIZATION **Three credits**
Introduction to contemporary French culture and civilization with emphasis on political, social, economic, and cultural structure.
Prerequisite: Fr. 204 or departmental approval.

FR. 301-302. SURVEY OF FRENCH LITERATURE **Three credits each**
A survey of the evolution of French literature from the Middle Ages to the present, with stress on general ideas, literary genres, and outstanding writers of each century. Reading of representative selections from different periods of French literature.
Prerequisite: Fr. 204, or the equivalent.

FR. 304. CLASSICAL FRENCH LITERATURE **Three credits**
A study of major works of the 17th century with emphasis on Corneille, Moliere, Racine, Pascal, and La Fontaine.
Prerequisite: Fr. 301-302, or the equivalent.

FR. 305. EIGHTEENTH CENTURY FRENCH LITERATURE **Three credits**
Study of the literature and thought in the eighteenth century, with special emphasis on Montesquieu, Diderot, Voltaire, and Rousseau.
Prerequisite: Fr. 301-302, or the equivalent.

FR. 306. NINETEENTH CENTURY FRENCH LITERATURE **Three credits**
The Romantic Movement: a study of the revolt against the classical tradition leading to the triumph of the Romantic School, with emphasis on Chateaubriand, Constant, Lamartine, Hugo, Vigny, Musset, Balzac, and Stendhal.
Prerequisite: Fr. 301-302, or approval of department chairperson.

FR. 307. NINETEENTH CENTURY FRENCH LITERATURE **Three credits**
Naturalism and Symbolism: a study of the rise of naturalism and symbolism in the second half of the century with emphasis on Baudelaire, Zola, Flaubert, Leconte de Lisle, Verlaine, and Rimbaud.
Prerequisite: Fr. 301-302, or approval of department chairperson.

FR. 308. TWENTIETH CENTURY FRENCH LITERATURE **Three credits**
Study of representative works of the major genres, with particular attention to Surrealism, Existentialism, the Theater of the Absurd, and the New Novel.
Prerequisite: Fr. 301-302 or equivalent.

FR. 312. THE FRENCH RENAISSANCE **Three credits**
The ideas and major writers of the 16th century.
Prerequisite: Six hours of literature beyond Fr. 301-302 or consent of instructor.

FR. 320. ADVANCED CONVERSATION **Three credits**
Intensive practice in idiomatic French. Discussions, reports, debates.
Prerequisite: Fr. 206.

FR. 350. ADVANCED GRAMMAR AND COMPOSITION **Three credits**
Intensive practice in writing with emphasis on grammatical problems.
Prerequisite: Fr. 204 and permission of instructor.

FR. 390. FOREIGN LANGUAGE METHODOLOGY **Three credits**
An opportunity for French language majors to synthesize their four years of study by examining language as a cultural device. Class sessions are supplemented by activities such as student teaching and language laboratory supervision.
Prerequisite: Senior standing, permission of department chairperson.

FR. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

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

FR. 398. TOPICS **Three credits**
A study of topics of special interest not extensively treated in regularly offered courses.

German

GER. 101. ELEMENTARY GERMAN **Three credits**
Introduction to German grammar; practice in reading, writing, and speaking the language. Students presenting two or more units from high school in German will not be granted credit for this course.

GER. 102. ELEMENTARY GERMAN **Three credits**
Continuation of Ger. 101. Reading of easy prose and poetry. Some stress on German culture, life, and customs. Students presenting two or more units from high school in German will not be granted credit for this course.
Prerequisite: Ger. 101, or equivalent.

GER. 203. INTERMEDIATE GERMAN **Three credits**
Emphasis on difficult grammatical construction and idioms. Reading of prose; practice in speaking and writing German.
Prerequisite: Ger. 102, or equivalent.

GER. 204. INTERMEDIATE GERMAN **Three credits**
Continuation of Ger. 203. Reading of works representative of German life and history; practice in writing and speaking.
Prerequisite: Ger. 203, or equivalent.

GER. 205. SCIENTIFIC GERMAN **Three credits**
Reading of selections from scientific German.
Prerequisite: Ger. 203, or equivalent.

GER. 206. GERMAN CONVERSATION **Three credits**
Emphasis on speaking, with drill in the colloquial vocabulary. Use of records and language laboratory to acquire fluency in speaking German.
Prerequisite: Ger. 204, or equivalent.

GER. 207. LINGUISTICS **Three credits**
An intensive study of the phonology, morphology, and syntax of German.
Prerequisite: Ger. 204 and Eng. 222.

GER. 208. CULTURE AND CIVILIZATION **Three credits**
Introduction to contemporary German culture and civilization with emphasis on political, social, economic, and cultural structure.
Prerequisite: Ger. 204 or departmental approval.

GER. 252. MASTERPIECES OF GERMAN LITERATURE IN TRANSLATION: THOUGHT AND CRITICISM **Three credits**
The change in man's view of his world from Humanism to the present, reflected in drama, critical essays, short philosophical writings, and satire.
Analysis of social criticism through satire, dramas, and essays of writers such as Saaz, Luther, Sachs, Lessing, Schiller, Heine, Buchner, and Brecht. Short philosophical essays from Kant to Nietzche.

GER. 301-302. SURVEY OF GERMAN LITERATURE **Three credits each**
A survey of the literature of the important periods from the beginning to 1932.
Prerequisite: Ger. 204, or equivalent.

GER. 303. HUMANISM, REFORMATION, AND BAROQUE **Three credits**
A study of major literary works of the sixteenth and seventeenth centuries.
Prerequisite: Ger. 301-302, or equivalent.

GER. 304. THE AGE OF ENLIGHTENMENT **Three credits**
The development of German literature in the eighteenth century with emphasis on the works and theories of Lessing.
Prerequisite: Ger. 301-302, or approval of department chairperson.

GER. 305. GOETHE AND SCHILLER **Three credits**
Study of major works (drama, poetry, essay, novel) of Goethe and Schiller.
Prerequisite: Ger. 301-302, or equivalent.

GER. 306. THE ROMANTIC MOVEMENT **Three credits**
Study of the revolt against the classical tradition from "Sturm und Drang" and the Schlegels to Holderlin, Novalis, and other representatives of the Romantic School.
Prerequisite: Ger. 301-302, or equivalent.

GER. 307. NINETEENTH CENTURY GERMAN LITERATURE **Three credits**
Study of major literary works from late Romanticism through Realism.
Prerequisite: Ger. 301-302, or equivalent.

GER. 308. TWENTIETH CENTURY LITERATURE **Three credits**
The study of the development of German Literature from the turn of the century until the present.
Prerequisite; Ger. 301-302, or approval of department chairperson.

GER. 320. ADVANCED CONVERSATION **Three credits**
Intensive practice in idiomatic German. Discussions, reports, debates.
Prerequisite: Ger. 206.

GER. 350. ADVANCED GRAMMAR AND COMPOSITION **Three credits**
Intensive practice in writing with emphasis on grammatical problems.
Prerequisite: Ger. 204 and permission of instructor.

GER. 390. FOREIGN LANGUAGE METHODOLOGY **Three credits**
An opportunity for German language majors to synthesize their four years of study by examining language as a cultural device. Class sessions are supplemented by activities such as student teaching and language laboratory supervision.
Prerequisite: Senior standing, permission of department chairperson.

GER. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

GER. 397. SEMINAR **(Maximum of three credits per student) One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairperson is required.

GER. 398. TOPICS **Three credits**
A study of topics of special interest not extensively treated in regularly offered courses.

Spanish

SP. 101. ELEMENTARY SPANISH **Three credits**
Introduction to Spanish grammar; practice in reading, writing, and speaking the language. Students presenting two or more units from high school in Spanish will not be granted credit for this course.

SP. 102. ELEMENTARY SPANISH **Three credits**
Continuation of Sp. 101. Students presenting two or more units from high school in Spanish will not be granted credit for this course.
Prerequisite: Sp. 101, or equivalent.

SP. 203. INTERMEDIATE SPANISH **Three credits**
Review of grammar; practice in oral and written Spanish; selected readings from modern Spanish prose.
Prerequisite: Sp. 102, or equivalent.

SP. 204. INTERMEDIATE SPANISH **Three credits**
Continuation of Sp. 203. Reading of works representative of Spanish life and history; practice in writing and speaking.
Prerequisite: Sp. 203, or equivalent.

SP. 205. COMMERCIAL SPANISH **Three credits**
The study of Spanish as it pertains to economic relations between the Spanish-speaking countries and the United States. Special emphasis on the writing of business letters.
Prerequisite: Sp. 203, or equivalent.

SP. 206. SPANISH CONVERSATION **Three credits**
Intensive practice in the spoken language, with emphasis on idiomatic usage. Use of records and language laboratory to acquire fluency in speaking Spanish.
Prerequisite: Sp. 204, or equivalent.

SP. 207. LINGUISTICS **Three credits**
An intensive study of the phonology, morphology, and syntax of Spanish.
Prerequisite: Sp. 204 and Eng. 222.

SP. 208. CULTURE AND CIVILIZATION **Three credits**
Introduction to contemporary Spanish culture and civilization with emphasis on political, social, economic, and cultural structure.
Prerequisite: Sp. 204 or departmental approval.

SP. 209. SPANISH-AMERICAN CULTURE AND CIVILIZATION **Three credits**
The cultural, economic, and political development of the Spanish-American countries.
Prerequisite: Sp. 203, or equivalent.

SP. 301-302. SURVEY OF SPANISH LITERATURE **Three credits each**
A survey of the evolution of Spanish literature from the Middle Ages to the present, with stress on general ideas, literary genres, and outstanding writers of each century. Reading of representative selections from different periods of Spanish literature.
Prerequisite: Sp. 204, or equivalent.

SP. 303. THE GOLDEN AGE OF SPANISH LITERATURE **Three credits**
Study of the great authors of the sixteenth and seventeenth centuries.
Prerequisite: Sp. 301-302, or equivalent.

SP. 304. NINETEENTH CENTURY SPANISH LITERATURE **Three credits**
Study of major literary works of the period, with emphasis upon Romanticism and Realism.
Prerequisite: Sp. 301-302, or equivalent.

SP. 306. TWENTIETH CENTURY SPANISH LITERATURE **Three credits**
Study of the development of Spanish literature from 1898 to the present.
Prerequisite: Sp. 301-302, or equivalent.

SP. 307. CERVANTES AND DON QUIXOTE **Three credits**
Study of the works of Cervantes with special emphasis on Don Quixote.
Prerequisite: Sp. 301, or equivalent.

SP. 308. SURVEY OF SPANISH-AMERICAN LITERATURE **Three credits**
Study of the evolution of Spanish-American literature from the discovery to the beginnings of the Mexican revolution. Readings from outstanding works from different periods and regions.
Prerequisite: Sp. 204, or equivalent.

SP. 309. SURVEY OF SPANISH-AMERICAN LITERATURE **Three credits**
Study of the evolution of Spanish-American literature from the Mexican revolution to the present. Readings from works representing principal modern movements and regional tendencies.
Prerequisite: Sp. 204, 208, or equivalent.

SP. 320. ADVANCED CONVERSATION **Three credits**
Intensive practice in idiomatic Spanish. Discussions, reports, debates.
Prerequisite: Sp. 206.

SP. 350. ADVANCED GRAMMAR AND COMPOSITION **Three credits**
Intensive practice in writing with emphasis on grammatical problems.
Prerequisite: Sp. 204 and permission of instructor.

SP. 390. FOREIGN LANGUAGE METHODOLOGY **Three credits**
An opportunity for Spanish language majors to synthesize their four years of study by examining language as a cultural device. Class sessions are supplemented by activities such as student teaching and language laboratory supervision.
Prerequisite: Senior standing, permission of department chairperson.

SP. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

SP. 397. SEMINAR **(Maximum of three credits per student) One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairperson is required.

SP. 398. TOPICS **Three credits**
A study of topics of special interest not extensively treated in regularly offered courses.

Russian

RUS. 101. ELEMENTARY RUSSIAN **Three credits**
Basic systematic introduction to the grammatical essentials of Russian; practice in reading, writing, and speaking the language.

RUS. 102. ELEMENTARY RUSSIAN **Three credits**
Continuation of Rus. 101. Graded elementary readings depicting the culture, life, and customs of the Russian people.
Prerequisite: Rus. 101, or equivalent.

RUS. 203. INTERMEDIATE RUSSIAN **Three credits**
A review of basic grammar followed by emphasis on advanced grammatical structure. Reading of selected prose, directed standard-situation conversation, and composition of Russian.
Prerequisite: Rus. 102, or equivalent.

RUS. 204. INTERMEDIATE RUSSIAN **Three credits**
Continuation of Rus. 203. Reading of works representative of Russian life and history; practice in writing and speaking.
Prerequisite: Rus. 203, or equivalent.

History

Professor Rodechko, chairperson; Professors Cox, Leach; Associate Professors Berlatsky, Shao; Assistant Professors Berg, Meyers.

Students who major in history are required to take Hist. 101-102 in the freshman year, Hist. 207-208 in the sophomore year, and 18 additional credit hours in advanced history courses. Advanced courses taken must include a minimum of six hours each in American and non-American topics.

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

HIST. 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.

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

HIST. 313-314. HISTORY OF SCIENCE **Three credits each**
The development of science and technology from earliest times to 1800, and from 1800 to the present.

HIST. 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.

HIST. 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.

HIST. 321-322. AMERICAN SOCIAL AND INTELLECTUAL HISTORY **Three credits each**
A study of social and intellectual developments in the United States from the colonial period to the present time. During the first semester emphasis will be placed on the influence of the American environment during the colonial period and of expansion and sectional disputes in the federal period upon society and upon religious, economic, and political thought. During the second semester the influence of industrialization, the rise of nationalism, and the emergence of the United States as a world power will be emphasized.

HIST. 323-324. AMERICAN ECONOMIC HISTORY **Three credits each**
The evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the transformation of an agrarian-commercial economy to an urban-industrial economy which exercises a dominant influence in world affairs.

HIST. 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.

HIST. 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.

HIST. 327-328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES **Three credits each**
A study of the evolution of the several policies that give direction to the relations of the United States with other nations.

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

HIST. 332. THE NATIONAL PERIOD **Three credits**
A study of the political and enonomic 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.

HIST. 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.

HIST. 334. TWENTIETH CENTURY AMERICA **Three credits**
The emergence of the United States as an industrial, urban, world power and the corresponding development of its political, economic, social, religious, and intellectual institutions.

HIST. 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.

HIST. 347-348. HISTORY OF RUSSIA **Three credits each**
A study of the political, social, and intellectual history of Russia.

HIST. 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.

HIST. 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.

HIST. 353-354. EARLY MODERN EUROPE, 1648-1815 **Three credits each**
Topics include the absolutism of Louis XIV, the growth of Brandenburg-Prussia, the French Revolution and French Empire, the economic forces of mercantilism and the early Industrial Revolution. The growth of science and the Enlightenment will receive careful attention.

HIST. 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.

HIST. 356. EUROPE IN THE TWENTIETH CENTURY **Three credits**
Against a background of the internal and international developments of the leading powers, the class will study the origins and results of the two World Wars.

HIST. 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 inter-relations 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.

HIST. 363. HISTORY OF MODERN CHINA **Three credits**
A study of Chinese history since 1840 with special emphasis on social, political, economic, and intellectual developments.

HIST. 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.

HIST. 367. MODERN SOUTH ASIA **Three credits**
A study of the political, social, and economic development of the Indian sub-continent since 1500.

HIST. 381-382. HISTORY OF LATIN AMERICA **Three credits each**
First semester: a survey of Latin American history from ancient times to 1820. Second semester: Latin America since 1820.

HIST. 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.

HIST. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson.

HIST. 398. TOPICS **Three credits**
Special topics in history. This course will be offered from time to time when interest and demand justify it.

HIST. 497. SEMINAR (Maximum of three credits per student) **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of instructor is required.

Mathematics

Professor Wong, chairperson; Professor T. Richards; Associate Professors Earl, Merrill, Salsburg, Sours, Tillman; Assistant Professors DeCosmo, Koch, Parker; Adjunct Professor Mantione.

Programs of study leading to the B.A. or B.S. degree with a major in mathematics are offered by the Department of Mathematics & Computer Science. Also available are the M.S. in Mathematics and, in cooperation with the Education Department, the M.S. in Education with a concentration in mathematics. A combined five-year B.S.-M.S. degree program in mathematics is offered (see page 156). Descriptions of graduate programs are contained in a separate graduate bulletin.

The Department offers three tracks through which the baccalaureate degree 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. All three tracks share a common background in algebra, analysis, probability, and basic computing.

In recent years the mathematical sciences have played an ever-expanding role not only in the physical sciences, but also in the social and biological sciences. The mathematics degree requirements at Wilkes permit sufficient flexibility for a student to complete the requirements for another major in addition to mathematics with properly chosen courses in other fields. A student will be able to obtain excellent preparation for graduate or professional study leading to careers in actuarial science, statistics, computing, economics, business and management, law, medicine, physical, environmental, or engineering sciences, and many interdisciplinary fields. Many professional schools particularly welcome applicants with a strong undergraduate mathematics background.

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 chairperson.

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

(1) The general core requirements listed on page 49, except the science/mathematics area which is specified below. 41

(2) Math. 111, 112, 202, 212, 311, 331, 334, and 351 29

(3) C.S. 122, 123, or 124 1-3

Additional requirements: **credit hours**

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

(4S) Phys. 201 and a two-semester sequence in Biology, Chemistry, Earth and Environmental Sciences, or Physics courses numbered above 200, or 11

Phys. 201, 202 and at least three credits in Biology, Chemistry, Engineering, Earth and Environmental Sciences, or Physics courses numbered above 200, Phil. 350 or 352.

		B.A. degree			B.S. degree		
		AM	GM	TC	AM	GM	TC
	Math. 211	4	4		4	4	
	Math. 203, 343, and 262 or 352			9			9
	Ed. 101, 102, 201, 202, 380			22			22
	One of Math. 342, 413, and 432		3			3	
	One of Math. 314, 361, and 362				3		
	One of Math. 262, 352, and 364	3			3		
	One of Math. 262, 314, 352, 361, 362, and 364	3	3			3	
	Any mathematics or computer science courses numbered above 200	3	3		6	6	6
(5)	Other major and education courses	13	13	31	16	16	37
(6)	Free electives	32-30	32-30	14-12	29-27	29-27	8-6

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

MATH. 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.

Prerequisite: Two years of secondary school mathematics in algebra and geometry.

Offered every fall, spring, and summer.

MATH. 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 Math. 103 or 104.

Offered every fall and summer.

MATH. 102. FUNDAMENTALS OF MATHEMATICS II **Three credits**

A continuation of Math. 101. Not open to students with credits in Math. 103-104.

Prerequisite: Math. 101.

Offered every spring and summer.

MATH. 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 Math. 101 or 102.

Offered every fall semester of odd years and every summer.

MATH. 104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS II — **Three credits**

A continuation of Math. 103. Not open to students with credits in Math. 101 or 102.

Prerequisite: Math. 103.

Offered every spring semester of even years and every summer.

MATH. 105. INTRODUCTORY CALCULUS 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 Math. 111 or 112.

Prerequisite: Geometry, Algebra II, and some knowledge of Trigonometry.

Offered every fall, spring, and summer.

MATH. 106. INTRODUCTORY CALCULUS II — **Four credits**

A continuation of Math. 105. Not open to students with credits in Math. 111 or 112.

Prerequisite: Math. 105.

Offered every spring and summer.

MATH. 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 Math. 105 or 106.

Prerequisite: Math. 100 or at least three years of secondary school mathematics including Geometry, Algebra II, and topics in Trigonometry.

Offered every fall and summer.

MATH. 112. CALCULUS II — **Four credits**

A continuation of Math. 111. Not open to students with credit in Math. 106.

Offered every spring and summer.

MATH. 150. ELEMENTARY STATISTICS — **Three credits**

This course covers the elementary statistical concepts, with emphasis on ideas and techniques rather than on proof of theorems. Applications to management science, social science, and natural sciences will be stressed. Major topics include probability, random variables, sampling, point estimation, interval estimation, tests of hypotheses, regression, and correlation. Not open to mathematics majors or students with credit in Math. 351.

Prerequisite: Two years of high school algebra.

Offered every fall and spring.

MATH. 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: Math. 112 or consent of department chairperson.

Offered every spring.

MATH. 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.

MATH. 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: Math. 112.

Offered every fall and summer.

MATH. 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: Math. 112.

Offered every spring and summer.

MATH. 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 Math. 331.

Prerequisite: Math. 104 or consent of instructor.

Offered every fall semester of even years and every summer.

MATH. 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 Math. 343.

Prerequisite: Math. 104 or consent of instructor.

Offered every spring semester of odd years and every summer.

MATH. 262. OPERATIONS RESEARCH — **Three credits**

Mathematical modeling of and solution algorithms for optimization problems of the following types: linear programming (including duality and sensitivity analysis); transportation, transshipment, and assignment problems; network models (including shortest route, critical path, and maximal flow problems); dynamic programming. (same as C.S. 262)

Prerequisite: Some elementary knowledge of matrices.

Offered every spring.

MATH. 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: Math. 202 or consent of instructor.

Offered in the fall semester of odd years.

MATH. 314. FUNCTIONS OF A COMPLEX VARIABLE **Three credits**
Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues.
Prerequisite: Math. 211 or consent of instructor.
Offered every spring and summer.

MATH. 331. INTRODUCTION TO ABSTRACT ALGEBRA I **Four credits**
A study of elementary number theory, groups, rings, and fields.
Prerequisite: Math. 202 or consent of instructor.
Offered in the spring semester of odd years.

MATH. 334. LINEAR ALGEBRA **Three credits**
Vector spaces, linear transformations, matrices, determinants, bilinear and quadratic forms, matrix polynomials.
Prerequisite: Math. 211 or consent of instructor.
Offered every fall and summer.

MATH. 342. INTRODUCTION TO TOPOLOGY **Three credits**
Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces.
Prerequisite: Math. 311 or consent of instructor.
Offered in the spring semester of odd years.

MATH. 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.

MATH. 351-352. PROBABILITY AND MATHEMATICAL STATISTICS I AND II **Three credits each**
Random variables, probability distributions, expectation and limit theorems, estimation, statistical hypotheses testing, confidence intervals.
Prerequisite: Math. 106 or 112 or consent of instructor.
Offered every year.

MATH. 361-362. INTRODUCTION TO APPLIED MATHEMATICS I AND II **Three credits each**
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: Math. 212.
Offered every year.

MATH. 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 C.S. 364)
Prerequisite: Math. 211 and C.S. 123 or consent of instructor.
Offered every spring.

MATH. 397. SEMINAR **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairperson.

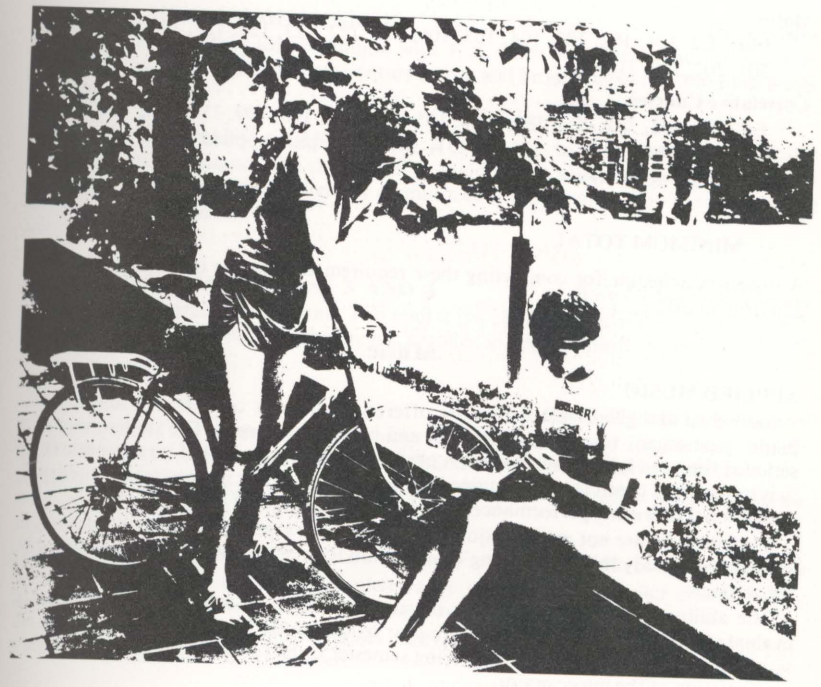
MATH. 413. FUNCTIONS OF SEVERAL VARIABLES **Three credits**
A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration on manifolds leading to the classical theorems of Green and Stokes.
Prerequisites: Math. 311 and 334.
Offered in the summer of odd years.

MATH. 432. INTRODUCTION TO ABSTRACT ALGEBRA II **Three credits**
A continuation of Math. 331. Polynomial rings, ideals, field extensions, and Galois Theory.
Prerequisite: Math. 331.
Offered in the summer of even years.

MATH. 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 chairperson.

MATH. 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 and Music Education

Professor Anderson, chairperson; Professors Chapline, Gasbarro; Assistant Professors Campbell, Fall, Garber, Santos; Adjunct Professor A. Liva.

Students who major in music or music education are required to complete the following programs of study. Those who desire teacher certification will pursue the B.S. degree program.

There is a fee of $20 per semester for all music and music education majors, and fees for private instruction are in addition to the regular tuition charge.

B.A. Degree — Major in Music

General Core Courses ..... 53 credits

Major ..... 51 credits

Mus. 105, 106, 107, 108, 109, 110, 121 or 125 or 131, 215, 216, 217, 218, plus applied music — private instruction

Electives ..... 27 credits

MINIMUM TOTAL ..... 131 credits

B.S. Degree — Major in Music Education

General Core Courses ..... 38 credits

Eng. 101, 102; Hist. 101, 102; P.E. requirement; Psy. 101, 102; humanities sequence; math/science sequence; social science sequence

Major ..... 32 credits

Mus. Ed. 101, 102, 103, 104, 105, 106, 121, 122, 123, 125, 127, 128, 201, 202, 209, 210

Correlative Courses ..... 72 credits

Ed. 101, 102, 201, 202, 380; Mus. 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 121 or 125 or 131, 215, 216, plus applied music — private instruction

Electives ..... 0-6 credits

MINIMUM TOTAL ..... 142 credits

A suggested schedule for completing these requirements may be obtained in the Music department office.

Music

APPLIED MUSIC

Individual and group instruction are offered at all levels of difficulty to students in piano, pipe organ, voice, and orchestral and band instruments. The student receives a series of fourteen lessons a semester. A performing examination before the music faculty is necessary if credit is to be obtained for such study. Music majors are required to attend a series of weekly performances provided by personnel of the department.

Students who are not music majors may receive one credit each semester for voice or instrumental study. No performing examination is necessary if credit is not desired by the student.

The ability, interest, and progress of students intending to major in music will be evaluated at the end of the sophomore year by the music faculty. Students will be advised before the opening of the following semester if the faculty does not recommend a continuation of the music major.

MUS. 101. INTRODUCTION TO THE MATERIALS AND LITERATURE OF 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 THE MATERIALS AND LITERATURE OF MUSIC II — **Three credits**

A survey of performance literature extending from the Baroque period to the present. Directed listening to illustrations of various media, forms, and styles characteristic of each period for the purpose of stimulating critical judgment in the listener.

Prerequisite: Mus. 101.

MUS. 105-106-107-108. THEORY OF MUSIC — **Five credits each course**

The study of the theory of music is centered upon three main principles:

1. The recognition of intervals and meter through dictation.
2. The structure of chords and chord progressions through keyboard harmony.
3. The writing of music through exercises in harmonic and contrapuntal techniques.

The first two semesters of theory include ear training, two hours; solfeggio, two hours; harmony, one hour. The third and fourth semesters include ear training, one hour; solfeggio, one hour; harmony, three hours.

There is no prerequisite for Mus. 105. Students may be admitted to Mus. 106, 107, and 108 by examination.

MUS. 109. HISTORY OF MUSIC I — **Three credits**

A detailed study of the history of music from the beginning of civilization to the seventeenth century.

MUS. 110. HISTORY OF MUSIC II — **Three credits**

A continuation of Mus. 109, beginning with J. S. Bach and tracing musical development to the present day. Twentieth century music will be emphasized in the final weeks of study.

MUS. 111-112. PIANO CLASS 1 AND 2 — **Two credits each semester**

Class instruction in piano. The classes will be divided into suitable groups according to proficiency. This course is required for all music education majors who are not enrolled in applied music in piano.

No prerequisite.

MUS. 113-114. PIANO CLASS 3 AND 4 — **Two credits each semester**

Advanced class instruction in piano. This course is a continuation of the required course for all music education majors who are not enrolled in applied music in piano.

Prerequisite: Mus. 112.

MUS. 121. BAND — **One-half credit each semester**

The band offers the student a varied program for concerts and for various athletic events. Students desiring to participate in the band should consult with the director.

All instrumental music education and music majors are required to participate in the band each semester.

MUS. 125. CHORUS — **One-half credit each semester**

The chorus offers the student a complete range of sacred and secular choral music. Students desiring to participate in the chorus should consult with the director.

All music education and music majors studying voice or piano are required to participate in the chorus each semester.

MUS. 131. ORCHESTRA **One-half credit each semester**
Participation in the Northeastern Pennsylvania Philharmonic Orchestra gives the student experience in the complete range of symphonic literature. Students desiring to participate in the Orchestra should consult with the department chairperson.

MUS. 215. INSTRUMENTATION **Two credits**
The instruments of the modern symphonic orchestra, their capabilities and limitations. The technique of scoring for small instrumental combinations; transposition and clef manipulation.
Prerequisite: Mus. 108, or approval of department chairperson.

MUS. 216. ORCHESTRA AND BAND ARRANGING **Two credits**
Scoring for the large orchestra or the modern symphonic band. The student may select his field of concentration.
Prerequisite: Mus. 215.

MUS. 217. ANALYSIS **Two credits**
The technique of composition as disclosed by melodic, harmonic, and structural analysis of music in varied styles and from diverse periods.
Prerequisite: Mus. 108, or equivalent as demonstrated by an examination.

MUS. 218. COUNTERPOINT **Three credits**
A study of the sixteenth century art of contrapuntal writing.
Prerequisite: Mus. 108.

MUS. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

MUS. 397. SEMINAR (Maximum of three credits per student) **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairperson is required.

Music Education

MUS. ED. 101-102. CLARINET CLASS AND METHODS **Two credits each semester**
Methods of teaching and instruction in the clarinet.

MUS. ED. 103-104. BRASS CLASS AND METHODS **Two credits each semester**
Methods of teaching and instruction in brass instruments.

MUS. ED. 105. WOODWIND CLASS METHODS **Two credits**
A class conducted as an introduction to the teaching of such woodwinds as flute, oboe, clarinet, bassoon, and saxophone, with demonstrations of the class teaching of these instruments.
Prerequisite: Mus. Ed. 102.

MUS. ED. 106. BRASS CLASS METHODS **Two credits**
A class conducted as an introduction to the teaching of such brass instruments as trumpet, horn, trombone, baritone, and tuba, with demonstrations of the class teaching of these instruments.
Prerequisite: Mus. Ed. 104.

MUS. ED. 121. VIOLIN CLASS AND STRING METHODS **Two credits**
A class in violin playing and in the teaching of string instruments.
No prerequisite.

MUS. ED. 122. VIOLA CLASS AND STRING METHODS **Two credits**
A class in viola playing and in the teaching of string instruments.
No prerequisite.

MUS. ED. 123. VIOLONCELLO AND BASS CLASS AND STRING METHODS **Two credits**
A class in the playing of the violoncello and the bass and in the teaching of string instruments.
No prerequisite.

MUS. ED. 125. PERCUSSION CLASS METHODS **Two credits**
A class in the fundamentals of percussion performance and demonstrations of class teaching.
No prerequisite.

MUS. ED. 127-128. VOICE CLASS AND METHODS **Two credits each semester**
A course in the fundamentals of voice production: breathing, breath control, elementary study of vowel forms, and consonants. Elementary songs are used to develop the student's own voice as well as to train him in voice pedagogy.
No prerequisite.

MUS. ED. 201. ELEMENTARY SCHOOL MUSIC METHODS **Two credits**
The course involves a general preparation for the teachers of music in the elementary grades. It entails a study of the principles, procedures, and objectives in school music.
Prerequisite: Junior class standing.

MUS. ED. 202. SECONDARY SCHOOL MUSIC METHODS **Two credits**
The course is planned to provide a preparation for teaching the various aspects of music in the secondary school.
Prerequisite: Junior class standing.

MUS. ED. 209-210. CONDUCTING AND SCHOOL MUSIC MATERIALS **Two credits each semester**
The development of an adequate baton technique and the presentation of various kinds of school music materials, stressing particularly elementary and secondary school instrumental materials the first semester and secondary school choral materials the second semester.
No prerequisite.

Nursing

Professor McHenry, chairperson; Associate Professors McKenna, Schuler; Assistant Professors Alexander, Alichnie, Berry, Champagne, Forlenza, Fuller, Godek, Hanson, Hoffer, Manganiello, Onuschak, Rarig, Schreiber, Slabinski; Instructors Kolanowski, Telban; Adjunct Professors Babcock, Duffy, Jamieson, Morgan, Proeller, Torregiani.

Purpose of the Nursing Program

The Nursing Program at Wilkes College leads to a Bachelor of Science degree with a major in nursing and reflects a curriculum design that is responsive to the changing needs of society for health care.

The purposes of the department are to:

1. Prepare a beginning self-directed professional practitioner capable of initiating and implementing the nursing process on behalf of clients in a variety of circumstances.
2. Provide a foundation for graduate study in Nursing.
3. Promote the utilization of new knowledge through the provision of continuing educational experiences for nursing practitioners.

Philosophy of Nursing

Professional nursing involves a deliberative process of assessment, planning, implementation, and the evaluation of nursing outcomes.

The baccalaureate program offers an educational experience to prepare a professional nurse practitioner who exerts leadership in the emerging roles of primary, secondary, and tertiary care. Emphasis is on the maintenance of health and the surveillance of the health practices of people.

The curriculum is designed to enable the student to integrate the arts, the sciences, and the humanities with nursing and to choose electives in areas related to personal interests and career goals.

The opportunity for self-learning is provided in the Learning Center, equipped with electronic study carrels and audio-visual materials. The Center is open twelve hours a day and is staffed at all times with nursing faculty who assist students to progress at their own pace, to utilize the equipment, supplies, and procedures which will be encountered in the various settings. A simulated hospital environment introduces the student to the elementary skills in nursing. The student may return to the Center at any time of the day for review and study.

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 are: (1) Wyoming Valley, (2) Nesbitt Memorial, (3) Mercy, (4) Veterans Administration Medical Center, (5) Wilkes-Barre General, (6) Community Medical Center, Scranton, (7) Hazleton State Hospital, (8) Nanticoke State Hospital, (9) Scranton State Hospital, and (10) the National Institutes of Health, Clinical Center, Bethesda, Maryland.

The agencies utilized are: (1) The Home Health Services of Luzerne County, (2) the Luzerne/Wyoming Mental Health Center, (3) the Hazleton/Nanticoke Mental Health Center, (4) St. Stanislaus Medical Care Center, (5) the Maternal Health Services of Northeastern Pennsylvania, (6) the State Health Departments in Wilkes-Barre and Scranton, (7) the Home Health Services of Northeastern Pennsylvania, (8) the Allied Services for the Handicapped in Scranton, (9) the United Rehabilitation Services of Wilkes-Barre, (10) the Wilkes-Barre Area School District, (11) the Northwest Area School District, Shickshinny, (12) the Nanticoke Area School District, (13) Crippled Children's Association, (14) Family Practice Center, (15) Scranton Primary Health Care Center, Inc., (16) Valley Crest Nursing Home, and (17) the following nursery schools: Payne-Pettebone, S. Wilkes-Barre Play School, Temple Israel, and Temple B'nai B'rith.

