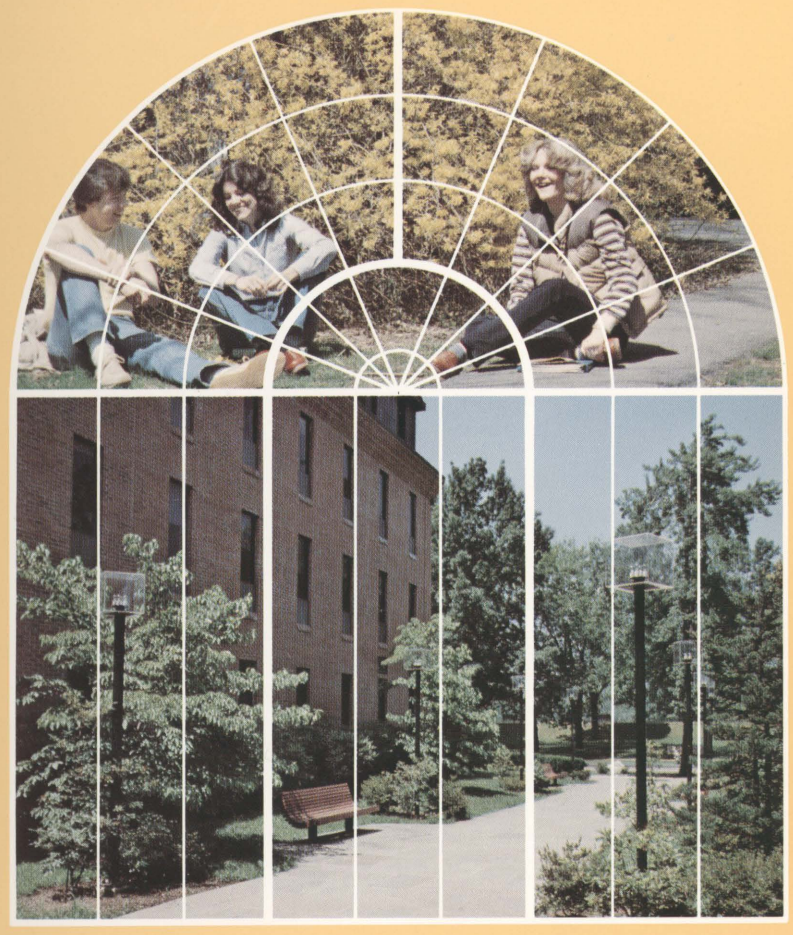


Wilkes College

1981-82

BULLETIN

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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.

82-162317

College Calendar

FALL SEMESTER — 1981

Classes Commence	Monday, August 31 — 8 a.m.
Fall Break	Friday, October 16 — 5 p.m.
Classes Resume	Wednesday, October 21 — 8 a.m.
Thanksgiving Break	Tuesday, November 24 — 10 p.m.
Classes Resume	Monday, November 30 — 8 a.m.
Classes End	Friday, December 11 — 5 p.m.
Final Examinations Begin	Monday, December 14 — 8 a.m.
Final Examinations End	Tuesday, December 22 — 11:30 a.m.

SPRING SEMESTER — 1982

Classes Commence	Monday, January 18 — 8 a.m.
Spring Break	Friday, March 5 — 5 p.m.
Classes Resume	Monday, March 15 — 8 a.m.
Easter Break	Thursday, April 8 — 10 p.m.
Classes Resume	Tuesday, April 13 — 8 a.m.
Classes End	Tuesday, May 4 — 5 p.m. *(Tuesday, May 4, follow Friday schedule)*
Final Examinations Begin	Friday, May 7 — 8 a.m.
Final Examinations End	Saturday, May 15 — 11:30 a.m.
Graduation	Sunday, May 23

SUMMER — 1982

First Day Session

Classes Commence	Monday, June 14 — 8 a.m.
Classes End	Friday, July 16 — 12 noon

Second Day Session

Classes Commence	Monday, July 19 — 8 a.m.
Classes End	Friday, August 20 — 12 noon

Evening Session

Classes Commence	Monday, June 14 — 6 p.m.
Classes End	Friday, August 6 — 10 p.m.

FALL SEMESTER — 1982

Classes Commence	Monday, August 30 — 8 a.m.
Classes on Labor Day	Monday, September 6
Founder's Day	Friday, September 24
Fall Break	Friday, October 15 — 5 p.m.
Classes Resume	Tuesday, October 19 — 8 a.m.
Thanksgiving Break	Tuesday, November 23 — 10 p.m.
Classes Resume	Monday, November 29 — 8 a.m.
Classes End	Friday, December 10 — 5 p.m.
Final Examinations Begin	Monday, December 13 — 8:30 a.m.
Final Examinations End	Tuesday, December 21 — 11:30 a.m.

SPRING SEMESTER — 1983

Classes Commence	Monday, January 17 — 8 a.m.
Spring Break	Friday, March 4 — 5 p.m.
Classes Resume	Monday, March 14 — 8 a.m.
Easter Break	Thursday, March 31 — 10 p.m.
Classes Resume	Tuesday, April 5 — 8 a.m.
Classes End	Tuesday, May 3 — 5 p.m. *(Tuesday, May 3, follow Friday schedule)*
Final Examinations Begin	Friday, May 6 — 8:30 a.m.
Final Examinations End	Saturday, May 14 — 11:30 a.m.
Graduation	Sunday, May 22 — 2 p.m.



Eugene S. Farley Library, named in honor of the College's first president

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

WILKES COLLEGE *Bulletin*

UNDERGRADUATE STUDIES

1981 - 1982

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.

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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.

Since its founding, Wilkes College has had three presidents: Eugene Shedden Farley, 1947-1970; Frances J. Michelini, 1970-1975; Robert S. Capin, 1976-.

Accreditation

Wilkes College is accredited by the Department of Education of the Commonwealth of Pennsylvania and the Middle States Association of Colleges and Secondary Schools.

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

The Electrical Engineering Program is accredited by the Accredita-

tion Board for Engineering and Technology (ABET), formerly ECPD, which is the sole authorized agency to accredit engineering programs in the U.S.

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

College Life

Student Activity

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

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

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

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

Other student activities include the theater, the symphonic band, choruses, numerous brass, woodwind, and percussion ensembles, 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 nine men's and six women's varsity areas. The men's varsity program includes cross-country, football, soccer, swimming, basketball, wrestling, golf, tennis, 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 counseling is available to aid students in developing self-confidence and in coping with any problems and anxieties that may develop.

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

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

Project Upward Bound

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

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

Reading Improvement Center

The primary goal of the Reading Center is to improve reading skills and related language arts and study skills of Wilkes College students.

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 pre-

sented 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.





Chase Hall on South River Street houses the Admissions office.

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.

Students majoring in Nursing are required to have completed courses in biology and chemistry during their secondary school program. Physics and mathematics are recommended.

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 Placement Program

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

College Level Examination Program Subject Examinations

The College grants credits through Subject Examinations of the College Level Examination Program. Satisfactory performance on one of the designated CLEP Subject Examinations is acceptable in substitution for the designated course, and the credits for the course will be applied to the student's transcript. CLEP credits from an accredited institution are transferable. For further information contact: College Level Examination Program, Box 1824, Princeton, New Jersey 08540. Information on specific course exemptions and credits may be obtained from the Wilkes College Office of Admissions. Students wishing to be considered for CLEP credits should have the test results forwarded to the Office of Admissions.

Challenge Examinations

Advanced placement and/or credit can be earned by challenge examinations administered by the appropriate department. Interested students should contact the department chairman. A fee of $25 will be assessed for each challenge examination. Students requesting a challenge examination must present a receipt from the Finance Office before the examination will be administered.

Readmission to the College

Students who have been enrolled full-time at Wilkes College and who, for any reason, terminate their studies at the College must apply for readmission to the College. Applications for readmission may be obtained from the Office of Admissions. A $15 non-refundable fee is charged.

Decisions concerning readmission to the College are reached jointly by the Office of Admissions and the Office of Student Affairs. An interview in the Office of Admissions is required prior to the final decision to readmit a student. Should an applicant be readmitted to the College he or she will be invited to make an appointment with the Office of Student Affairs in order to plan the next semester's course registration.

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

All inquiries concerning readmission should be directed to the Office of Admissions, Chase Hall. Telephone: 717-824-4651, Ext. 400.

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 col-

lege career to consult with his classroom instructors, his faculty adviser, the deans, or the department chairmen concerning his scholastic progress.

The Family Educational Rights and Privacy Act of 1974

In accordance with the provisions of "The Family Educational Rights and Privacy Act of 1974," students, upon request, will be given access to all their evaluative records which have been established by Wilkes College. Such records might typically include those maintained by the Office of Career Planning, 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 Office of Graduate and Part-Time Undergraduate Programs.

Evening Program

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

Students will confer with the Director of Graduate and Part-Time Undergraduate Programs to arrange a course of study to meet their needs, abilities, and special requirements.

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

Non-degree students may be admitted to classes which they are qualified to take by reason of their maturity, previous education, and work experience. Secondary school training is desirable but not necessary, provided the student is qualified to follow such special courses of instruction.

Summer Program

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 Office of Graduate and Part-Time Undergraduate Programs.

Graduate Program

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

Information concerning admission to the Graduate Program may be obtained from the Office of the Director of Graduate Programs. 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.

Fees and Expenses

Application Fee

A non-refundable fee of $15 is required with the initial application of all full-time applicants for admission to a degree or certificate program. Part-time and special students changing to full time must pay the $15 fee at the time of change.

Acceptance Deposit

Each applicant is required to remit an acceptance deposit of $50 by May 1. The deposit is applied to the first tuition payment upon matriculation. Acceptance deposits are non-refundable.

Tuition

Full-Time

A flat tuition fee of $2,100 per semester will be charged to all students taking a course load of twelve to eighteen hours. A student who elects to schedule more than eighteen hours will be charged $140 for each additional credit hour.

Wilkes College maintains a comprehensive program of financial aid in the forms of scholarships, grants, loans, and part-time employment programs. The College also participates in the Federal campus-based programs and is approved by the Federal Basic Grant Program, the Pennsylvania Higher Education Assistance Agency, the Federal Insured/Guaranteed Student Loan Program, and other State programs as an eligible institution. The individual aid programs are described in detail in the publication, "A Consumer's Guide to Financial Aid at Wilkes College" and on pages 25-27 of the Wilkes College Bulletin.

Part-Time

Students enrolled in day or evening courses on a part-time basis (i.e. eleven or fewer hours) as well as students enrolled in the summer will be charged $89 per credit hour. Part-time students may qualify for some forms of financial aid.

Audit

A full-time enrolled student (taking 12 hours or more) may audit additional courses at no charge on a space available basis. Part-time students may audit a course for one-half the regular tuition fee. Determination of audit status for financial purposes will be made at the time of registration for the course or within the first week of classes.

Other Fees

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

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, not to exceed Wilkes College tuition for that semester.

There is a fee of $20 per semester for all music and music education majors. The cost of individual instruction in applied music is $75 per credit for full-time students (12 credits or more) for a series of fourteen half-hour lessons.

A student activities fee of $50 per year provides for special programs, including plays, concerts, recitals, lectures, and home athletic events. Full-time students will be charged the entire amount at the beginning of the Fall semester. The activity fee is not refundable. Students entering in the Spring semester will be charged $25.

All graduating seniors will be charged a graduation fee of $40. The fee is assessed regardless of participation in commencement exercises.

A Health Care fee of $32 per year is required of each full-time student. Part of this fee provides the student with a $1,500 Accident Insurance plan. Students entering in the Spring semester will be charged $25. Sickness Insurance is also available to full and part-time students on an optional basis at a cost of $32 per year. Protection is provided under both plans from September 1 (or beginning class date for Spring entrants) to August 31 of the following year. The Health Care fee for full-time commuting students is payable in full with the first semester charges. Application for the optional sickness insurance must be made at the Comptroller's Office at Parrish Hall not later than the end of the second week of each semester. The Health Care fee of all resident students is included as part of the dormitory fee.

Part-time students enrolled in certain specified courses requiring participation in laboratories will be charged $7 each semester (summer, fall, spring) for participation in the Accident Insurance Program. All other part-time students *may* apply for the Accident Insurance on a voluntary basis. Part-time students enrolled in the specified courses not wishing to carry the College Accident Insurance may have the charges dropped by signing a waiver *within the first two weeks of each semester.* See the Office of Graduate and Undergraduate Part-Time Programs for courses requiring insurance coverage.

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

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

Residence Hall Fees

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

All full-time undergraduate students who are under 18 years of age are required to reside in Wilkes College residence halls during their first and second semesters unless they have been granted permission from the 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 student 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 $1,050 per semester. This charge includes the cost of health service, room rent, and twenty meals per week. A deposit of $50 will be required the first time a signed housing contract is returned to the Comptroller's Office. This fee will be held in escrow for residence hall damage assessments. If a student notifies the Housing Office prior to August 1 of his intention not to return to residence, the $50 deposit will be refunded. After August 1, and prior to the beginning of classes, no refunds will be made.

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

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

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

Refunds

Total Withdrawal

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

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

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

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

FULL TIME TO PART TIME

Students will be charged for the cost of actual credits carried after the drop, plus an additional amount computed according to a sliding scale formula. The additional amount will be the sum of full-time tuition minus the cost of courses actually carried times the applicable percentage listed above for withdrawals. For example, a student registers for 15 credits including labs at a cost of $2,100 and $40 for laboratory fees, then decides to drop a 4 credit course in the fourth week of classes. Charges for these 11 credits are computed as follows:

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

11 x $89 + .40 (2,100 – 979)

$979 + $448.40 = $1,427.40 = newly computed cost of 11 credits

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

REDUCED PART-TIME LOAD

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

WEEKEND COLLEGE

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

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

SUMMER PROGRAM

Students who have paid their tuition in full and who withdraw from courses or from the College during the first week of the first or second sessions or during the first two weeks of the eight-week evening session will receive a refund of one-half of their tuition upon written request. No refunds will be made to students who withdraw from courses or from the College after these periods. Fees are non-refundable.

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

MEALS

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

ROOM RENT

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

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

Credit Balances

Credit balances in a student's accounts will not be refunded unless requested from the Comptroller's Office. If a student receiving aid withdraws from the College and is otherwise entitled to a refund, the financial aid is reduced by the same proportion of the refund, and those dollars are restored to the financial aid fund.

Payment of Charges

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

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

The remainder is due on November 15 of the first semester and March 15 of the second semester. Failure to pay balances in full by the due dates may result in suspension from classes unless arrangements are made in advance with the Comptroller's Office. Grades or transcripts will not be released until settlement has been made. Diplomas will not be awarded nor will participation be allowed in commencement exercises until all financial obligations to the College have been satisfied.

Questions concerning fees and payment of fees should be referred to Mrs. Karen Campbell, Assistant Comptroller, Room 2, Parrish Hall, 16 South River St., Wilkes-Barre, Pa. 18766, Telephone No. 717-824-4651, Ext. 423.

Tuition Discounts for Family Units (brother, sister; parent, child; husband, wife)

When two or more members of the same family attend Wilkes at the same time, a 15% reduction in net tuition costs will be given to all but the first family member. If the family units do not attend at the same time, no tuition discounts will be allowed. Net tuition cost is the amount due after financial aid has been credited to the student's accounts.

Deferred Payment Plans

Wilkes Installment Payment Plan

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

ELIGIBILITY

Ordinarily, parents of any Wilkes undergraduate student are eligible if their combined annual income is $15,000 or more. Parents who have a combined annual gross income of less than $15,000 should consult the Director of Financial Aid for other sources of financial aid. It is advised that the student make sure that all other sources of

financial aid have been exhausted before applying for the IPP. Independent graduate and undergraduate students should consult the Assistant Comptroller for special permission to participate in the plan.

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

1) The amount must be greater than $1,000 and must be rounded to an even $100; and
2) The maximum amount which can be financed annually is the parents' contribution as determined by the Financial Aid Office, or $5,000.