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, name pins, yearly physical examinations, immunizations, dental and eye examinations, NLN achievement and comprehensive tests, liability insurance, transportation to assigned clinical areas, and the College nursing pin upon completion of the program. A price list for the above items may be obtained at the Nursing department.

Comprehensive Examinations

In addition to fulfilling the academic requirements of the College, students majoring in nursing are required to successfully complete the comprehensive examinations administered by the Department of Nursing. The examinations are given during the senior year.

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 a faculty member in the department to plan their program before acceptance into the Wilkes nursing program can be completed.

Students may be admitted for either full-time or part-time study and may challenge, in the proper sequence, twenty-one credits of clinical nursing courses. Examinations are offered three times a year, in January, May, and August. Upon approval of the petition and acceptance of the $25.00 fee for each course, study materials and directions will be given to the student by the faculty adviser. 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" (Section 6, of Act 151, amended May 29, 1968 — P.L. 135, No. 73). 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 curriculum is an integrated program covering a four-year academic period, totaling 127 credits. Nursing students must meet the general core requirements as listed on page 49.

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

Nursing courses are introduced in the sophomore year; nursing experiences progress through the development stages throughout the program. A grade of 2 is required for all nursing courses to progress through the nursing program. The student must perform satisfactorily in the clinical area to pass each nursing course.

The student will have the option to select his/her area of concentration in Nursing for the senior practicum and will be assigned a faculty adviser who is a clinical expert in the student's chosen field of interest.

B.S. Degree with a Major in Nursing

FIRST SEMESTER		SECOND SEMESTER	
Bio. 115	4	Bio. 116	4
Chem. 111	4	Chem. 130	4
Eng. 101	3	Eng. 102	3
Psy. 101	3	Psy. 102	3
Soc. 101 or	3	Soc. 200	3
Anth. 101	3	P.E. 100	0
P.E. 100	0		
	17		17

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 113	4	Nsg. 202. Nursing Care of the Growing Family	8
Nsg. 200. Nutrition	3	Ed. 398	3
Nsg. 201. Intro. to Nursing	6	Core Elective	3
Core Elective	3	Elective	3
P.E. 100	0	P.E. 100	0
	16		17

FIFTH SEMESTER		SIXTH SEMESTER	
Nsg. 203. Nursing Care of the Adult Family I	8	Nsg. 204. Nursing Care of the Adult Family II	8
Core Elective	3	Core Elective	3
Elective	3	Elective	3
	14		14

SEVENTH SEMESTER		EIGHTH SEMESTER	
Nsg. 301. Major Health Problems in Today's Society	8	Nsg. 302. Senior Practicum	6
Nsg. 303. Contemporary Problems in Nursing and/or Elective	6	Nsg. 303. Contemporary Problems in Nursing and/or Elective	3
Core Elective	3	Core Elective	6
	17		15

Total minimum credit requirements for B.S. degree, with a major in Nursing — 127.

NSG. 200. PRINCIPLES OF NORMAL AND THERAPEUTIC NUTRITION **Three credits**

An introduction of the basic science of human nutrition; principles of normal and therapeutic 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: Chem. 130.

Corequisite: Nsg. 201.

NSG. 201. INTRODUCTION TO NURSING **Six credits**

A basic course in nursing explores the concepts of man, family, and community as clients; defines and develops the components of the nursing process; and provides practical experience in the acquisition of related skills. Self-instruction in the Learning Center, under supervision, is required. Hours weekly: 5 hours class, 3 hours clinical practice. Placement: third semester. Fee: $25.

Prerequisite: Bio. 116, Chem. 130, Psy. 102, Soc. 200.

Corequisite: Nsg. 200, Bio. 113.

NSG. 202. NURSING CARE OF THE GROWING FAMILY **Eight credits**

The nursing process is utilized to assist in meeting the health care needs of young families during the childbearing and childrearing years. Basic concepts of parent-child, community, and mental health nursing are synthesized in the course as parts of total nursing care, oriented toward assisting young family clients to achieve and maintain op-

timum level of wellness. Theory is concurrent with clinical practice in various primary and secondary health care settings. Hours weekly: 5 hours class, 9 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 201, Nsg. 200, and Bio. 113.

Corequisite: Ed. 398, Research Analysis.

NSG. 203. NURSING CARE OF THE ADULT FAMILY I **Eight credits**

The nursing process is utilized in assisting adults and their families to maintain optimum wellness and to resolve selected health problems. Nursing theory as related to the biopsychosocial aspects of adult care is correlated with clinical practice in primary, secondary, and tertiary 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: $25.

Prerequisite: Nsg. 202.

NSG. 204. NURSING CARE OF THE ADULT FAMILY II **Eight credits**

The nursing process is utilized in the care of the adult family member with increasingly complex biopsychosocial problems. Acute and long-term care are viewed through related clinical experiences in primary, secondary, and tertiary health care settings. Continuity of care and relevant findings from nursing research are incorporated. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 203.

NSG. 301. MAJOR HEALTH PROBLEMS IN TODAY'S SOCIETY **Eight credits**

Health problems of present day society are viewed in greater depth. The extent of the problem, the impact on society, and the available resources for prevention and control are explored. Clinical practice is directed toward health promotion and maintenance in the general application. Hours weekly: 2 hours class, 18 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 204.

NSG. 302. SENIOR PRACTICUM **Six credits**

From a variety of health care facilities, students select a clinical practice and study experience congruent with their special interest and career goals. Under the guidance of a faculty adviser and a preceptor in the clinical area, the student synthesizes knowledge gained in all previous nursing and supportive courses in the management of care for groups of clients with common health needs. Complex problems in the selected area of nursing practice are explored in weekly sessions. Hours weekly: 2 hours class, 12 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 301.

NSG. 303. CONTEMPORARY PROBLEMS IN NURSING **Three credits**

The principles and processes are developed through exploration of systems of nursing and health care. Students examine contemporary problems in nursing within the context of a dynamic society and an evolving profession. Hours weekly: 3 hours class.

Prerequisite: Nsg. 204.

Philosophy

Associate Professor Henson, chairperson; Professors Kay, Williams; Assistant Professor Stevens; Adjunct Professor Barras.

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 not only ideally prepared for a variety of professional careers in law, medicine, teaching, and the ministry; they are also the beneficiaries of the traditional liberal arts education essential in today's world for success in 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 chairperson. The typical program consists of 30 credit hours in philosophy, including either Phil. 101 or Phil. 201, and Phil. 152.

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

PHIL. 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.

PHIL. 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.

PHIL. 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.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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 determination, fatalism, the relationship between mind and body, and the nature of universals.

Prerequisite: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 301. STUDIES IN GREEK PHILOSOPHY **Three credits**

A critical examination of a single major philosopher or text in the period of classical Greek philosophy. Variable content: this course may be repeated for credit. Normally preceded by Phil. 201.

Prerequisite: Phil. 101 or 201.

PHIL. 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 Phil. 202.

Prerequisite: Phil. 101 or 201.

PHIL. 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 Phil. 210.

Prerequisite: Phil. 101 or 201.

PHIL. 320. ADVANCED PHILOSOPHY OF RELIGION **Three credits**

An intensive examination of a major problem or figure in the philosophy of religion. Variable content: this course may be repeated for credit. Normally preceded by Phil. 220.

Prerequisite: Phil. 101 or 201.

PHIL. 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: Phil. 101 or 201.

PHIL. 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: Phil. 152 or Math. 202 or permission of instructor.

PHIL. 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: Phil. 101 or 201.

PHIL. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

PHIL. 397. SEMINAR (Maximum of three credits per student) One to three credits
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairperson is required.

Physical Education and Hygiene

Professor Reese, chairperson; Associate Professors Saracino, Schmidt; Assistant Professor Meyers; Instructors Aed, Kaschak, Righter, Roberts.

Attention is given to the physical well-being of students as a regular part of the curriculum; mass athletics and some form of sport or exercise for each student are included in the program of physical education. Physical education is required of both men and women, except by statement of a physician, during the freshman and sophomore years.

At the beginning of each year students are given a medical and physical examination. Activity in physical education includes soccer, football, basketball, baseball, volleyball, and other competitive games. Also included are bowling, tennis, badminton, bicycling, swim instruction, senior life-saving, body mechanics, tumbling and floor exercise, self-defense, golf, modern dance, social and folk dance, elementary games and recreational games.

P.E. 100. PHYSICAL EDUCATION[1] **No credit**
This course is designed to promote physical well-being and good health habits and to encourage participation in activities that will provide relaxation and exercise throughout life. Two hours each week. Four semesters are required.

P.E. 105-106. HYGIENE **One credit each**
A study of present-day health problems. The course undertakes to help students enjoy maximum health and happiness through better understanding of food, diet, exercise and physical fitness, infection, communicable and non-communicable diseases, emotional and mental disorders, and problems of everyday living. One hour each week. Class instruction in personal hygiene is required of all students, even those excused by physicians from taking physical education.

[1]Students enrolled in AFROTC may substitute AS 101-102-201-202 for the P.E. 100 series.

Physics

Professor Donahoe, chairperson; Professors Bellas, Holden; Associate Professors Bailey, Hostler; Assistant Professor Placek.

The B.A. curriculum in physics is designed for the student interested in a major in physics in preparation for a career in teaching, medicine, dentistry, patent law, technical sales, technical translation, technical writing, etc. The student will choose electives after consultation with his adviser.

Normally, students will begin the physics program in the first semester. In exceptional cases the mathematics and physics sequence may be started in the third semester.

The student must choose at least six credits from the following list in addition to those prescribed in the curriculum:

Physics 330 (4)	Physics 332 (4)
Physics 321 (3)	Physics 361 (4)
Physics 340 (3)	Physics 380 (4)
Physics 312 (3)	Physics 391-392 (1-2)

A student electing the minimum of 24 credits in physics must elect an additional four credits in chemistry.

The student must choose 12 credits from the following course combinations: Anth. 101 and Soc. 101; Ec. 101 and 102; P.S. 101 and 102; or Psy. 101 and 102.

Students who are prospective secondary school teachers should consult the information on education course requirements listed in the section on programs in Education.

The B.S. curriculum in physics is designed to provide a thorough grounding in the fundamentals of this rapidly expanding science, as well as to acquaint the student with current knowledge and research. Upon completion of the requirements for the degree, the student will be well prepared to pursue graduate study leading to an advanced degree or to undertake an industrial position.

The B.S. curriculum in medical physics is designed to allow students to study the applications of the physical sciences to medical problems. Many of the concepts, techniques, and devices which have been created by physicists are now being applied to medicine.

An important part of the medical physics program is a pair of laboratory courses in medical physics, and a practicum or field experience in a hospital, medical research laboratory, or a medical-oriented industrial laboratory.

For additional information, the student should contact the Physics department.

FIRST SEMESTER	B.A.	B.S.
Phys. 201	4	4
Eng. 101	3	3
Math. 111	4	4
Core elective[1]	3	3
P.E. 105	1	1
P. E. 100	0	0
	15	15

SECOND SEMESTER	B.A.	B.S.
Phys. 202	4	4
Eng. 102	3	3
Math. 112	4	4
Speech 101	—	3
Core elective[1]	3	3
P.E. 106	1	1
P.E. 100	0	0
	15	18

THIRD SEMESTER	B.A.	B.S.
Phys. 203	3	3
Phys. 321	—	3
Chem. 115	4	4
Math. 211	4	4
Core elective	6	3
P.E. 100	0	0
	17	17

FOURTH SEMESTER	B.A.	B.S.
Phys. 330	—	4
Phys. 340	—	3
Chem. 116	4	4
Math. 212	4	4
Core elective	3	3
Elective	6-7	—
P.E. 100	0	0
	17-18	18

FIFTH SEMESTER	B.A.	B.S.
Phys. 311	3	3
Phys. 331	4	4
Math. 361	—	3
Core elective	6	6
Elective	3-4	—
	16-17	16

SIXTH SEMESTER	B.A.	B.S.
Phys. 312	—	3
Phys. 332	—	4
Math. 362	—	3
Core elective	6	6
Elective	9-10	—
	15-16	16

SEVENTH SEMESTER	B.A.	B.S.
Phys. 361	—	4
Core elective	3	—
Elective[2]	13	11-13
	16	15-17

EIGHTH SEMESTER	B.A.	B.S.
Phys. 380	—	4
Core elective	3	—
Elective[2]	13	11-13
	16	15-17

Total minimum credits required for B.A. degree — 127.
Total minimum credits required for B.S. degree — 129.

PHYS. 101-102. PHYSICAL SCIENCE **Three credits each**

A course for the non-science student to enable an understanding and appreciation of the universe in which he lives. The methods, concepts, and vocabulary of physics and applications of some of its outstanding principles to the needs of the individual and the community; and the manner in which the continually expanding frontiers of science affect our future way of life. Lecture, demonstration, and discussion three hours a week.

Prerequisite: Background in science and mathematics not necessary.

[1] German or Russian through 204 or 205 level is required of B.S. candidates. Students with proficiency in either language are urged to seek advanced standing and to commence language study as early as possible but no later than the third semester. C.S. 123 and 223 may be substituted for the last two semesters of language with the approval of the student's adviser.

[2] Students contemplating graduate study in physics should elect Phys. 351 (Quantum Mechanics). B.S. degree candidates must elect an advanced mathematics course each semester.

PHYS. 105-106. INTRODUCTORY PHYSICS **Four credits each**

An introductory course designed to promote an understanding of the more important fundamental laws and methods of the major sections 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, wave motion, sound, and heat. Second semester: electricity, magnetism, and optics. Demonstration-lecture two hours a week, recitation one hour a week, and laboratory three hours a week. Fee: $20.

PHYS. 201. GENERAL PHYSICS I **Four credits**

A thorough grounding in the concepts, principles, and physical laws of mechanics, thermodynamics, and wave motion. Instruction by demonstration-lecture, recitation, and experimental work. Demonstration-lecture two hours a week, recitation one hour a week, and laboratory three hours a week. Fee: $20.

PHYS. 202. GENERAL PHYSICS II **Four credits**

Continuation of Phys. 201. Electricity and magnetism, and optics and light. Demonstration-lecture two hours a week, recitation one hour a week, and laboratory three hours a week. Fee: $20.

Prerequisite: Phys. 201.

PHYS. 203. GENERAL PHYSICS III **Three credits**

Continuation of Phys. 201 and 202. Modern physics. Including the experimental basis, concepts, and foundational principles of modern atomic and nuclear physics. Demonstration-lecture three hours a week.

Prerequisite: Phys. 202.

PHYS. 307. TOPICS IN THEORETICAL PHYSICS **Three credits**

Selected topics depending upon the interests of the instructor and students. Topics might include advanced mechanics, fluid mechanics, electromagnetic theory, relativity, etc. Three hours class a week.

Prerequisite: Approval of instructor and department chairperson.

PHYS. 308. TOPICS IN APPLIED PHYSICS **Three credits**

Selected topics depending upon the interests of the instructor and students. Topics might include astrophysics, biophysics, geophysics, medical physics, optical instrument design, reactor physics, etc. Three hours class a week.

Prerequisite: Approval of instructor and department chairperson.
Phys. 392, Advanced Laboratory, may be a corequisite.

PHYS. 311-312. MECHANICS **Three credits each**

Intermediate level courses designed to develop a thorough understanding of the principles of mechanics and the application of mathematical methods to the solution of problems. Topics include harmonic oscillator, central force problems, rotations of rigid bodies, moving coordinate systems, continuous media, inertia and stress tensors, Lagrange's equations of motion, theory of small vibrations. Recitation-lecture three hours a week.

Prerequisite: Phys. 202 and Math. 212.

PHYS. 320. ELECTRONIC INSTRUMENTATION FOR THE LIFE AND BEHAVIORAL SCIENCES **Three credits**

PHYS. 321. ELECTRONIC INSTRUMENTATION FOR THE PHYSICAL SCIENCES **Three credits**

Construction, calibration, and use of electronic instruments. Operational amplifiers and integrated circuits as device components. Students will be encouraged to follow their own interests in designing simple devices for special applications. Two hours class and one three-hour laboratory per week. Fee: $20.

Prerequisite: Phys. 106 or 202.

PHYS. 325-326. MEDICAL APPLICATIONS OF PHYSICS **Four credits each**

A study of the interactions and medical applications of the basic physical forces and energies with different biological systems, especially man. Interactions of x-rays, electromagnetic, and nuclear radiation with matter. Ultrasonic interactions. Dosimetry and radiation protection. Fluoroscopy, tomography, laser, positron, and other scanning devices, techniques and their applications. Three hours class and one three-hour laboratory a week each semester. Fee: $20 each semester.

PHYS. 327. MEDICAL PHYSICS PRACTICUM **Six credits**

Participating hospitals, clinics, medical centers, other health-care facilities and medically-oriented industrial companies will allow the Medical Physics student the off-campus opportunity to acquire on-the-job physics training directed toward the medical areas. This will be counted as six credits for an equivalent of eight weeks of summer work, or for an equivalent of twelve weeks of semester work.

PHYS. 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: $20.

Prerequisite: Phys. 202.

PHYS. 331-332. ELECTRICITY AND MAGNETISM **Four credits each**

Static and dynamic electricity, magnetism, electromagnetism, thermoelectricity, etc., are covered in considerable detail. The emphasis in this course is on fundamental analysis rather than applications. Three hours class and one three-hour laboratory a week. Fee: $20.

Prerequisite: Phys. 202 and Math. 212.

PHYS. 340. THERMODYNAMICS **Three credits**

The fundamental concepts of thermodynamics. The laws of thermodynamics, Carnot cycle, entropy, and an introduction to kinetic theory and statistical mechanics. Three hours lecture-discussion a week.

Prerequisite: Phys. 202.

PHYS. 351. QUANTUM MECHANICS **Three credits**

An introduction to quantum mechanics; Schrodinger's equation and its application to the harmonic oscillator, the potential-well, and the hydrogen atom; perturbation theory; angular momentum; identical particles and Pauli's exclusion principle; introduction to the relativistic wave equation and the origin of electron spin. Three hours lecture-discussion a week.

Prerequisite: Phys. 312, Math. 362.

PHYS. 361. ATOMIC PHYSICS **Four credits**

Black body radiation, wave-particle quality, hydrogenic atoms, multielectron atoms, molecules, solids. Three hours class and one three-hour laboratory a week. Fee: $20.

Prerequisite: Phys. 203, 311, 331.

PHYS. 370. INTRODUCTION TO SOLID STATE PHYSICS **Three credits**

Topics include bonding and structure, translational symmetry, direct and reciprocal lattices, lattice dynamics, electronic structure of simple metals, insulators and semiconductors. Three hours class a week.

Prerequisite: Phys. 361, Math. 362 or approval of instructor.

PHYS. 380. NUCLEAR PHYSICS **Four credits**

Special relativity, natural and induced radioactivity, nuclear structure, nuclear reactions, reactors, etc. Three hours class and one three-hour laboratory a week. Fee: $20.

Prerequisite: Phys. 361.

PHYS. 391-392. ADVANCED LABORATORY **One or two credits**

Students desiring to undertake laboratory work in topics of their own choosing should consult the department chairperson. Hours to be arranged. Fee: $20.

Prerequisite: Phys. 203, Math. 212.

PHYS. 395-396. INDEPENDENT RESEARCH **One to three credits**

Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

Prerequisite: Approval of department chairperson is required.

PHYS. 397. SEMINAR (Maximum of three credits per student) One to three credits

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairperson is required.

THE 400-SERIES COURSES ARE GRADUATE COURSES AVAILABLE TO UNDERGRADUATE SENIORS WITH PERMISSION OF INSTRUCTOR AND THE DEPARTMENT CHAIRPERSON

PHYS. 401-402. METHODS OF MATHEMATICAL PHYSICS Three credits each

Study of different branches of mathematics and their applications in physics. Topics include: ordinary and partial differential equations; Fourier series and integrals; complex variables; matrix methods; Green's functions; tensor analysis; group theory; and others. Three hours lecture-discussion.

Prerequisite: Math. 362, or equivalent.

PHYS. 423. X-RAY DIFFRACTION **Three credits**

Modern developments in X-ray diffraction. Generation, detection, and measurement of X-rays. Elastic and inelastic scattering. The geometry of crystals and diffraction by polycrystalline and amorphous materials. The kinematical theory and pair distribution functions. The dynamical theory for perfect and imperfect crystals as derived from Maxwell's equations. Total cross-sections, line shape functions, one-electron factors, and determination of crystal structure. Experimental X-ray methods and applications. Laboratory, one period a week. Fee: $20.

Prerequisite: Phys. 401.

PHYS. 427. SOLID STATE DEVICES **Three credits**

Application of energy band theory. Fermi-Dirac statistics. Conduction theory. Intrinsic and impurity conduction. Semiconductor properties and characteristics of p/n junctions. Transistors and transistor theory. Characteristics of transistors. High-current characteristics. Feedback effects.

PHYS. 473. ANISOTROPIC PROPERTIES OF CRYSTALS **Three credits**

Application of matrices and tensors to represent anisotropic physical properties of crystalline solids. The stress-strain and elastic properties. Paramagnetic and diamagnetic susceptibility, and electric polarization. Thermal expansion and thermodynamics of equilibrium properties of crystals. Thermal and electrical conductivity, and thermoelectricity. Double refraction, optical activity, and crystal optics.

Political Science

Professor Driscoll, chairperson; Assistant Professors Freysinger, Tuhy; Adjunct Professors Goldsmith, McDonald, Shaw.

The major in political science is designed to give the students some introduction to the many subject matters subsumed in the discipline of Political Science and to acquaint them with the broad spectrum of political problems in today's complex and rapidly changing world. At the same time, the offerings above the introductory level are grouped into major areas, which will permit the student to do considerable in-depth study and analysis.

Students majoring in political science may plan to seek careers in state and local government, urban planning, the federal bureaucracy, journalism, higher education, secondary education, politics, law-associated activities, or in any of the proliferating private and quasi-public organizations which seek to monitor the political processes or influence the content of public policy. The major is also excellent preparation for law school or for graduate work in a variety of social science and humanist disciplines.

A major in political science must take the two introductory courses, P.S. 101 and P.S. 102; at least one course in each of four substantive areas (American Politics; Government and Administration; Comparative and International Politics; Constitutional Law and Political Thought); and one course in the 390 sequence, which includes special topics, methodology, research, and intern-type experience. The number of credits required is 30 semester hours — 24 above P.S. 101 and 102.

Majors are strongly advised to take Statistics (Math. 150) and Fortran Programming (C.S. 123) unless their area of greatest interest is Comparative and International Politics, in which case knowledge of at least one foreign language is strongly recommended. Pre-law students are advised to take work in Accounting.

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

Urban Studies Concentration — see page 145.

I. Introductory Courses

P.S. 101. POLITICAL SCIENCE I — **Three credits**

A broad, comprehensive introduction to the great issues of politics: legitimacy and power; liberty and authority; the varying structures of political systems and their relations with each other.

P.S. 102. POLITICAL SCIENCE II — **Three credits**

A descriptive and analytical study of the theory and practice of American government: its constitutional basis, organization, powers, functions, and problems.

II. American Politics

P.S. 203. AMERICAN POLITICS, PARTIES, POLITICAL BEHAVIOR — **Three credits**

Analysis of the process through which people relate to, influence, and control their government. Publics and public opinion formation; role of interest groups; political parties; voting behavior.

Prerequisite: P.S. 102 recommended.

P.S. 204. POLICY FORMATION — **Three credits**

Analysis of the policy-making process at the national level of American government. Role of the President and Congress as leaders and participants in policy-making, with attention to the role of the bureaucracy, interest groups, political parties, and judicial review.

Prerequisite: P.S. 102 recommended.

P.S. 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 interrelationships between local, state, and Federal policies and agencies.

Prerequisite: P.S. 102 recommended.

P.S. 207. PUBLIC ADMINISTRATION — **Three credits**

An introduction to the principles and problems of public administration in an increasingly complex society. Attention to topics such as leadership, informal organizational processes (infra-structure), the relation of administration to its cultural context, and the question of administrative responsibilities, as well as the more technical problems of personnel, finance, and administrative law.

Prerequisite: P.S. 102 recommended.

III. Government Organization and Administration

P.S. 207. PUBLIC ADMINISTRATION — **Three credits**

Same as course listed above in Group II.

P.S. 210. PROBLEMS IN METROPOLITAN AREAS — **Three credits**

An examination of the politics and the processes of contemporary urban government, with special emphasis upon the complex problems presented by the rapidly expanding population in standard metropolitan areas.

Prerequisite: P.S. 102 recommended.

P.S. 211. 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: P.S. 102 recommended.

P.S. 214. 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: P.S. 102 or 205 or 210 or 211.

EC. 236. PUBLIC FINANCE — **Three credits**

See description under Economics.

IV. Comparative and International Politics

P.S. 222. 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: P.S. 101 recommended.

P.S. 223. COMPARATIVE POLITICS: THE POLITICAL SYSTEMS OF WESTERN EUROPE **Three credits**
A comparative study of the various forms of government in selected nations of western Europe — their development and changing politics and political systems.
Prerequisite: P.S. 101 and 102 recommended.

P.S. 224. COMPARATIVE POLITICS: THE U.S.S.R. AND THE COMMUNIST COUNTRIES OF EASTERN EUROPE **Three credits**
The development of the Soviet system; some attention to the Russian culture pre-1917, early Marxism and Leninism and the Russian Revolution. Emphasis on the development, maintenance, and possibilities of change in the interlocking system of Party and government. Comparison with events and processes in nations under Soviet domination.
Prerequisite: P.S. 101 and 102.
Offered in alternate years.

P.S. 225. INTERNATIONAL ORGANIZATION **Three credits**
Analysis of theory and practice in international organization; structure of the United Nations organization; making of peace and enforcement action; human rights and promotion of welfare.
Prerequisite: P.S. 101 and 102.

P.S. 226. COMPARATIVE POLITICS: EAST ASIAN GOVERNMENTS **Three credits**
Analysis of the distinctive institutions, processes, and problems of political development in Asia, with emphasis on the contrast in modernization and modern institutions of government and politics in China and Japan.
Prerequisite: P.S. 101 and 102.
Offered in alternate years.

V. Constitutional Law and Political Thought

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

P.S. 231. 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: P.S. 101 and 102.

P.S. 232. CONSTITUTIONAL LAW II **Three credits**
Continuation of the study of 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: P.S. 101 and 102.

P.S. 235. 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: P.S. 102 recommended.

VI. Advanced Special Studies

P.S. 393. POLITICAL SCIENCE: CONCEPTS AND METHODS **Three credits**
Survey of major concepts, theories, and methods of current political science as a discipline. Some attention to research design and techniques.
Prerequisite: At least 4 courses in P.S. or consent of instructor.

P.S. 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 P.S., or Urban Studies, or field in which internship will be served, such as Earth and Environmental Sciences. Student must consult with department before registering.

P.S. 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.

P.S. 397. SEMINAR **Three credits**
Presentations and discussions of selected topics by students.
Prerequisite: P.S. 393.

P.S. 398. TOPICS IN POLITICAL SCIENCE **Three credits**
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; environmental policies; urban design; international law; war and peace; political thought in the Far Eastern tradition; The First Amendment in law and practice; equality at law in an unequal society; etc. May be repeated when topic differs.
Prerequisite: Permission of department, criterion depending on topic.

Psychology

Professor Riley, chairperson; Associate Professor Stetten; Assistant Professors Bohlander, Charnetski, Truckenmiller; Adjunct Professor Kanner.

Psy. 101-102 are the starting point for the psychology program and must be taken by all psychology majors. These two courses do not count toward the 24 credit hours of psychology required of majors.

To allow the greatest possible flexibility in the psychology program, there is only one additional psychology course required of all psychology majors once the Psy. 101-102 sequence has been taken, that being Psy. 215, Research Design and Analysis. Students are then free

to tailor a program of study to fit their own needs and interests. It is strongly recommended, however, that students take Psy. 211-212, Experimental Psychology, especially if they have any intention of pursuing graduate training. Students are reminded that professional psychological work presumes advanced graduate study. Psy. 206, History of Psychology, would be useful to the students so that they might appreciate the breadth and nature of psychological thought and effort.

It would be highly desirable for the student to take at least one course from each of the interest areas listed below to achieve a reasonably balanced exposure. Because some courses have prerequisites and all courses are not offered each semester, it is advised that the individual program be started early and be well planned. Research Design and Analysis would then be taken in the sophomore year along with History of Psychology and/or Contemporary Psychological Theories. Experimental Psychology and interest area courses would then be reserved for the junior year, saving Seminars and Independent Research for the final semesters.

Required Courses:	Psy. 101-102 General Psychology
	Psy. 215 Research Design and Analysis
Strongly Advised:	Psy. 211-212 Experimental Psychology
	Psy. 206 History of Psychology
Interest Areas: I:	Psy. 203 Contemporary Psychological Theories
	Psy. 213 Physiological Psychology
	Psy. 214 Sensation and Perception
	Psy. 311 Comparative Psychology
II:	Psy. 242 Psychological Tests
	Psy. 243 Industrial Psychology
	Ed. 202 Educational Psychology*
	Soc. 255 Social Psychology*
III:	Psy. 221 Child Psychology
	Psy. 232 Human Behavior
	Psy. 245 Clinical Psychology
	Psy. 331 Abnormal Psychology

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

PSY. 101-102. GENERAL PSYCHOLOGY **Three credits each**
An introduction to the field of psychology with emphasis on objective and systematic methods of inquiry. Extensive treatment of major psychological topics such as sensation, perception, learning, motivation, intelligence, and personality development. Frustration, conflict, and mental health also receive attention.

*While not given within the Department of Psychology, these courses may still be counted toward the 24 credit hours required of the psychology major.

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: $20 each semester.
Prerequisite: Psy. 215.

PSY. 213. PHYSIOLOGICAL PSYCHOLOGY **Three credits**
A systematic study of the physiological mechanisms mediating behavior. Emphasis is on the neuro-physiological bases of sensation, perception, adaptation, motivation, emotion, learning, and memory. Methods and techniques used in the study of the nervous system and sensory and muscular systems will be investigated and demonstrated.
Prerequisite: Psy. 101-102.

PSY. 214. SENSATION AND PERCEPTION **Three credits**
Various principles and phenomena of sensation and perception are studied within the visual, auditory, olfactory, haptic, and bodily-orientation systems. An introduction to major perceptual theories is also given.
Prerequisite: Psy. 101-102 and 213.

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. CHILD PSYCHOLOGY **Three credits**
The course is designed to present a general view of the development and growth of the child. It is concerned primarily with the heredity and native equipment of the child and the manner in which this equipment is modified during childhood. Emotional development, language development, and social relations 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. 311. COMPARATIVE PSYCHOLOGY **Three credits**
A comprehensive survey of animal behavior including both vertebrates and invertebrates. The influence of neurological and endocrine evolution will be studied in relation to adaptation and behavior.
Prerequisite: Psy. 101-102.

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 he major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairperson is required.

PSY. 397. SEMINAR **(Maximum of three credits per student) One to three credits**
Presentatons and discussions of selected topics.
Prerequisite: Approval of department chairperson is required.

PSY. 398. TOPICS IN PSYCHOLOGY **Three credits**
A study in topics of special interest not extensively treated in regularly offered courses.

Sociology and Anthropology

Associate Professor Goldman, chairperson; Assistant Professors Brown, Natzke, Rasson.

Students majoring in sociology, anthropology, or sociology-anthropology must fulfill the following requirements: Anth. 101 and Soc. 101 are required, but are not accepted as credit hours toward the major. Phil. 230 or 350 may be taken for credit toward the major. Students who intend to major in anthropology, sociology, or sociology-anthropology are requested to consult with the department chairperson. Additional requirements pertaining to each of the three departmental programs are specified below.

Sociology

The department offers two options in its sociology program:

A major in sociology (option A) consists of twenty-four hours, and shall include Soc. 255, 370, 380, and at least one additional course in anthropology. In addition, Math. 150 is required, credit to apply toward either sociology or core requirements.

The department offers a supervised practicum for advanced students. Students approved for the B.A. degree with a major in sociology (option B) must complete thirty hours, including Soc. 255, 370, 380, and one additional course in anthropology. In addition, Math. 150 is required, credit to apply toward either sociology or core requirements.

Anthropology

The department offers two options in its anthropology program:

A major in anthropology (option A) consists of twenty-four hours, and shall include Anth. 370, 380, and at least one additional course in sociology. The following courses are strongly recommended: Anth. 270, 271, 272, and 273. Proficiency in at least one foreign language at the 204 level is required.

The department offers a supervised practicum for advanced students. Students approved for the B.A. degree with a major in anthropology (option B) must complete thirty hours including Anth. 370, 380, and one additional course in sociology. The following courses are strongly recommended: Anth. 270, 271, 272, 273. Proficiency in at least one foreign language at the 204 level is required.

Sociology-Anthropology (Joint Major)

A major in sociology-anthropology consists of thirty hours, and shall include Anth. 370 or Soc. 370, and Anth. 380 or Soc. 380. A minimum of twelve hours in each field is required. Proficiency in at least one foreign language at the 204 level is strongly recommended. In addition, Math. 150 is highly recommended.

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

Urban Studies Concentration

The urban studies concentration is an interdisciplinary program designed to meet the needs of students interested in the phenomenon of urbanization as a crucial aspect of our changing world, a phenomenon whose study cuts across the major academic disciplines. It is of particular importance to students who wish to enter careers in agencies, both public and private, concerned with urban problems.

Because this program is interdisciplinary and the College believes that a student must be exposed to the theory, methodology, and fundamentals of research in a discipline, the urban studies concentration may be taken only in addition to a regular discipline major.

Requirements for the urban studies concentration are as follows:

Introductory Courses: Soc. 101, Ec. 101, P.S. 102. (Two of the sequences would have to be completed to fulfill the core curriculum requirement in Social Science.)

Core Courses in Urban Studies: Soc. 215, P.S. 214, Hist. 326, Practicum in either Political Science or Sociology, **or** the Methods course in Political Science or Sociology. (Students planning to do graduate work are strongly advised to take two methods courses, one in addition to that taken in their discipline major.)

Electives: 15 hours selected from the following: Anth. 370, 393; Ec. 212, 223, 224, 236, 245; P.S. 203, 205, 207, 210, 211, 232; Soc. 235, 251, 252, 275; Topics (398) in Economics, Political Science, Sociology and Anthropology, when topic applicable to Urban Studies.

No more than two courses from the core or electives may be double counted in the discipline major and the urban studies concentration.

Earth and Environmental Sciences is recommended as the student's choice in the natural science sequence of the core curriculum.

Advising will be in the department of the student's choice, but admission to the program and the keeping of records will be under the supervision of the Political Science Department.

Anthropology

ANTH. 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.

ANTH. 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: Anth. 101, or approval of instructor.

ANTH. 271. PHYSICAL ANTHROPOLOGY **Three credits**
The study of human biological make-up, diversity, and evolution. Topics presented include primate studies, primate taxonomy, and human biological and cultural evolutionary history.
Prerequisite: Anth. 101, or approval of instructor.

ANTH. 272. LINGUISTIC ANTHROPOLOGY **Three credits**
The structural and historical properties of human language. The study of relationships between language, culture and perception, and patterns of language use.
Prerequisite: Anth. 101, or approval of instructor.

ANTH. 273. ARCHAEOLOGY **Three credits**
A survey of the methods, techniques, and concepts employed by anthropologically oriented archaeologists to reconstruct and explain sociocultural variation through time. Illustrative material will be based on scientific findings. The course will include several field trips.
Prerequisite: Anth. 101, or approval of instructor.

ANTH. 300. MEDICAL AND PSYCHIATRIC ANTHROPOLOGY **Three credits**
The study of physical and mental health and treatment from a cross-cultural perspective. The role of culture in defining health-related categories. The study of treatment systems in other cultures. The relationships between culture, environment, and disease. The role of medical and psychiatric anthropology in designing inter-cultural health care delivery systems.
Prerequisite: Anth. 101, or Soc. 101, or approval of instructor.

ANTH. 301. ARCHAEOLOGICAL FIELD METHODS **Three credits**
The study and use of archaeological field and laboratory techniques. Students will participate in the field and laboratory conducting an archaeological excavation or survey under faculty supervision.
Prerequisite: Anth. 101, or approval of instructor.

ANTH. 370. ANTHROPOLOGICAL METHODS **Three credits**
A comprehensive survey of the methods employed by anthropologists to describe and analyze the properties of human cultures. The study of field techniques and the methods used in cross-cultural comparison.
Prerequisite: Anth. 101, or approval of instructor.

ANTH. 380. ANTHROPOLOGICAL THEORY **Three credits**
An intensive survey of the various strategies anthropologists have employed to characterize human culture. A critical evaluation of attempts to explain the nature of culture and the causes of cultural diversity.
Prerequisites: Anth. 101, or approval of instructor.

ANTH. 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 Anth. 101, or approval of instructor.

ANTH. 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.

ANTH. 397. SEMINAR **Three credits**
Presentations and discussions of selected themes and issues in anthropology.
Prerequisite: Criteria will vary according to content of seminar.

ANTH. 398. TOPICS **Three credits**
A study of topics of special interest not extensively treated in regularly offered courses.

ANTH. 399. PRACTICUM **Six credits**
A supervised practical field experience designed for anthropology majors that involves work in a professional setting.
Prerequisite: Approval of department.

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 Anth. 101, or approval of instructor.

SOC. 215. SOCIOLOGY OF URBAN LIFE **Three credits**
The development of modern cities; effects of urban life upon social organization and personality patterns; major social problems of the cities.
Prerequisite: Soc. 101 or Anth. 101, or approval of instructor.

SOC. 230. SOCIAL PROBLEMS **Three credits**
A suvey of most pressing contemporary social problems and an examination of current theories of social disorganization.
Prerequisite: Soc. 101 or Anth. 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 Anth. 101, or approval of instructor.

SOC. 240. MEDICAL AND PSYCHIATRIC SOCIOLOGY **Three credits**
A general survey of the application of sociology in two fields: (1) medicine — social and cultural factors affecting health and illness, doctor-patient relationships, the role of the patient, the hospital environment; and (2) psychiatry — social factors affecting the diagnosis, etiology, and treatment of mental disorders, the mental hospital as a social system, community psychiatry.
Prerequisite: Soc. 101 or Anth. 101, or approval 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 Anth. 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 Anth. 101, or approval of instructor.

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 Anth. 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 Anth. 101 or Psy. 101-102, or approval of instructor.

SOC. 265. SOCIOLOGY OF INDUSTRY **Three credits**
An analysis of the formal and informal social organization of the work plant and of the relationship between modern industrial organization and the community.
Prerequisite: Soc. 101 or Anth. 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 Anth. 101 or Psy. 101-102, 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 Anth. 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. 398. TOPICS **Three credits**
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.

Special Degree and Non-Degree Programs

Aerospace Studies

Professor Seizys, chairperson; Assistant Professors Jennings and Johnson; Coordinator Rost.

Air Force Reserve Officer Training Corps Program

The Air Force ROTC particpates with Wilkes College in a program which allows students to qualify for commissions in the United States Air Force upon graduation.

The Air Force ROTC (AFROTC) provides a four-year program divided into the General Military Course (GMC) in the first two years and the Professional Officer Course (POC) in the last two years. A student may elect to enroll in either the total four-year program or the POC. Students in the four-year program take the GMC during the freshman and sophomore years and the POC during the junior and senior years, attending four weeks of field training during the summer between the sophomore and junior years.

Members of the program are eligible to compete for full-tuition AFROTC scholarships.

For acceptance into the POC, the four-year program student must pass a physical examination and an Officer Qualifying Test and must have attained an acceptable academic rating.

To qualify for direct entrance in the two-year POC program, students must have two academic years remaining at either the undergraduate or graduate level or a combination of the two. They must meet the physical standards, pass an Officer Qualifying Test, have an acceptable academic rating, and must successfully complete a six-week field training course.

Uniforms, equipment, and textbooks for AFROTC work are supplied by Wilkes College and the United States Air Force. Students in the POC and GMC students with scholarships receive a $100.00 per month tax-free subsistence 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 as close as feasible to their academic training and consistent with Air Force needs. Qualified students have the opportunity to compete for entry into an Air Force training program as pilots or navigators.

Four semester hours of credit may be earned in the GMC and 12 semester hours in the POC. There is also a one-hour course for pilot or navigator candidates.

All courses and Corps Training are conducted at Wilkes College.

The field training required before entry into the POC is held at several operational bases each summer. Cadets have the opportunity to observe, fly, and live with career personnel. 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 $300.00 for the four-week field training or $450.00 for the six-week training period.

The Department of Aerospace Studies at Wilkes College conducts a number of field trips to Air Force installations. The trips include tours of the base and familiarization flights.

Supplemental Courses Program

This program exists to enhance the career utility and officer performance of students commissioned through AFROTC. The program consists of required and recommended college-taught courses. All POC cadets and GMC scholarship cadets must successfully complete the required supplemental courses in addition to all aerospace studies courses.

GMC scholarship cadets must successfully complete by the end of the GMC a course in English composition. 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. This course should include the acquisition of a specific skill.

Flight Instuction Program

This program, designed for cadets in the POC who propose to enter Air Force pilot training upon graduation, 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 by a certified civilian flying school at government expense.

Corps Training

AFROTC cadets must participate in Corps Training two hours every other week during each semester. This program, better known as Leadership Laboratory, involves a progression of experience designed to develop each student's leadership potential in a supervised training laboratory. Areas examined: Air Force customs and courtesies; drill and ceremonies; career opportunities; 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, leadership training activities, take aircraft orientation flights, and work with contempories from other colleges and universities.

General Military Courses

The General Military Courses (GMC) constitute a two-year program for freshmen and sophomores 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 P.E. 100 series.**

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; study of information systems, quantitative approach to decision making, and resource control techniques; development of communicative skills.
Prerequisite: POC membership. **Note: AFROTC cadets may substitute AS 301 for B.A. 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.

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.

FLIGHT PROGRAM GROUND TRAINING — **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 any junior or senior. Two hours of class per week.

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 empoyer and the College. Through alternating semesters of full-time study and **full-time** professional work experience, students enhance their academic knowledge as well as advance their professional preparation. The student may earn **twelve credit hours** for a full-time professional semester. No more than a total of 24 semester hours may be obtained in the Cooperative Education Program. A maximum of six semester hours of this work may obtained in a given participating department, with departmental approval.

In addition to the full-time alternating program of study and work, 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 approximately one-half time in the classroom. In the parallel program, a student may earn six semester hours for a professional semester part-time. (No more than a total of 24 semester hours may be obtained in the Cooperative Education Program.)

Cooperative Education credit will appear on the student's transcript as Cooperative Education 301 for 3 semester hours of work, 302 for 6 semester hours, 303 for 9 semester hours, and 304 for 12 semester hours of work. If some of the credit is taken in a participating department, a special department course number will appear. The name of the participating company, institution, or agency shall also appear on the transcript.

The program is open to students majoring in any of the College's academic disciplines when they obtain permission from their academic adviser. Interested students may contact Mr. Robert Koester in the Career Planning Center (rear 34 S. River Street) or Dr. James Rodechko in Franklin Hall.

Special Degree Programs

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 chairperson.

Degree requirements

All requirements for both degrees must be met. In addition, Math. 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.

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/or travel. Credits may be granted for

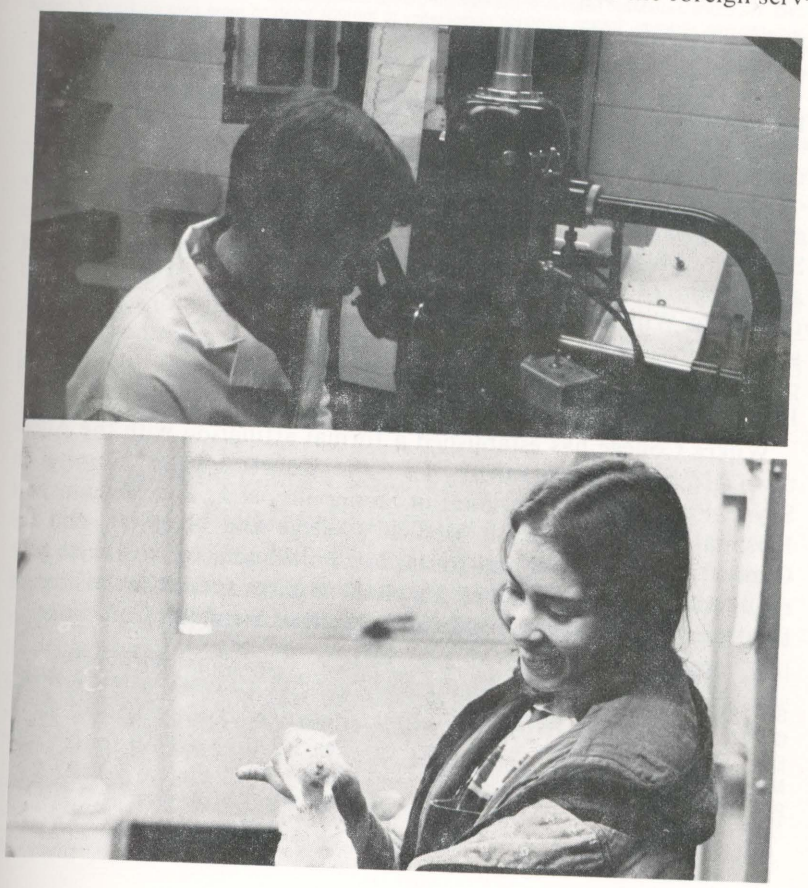
knowledge or experience obtained prior to enrollment, with approval of the appropriate department and the Individualized Studies Committee.

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

This interdisciplinary program, organized around four of the social science departments at Wilkes College, provides a wider and more comprehensive background in world affairs than is available in any one of the individual departments. The B.A. program is designed to open up career opportunities in such diverse fields as the foreign serv-



ice, other governmental or intergovernmental work, international business, international finance and law. The major requirements of this program follow:

MAJOR REQUIREMENTS	Hours
Ec. 101, 102	6
P.S. 101, 102	6
Soc. 101 & Anth. 101	6
Seminar I & II	6
Foreign Language	6
	30

MAJOR ELECTIVES	Hours
Ec. 224, 225, 226, 227, 228, 229	9
Hist. 327, 328, 341, 342, 347, 348, 356, 361, 362, 363, 364, 367, 381, 382	9
P.S. 222, 223, 224, 225, 226, 398 (if topic is relevant)	9
Soc. 252, 275. 398 (if topic is relevant), Anth. 270 and 272, 398 (if topic is relevant)	9
	36

CORE: The CORE distribution requirement listed in the College Bulletin shall be fulfilled. The International Studies major requires, however, foreign language competency to the 204 level; no more than six hours of foreign language may be applied to the humanities distribution; Hist. 101-102 also is recommended in the International Studies major.

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

Medical Technology

The American Society of Clinical Pathologists and the American Society of Medical Technologists recommend 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. The final year in this program is taken in hospitals approved for such training by the American Society of Clinical Pathologists.

Wilkes College has established a formal affiliation with the Allentown Hospital in Allentown, Pa., the Robert Packer Hospital in Sayre, Pa., Somerset Hospital in Somerville, N.J., the Williamsport Hospital, the Hahnemann Medical College and Hospital, and the General Hospital in Wilkes-Barre, Pa. Fulfillment of the fourth year requirement at non-affiliated hospitals requires special permission of the department chairperson and of the Academic Standards Committee.

FIRST SEMESTER	
Bio. 201-202	5
Chem. 115	4
Eng. 101	3
Math. 105	4
P.E. 100	0
	16

SECOND SEMESTER	
Bio. 203-204	5
Chem. 116	4
Eng. 102	3
Math. 106	4
P.E.100	0
P.E. 105-106	2
	18

THIRD SEMESTER	
Bio. 205-206	5
Chem. 221	4
Eng. 151	3
Hist. 101	3
Social Science Elective	3
P.E. 100	0
	18

FOURTH SEMESTER	
Bio. 207-208	5
Chem. 130	4
Eng. 152	3
Hist. 102	3
Social Science Elective	3
P.E. 100	0
	18

FIFTH SEMESTER	
Bio. 303	3
Bio. 307	3
C.S. 123	3
Phys. 105	4
Elective	3
	16

SIXTH SEMESTER	
Bio. 302	3
Bio. 313	3
Phys. 106	4
Phys. 320	3
Elective	3
	16

SEVENTH SEMESTER[1]

EIGHTH SEMESTER

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.[2]

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.

Wilkes-Hahnemann Cooperative Medical Education Program in Family Medicine

In an effort to increase the number of family physicians in Northeastern Pennsylvania, Wilkes College and Hahnemann Medical College and Hospital initiated an innovative program in family medicine in September of 1972. Successful completion of the program will enable a student to earn both the baccalaureate degree and the Doctor of Medicine degree concurrently seven years after entering the freshman year at Wilkes College.

[1] In lieu of the senior academic year on campus, one calendar year of study is required at an accredited school of medical technology.

[2] Students enrolled in the Wilkes-Hahnemann program receive the B.S. degree at the end of six years.

In this program a student will spend the first three years at Wilkes in a pre-professional health sciences curriculum which will meet the minimum natural science, social science, and communicative skills requirements for potential entry into the medical component of the program. The curriculum is designed with a high degree of flexibility so that a highly motivated student may select a major from a variety of health-related disciplines such as biology, chemistry, physics, medical technology, psychology, and sociology-anthropology, as well as such non-related areas as English, history, mathematics, political science, and philosophy.

After completion of the three-year Wilkes sequence, a Joint Selection Committee will supervise the selection of approximately twenty qualified candidates for entrance into the medical component at Hahnemann Medical College. Students who are not selected or do not elect to enter Hahnemann Medical College may still pursue a variety of degree options offered by Wilkes.

The next three years at Hahnemann Medical College will be spent studying the basic and clinical sciences and advanced basic clinical sciences. The final year will be spent in Wilkes-Barre at Wilkes College and the Wilkes-Barre/Scranton area hospitals (Mercy Hospital, Wilkes-Barre; Nesbitt Memorial Hospital, Kingston; Veterans Administration Hospital, Wilkes-Barre; Wilkes-Barre General Hospital; Wyoming Valley Hospital, Wilkes-Barre; and Community Medical Center, Scranton), where students will enter the family medicine track of study and complete the baccalaureate degree requirements. Students interested in this accelerated program can make application by obtaining a Wilkes College admission form from the Dean of Admissions.

Admission to this program is limited to students from twenty counties in Northeastern Pennsylvania. A list of these counties can be obtained by writing or calling the Wilkes Hahnemann Office at Wilkes College (717) 825-6744.

Admission to the Wilkes-Hahnemann program does not imply automatic admission into the Hahnemann Medical School component.

Pre-Professional Programs in Health Sciences — Family Medicine[1]

FIRST YEAR

Wilkes College

FIRST SEMESTER		SECOND SEMESTER	
Bio. 201-202	5	Electives	5-6
Chem. 115	4	Chem. 116	4
Eng. 101[2]	3	Eng. 102	3
Math. 105 or 111	4	Math. 106 or 112	4
P.E. 100	0	P.E. 100	0
P.E. 105[3] (optional)	1	P.E. 106[3] (optional)	1
	16-17		17-18

SECOND YEAR

Wilkes College

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205-206	5	Chem. 232	4
Chem. 231	4	Electives (including core electives)	12-14
Electives (including core electives)	7	P.E. 100	0
P.E. 100	0		
	16		16-18

THIRD YEAR

Wilkes College

FIFTH SEMESTER		SIXTH SEMESTER	
Electives (including core electives)	16-18	Electives (including core electives)	16-18

Students must complete the general core requirements. However, all students must complete Psy. 101-102. Phys. 105-106 or Phys. 201-202 must be taken in the second or third year.

Medical Component[1]

FOURTH YEAR

Hahnemann Medical College, Philadelphia, Pa.

Biochemistry
Developmental Biology (Gross Anatomy, Histology, Neuroanatomy, Genetics)
Physiology
Microbiology
Pharmacology
Pathology
Medical Problems
Human Behavior
Clinical Science
Summer Vacation

[1]Subject to change without prior notice. Because of the rapid changes in the area of medical education, the changes in the program occur more often and are more extensive than in other Wilkes College programs.

[2]Students may obtain advanced placement in English Composition.

[3]Students who are not selected to enter Hahnemann after three years or who elect not to participate in the program will be required to take P.E. 105-106 (Hygiene) before graduation from Wilkes.

FIFTH YEAR

CLINICAL CLERKSHIP ROTATIONS

Medicine (12 weeks)
Surgery (12 weeks)
Family Medicine (6 weeks)
Pediatrics (6 weeks)
Obstetrics/Gynecology (6 weeks)
Psychiatry (6 weeks)
Vacation (6 weeks)

SIXTH YEAR

Hahnemann Medical College, Philadelphia, Pa.

Advanced Basic Science and Clinical Electives

Wilkes College and Wilkes-Barre/Scranton Area Hospitals

Vacation and/or Free Elective Periods
Family Medicine Track Rotations

SEVENTH YEAR

Wilkes College and Wilkes-Barre/Scranton Area Hospitals

Family Medicine Track Rotations

Graduate Level Courses at Wilkes College

B.A. 398. TOPICS IN BUSINESS ADMINISTRATION **Six credits**

This course consists of modules dealing with accounting, insurance, business administration, law, and economics. A specialist will teach each segment. It is designed to prepare a person to provide a more efficient delivery of his activity in that the internal organization of his operation can be dealt with in a more knowledgeable manner.

SOC. 398. TOPICS IN SOCIOLOGY **Three credits**

Physician, Patient, and Society

This course explores socio-cultural components of illness, quality of health services, social and psychological factors affecting disease processes, problems of socially structured stress, coping with terminal or chronic illness, referral processes and their organization, and strain and problems facing the hospitalized patient.

P.S. 398. TOPICS IN POLITICAL SCIENCE **Three credits**

Health Care Delivery, Policy, Politics

Examination of the processes of government at both the Federal and local levels, and of the particular processes involved in the development and implementation of health care policy; critical analysis of the pluralist and elitist interpretations of the political process; discussion of the strategies of the citizen, community organization, and political representatives in policy formation.

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 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 at Wilkes College in the program and four years 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 96½–106½ 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. 201-202	5
Chem. 115	4
Eng. 101	3
Math. 105 or 111	4
P.E. 105	1
P.E.100	0
	17

SECOND SEMESTER	
Chem. 116	4
Eng. 102	3
Math. 106 or 112	4
Electives	5-6
P.E. 106	1
P.E. 100	0
Health Profession Orientation	0
	17-18

THIRD SEMESTER	
Bio. 205-206	5
Chem. 231	4
Psy. 101	3
Electives	3-6
P.E. 100	0
	15-18

FOURTH SEMESTER	
Bio. 207	2½
Chem. 232	4
Psy. 102	3
Electives	6-8
P.E. 100	0
Health Profession Orientation	0
	15½-17½

FIFTH SEMESTER	
Phys. 201	4
Electives	12-14
	16-18

SIXTH SEMESTER	
Phys. 202	4
Electives	12-14
Health Profession Orientation	0
	16-18

Total electives available . . . . . 38-48 credits
Core requirements (not listed) . . . . . 29 credits
Required beyond above: Math. 150 . . . . . 3 credits
Credits available for other courses . . . . . 6-16 credits
In addition . . . . . four years at Pennsylvania College of Optometry

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 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 at Wilkes College in the program and four years 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 97–107 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	
Bio. 201-202	5
Chem. 115	4
Eng. 101	3
Math. 105 or 111	4
P.E. 105	1
P.E.100	0
	17

SECOND SEMESTER	
Chem. 116	4
Eng. 102	3
Math. 106 or 112	4
Electives	5-6
P.E. 106	1
P.E. 100	0
	17-18

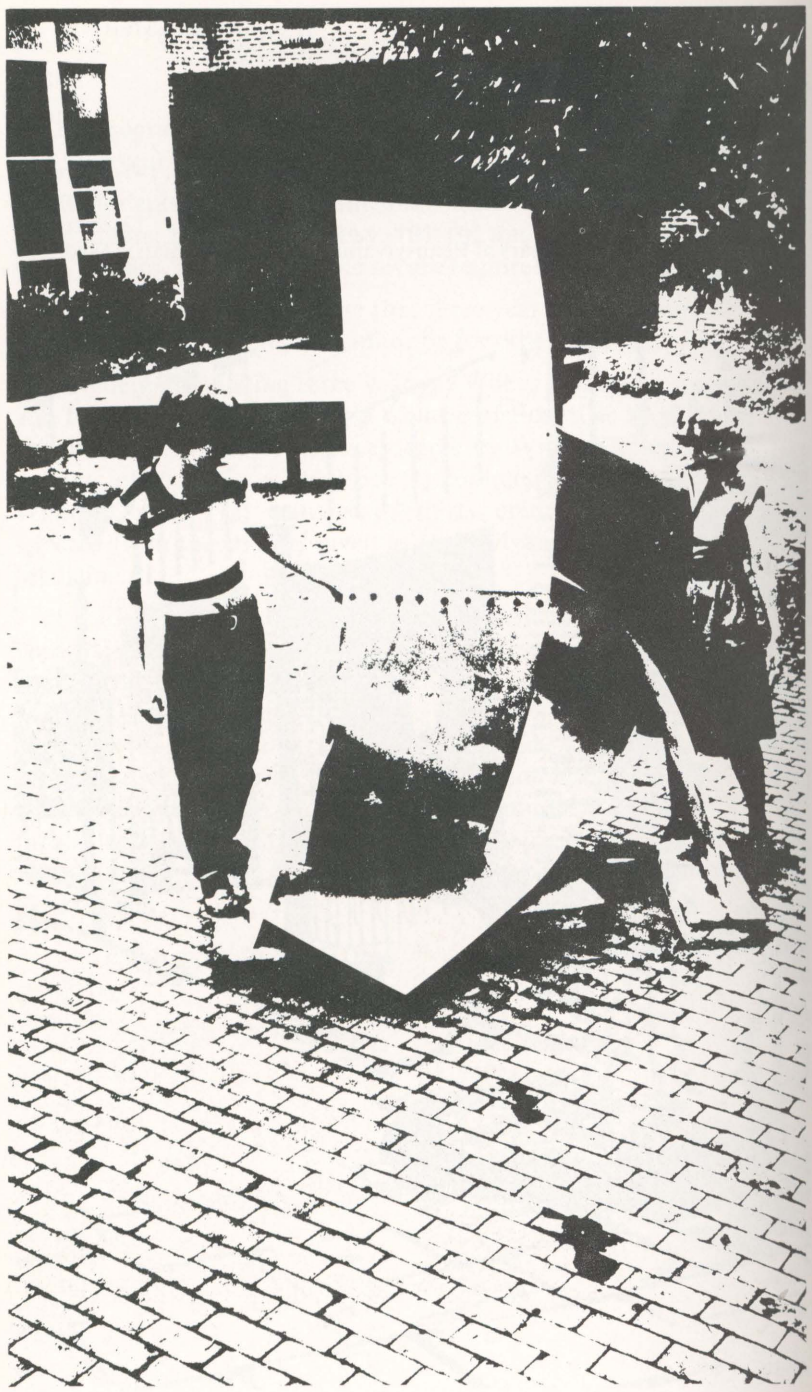
THIRD SEMESTER	
Bio. 205-206	5
Chem. 231	4
Psy. 101	3
Electives	3-6
P.E. 100	0
	15-18

FOURTH SEMESTER	
Chem. 232	4
Psy. 102	3
Electives	9-11
P.E. 100	0
	16-18

FIFTH SEMESTER	
Phys. 105 or 201	4
Electives	12-14
	16-18

SIXTH SEMESTER	
Phys. 106 or 202	4
Electives	12-14
	16-18

Total electives available . . . . . 41-51 credits
Core requirements (not listed) . . . . . 29 credits
Available for other courses . . . . . 12-22 credits
In addition . . . . . four years at Pennsylvania College of Podiatric Medicine



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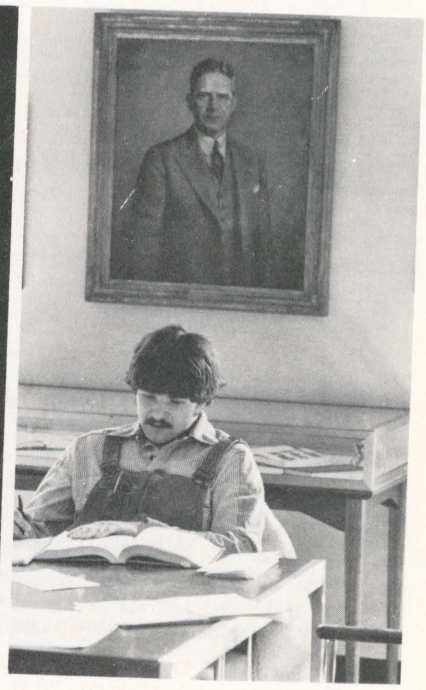

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B.S., M.B.A. (Wilkes)

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Family Practice Residency Program, Kingston, Pa.

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B.S. (Wyoming), M.S. (Wilkes)

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Family Practice Residency Program, Kingston, Pa.

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B.A. (Syracuse), M.A. (Columbia)

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B.S. (Wilkes), M.Ed. (Pennnsylvania State)

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B.A. (Wilkes), M.S. (Scranton), Ed.D. (Lehigh)

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B.A. (William & Mary), Ph.D. (Iowa)

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B.S., M.S. (Pennsylvania State), LL.B. (George Washington), M.D. (Hahnemann)

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B.S. (Bloomsburg), M.S. (Columbia)

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DANIEL R. GOLDMAN	Sociology & Anthropology
DALE A. BUEHLER	Library

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In alphabetical order, with date of appointment following the name.

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B.A. (Maryland), M.A., Ph.D. (Northwestern)

* * * * * * * * * * * * * * * * *

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B.S. (Lock Haven State), M.S. (SUNY, Albany)

ALIREZA AFRASHTEH (1977), Assistant Professor of Engineering
B.S., M.S. (Pahlavi, Iran), Ph.D. (Texas at Austin)

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B.S., M.S. (Juilliard); Fulbright Fellow, Staatliche Hochschule fur Musik, Koln, Germany, 1954-1955, 1955-1956

CARL J. CHARNETSKI (1976), Assistant Professor of Psychology
B.A. (Wilkes), M.A., Ph.D. (Temple)

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B.A. (Wilkes)

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B.S. (Massachusetts School of Art), M.S. (Columbia)

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B.S. (Rhode Island), M.A. (Columbia)

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BOYD L. EARL (1963), Associate Professor of Mathematics and Computer Science
B.S. (Wilkes), M.S. (Bucknell)

GEORGE F. ELLIOT (1950), Professor of Economics
B.A. (Montclaire State), M.A. (Clark)

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MAHMOUD H. FAHMY (1968), Associate Professor of Education
B.A. (Alexandria, Egypt), M.A. (Columbia), Ph.D. (Syracuse)

H. CUTLER FALL (1969), Assistant Professor of Music
B.A. (Brown), M.A. (Yale), Ph.D. (California State, Santa Barbara)

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
B.A. (Wilkes), M.A. (Bucknell), Ph.D. (Pennsylvania State)

SHARON S. FORLENZA (1979), Assistant Professor of Nursing
B.S. (Wilkes), M.S. (Maryland at Baltimore)

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B.F.A. (Florida Atlantic), M.F.A. (Kent State)

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B.S., M.A. (Columbia)

CATHERINE A. McKENNA (1978), Associate Professor of Nursing
B.S., M.S. (Catholic University of America)

SAMUEL MERRILL, III (1973), Associate Professor of Mathematics and Computer Science (On Leave)
B.A. (Tulane), M.A., Ph.D. (Yale)

GAY F. MEYERS (1970), Assistant Professor of Physical Education and Hygiene
B.S. (Lock Haven), M.S. (Wilkes)

JOHN F. MEYERS (1967), Assistant Professor of History
B.A. (Minnesota), M.A. (Clark)

WILLIAM R. MORAN (1979), Assistant Professor of Accounting
B.S. (Wilkes), M.B.A. (Penn State)

IRWIN MORRISON (1974), Assistant Professor of Accounting
B.B.A. (CCNY), LL.B. (Brooklyn), LL.M. (New York), C.P.A. (State of New York)

SUNDARAM NATARAJAN (1979), Assistant Professor of Engineering
B.S. (Madras), M.Tech. (IIT), Ph.D. (Concordia)

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UMID R. NEJIB (1965), Professor of Engineering
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LEOTA NEVIL (1968), Assistant Professor of Library Science
B.S. (Bloomsburg), M.S. (Wilkes)

ROBERT E. OGREN (1963), Associate Professor of Biology
B.A. (Wheaton), M.S. (Northwestern), Ph.D. (Illinois)

NANCY A. ONUSCHAK (1978), Assistant Professor of Nursing
B.S., M.S. (Wilkes)

JOHN L. OREHOTSKY (1971), Associate Professor of Engineering
B.S. (M.I.T.), M.S. (Polytechnic Institute of Brooklyn), Ph.D. (Syracuse)

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B.S. (Stanford), Ph.D. (California Institute of Technology)

ALEX PAWLENOK (1967), Associate Professor of Accounting
B.S. (Wilkes)

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B.S. (Wilkes), M.Ed. (Pennsylvania State)

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B.A., M.A., Ph.D. (Pittsburgh)

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B.S.N. (Western Ontario), M.Ed. (Columbia)

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B.A., M.A., M.L.S. (California)

BRIAN T. REDMOND (1976), Instructor of Earth and Environmental Sciences
B.S., M.S. (Michigan State)

JOHN G. REESE (1955), Professor of Physical Education and Hygiene
B.S., M.Ed. (Pennsylvania State)

CHARLES B. REIF (1942), Professor of Biology
B.A., M.A., Ph.D. (Minnesota)

THOMAS R. RICHARDS (1943), Professor of Mathematics and Computer Science
B.S. (Pennsylvania State), M.S. (Bucknell)

RONALD RIGHTER (1979), Instructor of Physical Education and Hygiene
B.A. (St. Joseph's), M.Ed. (Lehigh)

LOUIS RIGLEY (1974), Assistant Professor of Biology
B.S. (Alderson-Broaddus), Ph.D. (West Virginia)

ROBERT C. RILEY (1949), Professor of Psychology
B.A. (Bucknell), Ph.D. (Pennsylvania State)

PHILIP L. RIZZO (1957), Professor of English
B.A., M.A., Ph.D. (Pennsylvania)

NANCY LEE ROBERTS (1979), Instructor of Physical Education and Hygeine
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JAMES P. RODECHKO (1968), Professor of History
B.A. (Hofstra), M.A., Ph.D. (Connecticut)

RALPH B. ROZELLE (1962), Professor of Chemistry
B.S. (Wilkes), Ph.D. (Alfred)

FRANCIS J. SALLEY (1950), Professor of Chemistry
B.S. (St. Joseph's), M.S. (Pennsylvania)

JOSEPH H. SALSBURG (1959), Associate Professor of Mathematics and Computer Science
B.A. (Bucknell), M.A. (Columbia)

ROSENDO E. SANTOS, JR. (1968), Assistant 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)

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)

EVA E. SCHULER (1978), Associate Professor of Nursing
B.S., M.S. (Washington)

NORMA M. SCHULMAN (1979), Assistant Professor of English and Communication Studies
B.A. (Barnard), M.A., M.S. (Boston), Ph.D. (Tufts)

ANTHONY W. SEIZYS (1977), Professor of Aerospace Studies
B.S. (U.S. Air Force Academy), M.S. (Ohio State)

KUO-KANG SHAO (1966), Associate Professor of History
B.A. (Taiwan), M.S., Ph.D. (Pennsylvania)

JAY D. SIEGFRIED (1979), Assistant Professor of Theater Arts
B.A. (Yankton), M.A., M.F.A. (Iowa)

J. GEORGE SILES (1963), Associate Professor of Education
B.A. (Wilkes), M.S. (Scranton), Ed.D. (Lehigh)

HERBERT B. SIMON (1969), Associate Professor of Art
B.A., M.A. (New York)

ELAINE A. SLABINSKI (1976), Assistant Professor of Nursing
B.S. (Wilkes), M.S. (Rochester)

RICHARD E. SOURS (1965), Associate Professor of Mathematics and Computer Science
B.S. (Towson), M.S. (Michigan State), Ph.D. (Virginia)

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)

JOHN C. STEVENS (1979), Assistant Professor of Philosophy
B.A. (Reed), M.A., Ph.D. (Chicago)

WILLIAM R. STINE (1965), Professor of Chemistry
B.S. (Union), Ph.D. (Syracuse)

HOWARD A. SWAIN, JR. (1960), Professor of Chemistry
B.S. (Grove City), Ph.D. (Pennsylvania)

WAGIHA ABDEL-GAWAD TAYLOR (1969), Professor of Economics
B.A. (Alexandria), M.A. (Brown), Ph.D. (Clark)

SHARON G. TELBAN (1975), Instructor in Nursing
B.S., M.S. (Wilkes)

LEE C. TERRY (1968), Associate Professor of English
B.A. (Southern Methodist), Ph.D. (Texas)

STEPHEN J. TILLMAN (1970), Associate Professor of Mathematics and Computer Science
B.S. (Brown), M.S. (Lehigh), Ph.D. (Brown)

SUE A. TOPFER (1979), Instructor of Library Science
B.S. (Ursinus), M.S. (Syracuse)

JAMES L. TRUCKENMILLER (1975), Assistant Professor of Psychology
B.A. (Franklin & Marshall), M.A., Ph.D. (West Virginia)

PHILIP R. TUHY (1960), Assistant Professor of Political Science
B.A. (Valparaiso), M.G.A. (Pennsylvania)

LESTER J. TUROCZI (1972), Associate Professor of Biology
B.A., M.S., Ph.D. (Rutgers)

BRUCE W. WEAL (1978), Instructor of Communication Studies
B.A., M.A. (Maryland)

ROBERT E. WERNER (1955), Professor of Economics
B.A. (Roosevelt), M.S., Ph.D. (Wisconsin)

HOWARD WILLIAMS (1973), Associate Professor of Economics
B.S. (Wilkes), M.A., Ph.D. (Pennsylvania State)

ROY E. WILLIAMS (1967), Professor of Philosophy
B.A. (Eastern Nazarene), S.T.B. (Temple), Ph.D. (Drew)

BING K. WONG (1968), Professor of Mathematics and Computer Science
B.A. (Kansas State at Pittsburgh), M.A., Ph.D. (Illinois)

Adjunct Faculty

KATHERINE KABY ANSELMI (1979), Nursing
B.S. (Wilkes)

MARY P. BABCOCK (1972), Nursing
B.A. (Wilkes), M.S. (Scranton)

ABRAHAM D. BARRAS (1971), Philosophy
B.A. (Columbia), B.Rel.Ed., M.H.L., D.H.L. (Jewish Theological Seminary)

ANNE BELZECKY (1979), Medical Technology
School of Medical Technology, Allentown General Hospital

JAMES L. BENDER (1974), Medical Technology
School of Medical Technology, Robert Packer Hospital

MADELINE BONADIES (1978), Medical Technology
School of Medical Technology, The Somerset Medical Center

JOHN L. DAMASKA (1979), Medical Technology
School of Medical Technology, The Williamsport Hospital

BARBARA G. DEMORY (1979), Sociology and Anthropology
B.A. (California State), M.A., Ph.D. (California, Berkeley)

LILLIAN W. DUFFY (1976), Director, Nursing Learning Center
B.S. (Misericordia)

JOAN GOLDSMITH (1979), Political Science
B.A. (Denisen), J.D. (Vanderbilt)

PATRICIA M. HEAMAN (1966), English
B.A. (Wilkes), M.A., Ph.D. (Pennsylvania)

NAOMI D. JAMIESON (1978), Nursing
B.S., M.S. (Temple)

JOSEPH H. KANNER (1949), Psychology
B.A. (Bucknell), M.A. (New School for Social Research)

BRONIS KASLAS (1949), History
LL.B. (Kaunas, Lithuania), M.A., Ph.D. (Strasbourg)

ANNE VANKO LIVA (1970), Music
(Juilliard)

CHARLOTTE V. LORD (1962), English
B.S. (New York), M.A. (Bucknell), M.A. (Middlebury), Ph.D. (Pennsylvania)

ROSS L. MANTIONE (1978), Mathematics and Computer Science
B.A. (Wilkes)

TERESA B. McDONALD (1972), Political Science
B.S. (Bloomsburg), M.P.A. (Pennsylvania State)

EDWARD MISAKONIS (1979), Nursing
B.S. (Wilkes)

DIANA W. MORGAN (1975), Nursing
B.S. (Wilkes)

BARBARA ANN ONDRICK (1979), Nursing
B.S. (Misericordia)

VINCENT OSADCHY (1976), Engineering
B.S. (Muhlenberg), M.S. (Wilkes)

GEORGE G. PAWLUSH (1969), English
B.S., M.S. (Wilkes)

ELLEN M. PROELLER (1976), Nursing
B.S. (Pittsburgh)

RICHARD G. RASPEN (1967), Business Administration
B.S. (Wilkes), M.Ed. (Bloomsburg)

HELEN M. RUANE (1974), Wilkes-Hahnemann Program
School of Medical Technology, Wilkes-Barre General Hospital

SANDRA J. SABBATINI (1979), Nursing
B.S. (Wilkes)

ANDREW SHAW, JR. (1972), Political Science
B.S. (Wilkes), M.G.A. (Pennsylvania), D.P.A. (Nova)

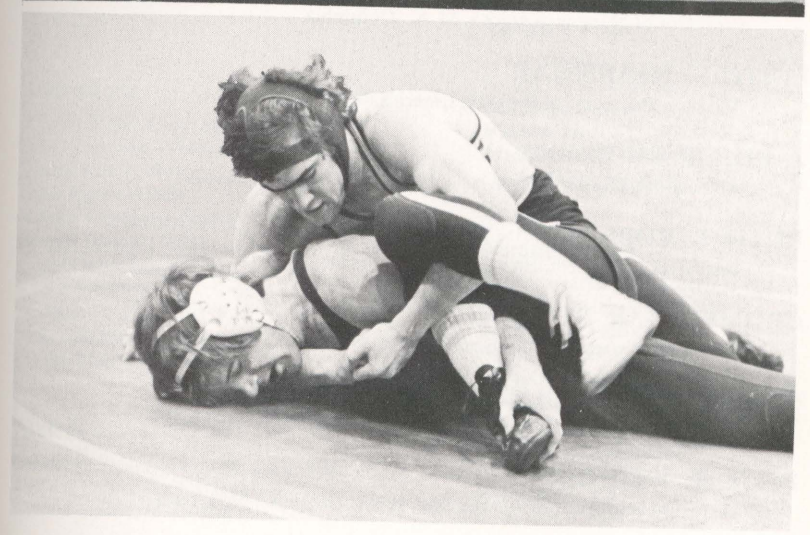
CROMWELL E. THOMAS (1946), Engineering
B.S. (Washington and Lee)

DELIA M. TORREGIANI (1977), Nursing
B.S. (Misericordia)

ANTHONY J. TURCHETTI (1973), Wilkes-Hahnemann Program
B.S., M.S. (Pennsylvania State), LL.B. (George Washington),
M.D. (Hahnemann)

MARILYN WODASKI (1979), Art
B.A. (Wilkes)

CAROL WOLFE ZACK (1979), Nursing
B.S. (Bloomsburg)



Emeriti

ALFRED W. BASTRESS
Professor of Chemistry, Emeritus. Ph.D., Yale

CATHERINE H. BONE
Assistant Professor of Chemistry, Emerita. M.S., Pennsylvania State

FRANK J. J. DAVIES
Professor of English, Emeritus. Ph.D., Yale

ELWOOD DISQUE
Associate Professor of German, Emeritus. B.A., Dickinson

RUTH W. JESSEE
Professor of Nursing Education, Emerita. Ed.D., Pennsylvania

BRONIS KASLAS
Professor of History, Emeritus. Ph.D., Strasbourg

GRACE C. KIMBALL
Associate Professor of Biology, Emerita. Ph.D., Cornell

ANNE VANKO LIVA
Associate Professor of Music, Emerita. Juilliard

CHARLOTTE V. LORD
Professor of English, Emerita. Ph.D., Pennsylvania

RUTH W. McHENRY
Professor of Nursing, Emerita. M.A., Columbia

EDITH S. NAMISNIAK
Assistant Professor of Biology, Emerita. M.A., Michigan

J. PHILIP RICHARDS
Associate Professor of Fine Arts, Emeritus. B.F.A., Syracuse

RUTH T. ROBERTS
Instructor of English, Emerita. B.A., Goucher

CROMWELL E. THOMAS
Associate Professor of Engineering, Emeritus. B.S., Washington and Lee

STANLEY H. WASILESKI
Assistant Professor of Mathematics, Emeritus. M.S., Bucknell

PAUL R. WERNER
Associate Professor of Accounting, Emeritus. M.A., New York

Standing Committees of the Faculty

The following are the Faculty Committee assignments made for the academic year 1978-79. The President is ex-officio on all Committees except Committees on Academic Freedom.