The following table illustrates typical monthly payment schedules:

Cash Price Advance	Monthly Payment
$1,000	$ 90.91
1,500	136.36
2,000	181.82
2,500	227.27
3,000	272.73
3,500	318.18
4,000	363.64
4,500	409.09
5,000	454.55

SCHEDULE OF PAYMENTS

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

OPTIONAL PAYMENTS

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

FEES

Although no finance charge will be asessed on the IPP, an application fee of $35 must accompany the application form. An additional fee of $15 will be assessed for early withdrawal from the plan.

RETAIL INSTALLMENT CONTRACT

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

PAYMENT COUPONS

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

SEMESTER BILL PAYMENTS

Payments made through the IPP will be credited to the student's account twice a year, once in September and once in January.

DELINQUENT PAYMENTS

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

APPLICATION DEADLINE

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

ADDITIONAL INFORMATION

Additional information about IPP is available from Mrs. Karen Campbell, Assistant Comptroller, at (717) 824-4651, Extension 423.

Private Plans

Three private plans are also authorized for use by the College. They are:

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

The above four plans are the only ones authorized by the College.

Financial Assistance

Wilkes College maintains an extensive program of financial aid for its students, since it 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 be forced to withdraw after matriculation, for purely financial reasons.

To assist qualified students, the College receives substantial gifts each year from friends and alumni. These funds, combined with those furnished directly to students by the Federal and state governments, are offered to students in packages consisting of grants, loans, and work opportunities.

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

Inquires and applications regarding all financial assistance programs should be initiated with the Director of Financial Aid. The Financial Aid Office is located in Weckesser Hall.

Application Procedures

Students requesting financial aid shall indicate this is 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 academic achievements. Because of the limited nature of College funds, applicants are *required* to submit applications for the Federal Basic Grants Program and for their State Grant/Scholarship Programs, where these are available. College grants may then be offered to students as supplements to these Federal and State funds.

Pennsylvania residents shall file the PHEAA/BEOG Composite application form, which gathers financial information about the applicant's family for the Pennsylvania State Grant Program, the Federal Basic Grants Program, and all the need-based programs of assistance administered by the College Financial Aid Office. The form

should be filed as soon as possible after January 1 and not later than May 1 to insure timely application for the academic year beginning the following September.

New Jersey residents and residents of other states which use the Financial Aid Form of the College Scholarship Service to gather financial information for those State Scholarship/Grant programs should file their state's version of the Financial Aid Form. Applicants should list Wilkes College and the CSS Code 2977 as a recipient of the information.

New York residents and residents of states without scholarship/grant programs should file the PHEAA/BEOG Composite form. As non-residents, applicants could not apply for the Pennsylvania Grant program, but the application will transmit the information to the Basic Grants Program and to the College for its use in determining the applicant's eligibility for its aid programs.

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

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

Students who have been awarded grants from the College are also required to maintain a minimum cumulative grade point average of 2.00 (1.80 after the freshman year) in order to maintain eligibility for this program, in addition to their constructive participation in at least one all-college activity of the student's choice. Students who have been awarded College Presidential Academic scholarships are required to maintain a minimum cumulative grade point average of 3.00 in order to maintain eligibility for that program.

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

Except where specifically noted, recipients of financial aid are required to enroll as full-time students in order to receive the aid funds.

The College has defined full-time to mean a student who is registered for a minimum of twelve credits during each semester that aid funds are received.

The primary responsibility for financing the cost of education rests with the student and his family. Consequently, financial aid will be granted only after they have made every reasonable effort to finance as large a portion of the student's education as possible. When such home support is lacking, the College will seek to develop with the student a plan whereby his or her education may be continued through work, loan, and scholarships/grants.

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

Types of Financial Aid

Financial aid packages are developed for students on an individual basis and usually consist of one or more of the following types of aid programs:

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

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

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

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

Scholarships

As evidence of its concern for academic excellence, the College has established several programs of scholarship assistance. These scholarships are based on truly outstanding academic achievement at the secondary level. Twenty Presidential Academic scholarships, each valued

at $750, are awarded by the Admissions Committee to those applicants who test above 1100 on the Scholastic Aptitude Test and who are ranked in the upper 10% of their graduating class. High school seniors who desire to be considered for a scholarship should apply in writing to the Dean of Admissions and schedule an interview appointment. These scholarships are renewable until graduation provided that the recipient maintains a minimum cumulative grade point average of 3.00 and participates in at least one all-college activity.

Scholarships are also awarded without regard to financial need by the departments of Art and Music. Students whose interests lie in these areas should write to that department chairman for additional information about these scholarships.

Grants

Wilkes College Grants are available to students with good records of achievement and performance in secondary school or college who cannot finance fully the cost of their education at the College. College Grants are awarded on the demonstrated financial need of the applicant and are subject to change in subsequent years as the financial need of the student changes. Grants range from $100 to $1,500 per year and must be renewed annually. Students receiving College Grant assistance are required to maintain a minimum cumulative average of 2.00 (1.80 after the freshman year) in order to continue receiving this assistance, and participate in at least one all-college extracurricular activity.

College Act 101 Grants are awarded to students accepted through the OPERATION PHOENIX Program, which provides education opportunities for educationally and economically disadvantaged students. Applicants must be residents of the Commonwealth of Pennsylvania and meet the requirements set forth by the Higher Education Equal Opportunity Act. These grants are guaranteed renewable through the sophomore year provided that the student maintains satisfactory academic progression and files timely application for the Pennsylvania State Grant Program and the Basic Grants Program.

Basic Educational Opportunity Grants

Federal Basic Grants, ranging from $200 to $1,750 in 1981-82 are available to those students who demonstrate financial need. The amount of individual grants is related directly to the student's eligibility index as determined by the Basic Grants Program. Application is made by completing either the PHEAA/BEOG Composite form or a state Financial Aid Form (FAF).

Nursing Student Scholarships

Federal grants ranging from $100 to $1,500 per year are available to students enrolled in the Department of Nursing. These grants are based on the financial need of the applicant.

Supplemental Educational Opportunity Grants

Federal grants ranging from $200 to $2,000 are available to those students demonstrating 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 need analysis service, does not exceed one-half the student's educational costs.

State Grants/Scholarships

Many states now offer direct financial assistance to their residents. The Commonwealth of Pennsylvania awards grants ranging from $100 to $1,500 to students meeting the financial need requirements of the Pennsylvania Higher Education Assistance Agency. Other states, such as New Jersey and Massachusetts, also offer grant assistance and allow their residents to take those funds to out-of-state institutions. Secondary school seniors should contact their guidance officers to learn about their state program and obtain application forms.

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 $1,500 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 Financial Aid Office 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.

State Guaranty Loan Programs

Each state operates a guaranteed loan program which enables residents to borrow directly from their local bank, savings-and-loan association, or credit union without the necessity of providing collateral or demonstrating financial need. The funds are obtained directly from the lender, and the Federal government pays all interest on the loan while the lender remains enrolled on at least a half-time basis and for six months after cessation of study, without regard to family income. Full time students may borrow up to $2,500 per year (or the difference between costs and resources, whichever is less) with an aggregate lending level of $12,500 as an undergraduate student. Application forms and further information can be obtained from the applicant's local lender.

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

Two part-time employment programs are available to students at the College. The College Work-Study Program is funded jointly by the Federal government and the College, and provides opportunities for students who demonstrate financial need to earn part of their college expenses through employment in academic departments, faculty and administrative offices, the Library, and the Dining Hall. Students are paid on an hourly basis and may not exceed 20 hours per week when classes are in session or 40 hours a week during weeks when no classes are held. Off-campus employment opportunities are also available under College Work-Study through the Cooperative Education Office.

The College also maintains a part-time Student Employment Program that is identical to CW-SP except that students are not required to demonstrate need in order to work under the College program. Funds for this program are provided entirely by the College and are administered by each departmental chairman or administrative officer. Interested students should contact those individuals concerning the possibility of part-time employment under the College Program.

Academic Progress

All financial aid programs require that recipients maintain "satisfactory academic progress" toward degree objectives, which is defined as the successful completion of at least 24 credit hours during each academic period. Students accumulating fewer than 24 credits between award periods face a withdrawal of College-administered aid, State aid, and the Basic Grant until satisfactory progression is met. Students should be aware that progression at that rate will not provide for graduation within the normal four-year period. Some financial aid programs are not available to students during the fifth year of study.

Trust Funds, Endowed Scholarships, and Awards

Founders of Scholarships

Several thousand friends and alumni contribute to the scholarship fund of the College on an annual basis. Many friends have created scholarships 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.

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

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.

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

DR. JAROSLAV G. MORAVEC MEMORIAL SCHOLARSHIP. 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 has been 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 partial scholarships for two seniors from Northwest Area High School who matriculate at the College. The recipients are determined by a selection committee of interested individuals from the Northwest Area. Further information concerning application procedures and eligibility requirements is available from the Director of Guidance, Northwest Area High School.

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.

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

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.

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

EMORY AND MAMIE ZIEGLER SCHOLARSHIP 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.

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

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 an-

nually 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 CORPORATION has created an endowed scholarship fund to provide grants for sons or daughters of its employees. To qualify for candidacy, a student must apply through the regular admissions channels of the College and be accepted by Wilkes College for full-time enrollment. Such a student is eligible for an annual scholarship grant of a minimum of $500.

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 and has participated constructively in cultural activities.

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

THE HUGO MAILEY MEMORIAL AWARD is given annually to that graduating senior in the social sciences who has best demonstrated overall abilities in scholarship, intellectual curiosity, and community or college service during his or her career at Wilkes College.

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

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

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

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

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.

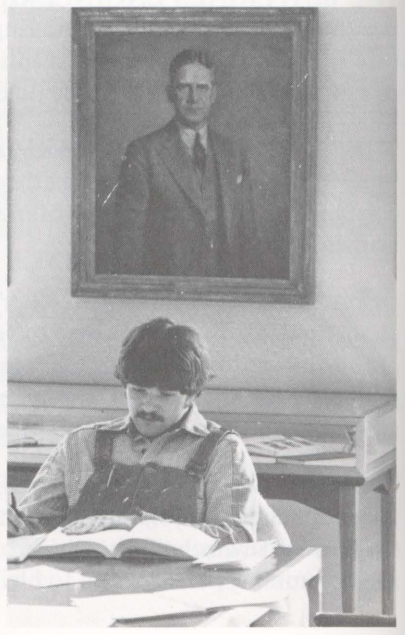
THE PHILOSOPHY DEPARTMENT AWARD is presented annually in memory of Stanko M. Vujica to the student beginning the study of philosophy who shows the greatest promise in and potential for continued achievement in philosophy.

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.





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, was named by the Trustees in honor of Dr. Eugene Shedden Farley, first president of Wilkes College.

The Eugene Shedden Farley Library has capacity for 425,000 volume equivalents and study area for 500 students. Also, students may borrow books from eight nearby libraries (public and private) through direct borrowing arrangements.

The library occupies the northwest corner of West South and South Franklin Streets. Its four floors contain study carrels, 14 faculty study rooms, a media center, and a large microform collection. There are four special collection rooms — one is devoted to Polish art treasures, books 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.

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 Language and Literature 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.

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.

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

The Dorothy Dickson Darte Center for the Performing Arts was dedicated in October, 1965.

The building contains a scene shop, dressing rooms, rehearsal areas, costume rooms, hydraulic lift forestage, patch panel with 246 circuits, and a ten-scene preset with 60 dimmers.

The College continues to join with community organizations, such as the Wyoming Valley Ballet Society, the Wilkes-Barre Chapter of Hadassah, and the Women's Committee for the Polish Room at Wilkes College, in the presentation of cultural programs. Proceeds from the College's musical comedy productions have assisted in the establishment of the Wilkes-Barre Kiwanis Charitable Foundation.

Dorothy Dickson Darte Music Building

Faculty offices, studios, classrooms, practice and rehearsal rooms are housed in the Darte Music Building. Opened in the summer of 1969, this facility is the second phase of the Center for the Performing Arts completed four years earlier in 1965.

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.

Roth Center Testing Service

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 Center, located on South River Street, was the law offices of the late Gilbert S. McClintock, the first chairman of the Board of Trustees.

Career Services

The Office of Career Services in the Roth Center offers guidance to undergraduates and alumni concerning permanent or part-time employment and graduate or professional school enrollment. Students in need of this service are invited to register with the office.

Additional services of the office include help with cover letters, resume preparation, interview techniques, application procedures, arranging for job and graduate school examinations, interpreting contracts, securing letters of reference. The Career Services Office will also maintain and forward credentials for all registered candidates. There is no charge for these services.

To aid students in choosing an occupational goal, a Careers Library is available to identify the variety of career options for students in any major.

The Career Services Office maintains contact with professional organizations and educational institutions, and every effort is made to assist qualified students and alumni in finding appropriate opportunities. Registrants are urged to regularly update their credentials file and to keep the office advised of their activities.

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.)

Conyngham Student Union Building

The Student Union Building, refurnished by the Conyngham family and by their friends, is a multi-functional unit available to clubs and organizations for student activities and for relaxation. Cafeteria service is provided for commuting students.

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 Information Office, the Office of College Development, the Director of Financial Aid, the Director of Planned Giving, the Director of Cultural Activities, the Director of Institutional Grants and Research.

Franklin Hall, formerly United Mine Workers building, contains the offices of the Dean of Management and the Director of Continuing Education (non-credit courses).

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 Office of Graduate and Part-Time Undergraduate Programs.

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

The Annette Evans Faculty and Alumni House, South River Street, provides rooms for alumni and faculty to meet informally and contains the offices of the Dean of Health Sciences and the Dean of Special Programs.

Roth Center, South River Street, contains the offices of Director of Career Planning, Personnel and Systems Coordinator, and Coordinator of Community Relations.



McClintock Hall — Women's Residence Hall

The Academic Program

Undergraduate Degree Programs

Academic Requirements

Course Descriptions



Bedford Hall — Men's Residence Hall

Undergraduate Degree Programs

Degree programs have been carefully designed so that students may meet the entrance requirements of graduate and professional schools. Students planning to go to graduate school should consult as early as possible with their department chairman. In the Bachelor of Arts 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
Chemistry
Communication Studies
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
Theater Arts

Bachelor of Science Degree

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

Selection of a Major

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

Biology
Business Education
Chemistry
Commerce and Finance
(a) Accounting
(b) Business Administration
Computer Science
Earth and
Environmental Sciences
Engineering
Individualized Studies
Mathematics
Medical Technology
Music
Nursing
Physics

Selection of a Minor

Students may choose minor fields from among the following: Accounting, Anthropology, Art, Biology, Business Education, Chemistry, Communication Studies, Computer Science, Earth and Environmental Sciences, English, Foreign Languages, History, Mathematics, Philosophy, Political Science, Psychology, Secondary Education, Sociology, Theater Arts.

Double Major

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

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 $33 \div 15 = 2.20$				

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

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

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

Class Standing

Freshmen, defined as students who have attempted fewer than twenty-four credits, must maintain a minimum 1.70 in both their major and cumulative grade point averages. All other students must maintain a minimum 2.00 in both their major and cumulative grade point averages. Any student who falls below the minimum required will automatically be placed on academic probation.

Academic Probation

Students placed on academic probation may be restricted to a twelve hour load each semester they are on probation. All waivers of this restriction will require approval of an appeal presented by the student to the Academic Standards Committee. The Academic Standards Committee may impose additional restrictions and requirements in individual cases when it determines such restrictions and requirements are in the best interest of the student and the College. The Committee may restrict a student's participation in extracurricular activities if the student is on academic probation.

Ineligibility

A student who has been placed on academic probation for a period of one calendar year will automatically be declared academically ineligible to enroll in any course at Wilkes College until he or she has been approved for readmission to the College by the Academic Standards Committee. Petitions for readmission will not normally be considered until one calendar year after the student has been declared academically ineligible. Students readmitted will be placed on academic probation.

Students declared academically ineligible may appeal to the Academic Standards Committee to have this action reversed. Such appeals will normally be heard only where the student has shown significant progress toward the achievement of a 2.00 average.

Attendance

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

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

Student Load

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

Auditing Courses

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

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

Students auditing courses will maintain standards — including attendance — required by the instructor. Students who do not maintain these standards will not be awarded audit recognition. All relevant fees will be charged.