Academic Freedom

Mediation
Jean Driscoll (1980)
Robert Riley (1981)
James DeCosmo (1982)
Howard Williams, Alt. (1982)

Faculty-Trustee
Francis Salley (1980)
Benjamin Fiester (1982)
George Elliot, Alt. (1982)

Academic Standards

Owen Faut, Chairperson (1982)
Welton Farrar (1980)
Herbert Garber (1980)
David Leach (1980)
John Orehotsky (1980)
Harold Cox (1981)
Robert Doty (1981)
Stanley Gutin (1981)
Joseph Salsburg (1981)
Robert Riley (1982)
Boyd Earl (1982)
Stanley Kay (1982)
Ruth McHenry
Jane Lampe
George Ralston
Gerald Hartdagen
Doris Barker, Sec.

Admissions

William Stine, Chairperson (1982)
Edwin Johnson (1980)
Stanley Kay (1980)
Louis Rigley (1980)
William Gasbarro (1981)
Herbert Simon (1981)
Nancy Onuschak (1981)
John Koch (1982)
Madeleine Carlin (1982)
John Whitby
Gerald Wuori

Athletic

James DeCosmo, Chairperson (1980)
Alex Pawlenok (1980)
William Gasbarro (1980)
Olivia Ayres (1981)
Welton Farrar (1981)
Judith Rasson (1981)
Gay Meyers (1982)
Doris Saracino (1982)
George Elliot (1982)
Arthur Hoover
John Reese

Curriculum

James Rodechko, Chairperson
Howard Swain (1980)
Theodore Engel (1980)
William Sterling (1980)
Judith Rasson (1980)
Jean Driscoll (1981)
Donald Henson (1981)
Walter Karpinich (1981)
Lester Turoczi (1981)
Umid Nejib (1982)
Steve Tillman (1982)
Olivia Ayres (1982)
Edwin Jahngen (1982)
Gerald Hartdagen

Faculty Policy

Francis Salley, Chairperson (1982)
Joseph Bellucci (1980)
Benjamin Fiester (1980)
Wagiha Taylor (1980)
Jean Driscoll (1981)
Lester Turoczi (1982)

Financial Aid

Walter Placek, Chairperson (1981)
Carl Charnetski (1980)
Boyd Earl (1980)
Alireza Afrashteh (1980)
John Orehotsky (1981)
Philip Tuhy (1981)
Edwin Johnson (1982)
Brian Redmond (1982)
Jean Berry (1982)
Richard Raspen
C. Steven Gurdin, Jr.

Standing Committees of the Faculty

The President is ex-officio on all Committees except Committees on Academic Freedom.

Graduate Studies

Franck Darte, Chairperson (1980)
Frank Donahoe (1980)
Clyde Housknecht (1980)
Kuo-Kang Shao (1980)
Robert Heaman (1980)
Roy Williams (1981)
Bing Wong (1981)
James Bohning (1981)
Louis Rigley (1982)
Levere Hostler (1982)
Philip Tuhy (1982)
Richard Aston (1982)
John Meyers
Howard Williams

Library

Wilbur Hayes, Chairperson (1981)
Frederick Krohle (1980)
Robert Ogren (1980)
Michael Case (1980)
Donald Leslie (1980)
Benjamin Fiester (1981)
John Natzke (1982)
Mary Onuschak (1982)
Levere Hostler (1982)
Mary Rarig
Dale Buehler

Student Life

Robert Freysinger, Chairperson (1981)
H. Cutler Fall (1980)
Doris Saracino (1980)
Scott Arnold (1980)
Adelaide Godek (1981)
Linda Giordano (1981)
Bruce Brown (1982)
Richard Fuller (1982)
Christopher Fox (1982)
Arthur Hoover
George Ralston
Sharon Telban

Student Publications

Lee Terry, Chairperson (1980)
Chester Colson (1980)
Walter Karpinich (1980)
Patricia Hoffer (1981)
Donald Leslie (1981)
Leota Nevil (1981)
Bradford Kinney (1982)
John Hardie (1982)
Rosendo Santos (1982)
Jane Lampe
George Pawlush

Teacher Recognition and Effectiveness

Elaine Slabinski, Chairperson (1981)
Leonard Powlick (1980)
George Gera (1980)
Rosendo Santos (1980)
Marion Alexander (1981)
John Erickson (1981)
Joseph Parker (1982)
John Natzke (1982)
James Truckenmiller (1982)
Richard Rees
Anthony Seizys

Tenure and Promotion

Social Sciences
David Leach (1980)
Wagiha Taylor (1981)

Natural Sciences and Mathematics
Richard Sours (1980)
James Bohning (1981)

Humanities
Donald Henson (1980)
Stanley Gutin (1981)

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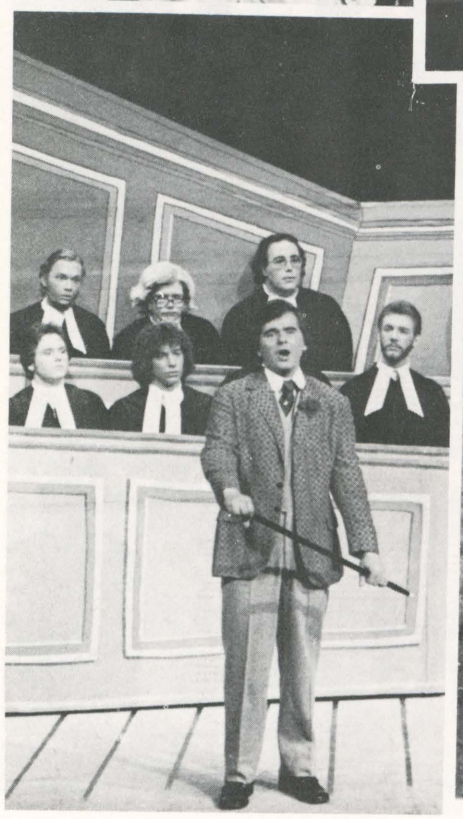


College Calendar

FALL SEMESTER — 1979

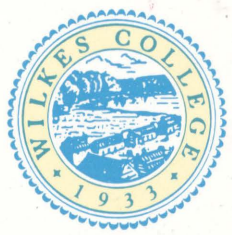
Classes Commence	Tuesday, September 4—8 a.m.
Thanksgiving Break	Tuesday, November 20—10 p.m.
Classes Resume	Monday, November 26—8 a.m.
Classes End	Thursday, December 13—10 p.m.
Final Examinations Begin	Saturday, December 15—8 a.m.
Free Day	Sunday, December 16
Final Examinations Resume	Monday, December 17—8 a.m.
Final Examinations End	Saturday, December 22—5 p.m.

SPRING SEMESTER — 1980

Classes Resume	Monday, January 14—8 a.m.
Spring Vacation	Friday, February 29—5 p.m.
Classes Resume	Monday, March 10—8 a.m.
Easter Vacation	Thursday, April 3—10 p.m.
Classes Resume	Tuesday, April 8—8 a.m.
Classes End	Tuesday, April 29—5 p.m.
Reading Period	Wednesday & Thursday, April 30, May 1
Final Examinations Begin	Friday, May 2—8:30 a.m.
Free Day	Sunday, May 4
Final Examinations Resume	Monday, May 5—8:30 a.m.
Final Examinations End	Saturday, May 10—11:30 a.m.
Graduation	Sunday, May 18

79/80 bulletin

GRADUATE DIVISION



Wilkes College

WILKES-BARRE, PENNSYLVANIA

Academic Calendar

FALL SEMESTER — 1979

Registration —

Thursday, August 30	8:30 a.m. to 8:00 p.m.
Friday, August 31	8:30 a.m. to 8:00 p.m.

Classes begin —

Tuesday, September 4	8:00 a.m.

Thanksgiving Recess —

Tuesday, November 20	10:00 p.m.
to Monday, November 26	8:00 a.m.

Classes end —

Thursday, December 13	10:00 p.m.

Examinations —

Saturday, December 15 thru Saturday, December 22

SPRING SEMESTER — 1980

Registration —

Thursday, January 10	8:30 a.m. to 8:00 p.m.
Friday, January 11	8:30 a.m. to 8:00 p.m.

Classes begin —

Monday, January 14	8:00 a.m.

Last day to file application for assistantships —
Friday, February 5

Spring Recess —

Friday, February 29	5:00 p.m.
to Monday, March 10	8:00 a.m.

Easter Recess —

Thursday, April 3	10:00 p.m.
to Tuesday, April 8	8:00 a.m.

Classes end —
*Tuesday, April 29

Examinations —
Friday, May 2 thru Saturday, May 10

Commencement —
Sunday, May 18

**Tuesday, April 29 will follow the Friday class schedule.*

For further information, write or call:

John F. Meyers, Director
Division of Continuing Education
and
Graduate Studies
16 South River Street
Wilkes-Barre, Pa. 18766
Phone: (717) 824-4651 Ext. 303
(after 4:30 p.m. — 824-4656)

"An equal opportunity and affirmative action institution."

The Graduate Division

GENERAL INFORMATION

The Graduate Division of Wilkes College was established in 1959 when the Board of Trustees authorized graduate study in the Departments of Chemistry and Physics. The first Master of Science Degrees were conferred in 1965.

The graduate programs are designed to provide the opportunity for completion of a Master's Degree in one or two years of full-time study. Cycling of graduate courses allows a full-time student to plan for continuous progress in his program.

The programs also allow businessmen, engineers, scientists, and teachers employed in the region to continue their studies without interrupting their employment. To permit a combination of work and study, many classes are scheduled to meet during late afternoon and early evening hours.

GRADUATE DEGREE PROGRAMS

Graduate degree programs are currently offered as follows:

DEGREE	CONCENTRATION
Master of Business Administration	Business Administration
Master of Science	Mathematics Physics
Master of Science in Education	Biology Chemistry Education Elementary Education English History Mathematics Physics Special Education

The programs are approved by the Pennsylvania State Department of Education.

Admission

APPLICATION PROCEDURE

A person interested in doing graduate work at Wilkes College should contact the Director of Graduate Studies to obtain the forms and information needed to proceed with his application. He must fill out the "Application for Graduate Admission" form and arrange for the submission of official transcripts of all previous college work. All departments also require letters of recommendation and some require Graduate Record Examination scores or the scores of other advanced tests used in their fields.

Students, other than international students, who are unable to complete the application process prior to the beginning of the semester in which entrance is desired will be allowed special admission to the program pending processing of their applications. This policy does not imply acceptance of the special student into the degree program. Students failing to complete the application process by the beginning of the second semester after their initial application will not be permitted to register for courses.

GENERAL REMARKS CONCERNING ADMISSION

As a general rule only men and women who have completed bachelor's degrees will be considered for admission to the graduate division. It is expected that candidates for admission shall have above-average performances during their undergraduate years and shall show evidence of intellectual and temperamental fitness for graduate study.

Specific departmental requirements established for each area of study are to be found herein. Each applicant should consult these requirements prior to filing an application. A student whose background is judged to be deficient in any specific area of his field of study or whose undergraduate grades are below standard may be asked to remedy the deficiency by taking one or more courses at the undergraduate level, without graduate credit.

CATEGORIES OF ADMISSION

Regular admission is granted to students who have demonstrated an acceptable level of academic work in their undergraduate program and are prepared for work at the graduate level in their field of specialization.

Provisional admission is granted to students who satisfy general admission requirements but who have undergraduate deficiencies or a marginal undergraduate record. The Director of Graduate Studies and the chairman of the appropriate department will review provisional admissions annually in order to re-evaluate their status in the graduate program. A student accepted as a provisional student because of marginal undergraduate grades will be permitted to take a maximum of 12 credits as a provisional student.

Special admission is granted to students who do not desire to pursue a regular course of study leading to a graduate degree but who wish to take graduate courses for specific purposes, such as teacher accreditation.

Students will be assigned academic advisors immediately upon their acceptance by the graduate division.

Seniors at Wilkes College may be permitted to enroll in certain graduate courses with the approval of the chairman of their undergraduate department and the Director of Graduate Studies. Credit for such courses will ordinarily be at the undergraduate level. Under certain conditions an undergraduate student may be permitted to register for graduate credit. In no case will a student be given both undergraduate and graduate credit for any course.

General Academic Information

DEGREE REQUIREMENTS

Students may be awarded the master's degree upon satisfaction of all general college requirements for graduation and the following specific requirements:

1. Admission to graduate study as a regular student;

2. Satisfactory completion of a total of thirty credit hours, said hours to be completed within six calendar years preceding the date of the granting of the degree;

3. Maintenance of a minimum average of 3.0 for all graduate work. (A student who completes more than nine credits with the grade of 2, or who receives the grade of 0 in any course will be ineligible to receive the master's degree);

4. Completion of specific departmental requirements;

5. Completion of specific thesis requirements of the individual departments to include the following, where applicable:

a. Acceptance by an Advisor and an Advisory Committee, before completion of nine hours of graduate study;

b. Submission of an acceptable thesis in the required format and quantity of copies not later than May 15 preceding the commencement at which the degree is to be conferred;

c. Completion of arrangements for publication of the thesis, if so directed, satisfactory to the Advisory Committee.

Specific departmental requirements for graduate degrees will be found under the listings of the individual departments.

TRANSFER CREDITS

A maximum of six semester hours of graduate credit in a different but recognized institution may be transferred for credit towards the master's degree. Extension work is not normally accepted for transfer. Courses taken before admission to the Wilkes program will be evaluated at the time of admission. Students desiring to take courses for transfer to Wilkes from another institution must secure prior approval from the Director of Graduate Studies, the chairman of the appropriate department and the student's advisor. Application forms for transfer-credit requests are available at the Graduate Studies Office.

GRADE REGULATIONS

Numerical grades are given for graduate work:

4 — Academic achievement of outstanding quality

3 — Academic achievement of acceptable quality in meeting requirements for graduation

2 — Academic achievement of quality below the average required for graduation

0 — Academic achievement below the minimum required for course credit

A grade of "X" indicates assigned work yet to be completed in a given course. Except in thesis work, grades of "X" will be given only in exceptional circumstances. Grades of "X" must be removed through satisfactory completion of all course work no later than four weeks after the end of the final examination period. Failure to complete required work within this time period will result in the conversion of the grade to 0. Further extensions of the time allowed for completion of the work may be granted only by the Director of Graduate Studies.

REGULATIONS FOR WITHDRAWAL

A grade of "W" indicates an authorized withdrawal from a course. A graduate student wishing to withdraw from a course must secure a withdrawal form from the Graduate Studies Office and have it approved by the instructor, the faculty advisor and the Director of Graduate Studies. Failure to secure authorized withdrawal for a course not completed will result in a grade of 0.

REGULATIONS ON THESIS RESEARCH

Each graduate student shall select a major advisor under whose direction he wishes to pursue his thesis research, if a thesis is required. Following acceptance of the candidate, the advisor shall appoint two other members of the Graduate Faculty to serve with him as the student's Advisory Committee.

Part-time students employed in laboratories on a full-time basis may be permitted to conduct their thesis research in these laboratories if a mutually satisfactory agreement can be reached by the student, the laboratory staff, and the college. In such cases, a qualified member of the staff of the employer shall be named by the Director of Graduate Studies to serve as a member of the student's Advisory Committee. He shall also be appointed an adjunct professor of the college and shall supervise the day-to-day progress of the student's research.

The original and two copies of the thesis must be submitted to the Director of Graduate Studies after the thesis has been approved by the Advisory Committee. One copy will be filed in the Library, one in the Graduate Office and one in the appropriate department. If the student desires a personal copy bound, an additional copy should be furnished. For thesis binding fees, see under fees and expenses.

TRANSCRIPTS

Transcripts are provided by the Office of Graduate Studies. They are issued only upon written request by the student, and should be requested at least three weeks prior to the date needed. A student requesting a transcript in person must present valid identification.

Transcripts given directly or mailed to students do not carry the college seal and are not official. The seal is attached only when the transcript is mailed directly from the college to another college or authorized agency.

A transcript of work completed at any college or high school other than Wilkes College must be obtained directly from that institution.

There is no charge for the first transcript requested. The student will pay one dollar for each additional transcript.

FEES AND EXPENSES

All payments for tuition, room and board, fees, etc., are due at the time registration forms are processed.

Payment of all charges for tuition, fees, room and board is to be made at the Finance Office, Parrish Hall. Several plans have been developed to assist students who do not have the cash in hand, and it is suggested these plans be considered when special assistance is needed. Students may consult with the Director of Financial Aid for information regarding scholarship and loan programs.

Subject to the regulations concerning refunds, the total tuition is considered fully earned by the college upon completion of registration by the student.

Tuition Cost per Semester: $95 per credit hour.

Graduation Fee: $40. (Charged to all graduating students in their last semester.)

Thesis Binding Fee: $7 per copy.

Individual departments have the right to charge laboratory and breakage fees as appropriate.

FINANCIAL AID AND ASSISTANTSHIPS

The college has available a limited number of teaching and research assistantships for selected graduate students. Recipients of these assistantships will take two or three graduate courses per semester and will assist either in instructional or research work in their major departments. Applications for assistantships for the fall term must be made to the Director of Graduate Studies before the preceding February 15. Generally, research assistants will be able to write theses based on work done under their assistantships.

A number of counselorships in undergraduate college dormitories are available each year to graduate students. These counselorships provide free room and board for the academic year. Applications for these positions must be filed with the Director of Housing no later than March 1 to be considered for the academic year beginning in September.

REFUNDS

Students in good standing who withdraw from the college for adequate and satisfactory reasons during the time limits indicated below will receive upon request a refund of one-half of the tuition. Refund of dormitory charges will not be allowed except under conditions beyond the control of the student.

Regular session: During the first six weeks of the term.

5-week summer session: During the first week of the term.

8-week evening session: During the first two weeks of the term.

No student who is suspended or expelled shall be entitled to any refunds.

GRADUATION

All graduate students are expected to participate in the commencement exercises at the close of the academic year in which they complete their degree requirements. **It is the responsibility of the graduate student to inform the Graduate Studies Office of his impending graduation no later than February 15 of the year that he expects to receive the degree.**

International Students

DATES OF APPLICATION

All credentials must be received by the dates listed below if an applicant is to be considered for admission:

Fall semester — By July 15

Spring semester — By November 30

Summer session — By April 30

LANGUAGE PROFICIENCY

All applicants who are not native speakers of English must submit scores on the Test of English as a Foreign Language (TOEFL) before they will be considered for admission. Normally, a combined score of 550 is evidence of sufficient facility in the English language.

IMMIGRATION REGULATIONS

The Immigration and Naturalization Service of the United States Department of Justice requires a certificate of eligibility (Form I-20A) to be initiated by the university and completed by the student prior to his application for a student visa to study in this country. Any extension of stay or employment while in the United States must have the prior approval of the regional office of the Immigration and Naturalization Service.

ECONOMIC CONSIDERATION

Total expenses for one academic year at Wilkes College are approximately $3,000. All graduate programs take longer than one academic year of full-time study and sometimes as long as two academic years. The student should, therefore, be prepared to spend as much as $6,000, in addition to transportation, on his graduate education at Wilkes College.

CONFIRMATION OF ACCEPTANCE

All entering international students must inform the Director of Graduate Studies of their intention to accept or decline admission to Wilkes College by the following deadlines:

Fall semester — By August 15

Spring semester — By December 31

Summer session — By May 31

ARRIVAL DATES

The required dates of arrival for the 1979-1980 academic years are given below. Immediately upon his arrival the student should contact both the Graduate Studies Director and the Foreign Students' Advisor.

Fall semester, 1979 —— August 25, 1979

Spring semester, 1980 — January 10, 1980

ADDITIONAL COURSES

International students may be required to take certain courses for undergraduate credit not applicable to the master's degree. In some cases these courses will be specified in the admissions letter but a Graduate Program Director may make additional requirements if a student is found to be deficient in the English language or in background knowledge in his field.

FOREIGN STUDENTS' ADVISOR

The Dean of Student Affairs, 2nd floor, Weckesser Hall, serves as advisor on nonacademic matters to all international students. Services provided include counseling on housing, visa problems and other difficulties in adjusting to life in the United States. All international students should register with the Foreign Students' Advisor as soon as they arrive.

Accounting

See under Business Administration, page 14.

Biology

Master of Science in Education

Candidates for the degree of Master of Science in Education, with a major in biology, must take eighteen hours of biology in courses numbered 302 or above. Chemistry 451 and 452 may be taken for credit toward the biology component with the prior approval of the Chairman of the Biology Department.

Requirements for the education component of the Master of Science in Education, with a major in biology, are listed under Education on page 22.

COURSES OF INSTRUCTION

BIOLOGY 302. ENDOCRINOLOGY — **Three credits**

A study of the endocrine system and the mechanism of action of hormones on the life processes and functions. Emphasis will be placed on the mammalian system with reference to comparative forms. Fee: $30.

BIOLOGY 303. BACTERIOLOGY — **Three credits**

Biology 303 covers generally the morphology and identification of bacteria. Laboratory work includes microscopy, techniques of making media, methods of sterilization, and the culturing of bacteria. Fee: $30.

BIOLOGY 305. INVERTEBRATE BIOLOGY — **Three credits**

A study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology and ecology. Fee: $30.

BIOLOGY 306. NEUROBIOLOGY — **Three credits**

A study of the functional aspects of excitable cells and nervous systems of living animals. Laboratory includes techniques in the stimulation and recording of excitable cells and organs. Fee: $30.

BIOLOGY 307. ANALYTICAL CYTOLOGY — **Three credits**

Experimental analysis of cell structure, organelles, chemistry and activities by means of microscopic techniques and instrumentation. Fee: $30.

BIOLOGY 308. ADVANCED GENETICS — **Three credits**

A study of plant and animal genetic systems with respect to contemporary literature, techniques and modes of analysis. Fee: $30.

BIOLOGY 309. EVOLUTION — **Three credits**

Evolution is a study of how new species of organisms are derived from previously existing species. Emphasis is placed upon the processes of organic evolution and the development of the evolutionary ideas. Fee: $30.

BIOLOGY 310. ANIMAL BEHAVIOR — **Three credits**

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 they will take. Laboratories, using living local fauna, will demonstrate principles discussed in lecture. Fee: $30.

BIOLOGY 311. POPULATION AND COMMUNITY ECOLOGY — **Three credits**

A study of populations and communities as living systems integrated with their environments. Field investigations of local plant and animal assemblages will constitute a major portion of the course. Fee: $30.

BIOLOGY 312. COMPARATIVE PHYSIOLOGY — **Three credits**

Comparative Physiology provides an extensive consideration of the physiology of organs and organ systems in comparative animal forms. Emphasis is placed on the similarities and differences in which related and/or divergent forms have solved various physiological problems. Lecture, two hours per week; laboratory, three hours per week. Fee: $30.

BIOLOGY 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 per week; laboratory, three hours per week. Fee: $30.

BIOLOGY 314. ICHTHYOLOGY — **Three credits**

Ichthyology surveys the taxonomy, anatomy and physiology, evolution, ecology and behavior of the three classes of fishes. Both local and marine species are examined in the laboratory . Lecture, two hours per week; laboratory, three hours per week. Fee: $30.

BIOLOGY 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. A background in microbiology, physiology, and biochemistry is advisable. Students lacking formal prerequisite courses but who are otherwise qualified in biology or chemistry may register through special arrangement with the instructor.

BIOLOGY 385. FLORISTIC BIOLOGY — **Three credits**

Floristic Biology is presented as a field course primarily concerned with the vascular plants of Northeastern Pennsylvania. The associated vertebrates are also observed as opportunities present themselves in the field.

BIOLOGY 398. TOPICS — **Three credits**

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

Business Administration

Master of Business Administration

The curriculum leading to the Master of Business Administration Degree provides an opportunity for specialization in a selected field but is concerned mainly with advanced study of broad business concepts and relationships. The purposes are:

1. to develop professional managers with emphasis on the foundation, organization, operation, and control of business enterprises;
2. to develop individuals trained in research and constructive business leadership;
3. to enable individuals to create and evaluate alternative courses of action as a procedure for making decisions.

ADMISSION

A candidate for the M.B.A. degree who is a graduate of an approved college or university and who has had basic courses in accounting, business law, managerial finance, economics, marketing, money and banking, and statistics will probably have an adequate background to complete the requirements for a degree in two years.

Background Undergraduate Course Requirements for Candidates in Master of Business Administration Program:

Accounting	1 year
Business Law	1 semester
Economics	1 year Principles
Statistics	1 semester of Statistics
Managerial Finance	1 semester
Money and Banking	1 semester
Marketing	1 semester

The program is designed to provide business education at the master's level not only for those who have had undergraduate training in business and economics, but also for interested engineers, scientists, and others who have a minimum amount of background education in this area.

Each student upon admission to the program will be assigned an advisor to guide him in the program.

DEGREE REQUIREMENTS

All candidates for the Master of Business Administration Degree must complete successfully a total of thirty credits of graduate work in 500-level courses. Fifteen of those thirty credits must be in core courses. Within the core, there are nine hours of course work which all candidates must complete: Business Administration 502, Economics 505, and Economics 510. The remaining six credits of core work must be completed by taking two of the following four courses: Accounting 503, Economics 506, Business Administration 507 and Business Administration 508 (Computer Science 408). Students with a minimum preparation in Accounting are urged to take Accounting 503. The other fifteen of the total thirty credits must be drawn from one or more areas of specialization.

A graduate student in Business Administration is required to pass a written comprehensive examination covering the broad field of business administration. This examination is given during the spring semester.

Students who are registered for or plan to complete their final graduate course work for the Degree of Master of Business Administration during the autumn semester may take this examination the preceding spring. A student who fails the comprehensive examination may retake it only once.

COURSES OF INSTRUCTION

BUSINESS ADMINISTRATION

Approval of the instructor and faculty adviser is a prerequisite for all courses.

BUSINESS ADMINISTRATION 508. MANAGEMENT INFORMATION SYSTEMS (See Computer Science 408) **Three Credits**

A general introduction intended to acquaint managers with the characteristics, selection, implementation, potentials, limitations and effects of modern management information systems.

Prerequisite: Admission to the MBA program or permission of the Department of Commerce and Finance or the Department of Mathematics and Computer Science. No computer programming background is assumed.

BUSINESS ADMINISTRATION 550. TOPICS **Three credits**

Special topics in business administration. This course will be offered from time to time as interest and demand justify it.

BUSINESS ADMINISTRATION 595. INDEPENDENT RESEARCH **Three credits**

Independent study and research for advanced students in the field of the major under the direction of a staff member.

ECONOMICS 473-4. PRE-SEMINARS **No graduate credit**

Seminars which provide review and training to a minimal level, on the current state of knowledge in respective fields.

Core Courses (15 semester hours required)

BUSINESS ADMINISTRATION 502. MANAGEMENT SCIENCE **Three credits**

This course familiarizes the student with the general field of management theory. It surveys the current literature and practice. It is designed to give a broad view of management as a science and art.

ACCOUNTING 503. MANAGERIAL ACCOUNTING **Three credits**

A thorough examination of financial statements and uses of accounting data for effective managerial planning and control. Topics include valuation factors; cost, expense and revenue concepts; cost control; capital expenditure planning; the price-level problem and other decision-making guides.

ECONOMICS 505. MANAGERIAL STATISTICS **Three credits**

An introductory graduate course in techniques, limits, and areas of application of statistical techniques.

ECONOMICS 506. LABOR-MANAGEMENT ECONOMICS **Three credits**

A course dealing with issues and trends in collective bargaining and industrial relations today. The shifting roles and relationships of labor-management and government will be dealt with. Problems of maintaining the labor force and the social aspects of industry will be dealt with.

BUSINESS ADMINISTRATION 507. BUSINESS AND SOCIETY **Three credits**

This course deals with the problems of the responsible business manager in a private enterprise society, particularly those problems dealing with policy-making and administration when both economic and non-economic factors are involved. Questions are raised as to the kinds of responsibility and the extent of responsibility business managers have to the goals of our society, to the communities in which they operate, to the people they employ, and to governmental policies, as well as to the stockholders of their own firms.

ECONOMICS 510. MANAGERIAL ECONOMICS **Three Credits**

Problems of the firm. Price and output determination with analysis of cost and demand functions in markets of various types and under various conditions of business. The course will deal with the application of economic theory to business practice.

AREA I—MARKETING SPECIALIZATIONS

BUSINESS ADMINISTRATION 511. MODERN INTERNATIONAL COMMERCE **Three credits**

This course is designed to introduce the student to the practical principles and methods of international marketing. Subjects covered will include the development and management of exports and imports, channels of trade, the mechanics of international finance, foreign credits, technical procedures and documentation, and the legal aspects of trade.

BUSINESS ADMINISTRATION 512. PRICE POLICY AND PROCEDURE **Three credits**

This course describes the basic pricing process, relates it to pricing decisions, and attempts to provide a systematic pricing program for managers to follow. Topics covered will include internal and external factors in pricing decisions, legal and ethical aspects of pricing, normative pricing models, and the special problems of manufacturers and distributors.

BUSINESS ADMINISTRATION 513.
HUMAN BEHAVIOR AND THE MARKETING PROCESS **Three credits**
This course deals with the behavior of man in social groupings and as an individual entity. Processes such as learning, perception, motives, personality, and intelligence will be studied particularly as they relate to marketing problems and procedures.

BUSINESS ADMINISTRATION 514
MARKET RESEARCH AND EXPERIMENTATION (Seminar) **Three credits**
This course deals with the experimental techniques that can be applied to the planning, execution, and analysis of marketing problems. Modern concepts of statistical decision theory and survey techniques are included.

AREA II—MANAGERIAL SCIENCE

BUSINESS ADMINISTRATION 521. ORGANIZATIONAL THEORY
Three credits
This course is concerned with the human relations aspects of organizations. It draws on the newer research in organization theory to analyze groups and individual behavior. It gives emphasis to the problems of managers at different levels of responsibility in regard to leadership, mobilization of resources, rationalization, planning motivation, and dynamic administration.

BUSINESS ADMINISTRATION 522.
QUANTITATIVE ASPECTS OF MANAGEMENT **Three credits**
This course examines the quantitative aspects of management. It analyzes the optimization of management decisions in the operation of the firm.

BUSINESS ADMINISTRATION 523.
MANAGEMENT SEMINAR I **Three credits**
This seminar brings to bear current management techniques on a variety of problems. Students will be guided in theoretical readings and will apply their knowledge in seminar discussions.

BUSINESS ADMINISTRATION 524.
MANAGEMENT SEMINAR II **Three credits**
This seminar has a research orientation. Research, objectives, techniques, and methodology will be dealt with.

AREA III—LABOR

ECONOMICS 531.
INDUSTRIAL RELATIONS AND THE LAW **Three credits**
An in-depth study of labor legislation, federal, state, and local. Emphasis will be placed on recent N.L.R.B. decisions and precedents.

ECONOMICS 532.
WAGE DETERMINATION AND ADMINISTRATION **Three credits**
A study of economic and institutional forces determining wages. Wage theories are analyzed. Problems of wage administration will be dealt with.