Withdrawals

A student may withdraw from any course through the fourth week of instruction, notifying his instructor, his adviser, and the appropriate Dean of Student Affairs of his intentions prior to withdrawal. This process must be completed and all necessary paperwork placed in the hands of the Registrar prior to the completion of the fourth week of instruction. After the fourth week, students may withdraw only with the written approval of the course instructor, the faculty adviser, and the appropriate Dean of Student Affairs. Students not fulfilling these requirements and not satisfactorily completing the course will receive a grade of "0."

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

Change of Major

Students who wish to transfer from one department to another shall obtain the approval of the adviser and the department chairman. The student shall satisfy the curriculum requirements of the Bulletin in force at the time of transfer. Change-of-major forms are available in the Registrar's Office and the Deans' Offices.

Transfer of Summer Credits

Students desiring to study at another college during the summer must secure prior approval from the chairman 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. All students must complete the last 30 credits in residence at the College.

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

Dean's List

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

Honors

The granting of honors at Commencement is based upon the entire academic record achieved by 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 chairman 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, stu-

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

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

1. They must successfully complete a *minimum* of 120 credit hours.
2. They must satisfy all requirements in their major(s). (Requirements for graduation vary from department to department. See the appropriate section in this bulletin for the number of credit hours required by each major.)
3. They must complete all subjects required for the degree as stated in the Bulletin in force at the time of admission to the program or any subsequent Bulletin. All students must complete the last 30 credits in residence at the College.
4. They must obtain a minimum cumulative average of 2.00 for all courses.
5. They must obtain a minimum cumulative average of 2.00 for all subjects within their major.
6. They must obtain a minimum cumulative average of 2.00 for all subjects within the chosen minor(s).
7. They must satisfy all requirements pertaining to the physical education program.
8. They must demonstrate competence in written and spoken English.

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.

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

Second Baccalaureate Degree

Students who hold a bachelor's degree with a major in one discipline from this or another accredited institution may be awarded a second baccalaureate degree in another discipline. Candidates for this second degree must earn at least thirty credits at Wilkes College beyond those completed for the first degree.

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

General Core Requirements

The General Core Requirements consist of a broad spectrum of courses in the liberal arts and sciences. These courses, which are central in a liberal arts education, are required of all Wilkes College students in both the B.A. and B.S. programs except the B.S. programs in Engineering, Medical Technology, and Physics, and the Bachelor of Music program.

The General Core Requirements for all programs in the Bulletin are listed as "core elective" except English 101-102 and Physical Education 100, 110, which are specifically designated.



Required General Core Courses	**Credit Hours**
English 101-102	6
Physical Education 110	2
Physical Education 100 (four semesters)	0
Art 101 (or another art course, with permission of Art Department) 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, 111-130, 115-116, 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.	
Economics 101-102, 227-228, and other courses with permission of Commerce and Finance Department.	
Political Science 102, 105 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.

Description of Courses

Accounting

(see Commerce and Finance)

Aerospace Studies

(see Special Degree and Non-Degree Programs)

Anthropology

(see Sociology and Anthropology)

Art

Associate Professor Sterling, chairman; Professor Colson; Associate Professors D'Vorzon, Fuller, Simon; Assistant Professor Maxwell.

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

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, and Art 499 (0 credits).

Additional requirements: Each student majoring in art must submit a portfolio for review by the art faculty at the end of the sophomore and junior years, so that his or her progress may be evaluated. **Transfer students must submit an equivalent portfolio for acceptance into the art major.**

Each student majoring in art must present a senior exhibition.

Minor in Art: A minimum of 18 credits in any art courses above the 100-level.

The Bachelor of Fine Arts proposal has received approval of the faculty and curriculum committee, and the program will be in effect pending approval by the Pa. Dept. of Education.

Students seeking certification in Art Education (K-12) are required to take the following minimum program:

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. 110	2	P.E. 100	0
	17		18

THIRD SEMESTER

Art 215	3
Art 220	3
Ed. 101	½
Ed. 201	3
Phil. 101	3
Core elective	3
P.E.100	0
	15½

FOURTH SEMESTER

Art 216	3
Art 221	3
Ed. 102	½
Ed. 202	3
Phil. 216	3
Art 241, 243, or 248	3
P.E. 100	0
	15½

FIFTH SEMESTER

Art 225	3
Art 233	3
Ed. 203	3
Core electives	6
	15

SIXTH SEMESTER

Art 218	3
Art 241, 243, or 248	3
Ed. 204	3
Core electives	6
	15

SEVENTH SEMESTER

Ed. 380	15
	15

EIGHTH SEMESTER

Art 252	2
Art (300-level)	3
Art 499	0
Core elective	3
Electives	5
	13

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.

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

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

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

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. Recent topics have included Advertising Design, Ceramic Sculpture, Advanced Photography, and Lettering. (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 chairman 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 chairman is required.

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

Biology

Associate Professor Turoczi, chairman; Professor Emeritus Reif; Professor Ogren; Associate Professors Hayes, Houseknecht, Rigley; Assistant Professors Doty, Siver.

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

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. 308, 309, 317, 340
(4) Molecular/Cellular — Bio. 307, 312, 315, 341

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.

Honors Program in Biology

Honor students in Biology will be recognized upon completion of the following requirements: achieving a graduating grade point average of 3.25 or better, receiving grades of 3.0 or better in all biology courses, pursuing independent research in biology and presenting results either at a national or regional scientific conference or through publication of a research paper. The distinction "Honors in Biology" will be recorded on the student's transcript upon graduation.

FIRST SEMESTER

	B.A.	B.S.
Bio. 201-202	5	5
Chem. 115	4	4
Eng. 101	3	3
Math. 105 or 111	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 or 112	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. 110	2	2
P.E. 100	0	0
	17	17

FOURTH SEMESTER

	B.A.	B.S.
Bio. 207-208	5	5
Chem. 232	4	4
Core Electives	6	6
P.E. 100	0	0
	15	15

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.

** Any course other than a biology course.

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.

Students in majors other than Biology may wish to elect a minor in Biology.

The minor in Biology shall consist of 23 credits. Required courses are Bio. 201, 202, 203, 204, 205, 206, 207, 208 plus one 300-level, three credit biology elective. This upper level elective (exclusive of Independent Research, Bio. 395-396) will be selected after consultation with the department chairman.

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.

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. Lecture, two hours a week; laboratory, three hours a week. 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. Lecture, two hours a week; laboratory, three hours a week. Fee: $30.

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

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

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

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. 312. COMPARATIVE PHYSIOLOGY **Three credits**

Comparative Physiology encompasses the study of organ functions and organ system functions in different animal groups. Emphasis will be on the systemic physiology of vertebrate animals. Lecture, two hours; laboratory, three hours a week. 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.

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

BIO. 315. MOLECULAR BIOLOGY **Three credits**

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

Prerequisite: Bio. 201-208, Chem. 231-232, 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. 317. ADVANCED ECOLOGY **Three credits**

Advanced ecology examines contemporary ecological thinking as it pertains to the interrelationships of organisms and their environments. Interactions at the population and community level are emphasized. Lecture, two hours; laboratory, three hours a week. 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. 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. Lecture, three hours per week.

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.

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

BIO. 395-396. INDEPENDENT RESEARCH **One to three credits**

This course involves independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.

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

BIO. 397. SEMINAR **One credit**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

BIO. 398. TOPICS **Three credits**

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

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

Business Administration

(see Commerce and Finance)

Business Education

(see Education)

Chemistry

Professor Bohning, chairman; Professors Faut (on leave), Rozelle, Salley, W. Stine, Swain; Assistant Professors E. Jahngen (on leave), Minase, Sethuraman; Adjunct Professor J. Jahngen (on leave); Lecturers Cohen, C. Stine.

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

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.

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

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

Required courses are indicated in the following suggested semester sequence. Certain restrictions on electives are given after the semester sequence.

	B.A.	B.S.
Chemistry credits	**36**	**51**
Physics credits	**11**	**11**
Math credits	**12**	**16**

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. 110	2	2
	16	16

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
	14	14

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. 241	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.

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: $30.

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: $30.

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: $30.

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: $30.

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: $30.

Prerequisite: Chem. 111 or 115.

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: $30.

Prerequisite: Chem. 116.

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: $30.

Prerequisite: Chem. 116 or Chem. 118.

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: $30.

Prerequisite: Chem. 231.

CHEM. 241. INORGANIC QUANTITATIVE ANALYSIS **Four credits**

An introduction to the theory and practice of typical analyses: volumetric, gravimetric, and instrumental. Class, two hours a week; laboratory, six hours a week. Fee: $40.

Prerequisite: Chem. 116.

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: $30.

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: $30.

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 electrophoresis, liquid chromatography, vapor pressure osmometry, and mass spectroscopy. Fee: $40.

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 π 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: $40.

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: one credit $20, two credits $30, three credits $40.

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 chairman 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 chairman.

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, chairman; Professor Capin; Associate Professor Broadt; Assistant Professors C. Chisarick, Croop, Moran.

Total minimum credits required for B.S. degree with a major in Accounting — 131.

The Accounting Minor

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

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. 110	2		
	17		15
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

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.

[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. 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.

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.
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.
Prerequisite: Math. 101-102, or equivalent sequence in mathematics.

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.
Prerequisite: 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.
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 200- or 300-level course in the Commerce and Finance Department.

ACCT. 395-396. INDEPENDENT RESEARCH **One to three credits**

ACCT. 397. SEMINAR **One to three credits**

ACCT. 398. TOPICS **Three Credits**
Special offerings designed to introduce students to subjects of current interest in Accounting which are not covered in other courses.

NOTE: Accounting courses should be taken in sequence.

Business Administration

Associate Professor Williams, chairman; Professors Farrar, Werner; Associate Professors Engel, Gera; Assistant Professors Chmiola, Cooney, Gurdin, Lewis.

Total minimum credits required for B.S. degree with a major in Business Administration — 134.

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. 110	2		
	17		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
	15		15

FIFTH SEMESTER	
B.A. 251	3
Ec. 201	3
Ec. 231	3
Core Elective	3
Electives	6
	18

SIXTH SEMESTER	
B.A. 222	3
B.A. 252 or 254	3
Ec. 228 or C. & F. elective	3
Ec. 232	3
Core Elective	3
Elective	3
	18

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

EIGHTH SEMESTER	
B.A. and Ec. electives	12
Elective	3
	15

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 — Microeconomics I
Ec. 251 — Macroeconomics I
Ec. 252 — Macroeconomics II
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 and 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 — Microeconomics I
Ec. 242 — Microeconomics II
Ec. 245 — Consumer Economics
Ec. 251 — Macroeconomics I
Ec. 252 — Macroeconomics II
Ec. 395-396 — Independent Research
Ec. 397 — Seminar
Ec. 398 — Topics
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 and Distribution Management
B.A. 240 — Property Insurance
B.A. 241 — Life Insurance
B.A. 252 — Operations and System Management **or**
B.A. 254 — Organizational Design and Behavior
B.A. 256 — Business Policies and Corporate Responsibility
B.A. 395-396 — Independent Research
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. 218 — Public Administration
P.S. 327 — 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 and Distribution Management
B.A. 222 — Marketing
B.A. 240 — Property Insurance
B.A. 241 — Life Insurance
B.A. 261 — Principles of Retailing
B.A. 264 — Retail Buying
B.A. 395-396 — Independent Research
B.A. 398 — Topics
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. 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.

B.A. 398. TOPICS **Three credits**
Lectures on subjects of special current interest in business which are not covered in other courses.

Economics

Associate Professor Williams, chairman; Professors Farrar, Taylor, Werner; Associate Professors DeYoung, Engel.

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

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

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 AND FINANCE **Three credits**
Theories of direct foreign investment; the nature and scope of multinational enterprise; international payments adjustments under alternative monetary systems; the collapse of the Bretten Woods System; the contemporary international monetary system; proposals for monetary reform; U.S. balance of payments problems and the status of the dollar.

EC. 227. ECONOMIC GEOGRAPHY OF NORTH AMERICA, EUROPE, AND THE SOVIET UNION **Three credits**
A study and analysis of the characteristics, potentials, and problems of the more advanced nations of the Northern Hemisphere.

EC. 228. ECONOMIC GEOGRAPHY OF ASIA, AFRICA, AND LATIN AMERICA **Three credits**
A study and analysis of the characteristics, potentials, and problems of the less developed nations of the world.

EC. 229. COMPARATIVE ECONOMIC SYSTEMS **Three credits**
The institutions of a market economy are analyzed as a foundation for purposes of comparisons. Marxist theory of prices, wages, and the demise of capitalism is studied in order to establish the theoretical basis of Socialism and Communism. Particular stress is placed on the performance of the Soviet economy. Attention is also given to important operational aspects of the Chinese, British, and Swedish systems.

EC. 230. BUSINESS CYCLES **Three credits**
Historical analysis of major business cycles. Contemporary theories and a critical examination of public policy toward business cycles.

EC. 231. APPLIED GENERAL STATISTICS **Three credits**
An introduction to the stochastic methods of research in business and economics. The principles of statistical inference (hypothesis testing and estimation) as applied in quality control, market research, financial analysis, and accounting. Lecture, three hours; laboratory, two hours. Fee $20.

EC. 232. ECONOMIC STATISTICS **Three credits**
A continuation of Ec. 231 into multivariate analysis. ChiSquare tests, One and Two Way analysis of Variance, Simple and Multiple Regression and Correlation, Time Series Analysis, and the construction and use of Index Numbers. Lecture, three hours; laboratory, two hours. Fee $20.

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.

EC. 398. TOPICS **Three credits**
Lectures on current issues and developments in economics.

Communication Studies

(see Language and Literature)

Computer Science

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

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

The Department of Mathematics and Computer Science also offers a variety of programs in mathematics and statistics (see page 131).

Major in Computer Science

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

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

Common requirements for B.A. and B.S. degrees:	**credit hours**
(1) The general core requirements listed on page 62, 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) Any two courses from one of these departments: Biology, Chemistry, Earth and Environmental Sciences, or Physics, and One additional course in Biology, Chemistry, Earth and Environmental Sciences, Engineering, Physics, Phil. 350, or Phil. 352. All three courses must number above 200 except that Chem. 115, 116, or 118 are acceptable in this requirement.	11
(5S) Any five courses in Computer Science or Mathematics numbered above 200, including at least two among C.S. 320, 323, 326, 328, and 330.	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

Minor in Computer Science

Total credits required for minor — 21.

Required courses — **credit hours**

C.S. 123, C.S. 124, C.S. 223
or C.S. 224, C.S. 227,C.S. 322 — 15

Electives: any one of the following matched pairs

a. C.S. 262, C.S. 321
b. C.S. 320, C.S. 329
c. C.S. 323, C.S. 327
c. C.S. 323, C.S. 328
e. C.S. 324, C.S. 325
f. C.S. 326, C.S. 327
g. C.S. 328, C.S. 364 — 6

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, spring, and summer.

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 fall and spring.

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; queueing models; inventory models; and decision analysis. (same as Math. 262)

Prerequisite: C.S. 123; Math. 105-106 or Math. 111-112; and 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 every fall semester.

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 every fall semester.

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 every 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 spring semester of even years.

C.S. 329. 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 per week. Fee: $25. (see E.E. 342)
Prerequisite: C.S. 320/E.E. 341.
Offered every spring semester.

C.S. 330. COMPUTER ARCHITECTURE **Three credits**
A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers." (same as E.E. 346)
Prerequisite: C.S. 322/Engr. 342 or C.S. 329/E.E. 342.
Offered every 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 of even years.

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, chairman; Assistant Professors Case, Redmond.

Total minimum credits for B.S. degree — 123.