ECONOMICS 533. THE LABOR MARKET **Three credits**
Economic and non-economic forces influencing labor supply and demand will be studied. Determinants of the labor force, unemployment, labor mobility, and the functioning of the labor market will be investigated.

ECONOMICS 534. LABOR SEMINAR **Three credits**
This seminar deals with current issues and theoritical concepts in industrial relations.

ECONOMICS 571. LABOR-MANAGEMENT SEMINAR **Three credits**
This seminar will deal with labor-management conflict and successful problem-solving techniques. The orientation and approach will be that of the concerned public.

AREA IV—ACCOUNTING

ACCOUNTING 504. ACCOUNTING THEORY & THOUGHT **Three Credits**
Analysis of the development of modern accounting concepts; interpreting and effectively communicating data based upon the relationship of modern accounting concepts and related economic considerations.

ACCOUNTING 541. ADVANCED PROBLEMS **Three credits**
A comprehensive review of technical and professional accounting problems. Review of the structure and content of the Uniform C.P.A. examination.

ACCOUNTING 542. FINANCIAL AND TAX PLANNING **Three credits**
Analysis of federal tax regulations and interpretations. Stress will be placed upon the timing of business transactions and the tax implication in choosing financial alternatives.

ACCOUNTING 543.
ACCOUNTING POLICIES AND PRACTICES **Three credits**
This course considers the ethical questions and legal implications in the performance of the accounting function; reporting data to management, governmental agencies, and other interested parties.

ACCOUNTING 544. CONTROLLERSHIP **Three credits**
Review of the controllership function and the role of the controller in the planning and coordination of the large business organization. Attention will be directed to the effective use of accounting information and facilities.

ACCOUNTING 545. PROFESSIONAL SEMINAR **Three credits**
Discussion of current accounting research, literature and theory, consideration of the role of the accountant in management advisory services.

AREA V—FINANCE

BUSINESS ADMINISTRATION 551.
INVESTMENT AND PORTFOLIO MANAGEMENT **Three credits**
A study of the various types of corporation and government securities coupled with an examination of the machinery of investment. Particular emphasis will be given to the investment alternatives relating to portfolio management decisions.

BUSINESS ADMINISTRATION 552.
FINANCIAL MANAGEMENT **Three credits**
A study of financial management problems of business. Attention is given to the control of current funds, working capital operations, and estimating the need for funds; the problem of long-term capital funds and expansion, and the choice between risk and profitability in the capital structure are also considered.

BUSINESS ADMINISTRATION 554.
MANAGERIAL FINANCE SEMINAR **Three credits**
Problems in managerial finance. Special topics.

Chemistry

Master of Science in Education

ADMISSION

For admission to graduate study in chemistry education, the applicant should have a baccalaureate degree from an accredited institution, with a minimum of 35 semester credit hours in chemistry. In addition, a year of physics and a working knowledge of calculus and differential equations are required. Students deficient in any of these areas may, at the discretion of the chemistry faculty, be granted provisional admission.

DEGREE REQUIREMENTS

General requirements for the Master of Science in Education with a major in chemistry are listed under Education on page 22. Specific chemistry requirements will be outlined by the student's advisor in the chemistry department.

COURSES OF INSTRUCTION

CHEMISTRY 325. ADVANCED INORGANIC CHEMISTRY **Three Credits**
Introduction to ligand field theory; chemistry of the first transition series, organometallic, and Il-acceptor compounds; mechanisms of inorganic reactions.
Prerequisite: Chemistry 252.

CHEMISTRY 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 of determining the structure of organic molecules.
Prerequisite: Chemistry 231, Chemistry 252.

CHEMISTRY 344. ADVANCED ANALYTICAL CHEMISTRY **Four Credits**
The theory and application of modern techniques and instrumental procedures, such as spectrophotometric, electroanalytical, and chromatographic. Theory and practice of analysis of more complex materials. Class, two hours a week; laboratory, six hours a week. Fee: $30.
Prerequisite: Chemistry 252.

CHEMISTRY 356. ADVANCED PHYSICAL CHEMISTRY **Three Credits**
A detailed examination of statistical thermodynamics, advanced kinetics, quantum theory, and spectroscopy.
Prerequisite: Chemistry 252.

CHEMISTRY 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: Chemistry 232.

CHEMISTRY 362. BIOCHEMISTRY II **Three Credits**
A study of metabolism with emphasis on metabolic regulation.
Prerequisite: Chemistry 361.

CHEMISTRY 398. TOPICS **Three Credits**
A study of topics of special interest not extensively treated in regularly offered courses.
Prerequisite: Permission of the Instructor.

Computer Science

See under Mathematics page 37.

Earth and Environmental Sciences

These courses may be taken by special students or may be applied towards graduate degrees offered by other departments. Students planning to apply these credits towards degree programs should secure the approval of their academic advisor prior to inclusion in their course of study.

COURSES OF INSTRUCTION

EARTH & ENVIRONMENTAL SCIENCES 401 & 402. ADVANCED TOPICS I & II. **One to three Credits Each**

Selected topics covering a variety of atmospheric, hydrospheric, and lithospheric processes and their relation to environmental management issues.

Prerequisite: Senior or graduate standing.

Education

Master of Science in Education

PURPOSE

Graduate study in education is offered primarily to enable teachers to enhance their preparation for classroom leadership. Study in various academic fields is required as well as in professional courses. Sufficient flexibility is provided, however, to permit others interested in education to arrange programs of study appropriate to their interests.

Programs are offered in Education; Elementary Education; Secondary Education, with a major in Biology, Chemistry, English, History, Mathematics, or Physics; and Special Education.

A program leading to Reading Specialist certification is available by special arrangement. Interested students should inquire at the Education Office.

SPECIAL FEATURES OF THE PROGRAM

The program is arranged so that students may pursue the degree on a full- or part-time basis. Late afternoon and evening classes are offered to enable full-time teachers within a reasonable distance from Wilkes-Barre to take courses toward fulfillment of degree requirements during the academic year. Credits may also be earned during the summer sessions.

ADMISSION

For admission to graduate study in education, the applicant must have a baccalaureate degree from an accredited institution or the equivalent with an appropriate major.

Students deficient in any phase of requirements may, at the discretion of the academic department, the Education Department, or the Director of Graduate Studies, be granted provisional admission. Deficiencies must be made up satisfactorily before full admission to graduate study will be granted.

Students who do not wish to earn a degree are invited to request "special non-degree" admission status.

DEGREE REQUIREMENTS

All candidates for the Master of Science in Education degree must complete a program of thirty credits; at least twelve credits must be in education, six in Area I and three in Area II.

A candidate for the Master of Science in Education degree who majors in education must take Education 526, must earn nine credits in one Area in education beyond the twelve-credit basic requirement, and must complete a thesis for which three credits may be granted.

A candidate for the Master of Science in Education degree who majors in elementary education must take three courses in the Education 532 series and Education 534.

A candidate for the Master of Science in Education degree who majors in one of the secondary school teaching subjects must complete eighteen credits in the appropriate academic department; three of the twelve credits in education must be in Area IV.

A candidate for the Master of Science in Education degree who majors in Special Education must take Education 525, 560, 561, 562, 564, and Psychology 331.

Certification courses in Area O are not accepted for degree requirement credit. Transcripts will show credit for these courses for certification purposes only.

PROGRAM OF STUDY

Each student develops a program of study which will satisfy requirements for the degree. The program must be approved by his advisor and by the Education Department. To facilitate securing this approval, students in secondary education are assigned a co-advisor in the Education Department.

COURSES OF INSTRUCTION

EDUCATION

AREA O—CERTIFICATION COURSES

EDUCATION 400.
GENERAL SECONDARY SCHOOL METHODS **Three credits**
An introduction to principles, methods, and materials appropriate for secondary school instruction.

EDUCATION 401-02.
ELEMENTARY CLASSROOM METHODS **Three credits each semester**
An introduction to principles, methods, and materials appropriate for elementary school instruction. Education 401 is prerequisite to 402.

EDUCATION 403-04. INTERN TEACHING **Three credits each semester**
Beginning teachers are assigned to supervisors who work with them to facilitate their introduction to classroom teaching.
Section A Elementary Section B Secondary

EDUCATION 405.
INTRODUCTION TO READING INSTRUCTION **Three credits**
A foundation course in reading instruction.

EDUCATION 409. SHORT COURSES
These courses treat a variety of topics, usually on a condensed schedule basis. They are designed to meet the immediate needs of teachers and may not be used to satisfy degree requirements. Credit is given at the rate of one-half semester hour for each eight hours of classwork.

AREA I—FOUNDATIONS OF EDUCATION

EDUCATION 510.
PSYCHOLOGICAL FOUNDATIONS OF EDUCATION **Three credits**
A study of human development and learning, application of psychological principles in the practice of education.

EDUCATION 511.
PHILOSOPHICAL FOUNDATIONS OF EDUCATION **Three credits**
An examination of philosophical issues which bear upon American education. The problem of relating theory to practice is considered.

EDUCATION 512. SOCIAL FOUNDATIONS OF EDUCATION **Three credits**
An introduction to the history, scope, materials and methods of the sociological analysis of education. Instruction includes the concepts of culture, socialization, stratification, social control and change as they relate to formal education.

EDUCATION 513.
COMPARATIVE FOUNDATIONS OF EDUCATION **Three credits**
An analytic study of educational patterns in contemporary societies. Educational policies and institutions are studied in their cultural context. Educational patterns of developed and developing nations are described, analyzed and compared; examples from each pattern are examined.

EDUCATION 514.
HISTORICAL FOUNDATIONS OF EDUCATION **Three credits**
A survey of the great landmarks of Western education from antiquity to the recent past. The development of primary, secondary, and higher education; objectives; curricula; methods; and systems of education are considered. Attention is given to some contemporary problems in their historical perspectives.

EDUCATION 515.
EDUCATIONAL PLANNING IN DEVELOPING NATIONS **Three credits**
An analytical study of educational patterns in developing nations. Educational systems are described, analyzed and compared with particular attention to planning and system analysis.

AREA II — PROFESSIONAL SKILLS IN EDUCATION

EDUCATION 520. TESTS AND MEASUREMENTS **Three credits**

Study of characteristics, construction, and use of various standardized and non-standardized measuring instruments; statistics through basic correlation.

EDUCATION 521. STATISTICS IN EDUCATION **Three credits**

Correlation and regression through statistical inference.

Prerequisite: Education 520 or equivalent.

EDUCATION 525. EDUCATIONAL RESEARCH I **Three credits**

A study of procedures used to collect, analyze and present data; critical examination of representative educational research reports. This course may not be taken for credit subsequent to Education 526.

Prerequisite: Education 520 or equivalent.

EDUCATION 526. EDUCATIONAL RESEARCH II **Three credits**

Advanced study of research methods; literature search leading to a thesis proposal.

Prerequisite: Education 521 or equivalent.

AREA III — ELEMENTARY EDUCATION

EDUCATION 430. DEVELOPMENTAL READING **Three credits**

An advanced course in techniques and materials of reading instruction.

Prerequisite: Education 405 or equivalent.

EDUCATION 436. CHILDREN'S LITERATURE **Three credits**

A study of methods and materials appropriate for elementary school instruction in literature.

EDUCATION 532-33.
PROBLEMS IN ELEMENTARY EDUCATION **Three credits**

Advanced study of materials and methodology appropriate for elementary classroom instruction.

Section A Mathematics
B Science
C Language Arts
D Social Studies
E Special Subjects

EDUCATION 534. ELEMENTARY SCHOOL CURRICULUM **Three credits**

A study of curricula offered in elementary schools, grade placement of content, articulation of subject matter areas, development of specialized programs.

Prerequisite: Fifteen graduate credits.

EDUCATION 535. NONGRADED INSTRUCTION IN THE ELEMENTARY SCHOOL **Three credits**

A study of the rationale for nongrading, the nongraded curriculum, and instructional staffing design.

Prerequisite: Permission of the instructor.

EDUCATION 536. ELEMENTARY SCHOOL READING INSTRUCTION **Three Credits**

Lectures and demonstrations cover the psychology of the reading process, appraisal of reading needs, directed reading activities, word recognition and comprehension abilities.

EDUCATION 537. READING DISABILITIES **Three Credits**

Lectures and demonstrations cover the identification, diagnosis, and classification of individuals with reading problems at all ages and levels of instruction.

Prerequisite: Education 536.

AREA IV — SECONDARY EDUCATION

EDUCATION 540. SPECIAL METHODS IN SECONDARY SCHOOL INSTRUCTION **Three credits each semester**

Section A Biology
B Chemistry
C Environmental Science
D English
E History
F Mathematics
G Physics
H Reading
I Social Sciences
J Educational Theater
K Science

EDUCATION 541. SECONDARY SCHOOL CURRICULUM **Three credits**

A study of secondary school curricula, traditional programs, recent developments, provisions for innovation and individualization.

EDUCATION 542. EXTRA-CURRICULAR ACTIVITIES **Three credits**

A study of the development of extra-curricular activities, organization and administration, the role of the sponsor, recent trends.

AREA VI — SPECIAL EDUCATION

EDUCATION 560.
PSYCHOLOGY OF EXCEPTIONAL CHILDREN **Three credits**
Advanced study of children whose characteristics deviate significantly from normal children.

Section A — Mentally Retarded
B — Socially and Emotionally Maladjusted
C — Gifted and Talented

EDUCATION 561. INDIVIDUAL ASSESSMENT **Three credits**
Advanced study of instruments utilized in the measurement of personality and intelligence.

Prerequisite: A course in testing.

EDUCATION 562.
REMEDIATION OF LEARNING DISABILITIES I **Three credits**
A study of the major areas of learning disability: gross motor development, sensory-motor development, perceptual-motor skills.

EDUCATION 563.
REMEDIATION OF LEARNING DISABILITIES II **Three credits**
A continuation of Education 562: language development, conceptual skills, social skills.

Prerequisite: Education 562.

EDUCATION 564.
CURRICULUM AND METHODS IN SPECIAL EDUCATION **Three credits**
Advanced study of instructional materials and techniques employed in special education programs.

AREA VII — SUPERVISION

EDUCATION 570. SUPERVISION OF INSTRUCTION **Three credits**
A study of the responsibilities supervisors have and proven techniques by which these duties are carried out.

EDUCATION 571. PRACTICUM IN SUPERVISION **Six credits**
Affords students an opportunity to gain experience in supervisory activities in education under the guidance of experienced supervisors.

EDUCATION 573 CURRICULUM CONSTRUCTION **Three credits**
Advanced study of curriculum development and evaluation.

EDUCATION 575. GROUP DYNAMICS **Three credits**
Study of the nature and behavior of groups.

EDUCATION 576.
INTRODUCTION TO EDUCATIONAL ADMINISTRATION **Three credits**
Basic study of the administrative function in educational institutions.

EDUCATION 578. SCHOOL LAW **Three credits**
An examination of school law at the federal, state and local levels; review, discussion and analysis of court decisions which affect schools.

EDUCATION 579. NEGOTIATIONS IN EDUCATION **Three credits**
A study of the processes and strategies used in collective negotiations in education, simulation of the bargaining confrontation, interaction analysis of the simulation.

AREA IX — ADVANCED GENERAL COURSES

EDUCATION 590. THESIS **Three credits**

EDUCATION 594. WORKSHOP **Three credits each semester**
Provides an opportunity for experienced teachers to develop study programs designed to meet their special needs. Students may receive credit more than once if there is no duplication in subject matter covered.

EDUCATION 595-596.
INDEPENDENT STUDY **Three credits each semester**
Affords an opportunity for independent study of selected topics under faculty supervision.

Prerequisite: Permission of department chairman.

EDUCATION 597. SEMINAR **Three credits**
An advanced course dealing with some significant issues selected by the instructor. The seminar technique provides a review of major problems based on the current level of knowledge in the area.

Prerequisite: Permission of the instructor.

EDUCATION 598. TOPICS **Three credits**
Advanced study of topics of special interest not extensively treated in regular courses.

EDUCATION 599. SHORT COURSES
These courses treat a variety of topics, usually on a condensed schedule basis. Designed to investigate problems in the field, these courses provide an opportunity for practicing professionals to study current issues under qualified leadership. Departmental approval is required if credits are to be applied to meet degree requirements. A maximum of six credits may be used to meet degree requirements. Credit is given at the rate of one-half semester hour for each eight hours of classwork.

English

Master of Science in Education

SPECIAL DEGREE REQUIREMENTS

Candidates for the degree of Master of Science in Education with a major in English must complete eighteen hours of course work in English, twelve of which must be in courses numbered 400 or above.

Information on requirements of the Education Department for the Master of Science Degree will be found under Education on page 22.

COURSES OF INSTRUCTION

ENGLISH 301. LITERARY CRITICISM **Three credits**
A study of literary theory and the techniques of analysis.

ENGLISH 310. MEDIEVAL ENGLISH LITERATURE **Three credits**
A study of English literature to 1500, exclusive of Chaucer and the drama.

ENGLISH 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.

ENGLISH 320. TUDOR PROSE AND POETRY **Three credits**
Study of English non-dramatic literature from 1485 to 1603.

ENGLISH 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.

ENGLISH 325. SHAKESPEARE **Three credits**
A study of selected plays; written reports on others not studied in class.
Prerequisite: Eng. 152 or 254.

ENGLISH 330.
SEVENTEENTH CENTURY PROSE AND POETRY **Three credits**
A study of the non-dramatic literature of the period.

ENGLISH 335. MILTON **Three credits**
A study of Milton's poetry and major prose.

ENGLISH 341.
RESTORATION AND EIGHTEENTH CENTURY DRAMA **Three credits**
Study of the drama from 1660 to 1780.

ENGLISH 343.
EIGHTEENTH CENTURY PROSE AND POETRY **Three credits**
The chief poets and essayists of the eighteenth century. Includes Swift, Pope, and Johnson.

ENGLISH 345. EARLY ENGLISH NOVEL **Three credits**
English prose fiction of the sixteenth and seventeenth centuries; rise of the novel to the close of the eighteenth century.

ENGLISH 354. ROMANTIC PROSE AND POETRY **Three credits**
Study of Blake, Wordsworth, Coleridge, Shelley, Keats, and Byron, with related prose writers of the Romantic Period.

ENGLISH 360. VICTORIAN PROSE AND POETRY **Three credits**
Readings in Tennyson, Browning, Arnold, and other significant writers of the Victorian Age.

ENGLISH 366. LATER ENGLISH NOVEL **Three credits**
The major novelists of the nineteenth and early twentieth centuries.

ENGLISH 370. MODERN BRITISH POETRY **Three credits**
Study of the major English and American poetry of the twentieth century.

ENGLISH 372. MODERN NOVEL **Three credits**
Study of the major English and American novels of the twentieth century.

ENGLISH 374. MODERN DRAMA **Three credits**
Study of important dramatists, European and American, from the time of Ibsen.

ENGLISH 381. AMERICAN LITERATURE I **Three credits**
A study of American literature to the Civil War.
Prerequisite: Eng. 152 or 254.

ENGLISH 382. AMERICAN LITERATURE II **Three credits**
A study of American literature from the Civil War to the present time.
Prerequisite: Eng. 152 or 254.

ENGLISH 383. AMERICAN NOVEL **Three credits**
A study of the American novel from its beginning to the present.

ENGLISH 384. AMERICAN DRAMA **Three credits**
A study of the American drama from the colonial period to the present.
Prerequisite: Eng. 152 or 254.

ENGLISH 386. MODERN AMERICAN POETRY **Three credits**
Study of major movements and representative figures in modern American poetry.
Prerequisite: Eng. 152 or 254.

ENGLISH 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.

ENGLISH 400. INTRODUCTION TO RESEARCH **Three credits**
An introductory course in research and bibliography designed to acquaint the graduate student with the resources and procedures used in literary research.

ENGLISH 405. STUDIES IN LINGUISTICS **Three credits**
A study of generative transformational grammar as developed by Chomsky, Lees, and others resulting from work done by Harris and other structuralists.

ENGLISH 410. STUDIES IN MEDIEVAL LITERATURE **Three credits**
The study of selected topics in Medieval English literature.

ENGLISH 420. STUDIES IN RENAISSANCE LITERATURE **Three credits**
A study of selected major figures of the English Renaissance.

ENGLISH 440. STUDIES IN RESTORATION AND EIGHTEENTH CENTURY LITERATURE **Three credits**
A study of selected topics in Engilsh literature from 1660 to 1800.

ENGLISH 450. STUDIES IN ROMANTIC AND VICTORIAN LITERATURE **Three credits**
A study of selected major English prose and poetry of the nineteenth century.

ENGLISH 470. STUDIES IN MODERN BRITISH LITERATURE **Three credits**
A study of selected major British authors of the twentieth century.

ENGLISH 480. STUDIES IN AMERICAN LITERATURE **Three credits**
A study of selected major movements and figures in American literature from the Puritans to contemporary authors.

ENGLISH 497. SEMINAR IN SPECIAL PROBLEMS **One to three credits**
This course is designed for intensive research in any specific area of English or American literature.

History

Master of Science in Education

SPECIAL DEGREE REQUIREMENTS

Candidates for the degree of Master of Science in Education, with a major in history, must take eighteen hours of history in courses numbered 300 or above.

Information on requirements of the Education Department for the Master of Science in Education, major in history, will be found under Education on page 22.

COURSES OF INSTRUCTION

HISTORY 313-314. HISTORY OF SCIENCE Three credits each semester
The development of science and technology from earliest times to 1800, and from 1800 to the present.

HISTORY 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 archeology.

HISTORY 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.

HISTORY 321-322. AMERICAN SOCIAL AND INTELLECTUAL HISTORY Three credits each semester
A study of social and intellectual developments in the United States from the colonial period to the present. During the first semester, emphasis will be placed on the influence of the American environment during the colonial period and of expansion and sectional disputes in the federal period upon society and upon religious, economic, and political thought. During the second semester the influence of industrialization, the rise of nationalism and the emergence of the United States as a World Power will be emphasized.

HISTORY 323-324. AMERICAN ECONOMIC HISTORY Three credits each semester
The evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the transformation of an agrarian-commercial economy to an urban-industrial economy which exercises a dominant influence in world affairs.

HISTORY 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.

HISTORY 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.

HISTORY 327-328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES Three credits each semester
A study of the evolution of the several policies that give direction to the relations of the United States with other nations.

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

HISTORY 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.

HISTORY 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.

HISTORY 334. TWENTIETH CENTURY AMERICA Three credits
The emergence of the United States as an industrial, urban, world power and the corresponding development of its political, economic, social, religious and intellectual institutions.

HISTORY 341-342. HISTORY OF GREAT BRITAIN AND THE BRITISH EMPIRE AND COMMONWEALTH Three credits each semester
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.

HISTORY 347-348. HISTORY OF RUSSIA Three credits each semester
A study of the political, social, and intellectual history of Russia.

HISTORY 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.

HISTORY 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 reform and conflicts resulting from the crisis in the sixteenth century.

HISTORY 353-354. EARLY MODERN EUROPE, 1648-1815 Three credits each semester
Topics include the absolutism of Louis XIV, the growth of Brandenburg-Prussia, the French Revolution and French Empire, the economic forces of mercantilism and the early Industrial Revolution. The growth of science and the Enlightenment will receive careful attention.

HISTORY 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.

HISTORY 356.
EUROPE IN THE TWENTIETH CENTURY **Three credits**
Against a background of the internal and international developments of the leading powers, the class will study the origins and results of the two World Wars.

HISTORY 361-362.
HISTORY OF THE FAR EAST **Three credits each semester**
A study of the history of the civilizations developed in India, China, and Japan with emphasis on their inter-relations 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.

HISTORY 363. HISTORY OF MODERN CHINA **Three credits**
A study of Chinese history since 1840 with special emphasis on social, political, economic, and intellectual developments.

HISTORY 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.

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

HISTORY 381-382.
HISTORY OF LATIN AMERICA **Three credits each semester**
First Semester, A Survey of Latin American History from ancient times to 1820. Second Semester, Latin America since 1820.

HISTORY 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.

HISTORY 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.

HISTORY 398. TOPICS **Three credits**
Special topics in history. This course will be offered from time to time when interest and demand justify it.

HISTORY 497. SEMINAR **One to three credits**
Presentations and discussions of selected topics. (May be repeated for credit.)

Prerequisite: Approval of the instructor is required.

Mathematics

Master of Science

Master of Science in Education

THE COURSES OF STUDY ARE INTENDED FOR:

a. students who plan to continue their studies beyond the master level,

b. teachers of secondary or junior college mathematics who seek to strengthen their subject-matter competence, and

c. persons seeking a terminal master degree to further their career in industry or government.

ADMISSION

An applicant should have a baccalaureate degree from an accredited college or university. He is expected to have completed courses in advanced calculus or real variables and in modern and linear algebra. Students with a weak mathematical background may be required to make up certain deficiencies before being admitted to candidacy.

DEGREE REQUIREMENTS

a. Master of Science — with a major in Mathematics:

A minimum of thirty credits of approved courses in Mathematics or Computer Science is required. All candidates are required to complete Math. 311, 331, and 334, or the equivalent, if they have not done so as undergrad-

uates. At least six credits, exclusive of those for the optional thesis, must be in courses numbered above 500. No more than twelve credits of the 300 level courses may be applied towards this degree.

b. M.S. in Education — with a major in Mathematics:

A minimum of thirty credits of approved courses, to be distributed as follows, is required.

1. Education courses: 12 credits
   six credits in Area I
   three credits in Area II
   three credits in Area IV
2. Mathematics or Computer Science courses: 18 Credits
   At least three credits must be in courses numbered above 400.

COURSES OF INSTRUCTION

Mathematics

MATHEMATICS 311. FUNCTIONS OF A REAL VARIABLE **Three credits**
A rigorous study of the topology of the real line, limits, continuity, differentiation, integration, and series of functions.

MATHEMATICS 314. FUNCTIONS OF A COMPLEX VARIABLE **Three credits**
Complex functions, limit, continuity, analytic functions, power series, contour integration, Laurent expansion, singularities and residues.

MATHEMATICS 331. INTRODUCTION TO ABSTRACT ALGEBRA I **Three credits**
A study of elementary number theory, groups, rings, and fields.

MATHEMATICS 334. LINEAR ALGEBRA **Three credits**
Vector spaces, linear transformations, matrices, determinants, inner products, bilinear and quadratic forms, matrix polynomials.

MATHEMATICS 342. INTRODUCTION TO TOPOLOGY **Three credits**
Metric spaces, topological spaces, countability and separation axioms, compactness, connectedness, product spaces.
Prerequisite: Math. 311 or consent of instructor.

MATHEMATICS 343. INTRODUCTION TO GEOMETRY **Three credits**
A study of selected topics from Euclidean geometry, affine geometry, projective geometry, and convexity.

MATHEMATICS 351-352. PROBABILITY AND MATHEMATICAL STATISTICS I AND II **Three credits each**
Random variables, probability distributions, expectation and limit theorems, estimation, testing statistical hypotheses, confidence intervals.

MATHEMATICS 361-362. INTRODUCTION TO APPLIED MATHEMATICS I & II **Three credits each semester**
Mathematics of physical science and engineering. Topics include: vector integral and differential calculus, power series, differential equations, Fourier analysis, and eigenvalue problems.

MATHEMATICS 364. NUMERICAL ANALYSIS **Three credits**
Numerical methods of differentiation, integration, solution to equations and of differential equations with emphasis on problems that lend themselves to solution on computers.
Prerequisite: A course in elementary differential equations and knowledge of Fortran.

MATHEMATICS 413. FUNCTIONS OF SEVERAL VARIABLES **Three credits**
A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration on manifolds leading to the classical theorems of Green and Stokes.
Prerequisites: Mathematics 311 and 334.

MATHEMATICS 432. INTRODUCTION TO ABSTRACT ALGEBRA II **Three credits**
A continuation of Mathematics 331. Polynomial rings, ideals, field extensions and Galois Theory.
Prerequisite: Mathematics 331.

MATHEMATICS 470. READINGS IN MATHEMATICS **Three credits per semester**
Individual study of an outstanding text under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics.
Prerequisite: Consent of department chairman.

MATHEMATICS 511. MEASURE AND INTEGRATION **Three credits**

Measures, measurable functions, integration, convergence theorems, product measures, signed measures.

Prerequisite: Mathematics 342, or consent of instructor.

MATHEMATICS 513. FUNCTIONAL ANALYSIS **Three credits**

Topics include: Banach spaces, Lp-spaces, Hilbert spaces, topological vector spaces, and Banach algebras.

Prerequisite: Mathematics 311 and 334.

MATHEMATICS 532. MODERN ALGEBRA **Three credits**

A study of group theory (including the Sylow Theorems and solvable groups); ring theory (including the Noetherian rings and UFDs); modules, tensor algebra, and semi-simple rings.

Prerequisite: Mathematics 331 and 334, or consent of instructor.

MATHEMATICS 542. ALGEBRAIC TOPOLOGY **Three credits**

Polyhedre, simplicial homology theory, cohomology rings, and homotopy groups.

Prerequisite: Mathematics 342.

MATHEMATICS 398, 498, 598. TOPICS IN MATHEMATICS **Variable**

A wide range of topics in pure and applied mathematics may be offered upon demand. May be repeated for credit.

Prerequisite: Consent of instructor.

MATHEMATICS 590. THESIS **Three or six credits**

Prerequisite: Consent of department chairman.

Computer Science

For a description of the prerequisite undergraduate courses, consult the undergraduate bulletin.

COMP. SCI. 320. LOGIC & 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.

Prerequisite: E.E. 211 or Phys. 202.

COMP. SCI. 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 others.

Prerequisite: Comp. Sci. 223 or Comp. Sci. 224.

COMP. SCI. 322. 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. Fee: $25.

Prerequisite: Computer Science 223/Engr. 245.

COMP. SCI. 323.
FORMAL LANGUAGES & AUTOMATA THEORY **Three credits**

This course formalizes many topics encountered in previous computing courses. Topics include alphabets, languages, grammars, finite automata, regular expressions and type 3 grammars, context-free languages, push-down automata.

Prerequisite: Math. 202.

COMP. SCI. 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: Comp. Sci. 224 and 227.

COMP. SCI. 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: Comp. Sci. 324.

COMP. SCI. 326. OPERATING SYSTEM PRINCIPLES **Three Credits**

Analysis of the computer operating systems including Batch, Timesharing, and Real-time systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices.

Prerequisite: Computer Science 227/E.E. 343.

COMP. SCI. 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: Comp. Sci. 227 and Comp. Sci. 323.

COMP. SCI. 328. ANALYSIS OF ALGORITHMS **Three credits**

Theoretical analysis of various algorithms. Topics include sorting, searching, selection, matrix multiplication and multiplication of real numbers.

Prerequisite: Comp. Sci. 227.

COMP. SCI. 329. MICROCOMPUTER OPERATION & DESIGN

Three Credits

Microprocessor architecture, microcomputer design, and peripheral interfacing. Microprogramming, soft-ware 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.

Prerequisite: Computer Science 320/E.E. 341.

COMP. SCI. 398/498. TOPICS IN COMPUTER SCIENCE **Variable credit**

The study of one or more topics in computer science. May be repeated for credit.

Prerequisite: Varies with the topics studied.

COMP. SCI. 408. MANAGEMENT INFORMATION SYSTEMS Three Credits

(Same as Business Administration 508)

A general introduction intended to acquaint managers with the characteristics, selection, implementation, potentials, limitations and effects of modern management information systems. May not be counted as an upper level elective in Mathematics and Computer Science without special permission.

Prerequisite: Admission to the MBA program or permission of the Department of Commerce and Finance or the Department of Mathematics and Computer Science. No computer programming background is assumed.

Physics

Master of Science

Master of Science in Education

ADMISSION

Applicants for admission to graduate study in physics must present at least 24 hours of undergraduate credit in physics. Proficiency in calculus and ordinary differential equations is assumed, and it is desirable that the student have some acquaintance with the use of complex variable theory.

DEGREE REQUIREMENTS

Two graduate programs are offered in physics leading to the Master of Science degree or Master of Science in Education degree with a major in Physics. Information on requirements for the Master of Science degree is given below. The education requirements for the Master of Science in Education with a major in Physics are listed under Education on page 22. The candidate may with the consent of his physics advisor elect any six of the courses listed below.

All candidates for the Master of Science Degree in physics are required to complete satisfactorily Physics 511, Analytical Mechanics; Physics 530, Electricity and Magnetism; Physics 401-402, Topics in Mathematical Physics; and Physics 550-551, Quantum Mechanics. A minimum of 18 credits in graduate physics courses is required, exclusive of dissertation credits.

For the M.S. in physics, the candidates can choose between two options regarding the dissertation: it may be an original research problem, or it may be a critical survey. In the former option, six credits are allowed for a thesis written on the research. In the latter option, no credit is allowed for the critical survey.

COURSES OF INSTRUCTION

PHYSICS 311-312 MECHANICS **Three credits each**

Intermediate level courses designed to develop a thorough understanding of the principles of mechanics and the application of mathematical methods to the solution of their problems. Topics include harmonic oscil-

lator, central force problems, rotations of rigid bodies, moving coordinate systems, continuous media, inertia and stress tensors, Lagrange's equations of motion, theory of small vibrations.

PHYSICS 320* ELECTRONIC INSTRUMENTATION FOR THE LIFE AND BEHAVIORAL SCIENCES **Three credits**

(See course description under Physics 321)

PHYSICS 321* ELECTRONIC INSTRUMENTATION FOR THE PHYSICAL SCIENCES **Three credits**

Construction, calibration and use of electronic instruments. Operational amplifers and integrated circuits as device components. Students will be encouraged to follow their own interests in designing simple devices for special applications. Two hours class and one three-hour laboratory per week. Fee: $25.

PHYSICS 330. OPTICS AND LIGHT **Three credits**

The principles of geometrical and physical optics are considered. Image formation, refraction, diffraction, origin of spectra, polarized light, optical activity, etc. Laboratory one period per week. Fee: $25.

PHYSICS 331-332. ELECTRICITY AND MAGNETISM **Three credits each**

Static and dynamic electricity, magnetism, electromagnetism, etc., are covered. The emphasis in this course is on fundamental analysis rather than applications. Laboratory, one period per week. Fee: $25 ea. semester.

PHYSICS 340. THERMODYNAMICS **Three credits**

The fundamental concepts of thermodynamics. The laws of thermodynamics, Carnot cycle, entropy, and an introduction to kinetic theory and statistical mechanics.

PHYSICS 351. QUANTUM MECHANICS **Three credits**

An introduction to quantum mechanics; Schrodinger's equation and its application to the harmonic oscillator, the potential-well, and the hydrogen atom; perturbation theory; angular momentum; identical particles and Pauli's exclusion principle; introduction to the relativistic wave equation and the origin of electron spin.

PHYSICS 361. ATOMIC PHYSICS **Three credits**

Black body radiation, wave-particle duality, hydrogenic atoms, multielectron atoms, molecules, solids. Laboratory, one period per week. Fee: $25.

PHYSICS 370.
INTRODUCTION TO SOLID STATE PHYSICS **Three credits**

Topics include bonding and structure, translational symmetry, direct and reciprocal lattices, lattice dynamics, electronic structure of simple metals, insulators and semiconductors.

PHYSICS 380. NUCLEAR PHYSICS **Three credits**

Special relativity, natural and induced radioactivity, nuclear structure, nuclear reactions, reactors, etc. Laboratory, one period per week. Fee: $25.

PHYSICS 401-402.
TOPICS IN MATHEMATICAL PHYSICS **Three credits each**

Development of the solutions of various differential equations of physics and chemistry arising from thermodynamics and statistical mechanics, kinetic theory, hydrodynamics, etc.

PHYSICS 405-406.
THEORETICAL PHYSICS I AND II **Three credits each**

The great unifying principles of physics will be examined and applied in the special branches of physics. Aspects of mechanics, optics, electromagnetism, relativity, atomic and nuclear physics will be treated from many points of view. Familiarity with subject matter will be assumed. The object of this course will be to develop deeper insight into physical laws and greater flexibility of approach to physical problems.