E. & E.S. — 32
194, 211, 230, 240, 251, 397, and 12 elected credits of either earth or environmental sciences

Core — 57
including Math. 111-112 and Phys. 105-106

Other required courses — 19
Bio. 207, 208, and 301, Chem. 115-116, C.S. 123

Free electives — 15

Total minimum credits for B.A. degree — 123

E. & E.S. — 32
194, 211, 230, 240, 251, 397

Core — 53
including P.S. 102-105, Phys. 101-102, Ec. 101-102, and Bio. 101-102

Other required courses — 24.5
Bio. 208, Chem. 111, P.S. 218, 314, and 354, Anth. 101, Math. 150, and C.S. 123

Free electives — 13.5

Earth and Space Science Certification Program:

E. & E.S.
the B.S. degree program (or equivalent) including E. & E.S. 212, 281, 282, and a geology elective; and Psy. 101-102

Education
the minor in secondary education (or equivalent), plus Ed. 204(I)

Certification nomination also includes the non-course professional requirements.

A minor in Earth and Environmental Sciences shall consist of 18 credits from the department, including no more than 6 at the 100 level.

E. & E.S. 110. SURVEY OF ASTRONOMY **Three credits**
Topics covered include stars, constellations, galaxies, sun, planets, and satellites. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $25.

E. & E.S. 115. SURVEY OF GEOLOGY **Three credits**
Topics covered include origin of earth, rocks and minerals, earthquakes, volcanoes, and continental motion. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $25.

E. & E.S. 120. SURVEY OF METEOROLOGY **Three credits**
Topics covered include temperature, precipitation, wind, weather maps, weather phenomena, and climate. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $25.

E. & E.S. 125. SURVEY OF OCEANOGRAPHY **Three credits**
Topics covered include water properties, currents, waves, marine life, and beaches. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $25.

E. & E.S. 130. ENVIRONMENTAL AWARENESS **Three credits**
Topics covered include ecology, natural resources, pollution, and global food, energy, and population problems. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $25.

E. & E.S. 135. WORLD PHYSICAL GEOGRAPHY **Three credits**
Topics covered include global patterns of land forms, vegetation, ocean and atmospheric circulation, settlement, and resources and their interrelationships. Intended for non-science majors. Two hours lecture and two hours laboratory. Fee: $25.

E. & E.S. 194. INTRODUCTION TO FIELD STUDY **One credit**
An introduction to an on-site application of field procedures and investigative techniques.

E. & E.S. 211. PHYSICAL GEOLOGY **Four credits**
Description, analysis, and laboratory studies of earth materials, structures, and processes, including earth's surface, interior, age, and origin. Three hours lecture and two hours laboratory. Fee: $30.

E. & E.S. 212. HISTORICAL GEOLOGY **Three credits**
A study of the geologic record of the earth's formation and evolution, including methods of dating. Two hours lecture and two hours laboratory.

E. & E.S. 230. OCEAN SCIENCE **Four credits**
An interdisciplinary approach to the study of the fundamentals of oceanography emphasizing physical, chemical, and biological interrelationships. Three hours lecture and two hours laboratory. Fee: $30.

E. & E.S. 240. PRINCIPLES OF ENVIRONMENTAL SCIENCE **Four credits**
A study of living systems as they are integrated with their physical environments and impacted by human activity. Three hours lecture and two hours laboratory. Fee: $30.

E. & E.S. 251. SYNOPTIC METEOROLOGY **Four credits**
Topics include surface and upper-air weather systems, weather phenomena, climate, and local weather influences. Synoptic map analysis and interpretation are emphasized. Three hours lecture and two hours laboratory. Fee: $30.

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 discussion.

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: $30.

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. Two hours lecture and two hours laboratory. Fee: $30.

E. & E.S. 310. 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.

E. & E.S. 315. 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. 320. HYDROLOGY **Three credits**
The physical elements and processes which constitute the hydrologic cycle are examined. Topics include floods and flood control, water resources, water uses, and ground water pollution problems. Two hours lecture and two hours laboratory. Fee: $30.
Prerequisite: E. & E.S. 211.

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 I **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: $40.
Prerequisite: Chem. 116.

E. & E.S. 331. ENVIRONMENTAL QUALITY MEASUREMENTS II **Four credits**
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: $40.
Prerequisite: Consent of instructor.

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: $30.
Prerequisite: Consent of instructor.

E. & E.S. 350. ENVIRONMENTAL DEVELOPMENT **Three credits**
Planning and management techniques for preservation of air, water, and land resources within developing and redeveloping metropolitan environments. Includes environmental impact statements. Three hours lecture.
Prerequisite: Consent of instructor.

E. & E.S. 370. GEOMORPHOLOGY **Three credits**
Land forms, their evolution, and the human role in changing the surface of the earth, utilization of geologic and hydrologic information, and field investigations. Two hours lecture and three hours laboratory. Fee: $30.
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: $30.

Prerequisite: E. & E.S. 211 and 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: $30.

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: $30.

Prerequisites: E. & E.S. 211 and 381.

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 chairman.

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

Prerequisite: E. & E.S. 194 or equivalent experience.

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. Fee: one credit $20, two credits $30, three credits $40.

Prerequisite: Upper-class standing and approval of academic adviser, research adviser, and department chairman.

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, chairman; Professor Emerita Nevil, Curriculum Librarian; Professors Bellucci, Darte; Associate Professors 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 complete the appropriate major *and* the minor in secondary education described below. Academic majors are available in Biology, Chemistry, Earth and Environmental Sciences, English, French, German, Mathematics, Physics, and Spanish. A comprehensive program in social science is available also; it is described below.

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.

Worksheets detailing all programs in Education are available in the department office.

Business Education

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

Total minimum credits required for the Certificate of Proficiency — 62 credits.

General Core Requirements . . . . . 26 credits
Eng. 101-102; P.E. 100 (four semesters), 110; Humanities sequence; C.S. 124; Math. 101; Ec. 101, 102.

Major Courses . . . . . 30 credits
Acct. 101, 102; B.A. 209, 231, 261; Bus. Ed. 101, 201, 221, 222, Speech 101.

Elective Courses (one set) . . . . . 6-9 credits
Acct. 101, 102 (six credits); or B.A. 114, 216, 222 or 264 (six credits); or Bus. Ed. 111, 211, 212 (nine credits).

B.S. Degree — Major in Business Education

Total minimum credits required for the B.S. degree with a major in Business Education — 122 credits.

General Core Requirements (must include Ec. 101, 102) . . . . 53 credits
C.S. 124, Math. 101, Psy. 101, 102 are recommended.

Major Courses . . . . . 36 credits
Acct. 101, 102; B.A. 209, 231, 251, 261; Bus. Ed. 101, 201, 221, 222; C.S. 124; Math. 101.

Electives . . . . . 33 credits
Students seeking to become teachers of business subjects must elect specific courses. Information concerning certification is available in the Education Department office.

Minor in Business Education

The minor in Business Education requires twenty-four credits as follows: Acct. 101; B.A. 209, 231; Bus. Ed. 101, 201, 221, 222; C.S. 124.

B.A. Degree — Major in Elementary Education

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

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

Minor in Secondary Education

The minor in Secondary Education requires twenty-five credits as follows: Ed. 101, 102, 201, 202, 203, 380.

Social Studies Certification Program

Total minimum credit requirement for this certification program — 128 credits.

General Core Requirements . . . . . 53 credits

Major (beyond 101-102) . . . . . 24 credits
The major may be Economics, History, Political Science, Psychology, or Sociology.

Concentration (beyond 101-102) . . . . . 12 credits
When History is the major, the concentration may be in Anthropology, Economics, Political Science, Psychology, or Sociology. When the major is other than History, the concentration must be in History.

Minor in Secondary Education . . . . . 25 credits

Electives . . . . . 14 credits
The program must include Anth. 101, Ec. 101, 227 or 228; Hist. 101, 102, 207, 208; Psy. 101, 102; P.S. 102; Soc. 101.

Students should seek professional advice from Dr. Mahmoud Fahmy, chairman of the Social Sciences Committee, and the representative of their major department: Dr. James Rodechko (History); Dr. Robert Riley (Psychology); Dr. John Natzke and Professor Judith Rasson (Sociology/Anthropology); Dr. Robert Freysinger (Political Science); Professor Joseph Chmiola (Economics).

BUS. ED. 100. THE KEYBOARD **One credit**
Introduces the keyboard; students learn letter placement and develop proficiency in stroking control; basic keyboard technique is easily transferred to computer terminal and other keyboards. Four hours per week for five weeks. Fee: $10.

BUS. ED. 101. ELEMENTARY TYPEWRITING **Three credits**
Introduces the keyboard; students learn letter placement and develop proficiency in stroking control; continues skill development emphasizing speed and accuracy; basic typewriting skills are applied to the production of letters, tables, reports and other kinds of personal, personal-business and business communications. Three hours lecture, one hour laboratory. Fee: $15. (Students may register for first third of the course; see Bus. Ed. 100 above.)

BUS. ED. 111. ELEMENTARY SHORTHAND **Three credits**
Teaches the student to read and write Gregg Shorthand rapidly and accurately. Develops and improves the student's grasp of the nonshorthand elements of transcription which include vocabulary development, spelling, punctuation, grammar, and typing style. Three hours lecture, one hour laboratory.

BUS. ED. 201. ADVANCED TYPEWRITING **Three credits**
Continues the development of basic typing skills and emphasizes the production of various kinds of business correspondence, tabulations, manuscripts, and forms from unarranged and rough-draft copy sources. One hour lecture, three hours laboratory. Fee: $15.

BUS. ED. 202. EXPERT TYPEWRITING **Three credits**
Further refines the student's speed and accuracy; focuses heavily on the production of a wide variety of business communications from unarranged materials; develops the student's ability to edit with proper style and format and make independent decisions in solving typewriting problems. One hour lecture, three hours laboratory. Fee: $15.

BUS. ED. 211. ADVANCED SHORTHAND **Three credits**
Trains students to write shorthand at an employable rate of speed; transcription and speed development are emphasized; use of dictation laboratory. Two hours lecture, two hours laboratory.

BUS. ED. 212. EXPERT SHORTHAND **Three credits**
Refines shorthand speed and transcription; students gain mastery of the mailable transcript; speed forcing is emphasized; use of dictation laboratory and tapes. Two hours lecture, two hours laboratory.

BUS. ED. 213. SPECIALIZED SHORTHAND **Three credits**
Introduction to court reporting; medical, legal, technical, and government terminology; students become familiar with the office procedures, forms, and vocabulary in each of these areas in addition to selected dictation and practice. Two hours lecture, two hours laboratory.

BUS. ED. 221. OFFICE EQUIPMENT **Three credits**
Develops student competence in the skills and knowledge of office electronic display, printing and key-driven calculators, adding machines, reprographics, transcribing/dictating equipment, and other modern word processing equipment. Two hours lecture, three hours laboratory. Fee: $15.

BUS. ED. 222. OFFICE ADMINISTRATION **Three credits**
Covers the contemporary administrative assistant's role; written communications; telecommunications and records management; management of office functions and word processing systems; office layouts and human relations in office administration; features lectures, guest speakers, and field trips.

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

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

ED. 202. EDUCATIONAL PSYCHOLOGY **Three credits**
A study of the principles of learning and the application of psychological principles in the practice of education.
Prerequisite: Psy. 102.

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

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

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

Engineering

Professor Nejib, chairman; Professor Emeritus Thomas; Professor Hostler; Associate Professors Aston, Orehotsky; Assistant Professors Afrashteh, Dolmy, Koch, Moussavi, Parker, Yu; Adjunct Professor Osadchy; Lecturers Burton, Fladd, Petrokonis, Petyak, Sandwick.

The Department of Engineering offers three different types of degree programs, which provide strong engineering and scientific experience with advanced techniques heavily integrated into the curriculum. Students intending to major in engineering are encouraged to be prepared in the sciences and mathematics.

The four-year programs in Electrical Engineering and Materials Engineering leading to the Bachelor of Science degree offer various specializations.

Students can choose to concentrate in bioengineering, computer engineering, electronic materials, microelectronics, microwave and antenna systems, or telecommunications. Specialization is achieved through the appropriate selection of the technical electives.

The five-year programs in engineering offer the student the opportunity to obtain broader education in the arts and sciences, while completing the requirements for a degree in engineering. Upon successful completion of this program, the student is awarded a B.S. degree in a particular branch of engineering and in another discipline. Students may elect to enter this program at any time during his or her tenure of study. The timing of this entry is critical due to the sequential nature of the courses in engineering.

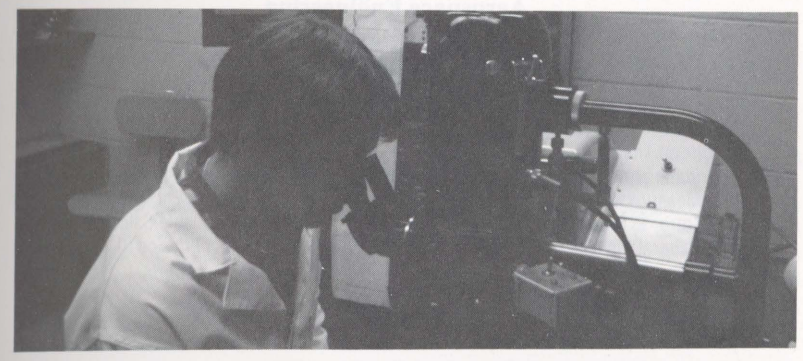
The two-year programs in Aeronautical, Chemical, Civil, Industrial, and Mechanical engineering are also offered. These programs are specifically designed to provide a successful transfer of students to the junior year at other accredited engineering schools.

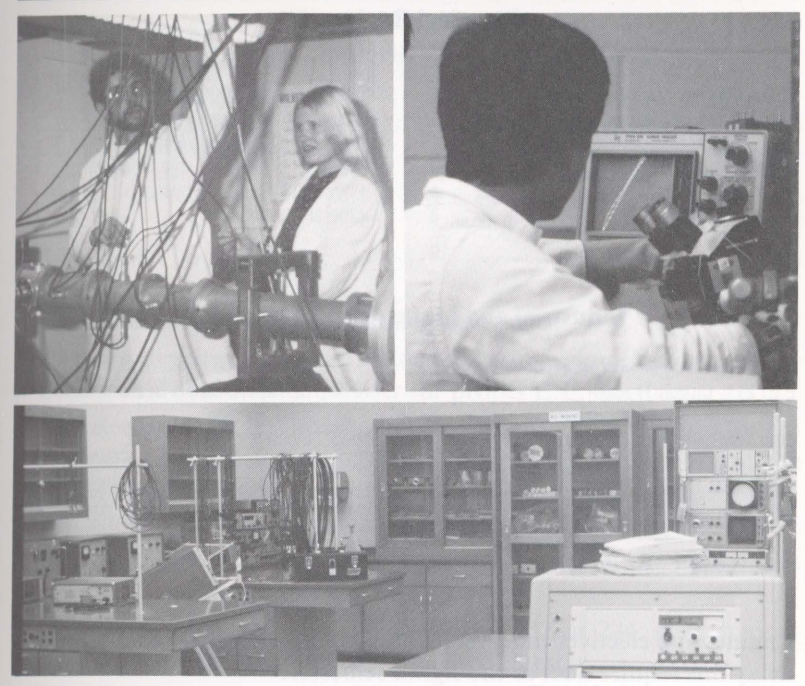
The student professional chapters of the Institute of Electrical and Electronic Engineers (I.E.E.E.), the American Society for Metals (A.S.M.), the Society of Women Engineers (S.W.E.), and the Pennsylvania Society of Professional Engineers (P.S.P.E.), in conjunction with the Department, periodically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

The Electrical Engineering Program is accredited by the ABET, the sole authorized accrediting agency for engineering programs in the U.S.

Honors Programs in Engineering

Upon the recommendation and approval of the engineering faculty, honor students in Engineering will be recognized upon completion of the following requirements: achieving an overall grade point average of 3.25 or better; receiving grades of 3.00 or better in all engineering courses of his or her discipline; pursuing independent research or special projects in engineering and presenting the results at meetings, conferences, or through publication of a paper. The distinction "Honors in Engineering" will be recorded on the student's transcript upon graduation.





Engineering facilities for study and research.

82-162317

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	3
Math. 111 Calculus I	4	Math. 112 Calculus II	4
P.E. 110 Hygiene	2	Phys. 201 General Physics II	4
P.E. 100 Physical Education	0	P.E. 100 Physical Education	0
	17		17

Two-Year Academic Programs

Aerospace Engineering
Civil Engineering
Mechanical Engineering

THIRD SEMESTER		FOURTH SEMESTER	
E.E. 211 Circuit Theory I	3	Engr. Elective	3
Engr. 231 Static and Dynamics	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
	18		17

Chemical Engineering

THIRD SEMESTER		FOURTH SEMESTER	
Chem. 231 Organic Chemistry I	4	Chem. Elective (200 or above)	3-4
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		17-18

Industrial and Management Engineering

THIRD SEMESTER		FOURTH SEMESTER	
E.E. 211 Circuit Theory I	3	B.A. 252 Operations & Systems Man. or Liberal Studies	3
Engr. 231 Statics and Dynamics	3	Engr. Elective	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	Liberal Studies	3
	18		17

Engineering electives must include Engr. 232 or 224. E.E. majors may delay this requirement to the eighth semester.

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. Elective	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		17

Electrical Engineering
Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
E.E. 251 Electronics I	3	E.E. 252 Electronics II	3
E.E. 253 Electronic Lab. I	1	E.E. 254 Electronic Lab II	1
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, bioengineering, or other 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 constitute a total of nine credits in the humanities and nine in the social sciences.
5. Engineering electives must include Engr. 232 or 224. E.E. majors may delay this requirement to the eighth semester.

Materials Engineering
Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
Chem. 231 Organic Chemistry I	4	Chem. Elective (200 or above)	3-4
Ma.E. 311 X-Ray Diffraction or 321 Thermo & Phase Equilibria I	4	Ma.E. 332 Engineering Polymers or 322 Thermo & Phase Equilibria II	3
Ma.E. 241 Physical Metallurgy or 231 Ceramics	3	Ma.E. 342 Mechanical Metallurgy or 234 Electrochemistry	3
E.E. 271 Physical Electronics	3	Ma.E. Elective	3
Liberal Studies	3	Liberal Studies	3
	16-17		15-16

Materials Engineering
Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
Ma.E. 311 X-Ray Diffraction or 321 Thermo & Phase Equilibria I	4	Ma.E. 332 Engineering Polymers or 322 Thermo & Phase Equilibria II	3
Ma.E. 241 Physical Metallurgy or 231 Ceramics	3	Ma.E. 342 Mechanical Metallurgy 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 — 133.

2. Students desiring electronic materials concentration should select the sequence E.E. 251, 253, 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 constitute a total of nine credits 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 **Three credits**
Introduction to computer programming using the FORTRAN language. The computer is used to solve problems geared to the individual interest of the students. Three hours lecture per week. Fee: $25. (see C.S. 123)

ENGR. 245. ADVANCED FORTRAN **Three credits**
A study of advanced programming techniques using FORTRAN. 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. CIRCUIT THEORY I **Three credits**
Definitions. Formulations of circuit equations and theorems. Various techniques for circuit analysis using resistive networks. Characterizations of inductance and capacitance. Sinusoidal steady-state analysis using phasor concept. Average power and r.m.s. values. Reactive power, complex power, and power factor. Three phase circuits and their analysis. Measurement of power.
Prerequisite: Math. 112.

E.E. 212. CIRCUIT THEORY II **Three credits**
Laplace transformation. Transient and steady-state analysis using Laplace transformation. Complex frequency and transform impedances. Definitions of one-port and two-port networks. Network functions, poles and zeros. Frequency responses of second order functions. Inter-relationship between time domain and frequency domain quantities. Mutual inductance and ideal transformer. Characterizations of two-port networks. Fourier series and integral. Computer methods in analysis.

Prerequisite: E.E. 211.

E.E. 251. ELECTRONICS I **Three credits**
The development of operating principles and teroinal characteristics of electronic devices, particularly semiconductor devices, rectifiers, amplifiers, design considerations for small and large signals.

Prerequisite: E.E. 212.

E.E. 252. ELECTRONICS II **Three credits**
Application of operational amplifiers. Frequency response of amplifiers and principle of feedback. Oscillators, modulation and detection. Design considerations, Logic gates, Flip-Flop Registers and Counters. Principle of digital filters, D/A and A/D converters.

Prerequisite: E.E. 251.

E.E. 253. ELECTRONIC LABORATORY I **One credit**
Familiarization with electronic equipment through experiments. Studying the characteristic of diode and transistor through a series of experiments. Design of power supply and different types of amplifiers. Fee: $25.

Prerequisite: To be taken along with or after EE 251.

E.E. 254. ELECTRONIC LABORATORY II **One credit**
Investigating the effect of negative feedback on characteristics of amplifiers. Experiment with operational amplifier and design of electronic circuits using Op-Amps as a building block. Amplifier design using FET. Switching techniques, multivibrators, flip-flop and other major logic circuits. Design of different type oscillators. Modulation and detection. Each lab group is responsible for the design and demonstration of an engineering project. Fee: $25.

Prerequisite: To be taken along with or after E.E. 252.

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. 314. CONTROL SYSTEMS **Three credits**
Model of linear systems and general feedback theory. Analysis of closed loop systems using the root locus and frequency response techniques. Stability analysis; the Nyquist stability criterion. Compensating techniques; series and feedback compensation. Sample data system. Introduction to analog computer.

Prerequisite: E.E. 212.

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: Eng 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. 346. COMPUTER ARCHITECTURE **Three credits**

A study of the design, organization, and architecture of computers, ranging from the microprocessors to the latest "supercomputers." (see C.S. 330)

Prerequisite: Engr. 342 or E.E. 342.

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, ctannel 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 chairman 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; medical engineering; 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 chairman 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.

English

(see Language and Literature)

History

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

Wilkes College requires 121 credit hours for the B.A. degree in history. These include 53 credit hours in core courses and 30 credit hours in history. History 101-102, History 207-208, and 18 credit hours in history courses numbered 300 and above are required. The 300 level courses must include a minimum of six hours each in American and non-American topics.

A variety of career options are open to history majors. Since history is a synthesis of the life experience that examines past economic, social, political, scientific, and religious conditions, a careful selection of history courses and elective credit hours will allow students to pursue career interests in business, government, teaching, communications, law, and social service. **The history major** includes a considerable number of elective credit hours that students may use to develop career interests. Information about career possibilities may be obtained in the History Department office (Room 20, Franklin Hall).

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

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. 314. HISTORY OF SCIENCE **Three credits**

The development of science and technology and its effect upon the growth of civilization.

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. 324. AMERICAN ECONOMIC HISTORY **Three credits**

A survey of the evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the development of the United States as an industrial world power since about 1850.

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

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. 348. HISTORY OF RUSSIA **Three credits**
A study of the political, social, and intellectual history of Russia. Emphasis is placed upon the emergence of Russia as a major power after 1700.

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

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

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

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 chairman.

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.

Individualized Studies
(see Special Degree Programs)

Interdisciplinary Program
(see Special Degree Programs)

International Studies
(see Special Degree Programs)

Language and Literature

Professor Kaska, chairman; Professors emeriti Belic, Lord; Professors Fiester, Gutin, Marban, Rizzo; Associate Professors Groh, R. Heaman, Holm, Terry; Assistant Professors Ayres, Fox, Karpinich, Kinney, Leslie, Jr., O'Neill, Siegfried, Stoekl; Instructors Allington, Kisthardt.

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

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

English

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

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

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 Eng. 220, 222, 225, and 226.

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

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

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

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

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

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

ENG. 151. WESTERN WORLD LITERATURE — **Three credits**
Study of western world literature to the beginning of the eighteenth century; lectures, quizzes, conferences.
Prerequisite: Eng. 102, or equivalent in composition.

ENG. 152. WESTERN WORLD LITERATURE — **Three credits**
Survey of western world literature from the eighteenth century to the present.
Prerequisite: Eng. 151.

ENG. 201. ADVANCED COMPOSITION — **Three credits**
A study of rhetorical types and strategies. Reading and intensive practice.
Prerequisite: Eng. 102.

ENG. 202. TECHNICAL WRITING — **Three credits**
A study of the types and strategies of technical writing. Reading and intensive practice.
Prerequisite: Eng. 102.

ENG. 203. CREATIVE WRITING — **Three credits**
Training in the selection and use of materials for writing the short story; attention is also given to some poetic forms and to the writing of short plays.
Prerequisite: Eng. 102.

ENG. 220. HISTORY OF THE ENGLISH LANGUAGE — **Three credits**
Study of the origins of the English language and of the principal phenomena of later development.
Prerequisite: Eng. 152 or 254.

ENG. 222. INTRODUCTION TO LINGUISTICS — **Three credits**
An introduction to the methods and materials of linguistic analysis.
Prerequisite: Eng. 152 or 254 and 220 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 chairman is required.

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

ENG. 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 their program, however, they must select Eng. 151, 253, and 254. These courses fulfill one of the required sequences, Eng. 151-152, in the Humanities. 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 and Mathematics: 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	53
Speech 101 and Communication 101	6
Language and Literature	18
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**

Minor. Students majoring in other disciplines may choose any one of the concentrations in Communication Studies as a minor. They must,

however, include Speech 101 and Communication 101 in their program. Students who choose the concentration in Organizational Communications, Journalism, or Broadcasting may substitute any advanced course in Communications for Communication 252, Internship.

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

Total minimum credits required — 122.

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

2. Studio:	Credit Hrs.
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, currently offered under Th. Arts 398, Topics, in place of Acting II and Directing II.

Students must complete all of the requirements of the core requirements for the Bachelor of Arts degree. As part of their program, however, they must select Eng. 151, 253, and 254. These courses fulfill one of the required sequences, Eng. 151-152, in the Humanities. Students may elect Th. Arts 101, but the credits will not count toward the total required of the major.

Minor. Students who minor in Theater Arts must take Th. Arts 141 and 15 additional hours. Th. Arts 101 will not count toward the total required for the minor.

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

Total number of credits required for the Bachelor of Arts degree — 122.

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.

A minor in any of the languages consists of eighteen credit hours in one language beyond 102.

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 chairman.

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 chairman.

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 chairman.

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 chairman 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 chairman 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. 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 chairman.

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 chairman.

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 chairman.

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 chairman 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 chairman is required.

GER. 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.

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 chairman.

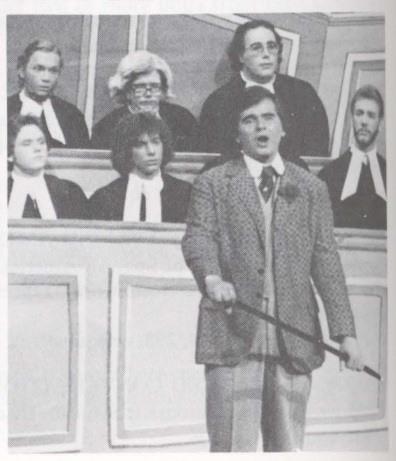
SP. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.
Prerequisite: Approval of department chairman is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

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

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







Mathematics

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

Programs of study leading to the B.A. or B.S. degree with a major or minor in mathematics **or a minor in statistics** are offered by the Department of Mathematics and Computer Science. Also available are the M.S. degree in Mathematics and the M.S. degree in Education with a concentration in mathematics. A combined five-year B.S.-M.S. degree program in mathematics is offered (see page 182). Descriptions of graduate programs are contained in a separate graduate bulletin.

The Department of Mathematics and Computer Science also offers programs in computer science (see page 86).

Major in Mathematics

The Department offers three tracks through which the baccalaureate degree major requirements in mathematics may be met: **general mathematics (GM), applied mathematics (AM), and teacher certification (TC)**. The program in general mathematics provides preparation for graduate study and research in mathematics. The applied mathematics track is designed to provide a background for graduate study in applied mathematics or statistics, and for careers in industry or government service. The teacher certification track provides preparation for secondary school teaching. The GM and AM tracks, when combined with an appropriate second major or minor, will also provide an excellent foundation for graduate or professional study in business and management; economics; law; medicine; actuarial, computing, engineering, environmental, and physical sciences. All three tracks share a common background in algebra, analysis, probability, and computer programming.

The B.A. degree is intended for those who wish to elect more humanities and social science courses, whereas the B.S. degree allows for greater concentration of physical and engineering science electives. Both B.A. and B.S. programs are available in all three tracks.

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

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

(1) The general core requirements listed on page 58, 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. 11

or

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

All eleven credits must be in courses numbered above 200 except that Chem. 115, 116, 118 are also acceptable in this requirement.

	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

Minor in Mathematics

Total credits required for minor — 22.

Required Courses: **credit hours**

Math. 111-112, 202, 211 or 212, 311 or 331 19

Electives:

Any 300-level course in mathematics 3

Minor in Statistics

In a wide range of sciences, both natural and social, statistical analysis is of major importance both in conducting research and in understanding its findings. Likewise, in governmental planning and industrial management statistical methods are a necessary tool and constitute a major application of computing. The minor in statistics is intended to support work in a major either in another mathematical science or in a number of other disciplines.

Total credits required for minor — 23.

Required Courses: **credit hours**

Math. 105-106 or Math. 111-112, C.S. 123, Math. 351-352, and Math. 354 20

Electives:

One of the following: Math./C.S. 262, C.S. 321, or a Topics course in statistics 3

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 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, spring, 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 chairman.
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; queueing models; inventory models; and decision analysis. (same as C.S. 262)

Prerequisite: C.S. 123; Math. 105-106 or Math. 111-112; and 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. 354. STATISTICAL METHODOLOGY **Three credits**

This course emphasizes applications, using statistical computer packages (SPSS or BMDP) and real data sets from a variety of fields. Topics include estimation and testing; stepwise regression; analysis of variance and covariance; design of experiments; contingency tables; and multivariate techniques, including factor analysis.

Prerequisite: Math. 150 or Math. 351 or consent of instructor.

Offered in the spring semester of even years.

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 chairman.

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 chairman.

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.

Medical Technology

(see Special Degree Programs)

Music

Professor Anderson, chairman; Professor Emeritus A. Liva; Professors Chapline, Gasbarro; Assistant Professors Campbell, Garber, Santos; Instructor Reiprich.

Purposes

The Music Program at Wilkes College leads to a Bachelor of Music degree with a major in either applied performance studies or certification in music education (K-12), and Bachelor of Science and Bachelor of Arts degrees in music. The latter two degree programs are being reviewed by the Department of Music for the purpose of updating their academic content.

The purposes of these degree offerings are to:

1. Give students a comprehensive exposure to all aspects of musical training relevant to their degree specialization;
2. Provide for contemporary careers which meet the needs of today's student in today's world;
3. Substantively prepare the student for graduate studies in music.

Objectives

The Department of Music is a professional academic unit for students of superior ability who by virtue of their musical aptitudes and achievements and their general academic background are qualified to pursue work at Wilkes College.

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

Certain criteria are recognized as basic to any curriculum in music. There is a comprehensive program of critical and evaluative studies. A command of basic skills widely recognized as attributes of the musician is a major part of this curriculum. These skills have relevance to long-term personal and professional goals. Curricula have been designed to meet the competency-based and performance-oriented technical demands of the craft of music. A major portion of the study will be devoted to the development of the student's potential as a performing musician, with simultaneous attention given to one's specialization as a teacher, scholar or whatever. Men and women should be able to express themselves clearly in their language — both in speech and writing, and in the grammar of music. To this end, students should develop skills which demand evidence of critical investigation, analytical thought, and clarity of organization. They should be able to rehearse, perform, criticize, discuss, and analyze music which will provide them a basic command of components considered requisite to success in any part of the field. They should develop familiarity with their musical heritage through constant contact with varied types and styles of literature, and should use this knowledge to illuminate their interpretations. Likewise, all students should have contact with less familiar musical styles and means of music-making, especially 20th century repertoire and practices. The extent of intellectual interests outside of the domain of music will vary with the background and temperament of each student. The cross-fertilization of their discipline through contact with common problems in other liberal arts is extremely fruitful. Its intellectual-creative enhancement is self-evident.

Bachelor of Music — Applied Voice

Degree completed with 132 semester credits.