PHYSICS 423. X-RAY DIFFRACTION **Three credits**

Modern developments in x-ray diffraction. Generation, detection, and measurement of x-rays. Elastic and inelastic scattering. The geometry of crystals and diffraction by polycrystalline and amorphous materials. The kinematical theory and pair distribution functions. The dynamical theory for perfect and imperfect crystals as derived from Maxwell's equations. Total cross-sections, line-shape functions, one-electron factors, and determination of crystal structure. Experimental x-ray methods and applications. Laboratory, one period per week. Fee: $25.

Prerequisite: Physics 370.

PHYSICS 427-428. SOLID STATE DEVICES **Three credits each**

Application of energy band theory. Fermi-Dirac statistics. Conduction theory. Intrinsic and impurity conduction. Semi-conductor properties and characteristics of p/n junctions. Transistors and transistor theory. Characteristics of transistors. High-current characteristics. Feedback effects.

PHYSICS 471. SOLID STATE PHYSICS **Three credits**

Application of group theory to the crystallographic point groups, symmetry principles and band structure of metals, insulators and semiconductors; transport properties, magnetic properties, optical properties.

PHYSICS 473.
ANISOTROPIC PROPERTIES OF CRYSTALS **Three credits**

Application of matrices and tensors to represent anisotropic physical properties of crystalline solids. The stress-strain and elastic properties. Paramagnetic and diamagnetic susceptibility, and electric polarization. Thermal expansion and thermodynamics of equilibrium properties of crystals. Thermal and electrical conductivity, and thermoelectricity. Double refraction, optical activity, and crystal optics.

Prerequisite: Physics 370.

PHYSICS 511. ANALYTICAL MECHANICS **Three credits**

The dynamics of particles and rigid bodies. Topics include central forces, orthogonal transformations, variational principles. Lagrange's equations, Hamiltonian method, etc.

Prerequisites: Differential equations, undergraduate mechanics.

PHYSICS 530-531. ELECTRICITY AND MAGNETISM **Three credits each**

A detailed analytical study of the laws of electrostatics, magneto-statics and electromagnetism. Topics include Laplace's equation, Poynting's flux, etc.

PHYSICS 540. STATISTICAL MECHANICS **Three credits**

The statistical theory of particles, both classical and quantum. Application to solid state and nuclear physics.

Corequisite: Physics 551.

PHYSICS 550-551. QUANTUM MECHANICS **Three credits each**

The fundamental principles of quantum mechanics, according to both Schrodinger and Heisenberg formulations. Topics include variational methods, perturbation methods, angular momentum, the formulation of spin, radiation theory, collision theory, and operator methods.

Prerequisites: Physics 401, Physics 511. Corequisite: Physics 402.

PHYSICS 571. SOLID STATE THEORY **Three credits**

Methods of energy band calculations, relativistic effects including spin, electron phonon interactions, superconductivity, cooperative phenomena, order-disorder, ferromagnetism.

PHYSICS 580-581. NUCLEAR PHYSICS **Three credits each**

An introduction to the theory and practice of nuclear physics. Nuclear reactions, scattering theory, fission, fusion, etc.

Corequisite: Physics 551.

PHYSICS 590. THESIS **Six credits**

* Either one but not both may be taken for credit.

Administration of the Graduate Program

Graduate programs at Wilkes College are the administrative responsibility of the Division of Continuing Education and Graduate Studies. A Faculty Committee on Graduate Studies acts in an advisory capacity to the Director, John F. Meyers, and is listed below.

Faculty Committee on Graduate Studies

FRANCK G. DARTE II	**Chairman of the Committee** **Professor of Education** Ed.D. (Pennsylvania)
RICHARD ASTON	**Associate Professor of Engineering** Ph.D. (Ohio State)
JAMES J. BOHNING	**Professor of Chemistry** Ph.D. (Northeastern)
FRANCIS J. DONAHOE	**Professor of Physics** Ph.D. (Pennsylvania)
ROBERT J. HEAMAN	**Associate Professor of English, Modern Foreign Languages and Literatures** Ph.D. (Michigan)
LEVERE C. HOSTLER	**Professor of Physics/Engineering** Ph.D. (Stanford)
CLYDE R. HOUSEKNECHT	**Associate Professor of Biology** Ph.D. (Minnesota)
LOUIS RIGLEY	**Assistant Professor of Biology** Ph.D. (West Virginia)
KUO-KANG SHAO	**Associate Professor of History** Ph.D. (Pennsylvania)
PHILIP R. TUHY	**Assistant Professor of Political Science** M.G.A. (Pennsylvania)

HOWARD WILLIAMS	**Associate Professor of Economics** Ph.D. (Pennsylvania State)
ROY E. WILLIAMS	**Associate Professor of Philosophy** Ph.D. (Drew)
BING K. WONG	**Professor of Mathematics** Ph.D. (Illinois)
GERALD E. HARTDAGEN	**Dean of Academic Affairs** Ph.D. (Northwestern)

Information on the graduate school may be obtained by writing to:

John F. Meyers
Director of Graduate Studies
Wilkes College
Wilkes-Barre, Pennsylvania 18766

WILKES COLLEGE

Wilkes-Barre, Pa. 18766

Wilkes College

1979 Fall Semester

WILKES COLLEGE FALL SEMESTER 1979

— GENERAL INFORMATION —

Calendar for Spring Semester 1979

Registration for Evening College, Part-Time, and Graduate Students:

Thursday, Aug. 30 ..... 8:30 a.m. to 8 p.m.

Friday, Aug. 31 ..... 8:30 a.m. to 8 p.m.

Tuesday, Sept. 4 ..... Classes begin at 8 a.m.

Tuesday, Nov. 20 ..... Thanksgiving recess begins at 10 p.m.

Monday, Nov. 26 ..... Classes resume at 8 a.m.

Saturday, Dec. 15 through
Saturday, Dec. 22 ..... Final Examinations

Expenses

All charges must be paid at the time registration forms are processed.

Undergraduate:

Undergraduate students who register for fewer than 12 credits pay $75 per credit.

Undergraduate students who register for 12 to 18 credits pay a flat tuition fee of $1625 per semester. (Students who take more than 18 credits pay $110 for each credit above 18.)

Graduate:

All graduate students pay $95 per credit.

Financial Aid

Various financial aid programs are available to part-time and full-time students. Inquiries about financial aid should be made to Richard Raspen, Director of Financial Aid. Information on Veterans' benefits is available through the Veterans' Affairs Office on campus.

Withdrawal

An evening college, part-time, or graduate student may withdraw, without prejudice, from any course at any time during the first 10 weeks of the semester, providing that he or she gives verbal or written notice to this effect to the instructor and to the Director of Continuing Education and Graduate Studies within this 10-week period.

Students in good standing who withdraw from courses or from the college will receive a refund of tuition under the following conditions: During the first six weeks of the semester, one-half of the tuition will be refunded upon request to the Director of Continuing Education and Graduate Studies, if the withdrawal is made for adequate and satisfactory reasons. After the first six weeks, no refunds are allowed and the student is obligated for the full costs of the term. No student who is suspended or expelled shall be entitled to any refunds.

Admissions

Application for admission to Wilkes College as an evening college, part-time, or graduate student should be made to the Division of Continuing Education and Graduate Studies, 16 South River Street, Wilkes-Barre, Pennsylvania 18766.

Degree Programs

Bachelor of Arts degrees are offered in the following subject areas:

Anthropology
Art
Biology
Chemistry
Computer Science
Earth and
Environmental Sciences
Economics
Elementary Education
English
Foreign Language
History
Individualized Studies
International Relations
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Social Science/Urban Affairs
Sociology
Sociology-Anthropology

Bachelor of Science degrees are offered in the following subject areas:

Biology
Business Education
Chemistry
Commerce & Finance
(a) Accounting
(b) Business Administration
Computer Science
Engineering
Environmental Sciences
Mathematics
Medical Technology
Music Education
Nursing
Physics

Wilkes also offers a "Certificate of Achievement" 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.

Wilkes offers the Master of Business Administration Degree; Master of Science Degrees in Biology, Chemistry, Mathematics, and Physics, and a Master of Science Degree in Education with concentrations in Biology, Chemistry, Education, Elementary Education, English, History, Mathematics or

Undergraduate students who register for 12 to 18 credits pay a flat tuition fee of $1625 per semester. (Students who take more than 18 credits pay $110 for each credit above 18.)

Graduate:

All graduate students pay $95 per credit.

Financial Aid

Various financial aid programs are available to part-time and full-time students. Inquiries about financial aid should be made to Richard Raspen, Director of Financial Aid. Information on Veterans' benefits is available through the Veterans' Affairs Office on campus.

Withdrawal

An evening college, part-time, or graduate student may withdraw, without prejudice, from any course at any time during the first 10 weeks of the semester, providing that he or she gives verbal or written notice to this effect to the instructor and to the Director of Continuing Education and Graduate Studies within this 10-week period.

Students in good standing who withdraw from courses or from the college will receive a refund of tuition under the following conditions: During the first six weeks of the semester, one-half of the tuition will be refunded upon request to the Director of Continuing Education and Graduate Studies, if the withdrawal is made for adequate and satisfactory reasons. After the first six weeks, no refunds are allowed and the student is obligated for the full costs of the term. No student who is suspended or expelled shall be entitled to any refunds.

Change Of Schedule

Occasionally a change in the course schedule becomes necessary. Such a change may mean the cancellation of one course or the addition of another. 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.

The 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.

The Bookstore

Books, stationery and supplies may be purchased at the College Bookstore, located in 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.

History

Bachelor of Science degrees are offered in the following subject areas:

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Accreditation

Wilkes 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 Graduate programs are approved by the Pennsylvania State Department of Education.

Information

For further information write or call:

John F. Meyers, Director
Division of Continuing Education and Graduate Studies
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: 824-4651 Ext. 303 (After 4:30 p.m., 824-4656)

WILKES COLLEGE Fall Semester 1979

Registration: Thursday and Friday, Aug. 30 and 31...8:30 a.m. to 8:00 p.m. Cl

Continuing Education Office, Parrish Hall, 2nd

Undergraduate Division

Course	Description	Room	Day & Hour	Credits
	(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)			
AEROSPACE STUDIES:				
A.S. 101E	U.S. Military Forces in the Contemporary World I	137 S. Franklin	Th **5:00**	1
A.S. 201E	The Development of Air Power I	137 S. Franklin	Th **6:00**	1
ACCOUNTING:				
Acct. 101E	Elementary Accounting I	Par. 35	M **6:30-9:30**	3
Acct. 102E	Elementary Accounting II	Par. 35	T **6:30-9:30**	3
Acct. 111E	Intermediate Accounting I	Par. 45	Th **6:30-9:30**	3
Acct. 201E	Cost Accounting	Par. 45	W **6:30-9:30**	3
Acct. 221E	Taxes I (Pre: Acct. 112 or approval of instructor)	Par. 45	T **6:30-9:30**	3
Acct. 231E	Auditing I	Par. 35	W **6:30-9:30**	3
Acct. 241E	Advanced Accounting I (Pre: Acct. 112)	Par. 35	Th **6:30-9:30**	3
ANTHROPOLOGY:				
Anth. 101E	Introduction to Anthropology	SLC 380	M **6:30-9:30**	3
ART:				
Art 101E	Experiencing Art I	SLC 105	W **6:00-9:00**	3
Art 102E	Experiencing Art II (Pre: Art 101)	SLC 1	T **6:30-9:30**	3
Art 245E	Batik	SLC 206	M **6:00-9:00**	3
Art 380E	Topics in Studio Art: Sculpture	SLC 3	T **6:00-9:00**	3
BIOLOGY:				
Bio. 101E	Biological Science I	SLC 316	Th **6:30-9:30**	3
Bio. 315E	Molecular Biology (Pre: Bio. 201-208; Chem. 237-238 or permission of instructor)	SLC 380	T **6:30-9:30**	3
BUSINESS ADMINISTRATION:				
B.A. 101E	Introduction to the Private Sector of Business	Par. 53	W **6:30-9:30**	3
B.A. 209E	Bus. Correspondence & Reports	Par. 43	M **6:30-9:30**	3
B.A. 225E	Managerial Finance	Par. 43	Th **6:30-9:30**	3
B.A. 231E	Bus. Law—Introd., Contracts, and Sales	Par. 33	T **6:30-9:30**	3
B.A. 241E	Life Insurance	Par. 45	M **6:30-9:30**	3
B.A. 251E	Principles of Management	SLC 127	Th **6:30-9:30**	3
B.A. 261E	Principles of Retailing	Par. 53	W **6:30-9:30**	3
BUSINESS EDUCATION:				
B. Ed. 105E	Elementary Shorthand	Butler 10	T Th **4:45-6:30**	2

Course	Description	Room	Day & Hour	Credits
	(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)			
HISTORY:				
Hist. 101E	World Civilization I	SLC 380	Th **5:30-8:30**	3
Hist. 102E	World Civilization II	SLC 270	M **6:30-9:30**	3
Hist. 321E	American Social & Intellectual History I	SLC 316	W **6:30-9:30**	3
Hist. 361E	History of the Far East I	SLC 147	T **6:30-9:30**	3
Hist. 382E	History of Latin America II	SLC 204	Th **6:30-9:30**	3
Hist. 398E	Topics: Revolutionary Theory and Practice (Pre: Permission of Instructor)	SLC 147	M **6:30-9:30**	3
MUSIC:				
Applied Music	Private Lessons Note: It is important that all students who register for Applied Music through the Evening College consult with the Chairman of the Music Department before completing their registrations.	TBA	TBA	
Mus. 101E	Introduction to the Materials & Literature of Music I	DDD 101	T **6:30-9:30**	3
Mus. 111A	Piano Class I (Majors only)	DDD 219	M Th **6:00-7:00**	2
Mus. 111B	Piano Class I (Non-majors only)	DDD 219	M **7:00-9:00**	2
Mus. 113A	Piano Class III (Majors only)	DDD 219	M Th **6:00-7:00**	2
PHILOSOPHY:				
Phil. 101E	Introduction to Philosophy	SLC 207	T **6:30-9:30**	3
Phil. 152E	Introduction to Logic	SLC 207	W **6:30-9:30**	3
Phil. 240E	Problems in Metaphysics (Pre: Phil. 101 or 201)	SLC 207	Th **6:30-9:30**	3
PHYSICS:				
Phys. 101E	Physical Science I (Pre: Background in science and mathematics not necessary)	SLC 166	Th **6:30-9:30**	3
Phys. 320E	Electronic Instrumentation for the Life & Behavioral Sciences Fee: $20 (Pre: Phys. 106 or 202)	SLC 161	T **5:00-7:00** & Th **5:00-8:00**	3
Phys. 321E	Electronic Instrumentation for the Physical Sciences Fee: $20 (Pre: Phys. 106 or 202)	SLC 161	T **5:00-7:00** & Th **5:00-8:00**	3
POLITICAL SCIENCE:				
P.S. 102E	Political Science II	SLC 318	M **6:30-9:30**	3
P.S. 398E	Topics: Latin America (Pre: Permission of instructor)	SLC 204	Th **6:30-9:30**	3
PSYCHOLOGY:				
Psy. 101E	General Psychology I	SLC 334	W **6:30-9:30**	3
Psy. 398E	Topics: Exceptional Child	SLC 342	M **6:30-9:30**	3
SECRETARIAL STUDIES:				
B. Ed. 105E	Elementary Shorthand	Butler 10	T Th **4:45-6:30**	2
B. Ed. 107E	Elementary Typewriting Fee: $15	Butler 10	T Th **7:00-8:45**	2

B. Ed. 107E	Elementary Typewriting Fee: $15	Butler 10	T Th **7:00-8:45**	2
B. Ed. 207A	Advanced Shorthand I (Pre: Bus. Ed. 106)	Butler 10	T Th **4:45-6:30**	3

COMMUNICATION STUDIES:

Comm. 211E	Journalism: Basic News Writing (Pre: Eng. 102)	Butler 10	M **6:30-9:30**	3
Comm. 298A	Topics: Public Relations	Butler 10	W **6:30-9:30**	3
Comm. 298B	Topics: Broadcasting Mgmnt.	DDD 218	T **6:30-9:30**	3

COMPUTER SCIENCE:

C.S. 124E	Cobol Programming Fee: $25	SLC 424	T Th **6:30-8:00**	3

EARTH & ENVIRONMENTAL SCIENCES:

E. & E.S. 102E	Geology	SLC 270	T **6:00-8:00**	3
	Laboratory Fee: $20	SLC 435	T **8:00-10:00**	
E. & E.S. 211E	Physical Geology Fee: $20	SLC 403	Th **6:30-10:00**	3

ECONOMICS:

Econ. 101E	Principles of Economics I	SLC 127	W **6:30-9:30**	3
Econ. 102E	Principles of Economics II	SLC 127	M **6:30-9:30**	3
Econ. 201E	Money and Banking	SLC 127	T **6:30-9:30**	3
Econ. 223E	Collective Bargaining	Par. 43	W **6:30-9:30**	3
Econ. 225E	International Trade	Par. 43	T **6:30-9:30**	3
Econ. 227E	Economic Geography of North America, Europe, and the Soviet Union	Par. 33	W **6:30-9:30**	3
Econ. 231E	Applied General Statistics Fee: $15	Par. 33	M **6:30-9:30**	3

EDUCATION:

Ed. 203I	Special Methods of Teaching: Sciences (Grades 7-12)	(King's)	T Th **6:00-7:30**	3
Ed. 203J	Special Methods of Teaching: Social Studies (Grades 7-12)	SLC 209	T Th **6:00-7:30**	3
Ed. 351A	Educational Measurements (Pre: Ed. 202)	SLC 160	T **6:00-9:00**	3

ENGINEERING:

E.E. 211A	Circuit Theory I (Pre: Math. 112)	SLC 127	T Th **4:30-6:00**	3
E.E. 381A	Advanced Microelectronics Lab.	SLC 16	T **5:00**	4
	Lab A	SLC 22	T **6:00-11:00**	
	Lab B	SLC 22	Th **6:00-11:00**	
	Fee: $25 (Pre: Senior Standing)			

ENGLISH:

Eng. 101E	Composition I	Kby. 102	Th **6:30-9:30**	3
Eng. 151E	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	SLC 318	T **6:30-9:30**	3
Eng. 203A	Creative Writing (Pre: Eng. 102 or equivalent in composition)	TBA	TBA	3
Eng. 305A	The Teaching of English	Kby. 107	W **5:00-8:00**	3
Eng. 398E	Topics: Contemporary Poetry (Pre: Eng. 152 or 254)	Kby. 107	Th **6:30-9:30**	3
Eng. 470E	Studies in Modern British Literature: The Novel	Kby. 107	T **6:30-9:30**	3

B. Ed. 207A	Advanced Shorthand I (Pre: B. Ed. 106)	Butler 10	T Th **4:45-6:30**	2

SOCIOLOGY:

Soc. 101E	Introduction to Sociology	SLC 380	W **6:30-9:30**	3
Soc. 251E	Fields of Social Work (Pre: Soc. 101 or Anth. 101 or Psy. 101-102)	SLC 133	Th **6:30-9:30**	3
Soc. 265E	Sociology of Industry (Pre: Soc. 101 or Anth. 101 or approval of instructor)	SLC 133	T **6:30-9:30**	3
Soc. 398E	Topics: Family Violence	Kby. 107	M **6:30-9:30**	3

SPANISH:

Span. 101E	Elementary Spanish I	TBA	TBA	3

SPEECH:

Spch. 101E	Fundamentals of Speech	Church Hall	M **6:30-9:30**	3

Graduate Division

Course	Description	Room	Day & Hour	Instructor

(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)

BIOLOGY:

Bio. 301A	General Botany	SLC 380	T-Th 9:00	Ogren
	Laboratory Fee: $30	SLC 349	T **2:00-5:00**	
Bio. 303A	Bacteriology	SLC 380	T-Th 10:00	Doty
	Laboratory Fee: $30	SLC 305	W **2:00-5:00**	
Bio. 304A	Life of the Vertebrates	SLC 380	W-F 9:00	Rigley
	Laboratory Fee: $30	SLC 349	W **2:00-5:00**	
Bio. 305A	Invertebrate Biology	TBA	M-W 11:00	Ogren
	Laboratory Fee: $30	TBA	F 8:00-11:00	
Bio. 307A	Analytical Cytology	SLC 316	M-W 10:00	Ogren
	Laboratory Fee: $30	SLC 377	M **2:00-5:00**	
Bio. 315E	Molecular Biology	SLC 316	T **6:30-9:30**	Turoczi
Bio. 340A	Limnology	SLC 380	T-Th **1:00**	Houseknecht
	Laboratory Fee: $30	SLC 377	Th **2:00-5:00**	

BUSINESS ADMINISTRATION:

Acct. 503	Managerial Accounting	Par. 53	T **6:30-9:30**	Moran
Acct. 542	Financial & Tax Planning	Par. 45	Th **6:30-9:30**	Morrison
B.A. 502	Management Science	Par. 56	T **6:30-9:30**	Engel
B.A. 511	Modern International Comm.	Par. 53	M **6:30-9:30**	Taylor
B.A. 514	Market Research & Experimentation (Seminar)	Par. 56	W **6:30-9:30**	Williams
B.A. 522	Quantitative Aspects of Management	Par. 33	Th **6:30-9:30**	Williams
B.A. 550	Topics: Small Bus. Admin.	TBA	TBA	Gettinger
C.S. 408/ (B.A. 508)	Management Inform. Systems (Pre: Background course requirements for the MBA, Econ. 473-4, or permission of the Department of Mathematics and Computer Science)	SLC 403	M **6:30-9:30**	Parker
Econ. 506	Labor-Mgmnt. Economics	Par. 56	M **6:30-9:30**	Werner

m. Classes begin...September 4

2nd Floor

Course	Description	Room	Day & Hour	Instructor
	(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)			
CHEMISTRY:				
Chem. 341A	Physical Chemistry I	SLC 147	T-Th **1:00**	Swain
	Laboratory	SLC 256	F **2:00-5:00**	
	Fee: $25			
	(Pre: Chem. 202, Math 211, Phys. 203 or permission of instructor)			
Chem. 411A	Advanced Inorganic Chemistry	TBA	TBA	Faut
Chem. 431A	Advanced Organic Chemistry I	TBA	TBA	Jahngen
Chem. 451A	Biochemistry I	TBA	TBA	Stine
COMPUTER SCIENCE:				
C.S. 320A	Logic & Switching Circuits	SLC 424	M-W-F 9:00	Koch
C.S. 324A	Systems Analysis	SLC 424	T-Th 9:30-11:00	Tillman
	(Pre: C.S. 224 and 227)			
C.S. 326A	Operating System Principles	SLC 424	M-W-F 12:00	Parker
	(Pre: C.S. 227)			
C.S. 408E/ (B.A. 508)	Management Inform. Systems	SLC 403	M **6:30-9:30**	Parker
	(Pre: Background course requirements for the MBA, Econ. 473-4, or permission of the Department of Mathematics and Computer Science)			
EDUCATION:				
Ed. 513	Comparative Foundations of Education	SLC 160	M **6:00-9:00**	Fahmy
Ed. 514	Historical Foundations of Education	SLC 133	W **6:00-9:00**	Barone
Ed. 520	Tests & Measurements	SLC 160	T **6:00-9:00**	Bellucci
Ed. 521	Statistics in Education	SLC 127	Th **6:00-9:00**	Bellucci
	(Pre: Ed. 520 or equivalent)			
Ed. 532D	PEE: Social Studies	SLC 160	W **6:00-9:00**	Fahmy
Ed. 599A*	Ungraded-Continuous Prog. Education	SLC 204	T **6:45-10:00**	Darte
	(1 credit — September 4 thru October 2)			
Ed. 599B*	Individualization of Instr.	SLC 204	T **6:45-10:00**	Darte
	(1 credit — October 9 thru November 6)			
Ed. 599C*	Team Teaching	SLC 204	T **6:45-10:00**	Darte
	(1 credit — November 13 thru December 11)			
	* Students may register for 1, 2, or 3 credits for the short course(s) in the Education 599 series.			
ENGLISH:				
Eng. 301A	Literary Criticism	Kby 107	M-W-F 9:00	Kaska
Eng. 312A	Chaucer	Kby 107	M-W-F **1:00**	Fiester
	(Pre: Eng. 152 or 254)			
Eng. 341A	Restoration & Eighteenth Century Drama	Kby 107	T-Th **1:00-2:30**	Fox
Eng. 345A	Early English Novel	SLC 209	M-W-F 12:00	Terry
Eng. 360A	Victorian Prose & Poetry	SLC 409	T-Th-F 10:00	R. Heaman
Eng. 381A	American Literature I	Kby 107	T-Th-F **3:00**	Gutin
	(Pre: Eng. 152 or 254)			
Eng. 397A	Seminar: Comedy	Kby 107	M-W-F **2:00**	Powlick
Eng. 470E	Studies in Modern British Literature: The Novel	Kby 107	T **6:30-9:30**	Rizzo
HISTORY:				

HISTORY:

Hist. 321E	American Social & Intellectual History I	SLC 316	W **6:30-9:30**	Rodechko
Hist. 351A	Medieval Europe	SLC 215	M-W-F **2:00**	Berg
Hist. 355A	Europe in the Nineteenth Century	SLC 147	M-W-F 12:00	Shao
Hist. 361E	Hist. of the Far East I	SLC 215	T **6:30-9:30**	Shao
Hist. 382E	Hist. of Latin America II	SLC 204	Th **6:30-9:30**	Freysinger
Hist. 398E	Topics: Revolution-Theory & Practice	SLC 215	M **6:30-9:30**	Cox

MATHEMATICS:

Math. 311A	Functions of a Real Variable	SLC 411	M-W-F **2:00**	Earl
Math. 334A	Linear Algebra	SLC 411	M-W-F 10:00	DeCosmo
Math. 351A	Probability & Mathematical Statistics I	SLC 403	T-Th **1:00-2:30**	Richards
Math. 361A	Introd. to Applied Math. I	SLC 405	M-W-F 11:00	Sours
Math. 398/ 498A	Topics in Mathematics	TBA	TBA	Staff

PHYSICS:

Phys. 311A	Mechanics I	SLC 147	M-W-F 10:00	Donahoe
Phys. 320E	Electronic Instrumentation for the Life & Behaviorial Sciences Fee: $20	SLC 161	T **5:00-7:00** Th **5:00-8:00**	Holden
Phys. 321E	Electronic Instrumentation for the Physical Sciences Fee: $20	SLC 161	T **5:00-7:00** Th **5:00-8:00**	Holden
Phys. 331A	Electricity & Magnetism I	SLC 160	M-W-F **1:00**	Hostler
	Laboratory A	SLC 125	8:00-11:00	
	Laboratory B Fee: $20	SLC 125	**2:00-5:00**	
Phys. 351A	Quantum Mechanics	TBA	TBA	Bellas
Phys. 361A	Atomic Physics Fee: $20	SLC 42	TBA	Bailey

Weekend College

(Fall, 1979)

Wilkes' Weekend College classes meet every third weekend on the campus of Keystone Junior College, La Plume, Pennsylvania. Classes start the weekend of September 7 and end the weekend of December 14.

For information on the Weekend College, contact:

JOHN F. MEYERS, Director
Division of Continuing Education & Graduate Studies
Wilkes College
Wilkes-Barre, Pa. 18766
Phone: (717) 824-4651 Ext. 303

WILKES COLLEGE SPRING SEMESTER 1980

— GENERAL INFORMATION —

Calendar for Spring Semester 1980

Registration for Evening College, Part-Time and Graduate Students:

Thursday, Jan. 10 ..... 8:30 a.m. to 8:00 p.m.
Friday, Jan. 11 ..... 8:30 a.m. to 8:00 p.m.
Monday, Jan. 14 ..... Classes begin at 8:00 a.m.
Friday, Feb. 29 ..... Spring recess begins at 5:00 p.m.
Monday, Mar. 10 ..... Classes resume at 8:00 a.m.
Thursday, Apr. 3 ..... Easter recess begins at 10:00 p.m.
Tuesday, Apr. 8 ..... Classes resume at 8:00 a.m.
*Tuesday, Apr. 29 ..... Classes end
Friday, May 2 thru Saturday, May 10 .... Final examinations

*Tuesday, Apr. 29 follows the Friday schedule.

Expenses

All charges must be paid at the time registration forms are processed.

Undergraduate:

Undergraduate students who register for fewer than 12 credits pay $75 per credit.

Undergraduate students who register for 12 to 18 credits pay a flat tuition fee of $1625 per semester. (Students who take more than 18 credits pay $110 for each credit above 18).

Graduate:

All graduate students pay $95 per credit.

Financial Aid

Various financial aid programs are available to part-time and full-time students. Inquiries about financial aid should be made to Richard Raspen, Director of Financial Aid, Weckesser Hall, Wilkes College, Wilkes-Barre, Pennsylvania 18766.

Withdrawal

An evening college, part-time, or graduate student may withdraw, without prejudice, from any course at any time during the first 10 weeks of the semester, providing that he or she gives verbal or written notice to this effect to the instructor and to the Director of Continuing Education and Graduate Studies within this 10-week period.

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Admissions

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Degree Programs

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Art
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Chemistry
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History
Sociology-Anthropology

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(a) Accounting
(b) Business Administration
Computer Science
Earth and Environmental Sciences
Engineering
Mathematics
Medical Technology
Music Education
Nursing
Physics

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.

Wilkes offers the Master of Business Administration Degree; Master of Science Degrees in Mathematics and Physics; and a Master of Science Degree in Education with concentrations in Biology, Chemistry, Education, Elementary Education, English, History, Mathematics or Physics.

Accreditation

Wilkes 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 graduate programs are approved by the Pennsylvania State Department of Education.

Information

For further information write or call:

John F. Meyers, Director
Division of Continuing Education and Graduate Studies
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: 824-4651 Ext. 303 (After 4:30 p.m., 824-4656)

WILKES COLLEGE Spring Semester 1980

Registration: Thursday and Friday, Jan. 10 and 11...8:30 a.m. to 8:00 p.m. Classes Begin...Jan. 14

Continuing Education Office, Parrish Hall, 2nd Floor

Undergraduate Division

(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Credits
ACCOUNTING:				
Acct. 101E	Elementary Accounting I	Par. 35	W **6:30-9:30**	3
Acct. 102E	Elementary Accounting II	SLC 127	M **6:30-9:30**	3
Acct. 102E-2	Elementary Accounting II	Par. 35	T **6:30-9:30**	3
Acct. 112E	Intermediate Accounting II	Par. 35	Th **6:30-9:30**	3
Acct. 204E	Managerial Accounting	Par. 45	W **6:30-9:30**	3
Acct. 222E	Taxes II (Pre: Acct. 221)	Par. 45	T **6:30-9:30**	3
Acct. 242E	Advanced Accounting II (Pre: Acct. 241 and permission of instructor)	Par. 45	Th **6:30-9:30**	3
AEROSPACE STUDIES:				
A.S. 102E	U.S. Military Forces in the Contemporary World II	137 S. Franklin	Th **5:00**	1
A.S. 202E	The Development of Air Power II	137 S. Franklin	Th **6:00**	1
ANTHROPOLOGY:				
Anth. 101E	Introduction to Anthropology	SLC 380	W **6:30-9:30**	3
Anth. 398E	Anthropology through Film Fee: $10	SLC 334	T **6:30-9:30**	3
Anth. 398E-2	Topics: Indians of North America	SLC 342	Th **6:30-9:30**	3
ART:				
Art 101E	Experiencing Art I	SLC 105	W **6:00-9:00**	3
Art 241E	Metalwork & Jewelry (Pre: Art 202 and 208 or permission of instructor)	CG 202	MW **6:30-8:00**	3
Art 243E	Ceramics I Fee: $15	CG 102	T **6:00-9:00**	3
Art 248E	Fiber I	SLC 206	T **5:30-8:30**	3
BIOLOGY:				
Bio. 102E	Biological Science II	SLC 380	Th **6:30-9:30**	3
Bio. 313E	Parasitology	SLC 380	T **6:00-8:00**	3
	Lab Fee: $30	SLC 377	Th **6:00-9:00**	
BUSINESS ADMINISTRATION:				
B.A. 101E	Introduction to Business	Weck Annex	Th **6:30-9:30**	3
B.A. 115E	Mathematics of Business and Finance	Weck Annex	W **6:30-9:30**	3
B.A. 209E	Business Correspondence and Reports	Weck Annex	M **6:30-9:30**	3
B.A. 216E	Advertising	Par. 45	M **6:30-9:30**	3
B.A. 220E	Real Estate	SLC 127	Th **6:30-9:30**	3
B.A. 222E	Marketing	Weck Annex	T **6:30-9:30**	3
B.A. 226E	Investments	Par. 43	W **6:30-9:30**	3
B.A. 232E	Business Law — Agency, Partnerships, Corporations, and Real Property	SLC 318	T **6:30-9:30**	3
B.A. 240E	Property Insurance	Par. 33	W **6:30-9:30**	3

(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Credits
ENGLISH:				
Eng. 102E	Composition II (Pre: Eng. 101 or Eng. 100)	Kby. 102	W **6:30-9:30**	3
Eng. 152E	Western World Literature II (Pre: Eng. 151)	SLC 270	T **6:30-9:30**	3
Eng. 152E-2	Western World Literature II (Pre: Eng. 151)	SLC 334	W **6:30-9:30**	3
Eng. 325E	Shakespeare (Pre: Eng. 152 or 254)	Kby. 102	T **6:30-9:30**	3
Eng. 398E	Topics: Contemporary Fiction	Kby. 102	Th **6:30-9:30**	3
Eng. 398E-2	Topics: Shakespeare Plays	TBA	TBA	3/Audit
Eng. 420E	Shakespeare Tragedies	Kby. 102	T **6:30-9:30**	3
HISTORY:				
Hist. 101E	World Civilization I	SLC 133	M **6:30-9:30**	3
Hist. 102E	World Civilization II	SLC 133	Th **5:30-8:30**	3
Hist. 322E	American Social and Intellectual History II	SLC 209	W **6:30-9:30**	3
Hist. 333E	The Age of Big Bus. 1865-1914	SLC 209	M **6:30-9:30**	3
Hist. 362E	History of the Far East II	SLC 209	T **6:30-9:30**	3
MATHEMATICS:				
Math. 211E	Introduction to Linear Algebra (Pre: Math. 112)	SLC 403	M W **7:00-9:00**	4
MUSIC:				
Mus. 101E	Introduction to the Materials and Literature of Music I	DDD 101	T **6:30-9:30**	3
Mus. 112A	Piano Class II (Music Majors)	DDD 219	M Th **6:00-7:00**	2
Mus. 112B	Piano Class II (Non-majors)	DDD 219	M **7:00-9:00**	2
Mus. 114A	Piano Class IV (Music majors) (Pre: Mus. 112)	DDD 219	M Th **6:00-7:00**	2
Applied Music	Private Lessons Note: It is important that all students who register for Applied Music through the Evening College consult with Dr. Terrance Anderson, Music Department Chairman, before completing their registration.			
NURSING:				
Nsg. 298E	Topics: Clinical Pharmacology in Nursing (Only open to Jrs. or Srs. or Rns.)	SLC 347	W **6:00-9:00**	3
Nsg. 398E	Recent Trends in Clinical Nutrition (Pre: Nsg. 200 or Rn. status)	SLC 318	M **6:00-9:00**	3
Nsg. 398E-2	Expanded Interpersonal Relations (Pre: Jrs. or Srs. or Rns.)	SLC 204	T **6:00-9:00**	3
PHILOSOPHY:				
Phil. 101E	Introduction to Philosophy	SLC 207	T **6:30-9:30**	3
Phil. 152E	Introduction to Logic	SLC 207	Th **6:30-9:30**	3
Phil. 230E	Social & Political Philosophy (Pre: Phil. 101 or Phil. 201)	SLC 316	T **6:30-9:30**	3
Phil. 302E	Studies in Modern Philosophy-Kant (Pre: Phil. 101 or Phil. 201)	SLC 207	M **6:30-9:30**	3
PHYSICS:				
Phys. 102E	Physical Science II	SLC 166	Th **6:30-9:30**	3
POLITICAL SCIENCE:				
P.S. 101E	Political Science I	SLC 127	T **6:30-9:30**	3
P.S. 232E	Constitutional Law II (Pre: P.S. 101 and 102)	SLC 204	W **6:00-9:00**	3