FIRST SEMESTER		SECOND SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 010. *Functional Piano	0	Mus. 010. *Functional Piano	0
Mus. 100. Applied Performance	2	Mus. 100. Applied Performance	2
Mus. 103. Comp. Musicianship I	2	Mus. 104. Comp. Musicianship II	2
Mus. 105. Harmonic Foundations I	3	Mus. 106. Harmonic Foundations II	3
Mus. 107. Analysis of Music I	3	Mus. 108. Analysis of Music II	3
Mus. 121. Ensemble (Minor)	½	Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½	Mus. 125. Ensemble (Major)	½
Eng. 101.	3	Eng. 102.	3
Foreign Language	3	Foreign Language	3
P.E. 100.	0	P.E. 100.	0
	17		17

*competency must be passed

THIRD SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½
Mus. 200. Applied Performance	2
Mus. 203. Comp. Musicianship III	2
Mus. 205. Harmonic Foundations III	3
Mus. 207. Analysis of Music III	3
Mus. 258. Vocal Methods	2
Foreign Language*	3
P.E. 100.	0
P.E. 110.	2
	18

*equivalent of 6 non-music electives

FOURTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½
Mus. 200. Applied Performance	2
Mus. 204. Comp. Musicianship IV	2
Mus. 206. Harmonic Foundations IV	3
Mus. 208. Analysis of Music IV	3
Mus. 259. Diction	2
Foreign Language*	3
P.E. 100.	0
	16

FIFTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	½
Mus. 128. *Chamber Performance	1
Mus. 260. Conducting I	2
Mus. 300. Applied Performance	2
Mus. 305. Composition / Orchestration	2
Mus. 307. Pedagogy I (Vocal)	3
Psy. 101.	3
Core	3
	16½

*public performance required

SIXTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	½
Mus. 128. *Chamber Performance	1
Mus. 261. Conducting II	2
Mus. 300. Applied Performance	2
Mus. 301. Recital	0
Mus. 306. 20th Century Theory	2
Mus. 308. Pedagogy II (Vocal)	3
Psy. 102.	3
Core	3
	16½

SEVENTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	½
Mus. 128. *Chamber Performance	1
Mus. 400. Applied Performance	2
Mus. 407. Music Literature (Voice)	3
Electives	3
Core	6
	15½

*public performance required

EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	½
Mus. 400. Applied Performance	2
Mus. 401. Recital	0
Mus. 411. Chamber Literature	3
Electives	4
Core	6
	15½

Bachelor of Music — All Applied Instruments

Except Voice and Keyboard

Degree completed with 132 semester credits.

FIRST SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0
Mus. 100. Applied Performance	2
Mus. 103. Comp. Musicianship I	2
Mus. 105. Harmonic Foundations I	3
Mus. 107. Analysis of Music I	3
Mus. 121. *Ensemble	½
Mus. 125. Ensemble	½
Eng. 101.	3
Core	3
P.E. 100.	0
	17

SECOND SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0
Mus. 100. Applied Performance	2
Mus. 104. Comp. Musicianship II	2
Mus. 106. Harmonic Foundations II	3
Mus. 108. Analysis of Music II	3
Mus. 121. *Ensemble	½
Mus. 125. Ensemble	½
Eng. 102.	3
Core	3
P.E. 100.	0
	17

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

THIRD SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble	½
Mus. 125. Ensemble	½
Mus. 200. Applied Performance	2
Mus. 203. Comp. Musicianship III	2
Mus. 205. Harmonic Foundations III	3
Mus. 207. Analysis of Music III	3
Mus. 260. Conducting I	2
Psy. 101.	3
P.E. 100.	0
P.E. 110.	2
	18

FOURTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble	½
Mus. 125. Ensemble	½
Mus. 200. Applied Performance	2
Mus. 204. Comp. Musicianship IV	2
Mus. 206. Harmonic Foundations IV	3
Mus. 208. Analysis of Music IV	3
Mus. 261 or 262. Conducting II	2
Psy. 102.	3
P.E. 100.	0
	16

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

FIFTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble	½
Mus. 128. Chamber Performance	1
Mus. 263 or 264. Conducting III	2
Mus. 300. Applied Performance	2
Mus. 305. Composition / Orchestration	2
Mus. 311-315. Pedagogy I	3
Core	6
	16½

SIXTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble	½
Mus. 128. Chamber Performance	1
Mus. 300. Applied Performance	2
Mus. 301. Recital	0
Mus. 306. 20th Century Theory	2
Mus. 312-316. Pedagogy II	3
Mus. 411. Music Literature (Orchestra)	3
Core	6
	17½

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

SEVENTH SEMESTER		EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble	½	Mus. 121. *Ensemble	½
Mus. 128. Chamber Performance	1	Mus. 400. Applied Performance	2
Mus. 400. Applied Performance	2	Mus. 401. Recital	0
Mus. 407-415. Music Lit. (major idiom)	3	Mus. 407-415. Music Literature (Chamber Literature)	3
Electives**	6	Electives**	6
Core	3	Core	3
	15½		14½

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

Bachelor of Music — Applied Keyboard

Degree completed with 132 semester credits.

FIRST SEMESTER		SECOND SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 100. Applied Performance	2	Mus. 100. Applied Performance	2
Mus. 103. Comp. Musicianship I	2	Mus. 104. Comp. Musicianship II	2
Mus. 105. Harmonic Foundations I	3	Mus. 106. Harmonic Foundations II	3
Mus. 107. Analysis of Music I	3	Mus. 108. Analysis of Music II	3
Mus. 121. Ensemble (Minor)	½	Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½	Mus. 125. Ensemble (Major)	½
Eng. 101.	3	Eng. 102.	3
Core	3	Core	3
P.E. 100.	0	P.E. 100.	0
	17		17

THIRD SEMESTER		FOURTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121. Ensemble (Minor)	½	Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½	Mus. 125. Ensemble (Major)	½
Mus. 200. Applied Performance	2	Mus. 200. Applied Performance	2
Mus. 203. Comp. Musicianship III	2	Mus. 204. Comp. Musicianship IV	2
Mus. 205. Harmonic Foundations III	3	Mus. 206. Harmonic Foundations IV	3
Mus. 207. Analysis of Music III	3	Mus. 208. Analysis of Music IV	3
Mus. 212. Keyboard Accompanying	2	Mus. 213. Accompanying Practicum	1
Psy. 101.	3	Psy. 102.	3
P.E. 100.	0	P.E. 100.	0
P.E. 110.	2		
	18		15

FIFTH SEMESTER		SIXTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	½	Mus. 125. Ensemble	½
Mus. 128. *Chamber Performance	1	Mus. 128. *Chamber Performance	1
Mus. 214. Accompanying Practicum	1	Mus. 215. Accompanying Practicum	1
Mus. 260. Conducting I	2	Mus. 261 or 262. Conducting II	2
Mus. 300. Applied Performance	2	Mus. 300. Applied Performance	2
Mus. 305. Composition & Orchestration	2	Mus. 301. Recital	0
Mus. 309. Pedagogy (Piano)	3	Mus. 306. 20th Century Theory	2
Core	6	Mus. 310. Pedagogy (Piano)	3
		Core	6
	17½		17½

*public performance required

SEVENTH SEMESTER		EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	½	Mus. 125. Ensemble	½
Mus. 128. *Chamber Performance	1	Mus. 400. Applied Performance	2
Mus. 400. Applied Performance	2	Mus. 401. Recital	0
Mus. 409. Keyboard Literature	3	Mus. 410. Chamber Literature	3
Core	3	Core	3
Electives**	6	Electives**	6
	15½		14½

*public performance required
**six elective credits must be non-music

Bachelor of Music — Music Education

Choral Track (with certification)

Degree completed with 136 semester credits.

FIRST SEMESTER		SECOND SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0	Mus. 010. Functional Piano	0
Mus. 100. Applied Performance (Major)	2	Mus. 100. Applied Performance (Major)	2
Mus. 103. Comp. Musicianship I	2	Mus. 104. Comp. Musicianship II	2
Mus. 105. Harmonic Foundations I	3	Mus. 106. Harmonic Foundations II	3
Mus. 107. Analysis of Music I	3	Mus. 108. Analysis of Music II	3
Mus. 121. Ensemble (Minor)	½	Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½	Mus. 125. Ensemble (Major)	½
Eng. 101.	3	Eng. 102.	3
Core	3	Core	3
P.E. 100.	0	P.E. 100.	0
	17		17

THIRD SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 011. *Functional Guitar	0
Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½
Mus. 200. Applied Performance (Major)	1
Mus. 200. Applied Performance (Minor)	1
Mus. 203. Comp. Musicianship III	2
Mus. 205. Harmonic Foundations III	3
Mus. 207. Analysis of Music III	3
Mus. 258. Vocal Methods	2
Psy. 101.	3
P.E. 100.	0
P.E. 110.	2
	18

FOURTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 011. *Functional Guitar	0
Mus. 121. Ensemble (Minor)	½
Mus. 125. Ensemble (Major)	½
Mus. 200. Applied Performance (Major)	1
Mus. 200. Applied Performance (Minor)	1
Mus. 204. Comp. Musicianship IV	2
Mus. 206. Harmonic Foundations IV	3
Mus. 208. Analysis of Music IV	3
Mus. 259. Voice Diction	2
Psy. 102.	3
P.E. 100.	0
	16

*if choral, elementary, or general music concentration

FIFTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	½
Mus. 250. Teaching of Elementary Music	2
Mus. 260. Conducting I	2
Mus. 300. Applied Performance (Major)	1
Mus. 300. Applied Performance (Minor)	1
Mus. 351. Teaching of Sec. Choral Music	2
Ed. 201. Introduction to Education	3
Ed. 380. Field Experience	4
Core	3
	18½

SIXTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	½
Mus. 252. Teaching of General Music	2
Mus. 261. Conducting II	2
Mus. 300. Applied Performance (Major)	1
Mus. 300. Applied Performance (Minor)	1
Mus. 352. Teaching of Sec. Band/Orchestral Music	2
Ed. 202. Educational Psychology	3
Ed. 380. Field Experience	4
Core	3
	18½

SEVENTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	½
Mus. 254-257.* Instrumental Methods	2
Mus. 263. Advanced Choral Conducting III	2
Mus. 400. Applied Performance (Major)	2
Ed. 380. Field Experience	4
Core	6
	16½

EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	½
Mus. 254-257.* Instrumental Methods	2
Mus. 400. Applied Performance(Major)	2
Mus. 401. Recital	0
Ed. 380. Field Experience	4
Core	6
	14½

*student elects two of four instrumental methods courses

Bachelor of Music — Music Education

Instrumental Track (with certification)

Degree completed with 136 semester credits.

FIRST SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0
Mus. 100. Applied Performance (Major)	2
Mus. 103. Comp. Musicianship I	2
Mus. 105. Harmonic Foundations I	3
Mus. 107. Analysis of Music I	3
Mus. 121. *Ensemble (Major)	½
Mus. 125. Ensemble (Minor)	½
Eng. 101.	3
Core	3
P.E. 100.	0
	17

SECOND SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0
Mus. 100. Applied Performance (Major)	2
Mus. 104. Comp. Musicianship II	2
Mus. 106. Harmonic Foundations II	3
Mus. 108. Analysis of Music	3
Mus. 121. *Ensemble (Major)	½
Mus. 125. Ensemble (Minor)	½
Eng. 102.	3
Core	3
P.E. 100.	0
	17

THIRD SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 011. **Functional Guitar	0
Mus. 121. *Ensemble (Major)	½
Mus. 125. Ensemble (Minor)	½
Mus. 200. Applied Performance (Major)	1
Mus. 200. Applied Performance (Minor)	1
Mus. 203. Comp. Musicianship III	2
Mus. 205. Harmonic Foundations III	3
Mus. 207. Analysis of Music III	3
Mus. 254. Instrumental Methods	2
Psy. 101.	3
P.E. 100.	0
P.E. 110.	2
	18

FOURTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 011. **Functional Guitar	0
Mus. 121. *Ensemble (Major)	½
Mus. 125. Ensemble (Minor)	½
Mus. 200. Applied Performance (Major)	1
Mus. 200. Applied Performance (Minor)	1
Mus. 204. Comp. Musicianship IV	2
Mus. 206. Harmonic Foundations IV	3
Mus. 208. Analysis of Music IV	3
Mus. 255. Instrumental Methods	2
Psy. 102.	3
P.E. 100.	0
	16

FIFTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble (Major)	½
Mus. 250. Teaching of Elementary Music	2
Mus. 256. Instrumental Methods	2
Mus. 260. Conducting I	2
Mus. 300. Applied Performance (Major)	1
Mus. 300. Applied Performance (Minor)	1
Ed. 201. Introduction to Education	3
Ed. 380. Field Experience	4
Core	3
	18½

SIXTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble (Major)	½
Mus. 257. Instrumental Methods	2
Mus. 261 or 262. Conducting II	2
Mus. 300. Applied Performance (Major)	1
Mus. 300. Applied Performance (Minor)	1
Mus. 352. Teaching of Sec. Band/Orchestral Music	2
Ed. 202. Educational Psychology	3
Ed. 380. Field Experience	4
Core	3
	18½

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

SEVENTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble (Major)	½
Mus. 263 or 264. Adv. Conducting III	2
Mus. 351. Teaching of Sec. Choral Music	2
Mus. 400. Applied Performance (Major)	2
Ed. 380. Field Experience	4
Core	6
	16½

EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 121. *Ensemble (Major)	½
Mus. 252. Teaching of General Music	2
Mus. 400. Applied Performance (Major)	2
Mus. 401. Recital	0
Ed. 380. Field Experience	4
Core	6
	14½

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

Core electives must include 12 credits in humanities, 6 in mathematics/sciences, 6 in social sciences.

MUS. 000. RECITAL ATTENDANCE **No credit**
This course is required each semester for all music majors. Degree requirement for graduation.

MUS. 010. FUNCTIONAL PIANO **No credit**
Class instruction in piano for music majors. Competency must be passed through examination before eligibility to upperclass status. Class meets two hours per week.

Prerequisite: none.

MUS. 011. FUNCTIONAL GUITAR **No credit**
Class instruction in guitar. Required for all choral, elementary, or general music specialists. Competency must be passed through examination before eligibility to upperclass status. Class meets two hours per week.

MUS. 100-400. APPLIED PERFORMANCE **One credit or two credits**
Instruction offered in all keyboard, band and orchestral instruments, guitar and voice. Individual instruction. For non-music and music majors. Each area conducts a weekly master class for discussion and performance. Participation is required.

Prerequisite: consent of instructor.

Mus. 100. Freshman Level
Mus. 200. Sophomore Level
Mus. 300. Junior Level
Mus. 400. Senior Level
Mus. 301. Junior Recital — No credit
Mus. 401. Senior Recital — No credit

Section A	Flute
Section B	Clarinet
Section C	Oboe
Section D	Bassoon
Section F	Saxophone
Section G	Trumpet
Section H	French Horn
Section J	Trombone
Section K	Baritone Horn
Section L	Tuba
Section M	Violin
Section N	Viola
Section P	Cello
Section Q	Bass
Section R	Percussion
Section S, T	Voice
Section U, V, W	Piano
Section X	Organ
Section Y	Guitar
Section Z	Harp

MUS. 101. INTRODUCTION TO MUSIC I **Three credits**
The materials of music and their interrelationships. Illustrations are derived from literature of all periods for the purpose of developing understanding and enjoyment through perceptive listening.

MUS. 102. INTRODUCTION TO MUSIC II **Three credits**
A survey of performance literature extending from the 17th century to the present. Directed listening of various idioms, forms, and styles characteristic of each period. The purpose is to stimulate critical judgment.

Prerequisite: Mus. 101 or consent of instructor.

MUS. 103-104, 203-204 COMPREHENSIVE MUSICIANSHIP I-IV **Two credits**
A degree requirement. Intensive training in basic skills through ear-training, rhythmic, melodic and harmonic dictation, keyboard harmony, and aural analysis using modal, tonal and post-tonal compositions. Competency must be demonstrated before entrance into the junior class.

Corequisite: To be taken in sequence with Harmonic Foundations and the Analysis of Music.

MUS. 105-106, 205-206. HARMONIC FOUNDATIONS I-IV **Three credits**
A degree requirement. A study of the functions, structures, and elements of music, modal through post-tonal styles. Written exercises and in-depth examination of musical examples.

Corequisite: To be taken in sequence with Comprehensive Musicianship and the Analysis of Music.

MUS. 107-108, 207-208. ANALYSIS OF MUSIC I-IV **Three credits**
A degree requirement. In-depth studies of the historical evolution of musical styles, antiquity to the present, through class lectures, analysis of the literature, and performance practices.

Corequisite: To be taken in sequence with Comprehensive Musicianship and Harmonic Foundations.

MUS. 111-112. CLASS PIANO I-II **Two credits**
Class instruction in piano. A two-semester sequence designed to provide non-music majors with a rudimentary study of piano performance. The classes will be divided into small sections according to proficiency level.

Prerequisite: None.

MUS. 121. WIND ENSEMBLE **One-half credit**
Open to all members of the College community, by audition. Besides appearances during the football season, the ensemble presents throughout the year several performances of literature appropriate to a wind ensemble. Participation required of all music majors.

MUS. 125. COLLEGE CHOIR **One-half credit**
Open to all members of the College community, by audition. The Choir presents several performances throughout the year, exploring choral literature from all historical periods and styles. Participation required of all music majors.

MUS. 126. MADRIGAL SINGERS **One-half credit**
Membership is taken from simultaneous enrollment in the College Choir. Throughout the year, the ensemble presents several performances of literature appropriate to chamber context.

MUS. 127. JAZZ ENSEMBLE **One-half credit**
Open to all members of the College community, by audition. The ensemble studies and performs all styles of popular music.

MUS. 128. CHAMBER PERFORMANCE **One credit**
Participation required of all applied performance majors for a minimum of three semesters. Students will study and publicly perform chamber literature appropriate to their instruments. Coaching and supervision by faculty members, as assigned.

Prerequisite: Mus. 200, junior standing, or consent of instructor.

MUS. 131. COLLEGE ORCHESTRA **One-half credit**
Open to all members of the College community, by audition. The orchestra performs concerts throughout the year of chamber and symphonic literature. Participation is required of all string applied performance and string music education majors.

MUS. 203-204. See Mus. 103-104.

MUS. 205-206. See Mus. 105-106.

MUS. 207-208. See Mus. 107-108.

MUS. 212. KEYBOARD ACCOMPANYING **Two credits**
A study of the techniques concerned with solo, chamber, and group accompanying. Required of all keyboard applied performance majors.

Prerequisite: Mus. 101, 103-106.

MUS. 213-215. ACCOMPANYING PRACTICUM I-III **One credit**
Practical accompanying experience, as assigned. Minimum time allotment is five hours per week of studio, chamber, or group accompanying, plus public performance accompanying when required.

Prerequisite: Mus. 212.

MUS. 250. TEACHING OF ELEMENTARY MUSIC **Two credits**
A study of the newer practices in elementary music — Suzuki, Orff, Kodaly, and Dalcroze. Emphasis on the development of skills and techniques of physical movement, improvisation, solfeggio, tone-bar and mallet technique, recorder playing, folk dancing, composition of suitable materials for classroom use, arranging and adapting existing music for the Orff instrumentarium. A survey and evaluation of appropriate resource materials.

MUS. 252. TEACHING OF GENERAL MUSIC **Two credits**
A study of the contemporary approaches to teaching of general music in junior and senior high schools, such as creativeness and musical skill concepts through an extension of Orff, Kodaly, and others.

Prerequisite: Mus. 250.

MUS. 254-258. MUSIC METHODS **Two credits**
An examination, discussion and practical application of the methodology necessary for the students to learn the techniques of group performance in the principal instrumental and vocal areas. This sequence of courses provides the student with a minimum competency in the group performance techniques of each instrumental idiom. This exposure reinforces the technical concentration beyond the student's major applied instrument. Required of all music education students.

MUS. 254. Woodwinds Methods
MUS. 255. Brass Methods
MUS. 256. String Methods
MUS. 257. Percussion Methods
MUS. 258. Vocal Methods

Prerequisite: Mus. 100, 103-106, sophomore standing, or consent of instructor.

MUS. 259. VOICE DICTION **Two credits**
An intensive study of the phonics of English, French, German, and Italian languages, based upon the International Phonetic Alphabet. Practical application is achieved through song literature selected from all historical periods. Required of all voice performance and choral music education majors.

MUS. 260-264. CONDUCTING I-III **Two credits**
Through class lectures, demonstrations and laboratory performances, students learn

and practice the fundamental techniques of conducting. Score reading and preparation, basic conducting patterns, gestures, and rehearsal methodology will be studied. The emphasis will be on actual laboratory experience.

MUS. 260. Introduction to Conducting
MUS. 261. Choral Conducting II
MUS. 262. Instrumental Conducting II
MUS. 263. Advanced Choral Conducting III
MUS. 264. Advanced Instrumental Conducting III

Prerequisite: Mus. 103-108, sophomore standing, or consent of instructor.

MUS. 298. TOPICS **Three credits**
A study in topics of special interest not extensively treated in regularly offered courses.

MUS. 305. COMPOSITION AND ORCHESTRATION **Two credits**
Practical exercises in composition, orchestration, and arranging for instruments and voices in all combinations, including orchestral, wind, jazz, and chamber ensembles.

Prerequisite: Mus. 206 and 208.

MUS. 306. 20th CENTURY THEORY **Two credits**
A survey of twentieth-century theoretical systems emerging from post-romantic and impressionistic to post-serial and avant-garde styles of the contemporary times. Emphasis will be on compositional techniques. Works and writings of Schoenberg, Stravinsky, Hindemith, Babbitt, Sessions, Messaien, Boulez, and others will be examined. Listening and analysis.

Prerequisite: Mus. 204, 206, and 208, junior standing, or consent of instructor.

MUS. 307-316. MUSIC PEDAGOGY **Three credits**
A survey of the techniques and methodology concerned with individual teaching of each applied idiom. Required of all applied performance majors. Sections are offered in the following areas:

MUS. 307-308. Voice Pedagogy I-II
MUS. 309-310. Piano Pedagogy I-II
MUS. 311-312. Woodwind Pedagogy I-II
MUS. 313-314. Brass Pedagogy I-II
MUS. 315-316. String Pedagogy I-II

Prerequisite: Mus. 200, junior standing, or consent of instructor.

MUS. 351. TEACHING OF SECONDARY CHORAL MUSIC **Two credits**
An examination of the administration and logistics of a secondary choral music program. A systematic development of teaching and rehearsal techniques, planning, and evaluation.

Prerequisite: Mus. 250, 252, 260, and 261, junior standing, or consent of instructor.

MUS. 352. TEACHING OF SECONDARY INSTRUMENTAL MUSIC **Two credits**
An examination of the administration and logistics of a secondary instrumental music program. A systematic development of teaching and rehearsal techniques, planning, and evaluation.

Prerequisite: Mus. 250, 252, 260 and 262, junior standing, or consent of instructor.

MUS. 395-396. INDEPENDENT RESEARCH **One to three credits**
Independent study and research for advanced students in music under the direction of a staff member. A research paper at a more substantial level beyond a term paper is required.

Prerequisite: Approval of department chairman.

MUS. 397. SEMINAR **One to three credits**

Presentation and discussion of selected topics.

Prerequisite: Approval of department chairman.

MUS. 407-415. MUSIC LITERATURE **Three credits**

An examination of the literature, its style and technical problems, studied through performance coaching. These courses are designed to give the student a comprehensive knowledge of the literature for each respective major area of performance. They will provide a necessary foundation for performance practice requirements beyond the scope of only a lecture approach. Sections are offered in the following areas:

MUS. 407. Voice Literature
MUS. 408. Choral Literature
MUS. 409. Keyboard Literature
MUS. 410. Chamber Literature
MUS. 411. Orchestral Literature
MUS. 412. Woodwind Literature
MUS. 413. Brass Literature
MUS. 414. String Literature
MUS. 415. Percussion Literature

Prerequisite: Mus. 205-208, senior standing in music, or consent of instructor.

Nursing

Professor Nehring, chairman; Assistant Professors Alexander, Bourcier, Collins, Godek, Grabo, Harrison, Kasputis, Kolanowski, Konkloski, Krzywicki, Nally, Reisinger, Schreiber, Stevens, Telban, Zong, Zuraw; Instructors Gulla, Jezewski, Notarianni; Teaching Associates Cummings, Duffy, Gidula, Manganiello, Morgan, Saueraker, Simons, Zack; Adjunct Professors Babcock, Klein.

Total minimum credit requirements for B.S. degree, with a major in Nursing — 129.

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 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) NPW Medical Center, (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, (10) the National Institutes of Health, Clinical Center, Bethesda, Maryland.

The community agencies utilized are the Mental Health/Mental Retardation Centers of Luzerne/Wyoming, Hazleton/Nanticoke and Scranton; the Rural Health Corporation of Northeastern Pennsylvania clinics; Home Health Services of Luzerne County; Maternal Health Services of Northeastern Pennsylvania; the Pennsylvania Department of Health; Public School Districts; Little Flower Manor, Wesley Village, St. Stanislaus Medical Care Center, and private physicians' offices and clinics.

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, student 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 com-

pletion of the program. A price list for the above items may be obtained at the Nursing department.

A student may be required to submit, at any time, to a health evaluation by the College physician, if evident limitations interfere with the student's practice.

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.

Registered Nurse students are required to complete Nursing 102A, Introduction to Nursing (three credits), plus one three-credit nursing elective course in place of Nursing 201, Introduction to Nursing (six credits), presented to basic and transfer students.

Students may be admitted for either full-time or part-time study and may challenge, in the proper sequence, twenty-four credits of clinical nursing courses. 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. 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 nursing curriculum covers a four-year academic period and totals 129 credits. It includes integrated nursing courses, electives, and the general core requirements, with the following exceptions: P.E. 110, not required; Sociology 101 *or* Anthropology 101, *and* Sociology 200 meet the Sociology-Anthropology requirements.

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 chairman of the Nursing Department may changes be made.

In accordance with College policy, students who have completed 24 credit hours must maintain a minimum 2.00 in both their major and cumulative grade point averages.

Nursing courses are introduced in the sophomore year. Nursing experiences progress through developmental stages throughout the program. Satisfactory clinical performance is an essential component of each nursing course, and a grade of 2.00 is required in **all** clinical nursing courses to progress through the program. The student will have the option to select his/her area of concentration in nursing for the senior practicum.

The Department of Nursing faculty reserves the right to revise the nursing major requirements as deemed necessary at anytime.

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 Young Family	8
Nsg. 200. Nutrition	3	Ed. 290	3
Nsg. 201. Intro. to Nursing	6	Core Elective and/or	0-3
Core Elective	3	Elective	3
P.E. 100	0	P.E. 100	0
	16		14-17

FIFTH SEMESTER	
Nsg. 203. Nursing Care of the Adult Family I	8
Core Elective	3
Elective	3
	14

SIXTH SEMESTER	
Nsg. 204. Nursing Care of the Adult Family II	8
Core Elective	3
Elective	3
	14

SEVENTH SEMESTER	
Nsg. 301. Nursing Care of the Older Adult Family	8
Nsg. 303. Contemporary Problems in Nursing or Elective	3
Elective	3
Core Elective	3
	17

EIGHTH SEMESTER	
Nsg. 302. Senior Practicum	8
Nsg. 303. Contemporary Problems in Nursing or Elective	3
Core Elective	6
	17

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 YOUNG 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 optimum level of wellness. Theory is concurrent with clinical practice in various health care settings. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 201, Nsg. 200, and Bio. 113.

Corequisite: Ed. 290.

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 adult care health

settings. Continuity of care is emphasized in the clinical component. Relevant findings from nursing research are incorporated. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 202, Ed. 290.

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 care is viewed through related clinical experiences in medical, surgical, and psychiatric settings. Relevant findings from nursing research are incorporated. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 203.

NSG. 301. NURSING CARE OF THE OLDER ADULT FAMILY **Eight credits**

The nursing process is utilized in the care of the older adult family member. Content reflects the major change accompanying the aging process, as well as the interactive effects of multiple pathological conditions. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: $25.

Prerequisite: Nsg. 204.

NSG. 302. SENIOR PRACTICUM **Eight credits**

Explores current nursing theories and models of practice, and develops the concepts of leadership, management, and organizational change. The student synthesizes knowledge from all previous nursing and supportive courses in an area of clinical practice congruent with his/her special interest and career goals. Hours weekly: 2 hours class, 18 hours clinical practice in a variety of settings.

Prerequisite: Nsg. 301.

NSG. 303. CONTEMPORARY PROBLEMS IN NURSING **Three credits**

Explores current issues and trends in nursing and health care within a seminar format. Hours weekly: 3 hours class.

Corequisite: Nsg. 301 or Nsg. 302.

NSG. 000. COMPREHENSIVE NURSING REVIEW **No credit**

A comprehensive review of nursing focused on the synthesis and application of basic nursing knowledge and problem-solving skills in preparation for standardized testing. This elective non-credit course will have a pass/fail grade.

Prerequisite: Wilkes College Senior Nursing students.

NSG. 270. RECENT TRENDS IN CLINICAL NUTRITION **Three Credits**

This elective course is an introduction to diet therapy, with a discussion of the contemporary issues in clinical nutrition. Deals with the popular myths about nutrition and health and substantiates or refutes these claims with research evidence.

Prerequisite: Nursing 200 or Registered Nurse status.

NSG. 272. CLINICAL APPLICATION OF PHARMACOLOGY **Three credits**

This elective course is designed to expand the student's knowledge of pharmacology. It includes the pharmacologic effect of drugs on body systems, as well as the interaction of multiple drugs and environmental factors.

Prerequisite: Junior and Senior Nursing students and Registered Nurses.

NSG. 298 and 398. TOPICS IN NURSING **Three credits**

A study in topics of special interest that are not exclusively treated in regularly offered courses.

Philosophy

Associate Professor Henson, chairman; Professor Kay; Assistant Professors Stevens, Stewart; Adjunct Professor Barras.

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

The study of philosophy, whether by those who pursue a major in philosophy or by those who elect only a few courses of special interest, contributes to the development of the most basic skills and habits of mind which are characteristic of educated men and women: clarity of thought, precision in the analysis of conflicting claims, the power to render sound judgments based upon an appreciation of differing perspectives, and the ability to express and defend one's own views with force and imagination. Students who develop these skills through the study of philosophy are prepared for a variety of professional careers in law, medicine, teaching, and the ministry. In addition, they are the beneficiaries of the traditional liberal arts education as a preparation for numerous careers in government, business, and industry.

Since students may elect to pursue a double major in philosophy and a related area of interest, philosophy majors are invited to design their own majors in consultation with their advisers and with the approval of the department chairman. The typical program consists of 30 credit hours in philosophy, including either Phil. 101 or Phil. 201, and Phil. 152.

The minor in philosophy consists of 18 credit hours, including Phil. 101 (3 credit hours), Phil. 152 (3 credit hours), and at least one course from Phil. 201 through Phil. 206 (3 credit hours).

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: 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 chairman is required.

PHIL. 397. SEMINAR **One to three credits**
Presentations and discussions of selected topics.
Prerequisite: Approval of department chairman is required.

Physical Education and Hygiene

Professor Reese, chairman; Associate Professors Saracino, Schmidt; Assistant Professor Meyers; Instructors Bellairs, 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 all men and women. Students are strongly urged to fulfill their four semesters of Physical Education in the first two years of their program. The only exceptions to this requirement are made to veterans of the military service and to students who have medical excuses which are submitted to and verified by the College infirmary. Veterans should submit a copy of their honorable discharge from the service to the Registrar's Office.

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. 110. HYGIENE **Two credits**

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.

Physics

Professor Donahoe, chairman; Professors Bellas, Holden, Hostler; Associate Professor Bailey; Assistant Professor Placek.

Total minimum credits required for B.A. degree — 127.
Total minimum credits required for B.S. degree — 130.

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,

[1]Students enrolled in AFROTC may substitute AS 101-102-201-202 for the P.E. 100 series.

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 taking the minimum of 24 credits in physics must elect an additional four credits in chemistry.

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.

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. 110	2	2
P.E. 100	0	0
	16	16

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. 100	0	0
	14	17

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

[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.