(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Instructor
CHEMISTRY:				
Chem. 344A	Advanced Analytical Chemistry	SLC 147	T Th 10:00	Salley
	Laboratory Fee: $30 (Pre: Chem. 252)	SLC 203	T Th **2:00-5:00**	
Chem. 356A	Advanced Physical Chemistry (Pre: Chem. 252)	SLC 209	M W F 10:00	Swain
Chem. 362A	Biochemistry II (Pre: Chem. 361)	TBA	TBA	Stine
Chem. 398A	Topics: Photochemistry (Pre: Permission of instructor)	TBA	TBA	Bohning/Jahngen
COMPUTER SCIENCE:				
C.S. 322A	Machine Language (Pre: C.S. 223 / Engr. 245)	SLC 411	T Th 8:00-9:30	Koch
C.S. 325A	Data Base Management (Pre: C.S. 324)	SLC 411	M W F 12:00	Tillman
C.S. 329A	Microcomputer Operation and Design	SLC 424	W F **1:00**	Parker
	Laboratory A	SLC 23	Th 9:00-11:00	
	Laboratory B (Pre: C.S. 320 / E.E. 341)	SLC 23	Th **3:00-5:00**	
EDUCATION:				
Ed. 436	Children's Literature	SLC 147	W **6:00-9:00**	Farris
Ed. 511	Philosophical Foundations of Education	SLC 133	W **6:00-9:00**	Fahmy
Ed. 512	Social Foundations of Education	SLC 160	M **6:00-9:00**	Barone
Ed. 526	Educational Research II (Pre: Education 521 or equivalent)	SLC 204	Th **6:00-9:00**	Hammer
Ed. 534	Elementary School Curriculum (Pre: Fifteen graduate credits)	SLC 215	W **7:00-10:00**	Darte
Ed. 536	Elementary School Reading Instruction	SLC 133	T **6:00-9:00**	Scappaticci
Ed. 537	Reading Disabilities (Pre: Education 536)	SLC 147	Th **6:00-9:00**	Scappaticci
Ed. 598E-1	Topics: Futuristics — Methods for Studying the Future	SLC 215	W **4:00-7:00**	Darte
Ed. 598E-2	Topics: Anthropology Through Film Fee: $10	SLC 334	T **6:30-9:30**	Rasson
TEMPLE UNIVERSITY COURSES				
Psy. of Rdg. 683	Practicum: Introduction to Diagnosis	SLC 127	S 8:30-**1:30**	Staff
Psy. of Rdg. 687	Psycho-Physiological Factors in Reading	SLC 127	S **2:00-5:00**	Staff
ENGLISH:				
Eng. 335A	Milton	Kby. 102	M W F **1:00**	Kaska
Eng. 343A	Eighteenth Century Prose and Poetry	Kby. 302	M W F 12:00	Fox
Eng. 366A	Later English Novel	SLC 160	F 10:00	Terry
		SLC 133	T Th 10:00	
Eng. 374A	Modern Drama	SLC 405	**2:30-4:00**	Powlick
Eng. 382A	American Literature II	Kby. 302	M W F 8:00	Gutin
Eng. 397A	Seminar: Byron and the Satanic Hero	Kby. 302	T Th F 9:00	R. Heaman
Eng. 398A	Topics: Symbolism — Baudelaire to Yeats	Kby. 302	M W F **2:00**	Leslie
Eng. 398E	Topics: Contemporary Fiction	Kby. 102	Th **6:30-9:30**	P. Heaman
Eng. 420E	Studies in Renaissance	Kby. 102	T **6:30-9:30**	Kaska

	Real Property			
B.A. 240E	Property Insurance	Par. 33	W **6:30-9:30**	3
B.A. 252E	Operations and Systems Management	Par. 35	M **6:30-9:30**	3
B.A. 254E	Organizational Design and Behavior	Par. 43	T **6:30-9:30**	3
B.A. 264E	Retail Buying	SLC 127	W **6:30-9:30**	3
B.A. 397E	Seminar: Entrepreneurship	Par. 33	Th **6:00-9:00**	3

BUSINESS EDUCATION:

Bus. Ed. 106E	Intermediate Shorthand (Pre: Bus. Ed. 105 or approval of instructor)	Butler 10	T Th **4:45-6:15**	2
Bus. Ed. 108E	Intermediate Typewriting (Pre: Bus. Ed. 107 or approval of instructor) Fee: $15	Butler 10	T Th **7:00-8:45**	2

COMMUNICATIONS:

Comm. 202E	Group Communication	Church Hall	W **6:30-9:30**	3
Comm. 212E	Journalism: Editing and Advanced News Writing (Pre: Comm. 211) Fee: $15	SLC 204	M **6:30-9:30**	3

COMPUTER SCIENCE:

C.S. 124E	Cobol Programming Fee: $25	SLC 424	T Th **6:30-8:00**	3
C.S. 224E	Advanced Cobol and File Management (Pre: C.S. 124) Fee: $25	SLC 424	T Th **8:00-9:30**	3

EARTH & ENVIRONMENTAL SCIENCES:

E. & E.S. 105E	Environmental Awareness	SLC 347	T **6:00-8:00**	3
	Lab. E Fee: $20	SLC 435	T **8:00-10:00**	
E. & E.S. 212E	Historical Geology	SLC 424	W **6:00-8:00**	3
	Lab E Fee: $20	SLC 424	W **8:00-10:00**	
E. & E.S. 320E	Hydrology	SLC 434	Th **6:00-8:00**	3
	Lab Fee: $20	SLC 434	Th **8:00-10:00**	

ECONOMICS:

Econ. 101E	Principles of Economics I	Par. 56	Th **6:30-9:30**	3
Econ. 102E	Principles of Economics II	Par. 56	W **6:30-9:30**	3
Econ. 212E	Government and Business	Par. 54	T **6:30-9:30**	3
Econ. 226E	International Investment & Finance	Par. 54	M **6:30-9:30**	3
Econ. 228E	Economic Geography of Asia, Africa, and Latin America	Par. 53	T **6:30-9:30**	3
Econ. 232E	Economic Statistics Fee: $15	Par. 33	M **6:30-9:30**	3
Econ. 236E	Public Finance	Par. 43	Th **6:30-9:30**	3
Econ. 251E	Macroeconomics I	Par. 54	W **6:30-9:30**	3

EDUCATION:

Educ. 398E	Topics: Futuristics — Methods for Studying the Future	SLC 215	W **4:00-7:00**	3
Educ. 436E	Children's Literature	SLC 147	W **6:00-9:00**	3

ENGINEERING:

E.E. 212E	Circuit Theory II (Pre: Math. 112)	SLC 403	M W **5:30-7:00**	3
Engr. 284E	Engineering Measurement Lab II Fee: $20	SLC 23	Th **6:30-8:30**	1
Ma.E. 210E	Introduction to Materials Science (Pre: Engr. 231 or Phys. 201)	SLC 403	T Th **5:30-7:00**	3

P.S. 101E	Political Science I	SLC 127	T **6:30-9:30**	3
P.S. 232E	Constitutional Law II (Pre: P.S. 101 and 102)	SLC 204	W **6:00-9:00**	3

PSYCHOLOGY:

Psy. 102E	General Psychology II	SLC 270	W **6:30-9:30**	3
Psy. 398E	Topics: Exceptional Child	SLC 347	M **6:30-9:30**	3

SOCIOLOGY:

Soc. 101E	Introduction to Sociology	SLC 318	W **6:30-9:30**	3
Soc. 200E	The Family (Pre: Soc. 101 or Anth. 101 or approval of instructor)	SLC 334	M **6:30-9:30**	3
Soc. 398E	Topics: Intervention Strategies	SLC 209	Th **6:30-9:30**	3

SPANISH:

Span. 102E	Elementary Spanish II (Pre: Span. 101 or equivalent)	Kby. 102	M **6:30-9:30**	3

SPEECH:

Spch. 101E	Fundamentals of Speech	Church Hall	M **6:30-9:30**	3

Graduate Division

(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Instructor
BIOLOGY:				
Bio. 302A	Endocrinology	SLC 411	W F 10:00	Erickson
	Laboratory Fee: $30	SLC 377	F **2:00-5:00**	
Bio. 308A	Advanced Genetics	SLC 380	W F 9:00	Turoczi
	Laboratory Fee: $30	SLC 349	Th **2:00-5:00**	
Bio. 309A	Evolution	SLC 166	M W F 12:00	Houseknecht
Bio. 310A	Animal Behavior	SLC 380	T Th 10:00	Rigley
	Laboratory Fee: $30	SLC 349	W **2:00-5:00**	
Bio. 312A	Comparative Physiology	SLC 380	T Th 9:00	Erickson
	Laboratory Fee: $30	SLC 377	T **2:00-5:00**	
Bio. 313E	Parasitology	SLC 380	T **6:00-8:00**	Rigley
	Laboratory Fee: $30	SLC 377	Th **6:00-9:00**	
Bio. 316A	Plant Physiology	SLC 380	M W **1:00**	Erickson/
	Laboratory Fee: $30	SLC 349	M **2:00-5:00**	Ogren
Bio. 341A	Immunology & Immuno-chemistry	SLC 209	M W F 11:00	Doty
BUSINESS ADMINISTRATION:				
B.A. 507	Business & Society	SLC 160	W **6:30-9:30**	Chmiola
B.A. 512	Price Policy & Procedure	Par. 56	T **6:30-9:30**	Taylor
B.A. 550E	Topics: Entrepreneurship	Par.33	Th **6:00-9:00**	Staff
B.A. 550E-2	Topics: Small Business Admin. (Pre: **Written** approval of instructor)	TBA	TBA	Gettinger
B.A. 552	Financial Management	Par. 43	M **6:30-9:30**	Engel
Econ. 505	Managerial Statistics	Par. 33	T **6:30-9:30**	Williams
Econ. 510	Managerial Economics	Par. 53	W **6:30-9:30**	Werner
Econ. 532	Wage Determination & Admin.	Par. 53	M **6:30-9:30**	Werner

	Baudelaire to Yeats			
Eng. 398E	Topics: Contemporary Fiction	Kby. 102	Th **6:30-9:30**	P. Heaman
Eng. 420E	Studies in Renaissance Literature: Shakespeare — The Tragedies	Kby. 102	T **6:30-9:30**	Kaska

HISTORY:

Hist. 322E	American Social and Intellectual History II	SLC 209	W **6:30-9:30**	Rodechko
Hist. 333E	The Age of Big Business, 1865-1914	SLC 209	M **6:30-9:30**	Cox
Hist. 352A	The Renaissance and Reformation	SLC 147	M W F **2:00**	Berg
Hist. 356A	Europe in the Twentieth Century	SLC 147	M W F 12:00	Shao
Hist. 362E	History of the Far East II	SLC 209	T **6:30-9:30**	Shao

MATHEMATICS:

Math. 314A	Functions of a Complex Variable	SLC 411	T Th 9:30-11:00	Earl
Math. 352A	Probability and Mathematical Statistics II	SLC 409	T Th **2:30-4:00**	Richards
Math. 362A	Introduction to Applied Mathematics II	SLC 405	M W F **1:00**	Sours

PHYSICS:

Phys. 312A	Mechanics II	SLC 147	M W F 10:00	Donahoe
Phys. 320A	Electronic Instrumentation for the Life and Behavioral Sciences Fee: $25	SLC 161	TBA	Holden
Phys. 321A	Electronic Instrumentation for the Physical Sciences Fee: $25	SLC 161	TBA	Holden
Phys. 330A	Optics and Light	SLC 147	M W F **1:00**	Donahoe
	Laboratory Fee: $25	SLC 158	M **2:00-5:00**	
Phys. 332A	Electricity and Magnetism II	SLC 160	M W F 9:00	Aston
	Laboratory A	SLC 125	T 8:00-11:00	
	Laboratory B Fee: $25	SLC 125	T **2:00-5:00**	
Phys. 340E	Thermodynamics	SLC 160	T Th **6:00-7:30**	Bellas
Phys. 380A	Nuclear Physics	TBA	TBA	Bailey

Weekend College

Wilkes' Weekend College classes meet every third weekend on the campus of Keystone Junior College, La Plume, Pennsylvania. Classes start the weekend of January 11 and end the weekend of April 18.

For information on the Weekend College, contact:

JOHN F. MEYERS, Director
Division of Continuing Education & Graduate Studies
Wilkes College
Wilkes-Barre, Pa. 18766
Phone: (717) 824-4651 Ext. 303

Wilkes College

1980 Summer Sessions

WILKES COLLEGE

Summer Sessions — 1980

FIRST SESSION — JUNE 16-JULY 18 SECOND SESSION — JULY 21-AUGUST 22 EIGHT-WEEK EVENING SESSION — JUNE 16-AUGUST 8

— GENERAL INFORMATION —

Students who register for courses in more than one session **MUST COMPLETE** a registration form for each session.

First Session

June 16 to July 18 (including Final Examinations)

Registration ..... Thursday, June 12 and Friday, June 13
Parrish Hall — 8:30 a.m. to 8:00 p.m.

Second Session

July 21 to August 22 (including Final Examinations)

Registration ..... Thursday, July 17 and Friday, July 18
Parrish Hall — 8:30 a.m. to 6:00 p.m.

Eight Week Evening Session

June 16 to August 8 (including Final Examinations)

Registration ..... Thursday, June 12 and Friday, June 13
Parrish Hall — 8:30 a.m. to 8:00 p.m.

Generally, courses offered during the First or Second Session will meet five days per week for two hours, according to the following schedule:

first period ..... 8:00 a.m. - 9:50 a.m.
second period ..... 10:10 a.m. - 12:00 noon
third period ..... 6:00 p.m. - 7:50 p.m.
fourth period ..... 8:10 p.m. - 10:00 p.m.

Most courses offered during the eight-week evening session will be scheduled on Monday, Tuesday and Thursday evenings from 6:00 p.m. to 7:45 p.m. or 8:00 p.m. to 9:45 p.m.

Because some courses do not follow these time-tables exactly, students are urged to consult the list of courses to be sure that the course(s) in which they are interested is not offered at times or for periods other than those posted in the calendar.

Restriction Of Course Loads

Course load is limited to six semester hours of credit for each session, except in the nursing program. Students are cautioned to exercise judgment and care in scheduling both day and evening courses.

Dormitory And Dining Facilities

Dormitory facilities will be available for both male and female students during all summer sessions.

The Snack Bar in the Student Union will be open to all students for breakfasts and light lunches on a "pay as you go basis" from 7:00 a.m. to 1:00 p.m., Monday through Friday, from June 16 to August 22.

Inquiries concerning dormitory and dining facilities should be made through:

The Housing Office
Wilkes College
Wilkes-Barre, Pennsylvania 18766

Expenses

Tuition for the summer sessions is $75 per credit hour for undergraduate and $95 per credit hour for graduate students. All charges must be paid at the time of registration. Tuition and fees for the second session must be paid no later than July 16. Books and supplies may be purchased at the Bookstore and must be paid for at the time of purchase.

Financial Aid For Undergraduates

All students are urged to apply for financial aid during the summer sessions. Inquiries about financial aid for summer study should be made to the Director of Financial Aid prior to June 1.

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.

The 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.

The Bookstore

Books, stationery and supplies may be purchased at the College Bookstore, located in 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.

Accreditation

Wilkes 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 Graduate programs are approved by the Pennsylvania State Department of Education.

Admissions

Application for admission to Wilkes College as an evening college, part-time, or graduate student should be made to the Division of Continuing Education and Graduate Studies, 16 South River 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.

Degree Programs

Bachelor of Arts degrees are offered in the following subject areas:

Anthropology
Art
Biology
Chemistry
Computer Science
Earth & Environmental Sciences
Economics
Elementary Education
English
English/Communication Studies
English/Theater Arts
Foreign Language
History
Individualized Studies
International Relations
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Social Science/Urban Affairs
Sociology
Sociology-Anthropology

Bachelor of Science degrees are offered in the following subject areas:

Biology
Business Education
Chemistry
Commerce & Finance
(a) Accounting
(b) Business
Earth & Environmental Sciences
Engineering
Mathematics
Medical Technology
Music Education

second period ..... 10:10 a.m. - 12:00 noon
third period ..... 6:00 p.m. - 7:50 p.m.
fourth period ..... 8:10 p.m. - 10:00 p.m.

Most courses offered during the eight-week evening session will be scheduled on Monday, Tuesday and Thursday evenings from 6:00 p.m. to 7:45 p.m. or 8:00 p.m. to 9:45 p.m.

Because some courses do not follow these time-tables exactly, students are urged to consult the list of courses to be sure that the course(s) in which they are interested is not offered at times or for periods other than those posted in the calendar.

Restriction Of Course Loads

Course load is limited to six semester hours of credit for each session, except in the nursing program. Students are cautioned to exercise judgment and care in scheduling both day and evening courses.

Dormitory And Dining Facilities

Dormitory facilities will be available for both male and female students during all summer sessions.

The Snack Bar in the Student Union will be open to all students for breakfasts and light lunches on a "pay as you go basis" from 7:00 a.m. to 1:00 p.m., Monday through Friday, from June 16 to August 22.

Inquiries concerning dormitory and dining facilities should be made through:

The Housing Office
Wilkes College
Wilkes-Barre, Pennsylvania 18766

Expenses

Tuition for the summer sessions is $75 per credit hour for undergraduate and $95 per credit hour for graduate students. All charges must be paid at the time of registration. Tuition and fees for the second session must be paid no later than July 16. Books and supplies may be purchased at the Bookstore and must be paid for at the time of purchase.

Financial Aid For Undergraduates

All students are urged to apply for financial aid during the summer sessions. Inquiries about financial aid for summer study should be made to the Director of Financial Aid prior to June 1.

Students enrolled at least half-time (6 credits over the entire summer) are eligible to receive loans through the State Guaranteed Loan Program. They may also be eligible to receive funds through the Basic Educational Opportunity Grant Program.

Full-time summer school students (those carrying at least 12 credits over the summer) may also be eligible for accelerated payments through the Pennsylvania State Grant Program.

Part and full-time employment is also available for any student eligible under the College Work-Study Program.

Withdrawal

Withdrawal from classes after the first week is inadvisable except in extenuating circumstances.

A student who withdraws from the summer session or drops courses after the first week **must** receive permission from the instructor and the Director of Continuing Education in order that his records may not unjustly show failure in courses.

Students in good standing who withdraw from the College will receive a refund of tuition under the following conditions: during the first week of the first and second sessions and during the first two weeks of the eight-week evening session, one-half of the tuition will be refunded upon written request to the Director of Continuing Education, if the withdrawal is made for adequate and satisfactory reasons. After these designated periods no refunds are allowed and the student is obliged for the full costs of the term. No student who is suspended or expelled shall be entitled to any refunds.

Accreditation

Wilkes 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 Graduate programs are approved by the Pennsylvania State Department of Education.

Admissions

Application for admission to Wilkes College as an evening college, part-time, or graduate student should be made to the Division of Continuing Education and Graduate Studies, 16 South River 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.

Degree Programs

Bachelor of Arts degrees are offered in the following subject areas:

- Anthropology
- Art
- Biology
- Chemistry
- Computer Science
- Earth & Environmental Sciences
- Economics
- Elementary Education
- English
- English/Communication Studies
- English/Theater Arts
- Foreign Language
- History
- Individualized Studies
- International Relations
- Mathematics
- Music
- Philosophy
- Physics
- Political Science
- Psychology
- Social Science/Urban Affairs
- Sociology
- Sociology-Anthropology

Bachelor of Science degrees are offered in the following subject areas:

- Biology
- Business Education
- Chemistry
- Commerce & Finance
  - (a) Accounting
  - (b) Business Administration
- Computer Science
- Earth & Environmental Sciences
- Engineering
- Mathematics
- Medical Technology
- Music Education
- Nursing
- Physics

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.

Wilkes offers the Master of Business Administration Degree; Master of Science Degrees in Mathematics and Physics; and a Master of Science Degree in Education with concentrations in Biology, Chemistry, Education, Elementary Education, English, History, Mathematics or Physics.

Information

For further information, write or call:

John F. Meyers, Director
Division of Continuing Education & Graduate Studies
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 303-304
(After 4:30 p.m., 824-4656)

Undergraduate Division

REGISTRATION: (Parrish Hall, Second Floor)

First Session: Thursday, June 12, and Friday, June 13 . . . . . (8:30 a.m.-**8:00 p.m.**)
Second Session: Thursday, July 17, and Friday, July 18 . . . . . (8:30 a.m.-**6:00 p.m.**)
Eight-Week Evening Session: Thursday, June 12, and Friday, June 13 . . (8:30 a.m.-**8:00 p.m.**)

UNDERGRADUATE — FIRST SESSION

First Session Undergraduate Schedule

June 16 - July 18, 1980 — Monday thru Friday
(unless otherwise indicated)

Course	Description	Room	Day & Time	Credits
	(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)			
ACCOUNTING:				
Acct. 101S	Elementary Accounting I	Par. 35	10:10-12:00	3
ART:				
Art 101S	Experiencing Art I	SLC 206	8:00-9:50	3
Art 245S	Batik Fee: $10	SLC 206	10:10-12:00	3
BIOLOGY:				
Bio. 113S	Microbiology (June 16-July 25)	SLC 359	M 10:00-**1:00** W F 10:00-12:00	4
	Laboratory Fee: $30	SLC 305	T Th 10:00-**1:00**	
Bio. 303S	Bacteriology	SLC 361	M W F 10:00-12:00	3
	Laboratory Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 305	M W F **2:00-5:00**	
Bio. 398A	Topics: Marine Biology (June 18 - July 7) (Pre: Permission of instructor)	TBA	TBA	3
Bio. 398B	Topics: Field Zoology (May 27 - June 13) (Pre: Permission of instructor)	TBA	M F 8:00-**5:00**	3
BUSINESS ADMINISTRATION:				
B.A. 101S	Introduction to Business	Par. 53	8:00-9:50	3
B.A. 222S	Marketing	Par. 53	10:10-12:00	3
Business Education:				
Bus. Ed. 107S	Elementary Typewriting Fee: $15	Butler 10	10:10-12:00	2
CHEMISTRY:				
	All Chemistry courses in this session meet from June 9 to July 18.			
Chem. 111S	Introduction to Chemical Reactions and Principles (June 9 - July 18)	SLC 342	10:00-11:30	4
	Laboratory Fee: $25	SLC 259	M W Th 12:00-**3:00**	
Chem. 115S	Elements and Compounds (June 9 - July 18)	SLC 342	8:30-10:00	4
	Laboratory Fee: $25	SLC 263	M W Th 12:00-**3:00**	
Chem. 231S	Organic Chemistry I (June 9 - July 18)	SLC 334	10:00-11:30	4
	Laboratory Fee: $25	SLC 264	T Th **1:00-5:00**	
COMMUNICATION STUDIES:				
Comm. 101S	Principles of Communication	Kirby 302	8:00-9:50	3
Comm. 205S	Mass Media	Kirby 302	10:10-12:00	3
COMPUTER SCIENCE:				
C.S. 122S	BASIC Programming Fee: $10	SLC 424	M W F 12:00-**1:00**	1
EARTH & ENVIRONMENTAL SCIENCES:				
E. & E.S. 101S	Astronomy	SLC 435	10:10-12:00	3
	Laboratory Fee: $20	TBA	TBA	
E. & E.S. 103S	Meteorology	SLC 435	**1:00-3:00**	3
	Laboratory Fee: $20	TBA	TBA	
E. & E.S. 370S	Geomorphology	SLC 434	**1:00-3:00**	3
	Laboratory Fee: $20	TBA	TBA	

Course	Description	Room	Day & Time	Credits
	(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)			
MUSIC:				
Mus. 101S	Introduction to the Materials and Literature of Music I	DDD 323	8:00-9:50	3
Mus. 101S-2	Introduction to the Materials and Literature of Music I	DDD 323	10:10-12:00	3
Applied Music	Private Lessons Note: It is important that all students who register for Applied Music through the Summer School consult with Dr. Terrance Anderson, Music Department Chairman, **before** completing their registrations.	TBA	TBA	variable
Mus. 298S	Topics: Pre-Freshman Theory	DDD 218	8:00-9:50	3
BAND AND CHORAL MUSIC INSTITUTE — June 22 - July 8				
	Opportunities for study in: Pre-Freshman Theory Performing Ensembles Master Classes in Applied Studies Master Classes in Chamber Performance For more information on this Program for the Superior High School Musician, contact Dr. Terrance Anderson, Chairman, Music Dept.			
PHILOSOPHY:				
Phil. 101S	Introduction to Philosophy	SLC 270	8:00-9:50	3
Phil. 220S	Philosophy of Religion (Pre: Phil. 101 or 201)	SLC 270	10:10-12:00	3
PHYSICS:				
Phys. 101S	Physical Science I	SLC 166	8:00-9:50	3
POLITICAL SCIENCE:				
P.S. 101S	Political Science I	SLC 409	10:10-12:00	3
P.S. 398S	Topics in Political Science: Planning (Pre: Permission of Department, criterion depending on topic)	SLC 409	8:00-9:50	3
PSYCHOLOGY:				
Psy. 101S	General Psychology I	SLC 101	10:10-12:00	3
Psy. 221S	Child Psychology (Pre: Psy. 101-102)	SLC 101	8:00-9:50	3
Psy. 232S	Human Behavior (Pre: Psy. 101-102)	SLC 318	10:10-12:00	3
Psy. 242S	Psychological Tests (Pre: Psy. 101-102)	SLC 160	10:10-12:00	3
RUSSIAN:				
Rus. 101S	Elementary Russian I	TBA	TBA	3
Rus. 203S	Intermediate Russian I (Pre: Rus. 102 or the equivalent)	TBA	TBA	3
SOCIOLOGY:				
Soc. 101S	Introduction to Sociology	SLC 316	10:10-12:00	3
Soc. 200S	The Family (May 19 - June 13) (Pre: Soc. 101 or Anthro. 101 or approval of instructor)	SLC 160	8:00-10:00	3
Soc. 200S-2	The Family (May 19 - June 13) (Pre: Soc. 101 or Anthro. 101 or approval of instructor)	SLC 160	10:00-12:00	3
Soc. 230S	Social Problems (Pre: Soc. 101 or Anthro. 101 or approval of instructor)	SLC 316	8:00-9:50	3
Soc. 398S	Topics: Sex Roles	SLC 134	10:10-12:00	3
SPANISH:				
Span. 101S	Elementary Spanish I	SLC 411	8:00-9:50	3
Span. 203S	Intermediate Spanish I (Pre: Span. 102 or the equivalent)	SLC 411	10:10-12:00	3
SPEECH:				
Spch. 202S	Business & Professional Speaking	SLC 1	8:00-9:50	3

Course	Description	Room	Day & Time	Credits
	(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)			
Eng. 152S-2	Western World Literature II (Pre: Eng. 151)	SLC 317	10:10-12:00	3
Eng. 320S	Tudor Prose & Poetry (Pre: Eng. 152 or 254)	SLC 347	10:10-12:00	3
FRENCH:				
Fr. 102S	Elementary French II (Pre: Fr. 101 or the equivalent)	SLC 215	8:00-9:50	3
Fr. 204S	Intermediate French II (Pre: Fr. 203 or the equivalent)	SLC 215	10:10-12:00	3
GERMAN:				
Ger. 102S	Elementary German II (Pre: Ger. 101 or the equivalent)	SLC 133	8:00-9:50	3
Ger. 204S	Intermediate German II (Pre: Ger. 203 or the equivalent)	SLC 133	10:10-12:00	3
HISTORY:				
Hist. 101S	World Civilization I	SLC 411	10:10-12:00	3
Hist. 102S	World Civilization II	SLC 147	8:00-9:50	3
Hist. 398S	Topics: History of Chinese Communism	SLC 147	10:10-12:00	3
MATHEMATICS:				
Math. 102S	Fundamentals of Mathematics II (Pre: Math. 101)	SLC 403	8:00-9:50	3
Math. 104S	Mathematics for Elementary School Teachers II	SLC 405	10:10-12:00	3
Math. 106S	Introductory Calculus II (July 21 - August 29) (Pre: Math. 105)	SLC 403	10:10-**12:15**	4
Math. 243S	Geometry for Elementary School Teachers (Pre: Math. 104 or consent of instructor)	SLC 405	8:00-9:50	3
MUSIC:				
Mus. 101S	Introduction to the Materials & Literature of Music I	DDD 323	8:00-9:50	3
Mus. 101S-2	Introduction to the Materials & Literature of Music I	DDD 323	10:10-12:00	3
Applied Music	Private Lessons Note: It is important that all students who register for Applied Music through the Summer School consult with Dr. Terrance Anderson, Music Dept. Chairman, **before** completing their registrations.	TBA	TBA	variable
PHILOSOPHY:				
Phil. 152S	Introduction to Logic	SLC 160	8:00-9:50	3
Phil. 298S	Topics: Contemporary Moral Issues (Pre: Phil. 101 or 201)	SLC 160	10:10-12:00	3
PHYSICS:				
Phys. 102S	Physical Science II	SLC 166	8:00-9:50	3
POLITICAL SCIENCE:				
P.S. 102S	Political Science II	SLC 207	10:10-12:00	3
P.S. 398S	Topics in Political Science: Modern Political Thought (Pre: Permission of department, criterion depending on topic)	SLC 207	8:00-9:50	3
PSYCHOLOGY:				
Psy. 102S	General Psychology II (Pre: Psy. 101)	SLC 101	10:10-12:00	3
Psy. 243S	Industrial Psychology (Pre: Psy. 101-102)	SLC 318	10:10-12:00	3
Psy. 398S	Topics in Psychology: Sleep & Dreaming	SLC 409	10:10-12:00	3

ECONOMICS:

Econ. 101S	Principles of Economics I	Par. 43	8:00-9:50	3
Econ. 201S	Money and Banking	Par. 43	10:10-12:00	3
Econ. 223S	Collective Bargaining	Par. 45	10:10-12:00	3
Econ. 231S	Applied General Statistics Fee: $15	Par. 33	10:10-12:00	3

EDUCATION:

Ed. 201S	Introduction to Education (Pre: Sophomore standing)	SLC 207	10:10-12:00	3
Ed. 202S	Educational Psychology (Pre: Psy. 102)	SLC 215	8:00-9:50	3
Ed. 351S	Educational Measurements (Pre: Ed. 202)	SLC 160	8:00-9:50	3
Ed. 398S	Topics in Education: Mainstreaming Fee: $10	SLC 347	8:00-9:50	3

ENGINEERING:

E.E. 211S	Circuit Theory I (Pre: Math. 112)	SLC 223	10:10-12:00	3
E.E. 211S-2	Circuit Theory I (Pre: Math. 112)	SLC 223	**6:00-7:50**	3
E.E. 251S	Electronics I	SLC 240	10:10-12:00	4
	Laboratory Fee: $20 (Pre: E.E. 212)	SLC 125	TBA	
E.E. 251S-2	Electronics I	SLC 240	**6:00-7:50**	4
	Laboratory Fee: $20 (Pre: E.E. 212)	SLC 125	TBA	
Engr. 241S	BASIC Programming	SLC 424	M W F 12:00-**1:00**	1
Engr. 360S	Industrial Training (Pre: Approval of the Engineering Department Chairman)	TBA	TBA	1-6
Ma.E. 210S	Introduction to Materials Science (Pre: Engr. 231 or Phys. 201)	SLC 34	10:10-12:00	3
Ma.E. 210S-2	Introduction to Materials Science (Pre: Engr. 231 or Phys. 201)	SLC 34	**6:00-7:50**	3

ENGLISH:

Eng. 100S	Writing Workshop	SLC 127	8:00-9:50	3
Eng. 100S-2	Writing Workshop	SLC 133	10:10-12:00	3
Eng. 101S	Composition I	SLC 204	8:00-9:50	3
Eng. 101S-2	Composition I	SLC 380	10:10-12:00	3
Eng. 151S	Western World Literature I (Pre: Eng. 102 or equivalent in Composition)	SLC 334	8:00-9:50	3
Eng. 151S-2	Western World Literature I (Pre: Eng. 102 or equivalent in Composition)	SLC 127	10:10-12:00	3
Eng. 253S	Survey of English Literature (Pre: Eng. 102)	SLC 133	8:00-9:50	3
Eng. 360S	Victorian Prose & Poetry (Pre: Eng. 152 or 254)	SLC 204	10:10-12:00	3

FRENCH:

Fr. 101S	Elementary French I	SLC 147	8:00-9:50	3
Fr. 203S	Intermediate French I (Pre: Fr. 102 or the equivalent)	SLC 147	10:10-12:00	3

GERMAN:

Ger. 101S	Elementary German I	Kirby 102	8:00-9:50	3
Ger. 203S	Intermediate German I (Pre: Ger. 102 or equivalent)	Kirby 102	10:10-12:00	3

HISTORY:

Hist. 101S	World Civilization I	SLC 209	8:00-9:50	3
Hist. 102S	World Civilization II	W.A.	10:10-12:00	3
Hist. 102S-2	World Civilization II	W.A.	**6:00-7:50**	3
Hist. 398S	Topics: World War II (Pre: Permission of the instructor)	SLC 209	10:10-12:00	3

MATHEMATICS:

Math. 100S	Pre-calculus Mathematics (June 9 - July 18) (Pre: Two years of secondary school mathematics in Algebra and Geometry)	SLC 403	10:10-**12:15**	4
Math. 101S	Fundamentals of Mathematics I	SLC 424	8:00-9:50	3
Math. 103S	Mathematics for Elementary School Teachers I	SLC 424	10:10-12:00	3
Math. 105S	Introductory Calculus I (June 9 - July 18) (Pre: Geometry, Algebra II, and some knowledge of Trigonometry)	SLC 405	10:10-**12:15**	4
Math. 232S	Abstract Algebra for Elementary School Teachers (Pre: Math. 104 or consent of instructor)	SLC 403	8:00-9:50	3

UNDERGRADUATE — SECOND SESSION

Second Session Undergraduate Schedule

July 21 to August 22, 1980 — Monday thru Friday
(unless otherwise indicated)

Course	Description	Room	Day & Time	Credits

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

ACCOUNTING:

Acct. 102S	Elementary Accounting II	Par. 45	10:10-12:00	3

ANTHROPOLOGY:

Anth. 101S	Introduction to Anthropology	SLC 127	10:10-12:00	3

ART:

Art 380S	Topics in Studio Art: Painting Workshop	SLC 217	**6:00-7:50**	3

BIOLOGY:

Bio. 385S	Floristic Biology (July 21 - August 8) (Pre: Permission of instructor)	TBA	8:00-12:00	3

BUSINESS ADMINISTRATION:

B.A. 101S	Introduction to Business	Par. 43	8:00-9:50	3
B.A. 225S	Managerial Finance	Par. 35	8:00-9:50	3
B.A. 226S	Investments	Par. 35	10:10-12:00	3
B.A. 261S	Principles of Retailing	Par. 43	10:10-12:00	3

CHEMISTRY:

All Chemistry courses in this session meet from July 21 to August 29.

Chem. 116S	The Chemical Reaction (July 21 - August 29)	SLC 334	10:00-11:30	4
	Laboratory Fee: $25 (Pre: Chem. 115)	SLC 263	M W Th 12:00-**3:00**	
Chem. 130S	Organic & Biological Chemistry (July 21 - August 29)	SLC 334	8:30-10:00	4
	Laboratory Fee: $25 (Pre: Chem. 111 or 115)	SLC 259	M W Th 12:00-**3:00**	
Chem. 232S	Organic Chemistry II (July 21 - August 29)	SLC 342	10:00-11:30	4
	Laboratory Fee: $25	SLC 264	T Th **1:00-5:00**	

EARTH & ENVIRONMENTAL SCIENCES:

E. & E.S. 394	Field Study	TBA	TBA	3

ECONOMICS:

Econ. 102S	Principles of Economics II	Par. 45	8:00-9:50	3
Econ. 232S	Economic Statistics Fee: $15	Par. 33	10:10-12:00	3

EDUCATION:

Ed. 352S	Guidance (Pre: Ed. 202)	SLC 209	8:00-9:50	3
Ed. 398S-2	Topics in Education: Education of Disadvantaged Youth	SLC 209	10:10-12:00	3

ENGINEERING:

E.E. 212S	Circuit Theory II	SLC 223	10:10-12:00	3
E.E. 212S-2	Circuit Theory II	SLC 223	**6:00-7:50**	3
E.E. 252S	Electronics II	SLC 240	10:10-12:00	4
	Laboratory Fee: $20	SLC 125	TBA	
E.E. 252S-2	Electronics II	SLC 240	**6:00-7:50**	4
	Laboratory Fee: $20	SLC 125	TBA	
Engr. 360S	Industrial Training (Pre: Approval of the Engineering Department Chairman)	TBA	TBA	1-6

ENGLISH:

Eng. 101S	Composition I	SLC 204	10:10-12:00	3
Eng. 102S	Composition II (Pre: Eng. 101 or Eng. 100)	SLC 317	8:00-9:50	3
Eng. 152S	Western World Literature II (Pre: Eng. 151)	SLC 347	8:00-9:50	3
Rus. 102S	Elementary Russian II (Pre: Rus. 101 or the equivalent)	TBA	TBA	3
Rus. 204S	Intermediate Russian II (Pre: Rus. 203 or the equivalent)	TBA	TBA	3

SPANISH:

Span. 102S	Elementary Spanish II (Pre: Span. 101 or the equivalent)	SLC 270	8:00-9:50	3
Span. 204S	Intermediate Spanish II (Pre: Span. 203 or the equivalent)	SLC 270	10:10-12:00	3

SPEECH:

Spch. 101S	Fundamentals of Speech	SLC 1	8:00-9:50	3

THEATER ARTS:

T.A. 398S	Topics: Creative Dramatics	CPA	8:00-9:50	3

UNDERGRADUATE
EIGHT-WEEK EVENING SESSION

Eight-Week Evening Undergraduate Schedule

June 16 to August 8, 1980 — Monday, Tuesday & Thursday Nights
(unless otherwise indicated)

Course	Description	Room	Day & Time	Credits

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

ACCOUNTING:

Note: These courses meet two nights per week; three hours each night.

Acct. 101E	Elementary Accounting I	Par. 35	M W **6:00-9:00**	3
Acct. 221E	Taxes I (Pre: Acct. 112 or approval of instructor)	Par. 35	T Th **6:00-9:00**	3

BUSINESS ADMINISTRATION:

Note: These courses meet two nights per week; three hours each night.

B.A. 209E	Business Correspondence & Reports	Par. 53	M W **6:00-9:00**	3
B.A. 240E	Property Insurance	Par. 43	M W **6:00-9:00**	3
B.A. 241E	Life Insurance	Par. 43	T Th **6:00-9:00**	3
B.A. 251E	Principles of Management	Par. 45	T Th **6:00-9:00**	3

COMPUTER SCIENCE:

C.S. 123E	Fortran Programming Fee: $25	SLC 424	**8:00-9:45**	3
C.S. 124E	Cobol Programming Fee: $25	SLC 424	**6:00-7:45**	3
C.S. 224E	Advanced Cobol & File Management Fee: $25 (Pre: C.S. 123 / Engr. 244)	SLC 411	**6:00-7:45**	3

ENGINEERING:

Engr. 244E	Fortran Programming Fee: $25	SLC 424	**8:00-9:45**	3

ENGLISH:

Eng. 102E	Composition II (Pre: Eng. 101 or Eng. 100)	SLC 127	**6:00-7:45**	3
Eng. 152E	Western World Literature II (Pre: Eng. 151)	SLC 127	**8:00-9:45**	3
Eng. 203E	Creative Writing (Pre: Eng. 102)	SLC 257	**6:00-7:45**	3

MATHEMATICS:

Math. 100E	Pre-Calculus Mathematics (Pre: Two years of secondary school Mathematics in Algebra and Geometry)	SLC 403	M T W Th **6:00-7:45**	4
Math. 111E	Calculus I (Pre: Math. 100 or at least three years of secondary school Mathematics including Geometry, Algebra II and Topics in Trigonometry)	SLC 409	M T W Th **6:00-7:45**	4
Math. 112E	Calculus II	SLC 411	M T W Th **8:00-9:45**	4
Math. 211E	Introduction to Linear Algebra & Differential Equations (Pre: Math. 112)	SLC 342	M T W Th **6:00-7:45**	4
Math. 212E	Multivariable Calculus (Pre: Math. 112)	SLC 403	M T W Th **8:00-9:45**	4
Math. 314E	Functions of a Complex Variable (Pre: Math. 211 or consent of instructor)	SLC 405	**6:00-7:45**	3
Math. 432E	Introduction to Abstract Algebra II (Pre: Math. 331)	TBA	TBA	3

(See other side)

FIRST SESSION — JUNE 16-JULY 18

SECOND SESSION — JULY 21-AUGUST 22

EIGHT-WEEK EVENING SESSION — JUNE 16-AUGUST 8

Course	Description	Room	Day & Time	Credits
(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)				
MUSIC:				
Mus. 101E	Introduction to the Literature & Materials of Music I	DDD 323	**6:00-7:45**	3
PHILOSOPHY:				
Phil. 101E	Introduction to Philosophy	SLC 160	**6:00-7:45**	3
Phil. 230E	Social & Political Philosophy (Pre: Phil. 101 or 201)	SLC 160	**8:00-9:45**	3
PHYSICAL EDUCATION & HYGIENE:				
P.E. 105E	Hygiene	W.A.	W **6:00-9:00**	1
P.E. 106E	Hygiene	W.A.	W **6:00-9:00**	1
P.E. 105-106E	Hygiene	W.A.	W **6:00-9:00**	2
PSYCHOLOGY:				
Psy. 245E	Clinical Psychology (Pre: Psy. 101-102)	SLC 147	**6:00-7:45**	3
Psy. 331E	Abnormal Psychology (Pre: Psy. 232)	SLC 147	**8:00-9:45**	3
SOCIOLOGY:				
Soc. 101E	Introduction to Sociology	SLC 316	**6:00-7:45**	3
SPEECH:				
Spch. 101E	Fundamentals of Speech	SLC 1	**6:00-7:45**	3

POST SESSION — AUGUST 25-29

CHEMISTRY:				
Chem. 99A	Basic Mathematics for Introductory Chemistry (For students registered for Chem. 115 during the Fall Semester, 1980)	TBA	M-F 9:00-12:00	0
Chem. 99B	Basic Mathematics for Introductory Chemistry (For students registered for Chem. 111 during the Fall Semester, 1980)	TBA	M-F **1:00-4:00**	0

Graduate Division

Course	Description	Room	Day & Time	Instructor
(TIMES LISTED IN LIGHT FACE REPRESENT A.M., TIMES IN **BOLD FACE P.M.**)				
BIOLOGY:				
	First Session — June 16 - July 18			
Bio. 303S	Bacteriology	SLC 361	M W F 10:10-12:00	Doty
	Laboratory Fee: $30	SLC 305	M W F **2:00-5:00**	
	Special Sessions			
Bio. 385S	Floristic Biology (July 21 - August 8)	TBA	8:00-12:00	Reif
Bio. 398A	Topics: Marine Biology (June 18 - July 7) (Pre: Permission of instructor)	TBA	TBA	Rigley
Bio. 398B	Topics: Field Zoology (May 27 - June 13) (Pre: Permission of instructor)	TBA	M-F 8:00-**5:00**	Houseknecht

	(Pre: Permission of instructor)			
Bio. 398B	Topics: Field Zoology (May 27 - June 13) (Pre: Permission of instructor)	TBA	M-F 8:00-5:00	Houseknecht

BUSINESS ADMINISTRATION:

Eight-Week Evening Session — June 16 - August 8

Acct. 504E	Accounting Theory & Thought	Par. 45	M W 6:00-9:00	Moran
B.A. 507E	Business & Society	Par. 33	T Th 6:00-9:00	Chmiola
B.A. 550E	Topics: Labor	Par. 54	M W 6:00-9:00	Werner
B.A. 554E	Managerial Finance Seminar: Behavior of Financial Markets & Institutions	Par. 53	T Th 6:00-9:00	Engel
Econ. 505E	Managerial Statistics	Par. 33	M W 6:00-9:00	Williams

EDUCATION:

For information on summer school offerings in the Reading Specialist Program, contact the Department of Education.

First Session — June 16 - July 18

Ed. 510	Psychological Foundations of Education	SLC 215	10:10-12:00	Hammer
Ed. 512	Social Foundations of Education	SLC 207	8:00-9:50	Fahmy
Ed. 520	Tests & Measurements	SLC 160	8:00-9:50	Bellucci
Ed. 534	Elementary School Curriculum (Pre: 15 graduate credits)	SLC 347	10:10-12:00	Darte
Ed. 541	Secondary School Curriculum	SLC 347	10:10-12:00	Darte
Ed. 576	Introduction to Educational Administration	Par. 56	8:00-9:50	Johnson
Ed. 578	School Law	Par. 56	10:10-12:00	Johnson
Ed. 594*	Workshop: Advanced Instrumental Conducting (June 22 - July 8)	TBA	TBA	Campbell
Ed. 594B*	Workshop: Advanced Choral Conducting (June 22-July 8)	TBA	TBA	Anderson
Ed. 594C*	Workshop: Instrumental Rehearsal Techniques & Repertoire (June 22-July 8)	TBA	TBA	Campbell
Ed. 594D*	Workshop: Choral Rehearsal Techniques & Repertoire (June 22-July 8)	TBA	TBA	Anderson
Ed. 598A	Topics: Mainstreaming Fee: $10	SLC 347	8:00-9:50	Darte
Ed. 598B	Topics: Topic Update for Science Teachers	TBA	TBA	Placek
Ed. 598P	Topics: Project Teach	TBA	TBA	Staff

Second Session — July 21 - August 22

Ed. 598C	Topics: Education of Disadvantaged Youth	SLC 209	10:10-12:00	Johnson
Ed. 598D	Topics: Anatomy of Teaching	SLC 380	8:00-9:50	Fahmy
Ed. 598F	Topics: Values Clarification	SLC 380	10:10-12:00	Fahmy

* A graduate student may take only two of these courses.

ENGLISH:

First Session — June 16 - July 18

Eng. 450S	Studies in Romantic & Victorian Literature: Victorian Prophets of Culture	SLC 204	10:10-12:00	Terry

Second Session — July 21 - August 22

Eng. 420S	Studies in Renaissance Literature: Spenser & the Tradition of Renaissance Humanism	SLC 347	10:10-12:00	Kaska

HISTORY:

First Session — June 16 - July 18

Hist. 398S	Topics: World War II	SLC 209	10:10-12:00	Rodechko

Second Session — July 21 - August 22

Hist. 398S	Topics: History of Chinese Communism	SLC 147	10:10-12:00	Shao

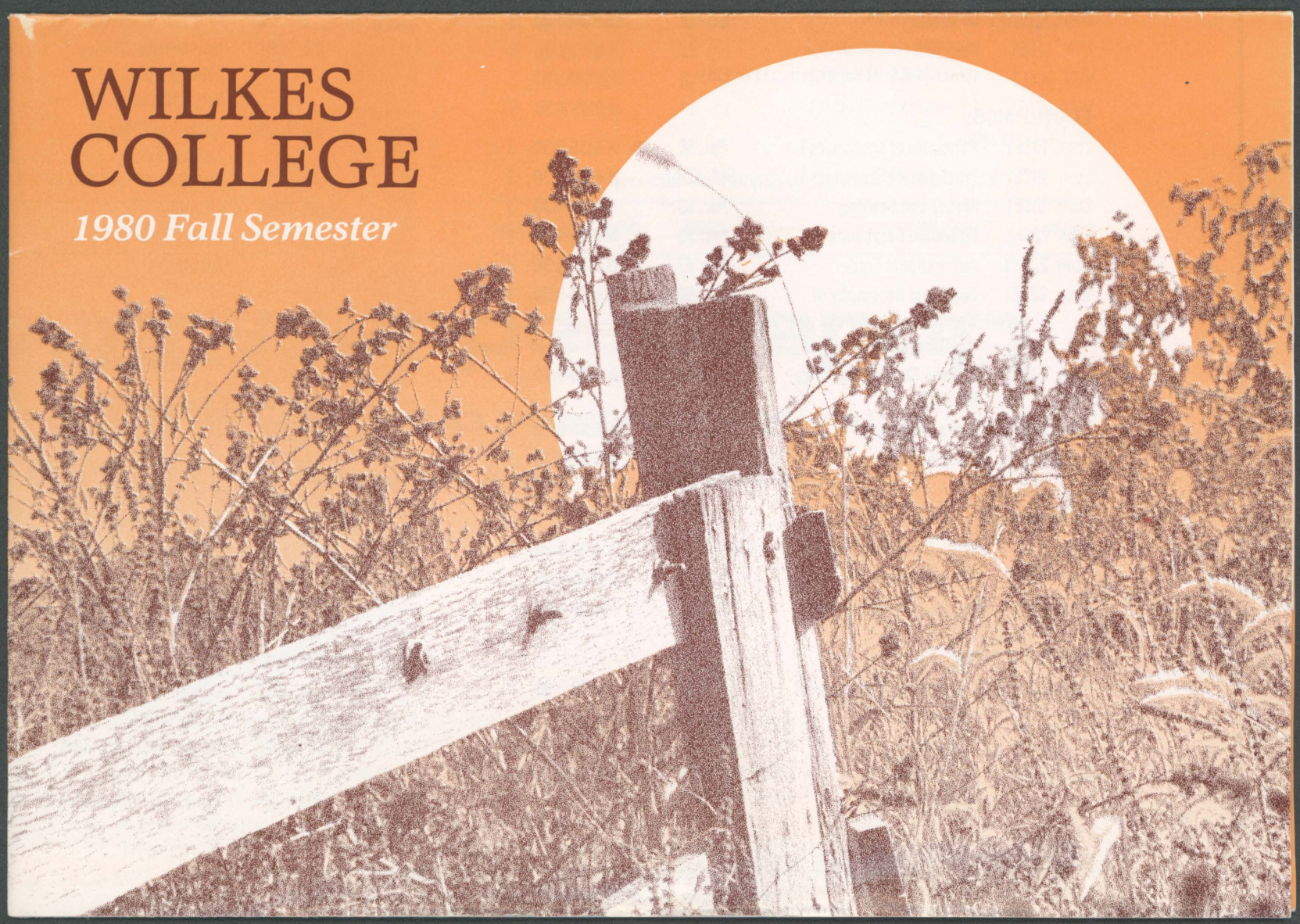
MATHEMATICS:

Eight-Week Evening Session — June 16 - August 8

Math. 314E	Functions of a Complex Variable	SLC 405	6:00-7:45	Staff
Math. 432E	Introduction to Abstract Algebra II (Pre: Math. 331)	TBA	TBA	Staff

WILKES COLLEGE

1980 Fall Semester



WILKES COLLEGE FALL SEMESTER 1980

— GENERAL INFORMATION —

Calendar for Fall Semester 1980

Registration for Evening College, Part-Time, and Graduate Students:

Thursday, Aug. 28 ..... 8:30 a.m. to 8:00 p.m.
Friday, Aug. 29 ..... 8:30 a.m. to 8:00 p.m.
Monday, Sept. 1 ..... Classes begin at 8:00 a.m.
Friday, Oct. 17 ..... Fall recess begins at 5:00 p.m.
Wednesday, Oct. 22 ..... Classes resume at 8:00 a.m.
Tuesday, Nov. 25 ..... Thanksgiving recess begins at 10 p.m.
Monday, Dec. 1 ..... Classes resume at 8:00 a.m.
Monday, Dec. 15 through Tuesday, Dec. 23 ..... Final Examinations

Admissions

An Application for Admission to Wilkes College as a graduate or a part-time undergraduate student may be obtained in the Office of Graduate and Part-time Undergraduate Programs, Parrish Hall, second floor. Full-time Undergraduate students apply for admission through the Admissions Office, Chase Hall.

Financial Aid

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, lower level, Weckesser Hall. Inquiries about financial aid should be made to Richard Raspen, Director of Financial Aid. Information about Veterans' Benefits is available through the Veterans' Affairs Office, 2nd floor, Parrish Hall.

Expenses

All charges must be paid at the time registration forms are processed.

Undergraduate:

Undergraduate students who register for fewer than 12 credits pay $82 per credit.

Undergraduate students who register for 12 to 18 credits pay a flat tuition fee of $1875 per semester. (Students who take more than 18 credits pay $125 for each credit above 18.)

Graduate:

All graduate students pay $110 per credit.

The Bookstore

Books, stationery and supplies may be purchased at the College Bookstore, located in 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.

Degree Programs

Bachelor of Arts degrees are offered in the following subject areas:

Bachelor of Science degrees are offered in the following subject areas:

Biology
Business Education
Chemistry
Commerce & Finance
  (a) Accounting
  (b) Business Administration
Computer Science
Engineering
Earth and
  Environmental Sciences
Mathematics
Medical Technology
Music Education
Nursing
Physics

Wilkes also offers a "Certificate of Achievement" 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.

Wilkes offers the Master of Business Administration Degree; Master of Science Degrees in Mathematics and Physics; and a Master of Science Degree in Education with concentrations in Biology, Chemistry, Education, Elementary Education, English, History, Mathematics or Physics.

The Library

The Eugene Shedden Farley Library is open to all Wilkes students. Students may borrow books from the Library by presenting their College identificaton cards. Hours are posted at the beginning of each academic session.

Withdrawal

An evening college, part-time, or graduate student may withdraw, without prejudice, from any course at any time during the first 4 weeks of the semester, providing that he or she gives verbal or written notice to this effect to the instructor and to the Director of Graduate and Part-time Undergraduate Programs within this 4-week period.

Students in good standing who withdraw from courses or from the College will receive a refund of tuition, upon written request, according to the following schedule:

Time of withdrawal	Tuition Refund
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

Accreditation

Wilkes 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 Graduate programs are approved by the Pennsylvania

Tuesday, Dec. 23 ..... Final Examinations

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Chemistry
Computer Science
Earth and
Environmental Sciences
Economics
Elementary Education
English
Foreign Language
History
Individualized Studies
International Relations
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Social Science/Urban Affairs
Sociology
Sociology-Anthropology

Earth and
Environmental Sciences

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The Graduate programs are approved by the Pennsylvania State Department of Education.

Information

For further information write or call:

John F. Meyers, Director
Graduate and Part-time Undergraduate Programs
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: 824-4651, Ext. 380

WILKES COLLEGE Fall Semester 1980

Registration: Thursday and Friday, Aug. 28 and 29...8:30 a.m. to 8:00

Continuing Education Office, Parrish Hall, 2nd Floor

Undergraduate Division

Course	Description	Room	Day & Hour	Credits
	(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)			
ACCOUNTING:				
Acct. 101E1	Elementary Accounting I	Par. 35	W **6:30-9:30**	3
Acct. 102E1	Elementary Accounting II	Par. 45	Th **6:30-9:30**	3
Acct. 111E1	Intermediate Accounting I	Par. 35	M **6:30-9:30**	3
Acct. 201E1	Cost Accounting	Par. 45	M **6:30-9:30**	3
Acct. 221E1	Taxes I (Pre: Acct. 112 or approval of instructor)	Par. 45	T **6:30-9:30**	3
Acct. 231E1	Auditing	Par. 35	Th **6:30-9:30**	3
Acct. 241E1	Advanced Accounting I (Pre: Acct. 112)	Par. 45	W **6:30-9:30**	3
Acct. 398E1	Topics: Statement Analysis	Par. 53	M **6:30-9:30**	3
AEROSPACE STUDIES:				
A.S. 101E1	U. S. Military Forces in the Contemporary World	137 S. Fkln.	Th **5:00-6:00**	1
A.S. 201E1	The Development of Air Power I	137 S. Fkln.	Th **6:00-7:00**	1
A.S. 311E1	National Security Forces in American Society I	137 S. Fkln.	TBA	3
ANTHROPOLOGY:				
Anth. 101E1	Introduction to Anthropology	SLC 380	T **6:30-9:30**	3
Anth. 270E1	Cultural Anthropology (Pre: Anth. 101 or approval of instructor)	SLC 204	W **6:30-9:30**	3
Anth. 273E1	Archaeology (Pre: Anth. 101 or approval of instructor)	SLC 134	T **6:30-9:30**	3
ART:				
Art 101E1	Experiencing Art I	SLC 105	W **6:00-9:00**	3
Art 245E1	Batik Fee: $10	SLC 206	M **6:00-9:00**	3
BIOLOGY:				
Bio. 309A	Evolution (Pre: Bio. 201-208 or permission of instructor)	SLC 207	W **6:30-9:30**	3
BUSINESS ADMINISTRATION:				
B.A. 101E1	Introduction to Business	Weck. Annex	M **6:30-9:30**	3
B.A. 209E1	Business Correspondence and Reports	Par. 33	M **6:30-9:30**	3
B.A. 225E1	Managerial Finance	Par. 43	W **6:30-9:30**	3
B.A. 231E1	Business Law—Introduction, Contracts and Sales	Par. 56	T **6:30-9:30**	3
B.A. 241E1	Life Insurance	Par. 43	Th **6:30-9:30**	3
B.A. 251E1	Principles of Management	Weck. Annex	T **6:30-9:30**	3
B.A. 261E1	Principles of Retailing	Weck. Annex	W **6:30-9:30**	3
B.A. 397E1	Seminar: Risk Management (Pre: Two insurance courses)	Par. 43	T **6:30-9:30**	3

Course	Description	Room	Day & Hour	Credits
	(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)			
E.E. 251E	Electronics I Laboratory Fee: $20 (Pre: E.E. 212)	SLC 405 SLC 125	M W **5:30-7:00** Th **5:30-8:00**	4
Ma.E. 210E	Introduction to Materials Science (Pre: Engr. 231 or Phys. 201)	SLC 403	T Th **5:30-7:00**	3
ENGLISH:				
Eng. 101E1	Composition I	SLC 209	T **6:30-9:30**	3
Eng. 151E1	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	Kby. 102	M **6:30-9:30**	3
Eng. 151E2	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	SLC 270	W **6:30-9:30**	3
Eng. 203E	Creative Writing—Playwrighting (Pre: Eng. 102)	Kby. 302	M **6:30-9:30**	3
Eng. 312E1	Chaucer (Pre: Eng. 152 or 254)	Kby. 102	W **6:30-9:30**	3
HISTORY:				
Hist. 101E1	World Civilization I	SLC 318	W **6:30-9:30**	3
Hist. 102E1	World Civilization II	SLC 270	T **6:30-9:30**	3
Hist. 102E2	World Civilization II	SLC 270	Th **6:30-9:30**	3
Hist. 315E1	Ancient History: Near East	SLC 215	Th **6:30-9:30**	3
Hist. 398E1	Topics: History of the South	SLC 215	M **6:30-9:30**	3
MUSIC:				
Mus. 101E1	Introduction to Music I	DDD 202	T **6:30-9:30**	3
NURSING:				
Nsg. 298E1	Topics: Physical Assessment (Open to registered nurses)	TBA	T **6:00-9:00**	3
Nsg. 398E1	Topics: Stress Management (Open to juniors, seniors, and registered nurses)	SLC 316	Th **6:00-9:00**	3
PHILOSOPHY:				
Phil. 101E1	Introduction to Philosophy	SLC 133	W **6:30-9:30**	3
Phil. 152E1	Introduction to Logic	SLC 127	M **6:30-9:30**	3
Phil. 232E1	Philosophy of History (Pre: Phil. 101 or 201)	SLC 207	T Th **6:30-8:00**	3
PHYSICS:				
Phys. 101E1	Physical Science I	SLC 166	Th **6:30-9:30**	3
POLITICAL SCIENCE:				
P.S. 102E1	Political Science II	SLC 166	M **6:30-9:30**	3
PSYCHOLOGY:				
Psy. 101E1	General Psychology I	SLC 334	M **6:30-9:30**	3
Psy. 398E	Topics in Psychology:	SLC 347	M **6:30-9:30**	3

	Business Law - Introduction; Contracts and Sales	Par. 56	T 6:30-9:30	3
B.A. 241E1	Life Insurance	Par. 43	Th 6:30-9:30	3
B.A. 251E1	Principles of Management	Weck. Annex	T 6:30-9:30	3
B.A. 261E1	Principles of Retailing	Weck. Annex	W 6:30-9:30	3
B.A. 397E1	Seminar: Risk Management (Pre: Two insurance courses)	Par. 43	T 6:30-9:30	3

BUSINESS EDUCATION:

B.E. 101A	Elementary Typewriting Fee: $15	Butler 10	T Th 6:45-8:30	3
B.E. 111A	Elementary Shorthand	Butler 10	T Th 4:45-6:30	3

COMMUNICATION STUDIES:

Comm. 211E1	Journalism: Basic News Writing Fee: $15 (Pre: Eng. 102)	Butler 10	M 6:30-9:30	3
Comm. 215E1	Public Relations	SLC 133	Th 6:30-9:30	3
Comm. 245E1	Broadcast Management	Butler 10	W 6:30-9:30	3

COMPUTER SCIENCE:

C.S. 124E1	Cobol Programming Fee: $25	SLC 424	T Th 6:30-8:00	3
C.S. 324E1	Systems Analysis (Pre: C.S. 224)	SLC 424	T Th 8:00-9:30	3

EARTH AND ENVIRONMENTAL SCIENCES:

E. & E.S. 101E1	Astronomy	SLC 101	M 6:00-8:00	3
	Laboratory E Fee: $20	SLC 434	M 8:00-10:00	
E. & E.S. 381E1	Mineralogy Fee: $20 (Pre: E. & E.S. 211 and Chem. 111 or 115)	SLC 411	Th 6:00-10:00	3

ECONOMICS:

Econ. 101E1	Principles of Economics I	Par. 56	W 6:30-9:30	3
Econ. 102E1	Principles of Economics II	SLC 127	M 6:30-9:30	3
Econ. 201E1	Money and Banking	Par. 33	T 6:30-9:30	3
Econ. 223E1	Collective Bargaining	Par. 33	W 6:00-9:00	3
Econ. 225E1	International Trade	Par. 53	W 6:30-9:30	3
Econ. 227E1	Economic Geography of North America, Europe and the Soviet Union	SLC 380	M 6:30-9:30	3
Econ. 231E1	Applied General Statistics Fee: $15	Par. 33	Th 6:30-9:30	3
Econ. 241E1	Microeconomics I	Par. 54	W 6:30-9:30	3
Econ. 251E1	Macroeconomics I	Par. 54	M 6:30-9:30	3

EDUCATION:

Educ. 203I	Special Methods-Science	King's Coll.	T Th 4:00-5:30	3
Educ. 290E1	Research Analysis	SLC 209	M 6:00-9:00	3
Educ. 398E1	Topics: Futuristics	SLC 209	W 6:00-9:00	3

ENGINEERING:

Engr. 283E	Engineering Measurement Laboratory I Fee: $20	SLC 23	T 5:00-7:00	1
E.E. 211E	Circuit Theory I (Pre: Math. 112)	SLC 403	M W 5:30-7:00	3

POLITICAL SCIENCE:

P.S. 102E1	Political Science II	SLC 166	M 6:30-9:30	3

PSYCHOLOGY:

Psy. 101E1	General Psychology I	SLC 334	M 6:30-9:30	3
Psy. 398E	Topics in Psychology: Exceptional Child	SLC 347	M 6:30-9:30	3

SOCIOLOGY:

Soc. 101E1	Introduction to Sociology	SLC 380	W 6:30-9:30	3
Soc. 251E1	Fields of Social Work (Pre: Soc. 101 or Anth. 101 or approval of instr.)	SLC 204	Th 6:30-9:30	3
Soc. 370E1	Methods of Research in Sociology (Pre: Soc. 101 or approval of instructor)	SLC 204	M 6:30-9:30	3

SPANISH:

Span. 101E1	Elementary Spanish I	SLC 207	M 6:30-9:30	3

SPEECH:

Spch. 101E1	Fundamentals of Speech	DDD 101	W 6:30-9:30	3

Graduate Division

BIOLOGY:

Bio. 303A	Bacteriology	SLC 316	MW 10:00	Doty
	Laboratory Fee: $30	SLC 305	W 2:00-5:00	
Bio. 305A	Invertebrate Biology	SLC 127	MW 1:00	Rigley
	Laboratory Fee: $30	SLC 349	M 2:00-5:00	
Bio. 307A	Analytical Cytology	SLC 160	TTh 10:00	Ogren
	Laboratory Fee: $30	SLC 377	T 2:00-5:00	
Bio. 309E	Evolution	SLC 207	W 6:30-9:30	Turoczi
Bio. 312A	Comparative Physiology	SLC 207	TTh 9:00	Hayes
	Laboratory Fee: $30	SLC 377	F 8:00-11:00	
Bio. 315A	Molecular Biology (Pre: Bio. 201-208; Chem. 231-232 or permission of instructor)	SLC 316	MWF 11:00-12:00	Turoczi

BUSINESS ADMINISTRATION:

Acct. 503	Managerial Accounting	Par. 35	T 6:30-9:30	Moran
Acct. 542	Financial and Tax Planning	Par. 54	Th 6:30-9:30	Broadt
B.A. 502E1	Management Science	Par. 56	Th 6:30-9:30	Engel
B.A. 502E2	Management Science	Par. 53	T 6:30-9:30	Engel
B.A. 511	Modern International Commerce	Par. 56	M 6:30-9:30	Taylor
B.A. 514	Market Research and Experimentation (Seminar)	SLC 160	M 6:00-9:00	Lewis
B.A. 521	Organizational Theory	Weck. Annex	Th 5:00-8:00	Kelly
B.A. 522	Quantitative Aspects of Management	Par. 54	T 6:00-9:00	Williams
B.A. 550A	Topics: Small Business Administration	TBA	TBA	Gettinger
B.A. 550B	Topics: Risk Management	Par. 43	T 6:30-9:30	Farrar

Course	Description	Room	Day & Hour	Instructor
	(TIMES LISTED IN LIGHT FACE REPRESENT A.M.; **BOLD FACE P.M.**)			
B.A. 550C	Topics: Techniques of Work Measurement, Simplification and Performance Appraisal	SLC 160	W **6:30-9:30**	Chmiola
Econ. 506	Labor-Management Economics	Par. 43	M **6:00-9:00**	Werner
CHEMISTRY:				
Chem. 325A	Advanced Inorganic Chemistry (Pre: Chem. 252)	TBA	TBA	Faut
Chem. 335A	Advanced Organic Chemistry (Pre: Chem. 231, Chem. 252)	TBA	TBA	Jahngen
Chem. 361A	Biochemistry I	TBA	TBA	Stine
Chem. 398A	Topics: Chemical Applications (Pre: Approval of instructor)	TBA	TBA	Faut
COMPUTER SCIENCE:				
C.S. 320A	Logic & Switching Circuits (Pre: E.E. 211 or Phys. 202)	SLC 424	MW 10:00-11:30	Koch/Nejib
C.S. 320B	Logic & Switching Circuits (Pre: E.E. 211 or Phys. 202)	SLC 424	MW 11:30-**1:00**	Koch/Nejib
C.S. 321A	Simulation & Data Analysis (Pre: C.S. 223 or C.S. 224)	SLC 403	TTh 9:30-11:00	Parker
C.S. 323A	Formal Languages and Automata Theory (Pre: Math. 202)	SLC 409	TTh 8:00-9:30	Koch
C.S. 324E1	Systems Analysis	SLC 424	TTh **8:00-9:30**	Mantione
EDUCATION:				
Educ. 510	Psychological Foundations of Education	SLC 311	W **6:00-9:00**	Hammer
Educ. 513	Comparative Foundations of Education	SLC 209	Th **6:00-9:00**	Fahmy
Educ. 521	Statistics in Education (Pre: Education 520 or equivalent)	SLC 160	T **6:00-9:00**	Bellucci
Educ. 532D	PEE: Social Studies	SLC 411	W **6:00-9:00**	Fahmy
Educ. 536	Elementary School Reading Instruction	SLC 133	T **6:00-9:00**	Scappaticci
Educ. 537	Reading Disabilities (Pre: Education 536)	SLC 160	Th **6:00-9:00**	Scappaticci
Educ. 575	Group Dynamics	SLC 133	M **6:00-9:00**	Hammer
Educ. 598A	Topics: Futuristics—Methods for Studying the Future	SLC 215	W **6:00-9:00**	Darte
Educ. 598P	Topics: Project Teach	TBA	TBA	Staff
ENGLISH:				
Eng. 330A	Seventeenth Century Prose and Poetry	Kby. 302	TTh 9:30-11:00	Kaska
Eng. 354A	Romantic Prose and Poetry	SLC 311 SLC 215	TTh **1:00** F **1:00**	R. Heaman
Eng. 370A	Modern British Poetry	SLC 215	TTh **3:00-4:30**	Gutin
Eng. 372A	Modern Novel	Kby. 302	TTh 8:00-9:30	Rizzo
Eng. 384A	American Drama	CPA	MWF 12:00	Staff
Eng. 397A	Seminar: Faulkner and the Southern Tradition	Kby. 302	MWF 9:00	Terry
Eng. 398A	Topics: Biography as Art	SLC 311	TThF **2:00**	Fox
Eng. 410E	Studies in Medieval Literature: Chaucer	Kby. 102	W **6:30-9:30**	Fiester

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Eng. 354A	Romantic Prose and Poetry	SLC 311 SLC 215	TTh **1:00** F **1:00**	R. Heaman
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HISTORY:

Hist. 315E1	Ancient History: Near East	SLC 215	Th **6:30-9:30**	Berg
Hist. 325A	American Ethnic History	SLC 316	TThF 10:00	Rodechko
Hist. 331A	Colonial America	SLC 342	TTh **1:00-2:30**	Hartdagen
Hist. 341A	History of Great Britain and the British Empire and Commonwealth I	SLC 207	MWF 11:00	Berlatsky
Hist. 355A	Europe in the 19th Century	SLC 316	TThF 9:00	Shao
Hist. 398E1	Topics: History of the South	SLC 215	M **6:30-9:30**	Cox

MATHEMATICS:

Math. 334A	Linear Algebra	SLC 403	MWF 10:00	Sours
Math. 343A	Introduction to Geometry	SLC 405	MW **4:00-5:30**	Earl
Math. 351A	Probability and Mathematical Statistics I	SLC 403	MWF **1:00**	Merrill
Math. 361A	Introduction to Applied Mathematics I	SLC 405	MWF 8:00-9:00	DeCosmo

PHYSICS:

Phys. 311A	Mechanics I	SLC 147	MWF 9:00	Donahoe
Phys. 320A	Electronic Instrumentation for the Life and Behavioral Sciences Fee: $25	SLC-161	T **2:00-4:00** Th **2:00-5:00**	Staff
Phys. 321A	Electronic Instrumentation for the Physical Sciences Fee: $25	SLC161	T **2:00-4:00** Th **2:00-5:00**	Staff
Phys. 331A	Electricity and Magnetism I Laboratory Al Laboratory A2 Fee: $25	SLC 166 SLC 125 SLC 125	MWF **1:00** T **2:00-5:00** Th **2:00-5:00**	Staff
Phys. 351A	Quantum Mechanics	SLC 147	TTh 8:00-9:30	Staff
Phys. 361A	Atomic Physics Laboratory	SLC 147 SLC 42	MWF 11:00 W **2:00-5:00**	Staff

WEEKEND COLLEGE (FALL, 1980)

Wilkes' Weekend College classes meet every third weekend on the campus of Keystone Junior College, La Plume, Pennsylvania. Classes start the weekend of September 5 and end the weekend of December 12.

For information on the Weekend College, contact:

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