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[1]	13	11-13
	16	15-17

EIGHTH SEMESTER

	B.A.	B.S.
Phys. 380	—	4
Core elective	3	—
Elective[1]	13	11-13
	16	15-17

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.

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: $30 each semester.

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: $30.

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: $30.

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.

[1]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. 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 chairman.

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 chairman.
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: $30.

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: $30 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: $30.

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: $30 each semester.
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: $30.
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: $30.
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 chairman. Hours to be arranged. Fee: $30 each semester.
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. Fee: $30 each semester.
Prerequisite: Approval of department chairman 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 chairman is required.

THE 400-SERIES COURSES ARE GRADUATE COURSES AVAILABLE TO UNDERGRADUATE SENIORS WITH PERMISSION OF INSTRUCTOR AND THE DEPARTMENT CHAIRMAN

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: $30.
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, chairman; Assistant Professors Freysinger, Tuhy; Adjunct Professor Shaw; Teaching Associate Carapico.

The Political Science Department offers a major and a minor in Political Science, with a concentration in Public Administration and Policy. Certain areas of political science are a significant part of the International Studies major and the supplementary major in Urban Studies. For a description of these programs, see their listing in the section under Special Degree Programs. Students interested in Pre-Law should see page 166.

Requirements for a major in Political Science:

Total hours for graduation: 121, including 53-57 hours of core requirements.

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

Required courses: P.S. 102, 105, 238.

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

Electives in Political Science: 9 credits.

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

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

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

Total hours for graduation: 121, including 53-57 hours of core requirements.

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

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

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

(1) P.S. 205, 310, 311, 314.

(2) P.S. 307, 331, 356, Ec. 236.

Total — 9 credits hours.

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

Cognate courses required: Statistics and Ec. 101.

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

Pre-Law

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

Recommended Curriculum for Students Interested in Law School

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

Eng. 101-102	Composition	6
Eng. 151-152	Western World Literature	6
Phil. 101, 152	Intro. to Philosophy, Intro. to Logic	6
Hist. 101-102	World Civilization	6
Ec. 101-102	Intro. to Economics	6
P.S. 102, 105	Intro. to Political Science	6
Math. 150 and C.S. course	Elementary Statistics and Computer Programming	6

And to complete the core requirements:

Music, Th. Arts, Art	Intro. to Music, Theater Arts, Art	3
Science Sequence	Biology, Chemistry, Environmental Science, Physics, Mathematics and Computer Science	6-8
P.E. 105-106	Physical Education and Hygiene	2
	Total Hours in the Core	53-55

Additional Elective courses recommended for Pre-Law:

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

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

English (Literature concentration)	24
English (Writing concentration)	21
Economics	24
History	18
Philosophy	21
Political Science	18
Sociology	24
Electives — depending on choice of science and of major	3-11
Total	121

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

I. Introductory Courses

P.S. 102. INTRODUCTION TO AMERICAN POLITICS **Three credits**
A descriptive and analytical study of the theory and practice of American government, its constitutional basis, organization, powers, functions, and problems.

P.S. 105. MODERN POLITICAL SYSTEMS **Three credits**
An introductory survey of the major political systems of the world, the problems and the prospects of the developing countries, and the relations between the nations of the world.

II. American Politics

P.S. 203. THE AMERICAN PARTY SYSTEM **Three credits**
Analysis of the history, process, and changing dynamics of the political party system in the U.S. Focus is on the Republican and Democratic parties and prospects for realignment, with attention to the growing significance of "independents."
Prerequisite: P.S. 102 or consent of instructor.
Offered in alternate years.

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 on interrelationships between local, state, and Federal policies and agencies.
Prerequisite: P.S. 102 or consent of instructor.
Offered in alternate years.

P.S. 303. POLITICAL BEHAVIOR **Three credits**
Macro-analysis of public opinion, political socialization and participation, and voting behavior.
Prerequisite: P.S. 102 and P.S. 238 or Math 150, or consent of instructor.
Offered in alternate years.

P.S. 307. THE AMERICAN PRESIDENCY **Three credits**
An exploration and analysis of the development and changing role of the American President as political leader, decision-maker, world leader. Examines the selection and election process and the effect of this process on the Presidency.
Prerequisite: P.S. 102 or consent of instructor.
Offered in alternate years.

III. Public Administration

P.S. 218. INTRODUCTION TO PUBLIC ADMINISTRATION **Three credits**
An introduction to the principles and problems of public administration in an increasingly complex society. Attention to such topics as leadership, informal organizational processes (infra-structure), the relation of administration to its cultural context, and the question of administrative responsibilities. Survey of the technical problems of personnel, finance, and administrative law.
Prerequisite: P.S. 102 or consent of instructor.
Offered every spring semester.

EC. 236. PUBLIC FINANCE **Three credits**
See description under Economics.

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

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

P.S. 314. PLANNING IN URBAN DEVELOPMENT **Three credits**
Origins and evolution of city planning, influences of urban growth, legal and institutional framework, and scientific and philosophical premises. Survey of city planning as it has evolved in the United States since 1800 in response to physical, social, and economic problems.
Prerequisite: P.S. 102, or 205, or 310 or 311.
Offered in alternate years.

P.S. 316. GOVERNMENT BUDGETING **Three credits**
An examination of the political and administrative aspects of the governmental budgeting process, including the possibilities and consequences of recent budgetary reforms.
Prerequisite: P.S. 102 or consent of instructor.
Offered in alternate years.

P.S. 318. PUBLIC PERSONNEL ADMINISTRATION **Three credits**
Description and analysis of public personnel: methods of recruitment, assignment, promotion; the relation of the personnel function to its environment; the public service character of governmental employees.
Prerequisite: P.S. 102 or consent of instructor.
Offered in alternate years.

IV. Comparative and International Politics

P.S. 323. DEMOCRATIC SYSTEMS **Three credits**

Comparison of the development, institutions, problems, and prospects of democratic systems in the modern world and their relation to capitalist-industrial society. Focus is on Great Britian, France, West Germany, and Japan with some attention to the Scandanavian democracies, Italy, and British Commonwealth nations.

Prerequisite: P.S. 102 and 105 or consent of instructor.

Offered in alternate years.

P.S. 324. COMMUNIST SYSTEMS **Three credits**

Analysis of the social and political conditions out of which the major Communist systems in the Soviet Union and in China developed. Marxism, Leninism, Maoism. Examines the common elements, the differing elements, problems and prospects of the two nations and their inter-relationship with each other and other countries of the world. Some attention to Communism in Eastern Europe, and the Third World.

Prerequisite: P.S. 105 or consent of instructor.

Offered in alternate years.

P.S. 325. POLITICS OF DEVELOPING AREAS **Three credits**

The political process in the lesser-developed areas of the world: Asia, Africa, and Latin America. Examines the problems of economic and political change and the relations of these areas to the Western world and the Communist states.

Prerequisite: P.S. 105 or consent of instructor.

Offered in alternate years.

P.S. 327. INTERNATIONAL RELATIONS **Three credits**

Survey of essential elements in international relations, such as national power, imperialism, balance of power, collective security, international law, international organization, and problems of peace.

Prerequisite: P.S. 105 or consent of instructor.

Offered in alternate fall semesters.

HIST. 328. U.S. FOREIGN POLICY **Three credits**

See description under History.

V. Political Theory and Law

PHIL. 230. SOCIAL AND POLITICAL PHILOSOPHY **Three credits**

See description under Philosophy.

P.S. 238. CONCEPTS AND METHODS IN POLITICAL SCIENCE **Three credits**

Survey of the major concepts, theories, and methods of current political science as a discipline. Some attention to research design and techniques.

Prerequisite: P.S. 102 or 105.

Offered every spring semester.

P.S. 331. CONSTITUTIONAL LAW I **Three credits**

Study of the growth and change of the American Constitution through analysis of the leading cases decided by the U.S. Supreme Court. Analysis of the powers of the three branches of government and of the relations between the states and the Federal Government.

Prerequisite: P.S. 102 or consent of instructor.

Offered in alternate fall semesters.

P.S. 332. CONSTITUTIONAL LAW II **Three credits**

Continuation of the study of the meaning of the Constitution as interpreted by the Supreme Court. Analysis of the landmark decisions regarding free speech and press, separation of church and state, rights of persons accused of crime, equal protection of the laws, voting rights.

Prerequisite: P.S. 102 or consent of instructor.

Offered in alternate spring semesters.

P.S. 335. AMERICAN POLITICAL THOUGHT **Three credits**

Study of the political ideas, ideals, and ideologies as they contributed to and developed from the American experience. Analysis of the ways of thought which underlie our political institutions and practices.

Prerequisite: P.S. 102 or consent of instructor.

Offered in alternate years.

VI. Public Policy

P.S. 353. POLICY FORMATION IN THE LEGISLATURE **Three credits**

Analysis of the policy-making process in the legislature, focusing on case studies of the process in the U.S. Congress. Internal processes and external influences.

Prerequisites: P.S. 102 or consent of instructor.

Offered in alternate years.

P.S. 354. ADMINISTRATIVE POLICY-MAKING **Three credits**

Analysis of the ways in which public policy is made and effected in administrative agencies, of the ways in which the public administrator operates and the linkage between administrative organizations and other policy-makers and influencers of policy.

Prerequisite: P.S. 102 and 218 or consent of instructor.

Offered in alternate years.

P.S. 356. JUDICIAL PROCESS AND POLICY **Three credits**

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

Prerequisite: P.S. 102 or consent of instructor.

Offered in alternate years.

P.S. 398. TOPICS IN PUBLIC POLICY **Three credits**

See description under Topics in Area VII.

VII. Special Studies

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 in Urban Studies, or in a field in which internship will be served, such as Earth and Environmental Sciences. Student must consult with department before registering.

Offered every semester.

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.

Offered every semester.

P.S. 397. SEMINAR **Three credits**
Presentations and discussions of selected topics by students.

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; urban design; The First Amendment in law and practice; equality at law in an unequal society; Marxism, etc. May be repeated when topics differ A topics course in a specific field of public policy, such as Energy, Environmental Science, Mental Health and Retardation, etc., will be offered each year beginning in 1981-82.

Prerequisite: Permission of department, criterion depending on topic.

Psychology

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

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

Psy. 101-102 are the starting point for the psychology program and must be taken by all psychology majors. There is no substitution for Psy. 102.* These two courses do not count toward the 24 credit hours of psychology required of majors. In addition to Psy. 101-102 the psychology major must take Psy. 215 (Research Design and Analysis). It is strongly recommended that Psy. 211-212 (Experimental Psychology) be taken if the student is planning graduate study. The General Core Requirements must be satisfied by the Psychology major.

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.

Interest Area I.

Psy. 211-212 Experimental Psychology
Psy. 203 Contemporary Psychological Theories
Psy. 213 Physiological Psychology
Psy. 214 Sensation and Perception

Interest Area II.

Psy. 221 Child Psychology
Psy. 232 Human Behavior
Psy. 331 Abnormal Psychology
Psy. 255 Social Psychology

Interest Area III.

Psy. 242 Psychological Tests
Psy. 243 Industrial Psychology
Psy. 243 Clinical Psychology

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

Minor in Psychology

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

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

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.

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: $30 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. Fee: $10.
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.

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. 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.

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 chairman 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 chairman 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

Assistant Professor Natzke, chairman; Assistant Professors Brown, Goode, Rasson; Teaching Associate Tutwiler; Adjunct Professor Tomkiewicz.

Total Minimum Credits for B.A. Degree — 121.

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

Sociology Major

A major in sociology consists of twenty-four hours, and shall include Soc. 255, 370, 380, and at least one course in anthropology beyond Anth. 101. In addition, Math. 150 is required, credit to apply toward either sociology or core requirements. Phil. 230 and/or 350 may be taken for credit toward the major.

The department offers Practicum 399, a supervised practical field experience designed for sociology majors that involves work in a professional setting. The six hours earned in Practicum may not be applied toward the twenty-four hours required for the major. Approval of the department chairman is required before registering for Practicum.

Sociology Minor

A minor in sociology consists of 18 hours, including Soc. 101. At least one of the following courses is required: Social Psychology 255; Sociological Methods 370; Sociological Theory 380.

The department offers Practicum 399, a supervised practical field experience designed for sociology minors in a professional setting. The six hours earned in Practicum may not be applied toward the 18 hours required for the minor. Approval of the department chairman is required before registering for Practicum.

Anthropology Minor

A minor in anthropology consists of 18 hours, including Anth. 101. At least one of the following courses is required: Cultural Anthropology 270; Physical Anthropology 271; Linguistic Anthropology 272; Archaeology 273.

The department offers Practicum 399, a supervised practical field experience designed for anthropology minors in a professional setting. The six hours earned in Practicum may not be applied toward the 18 hours required for the minor. Approval of the department chairman is required before registering for Practicum.

Certification in Education

Sociology majors seeking certification in education must complete the Social Studies Certification Program. A description of the program is given on page 96.

Urban Studies Concentration

Sociology majors who wish to concentrate in urban studies must complete the requirements listed under Urban Studies (see Special Degree Programs).

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 af-

fecting 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.

Speech

(see Language and Literature)

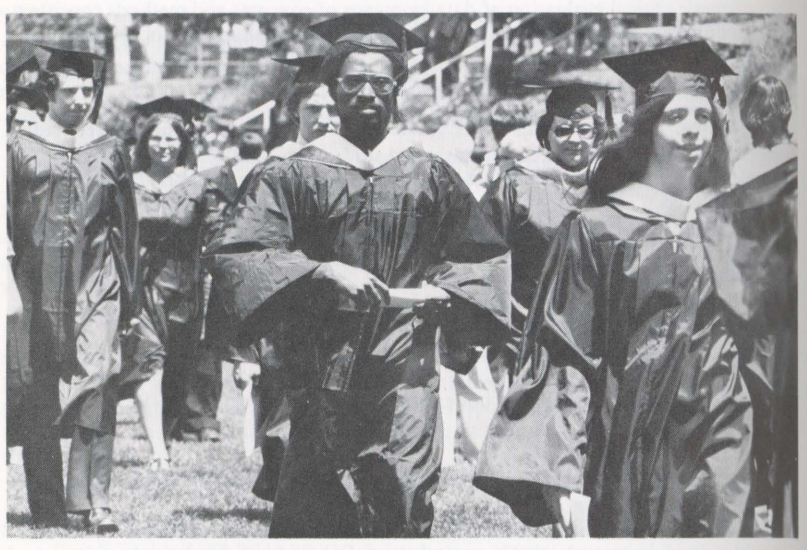
Theater Arts

(see Language and Literature)

Urban Studies

(see Special Degree Programs)

Special Degree Programs
Health Sciences Programs
Freshman Honors
Non-Degree Programs





Special Degree Programs

Pre-Professional Degree Program

Four years of undergraduate study ordinarily are required to qualify for the Bachelor's degree. Wilkes College makes an exception to this requirement for medical and dental students.[1]

These students may, with the approval of the Academic Standards Committee, satisfy the requirements for the Bachelor's degree by completing three years of undergraduate study at Wilkes and by requesting credit toward the degree for their first two years of work in professional school.

Such students must petition the Academic Standards Committee for permission to graduate, submit official transcripts from the professional school, and pay the usual graduation fees. In all cases the final approval for the granting of the degree rests with the Academic Standards Committee of Wilkes College.

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

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

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

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

Information about the program may be obtained at the History Department office in Franklin Hall or at the Commerce and Finance office in Parrish Hall.

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[1]Students enrolled in the Wilkes-Hahnemann program receive the B.S. degree at the end of six years.

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

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

All requirements for both degrees must be met. In addition, 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.

Medical Technology

Total credits required in Medical Technology — 132.

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.

At the completion of three years, the student may be accepted by an affiliated hospital school of medical technology for a period of twelve months' clinical training. Following graduation from the hospital school, the student will receive the B.S. degree in medical technology from the College and will be eligible for registry as a medical technologist by the ASCP.

Wilkes College has established a formal affiliation with the Allentown Hospital Association in Allentown, Pa., the Robert Packer Hospital in Sayre, Pa., the Somerset Medical Center in Somerville, N.J., the Wilkes-Barre General Hospital in Wilkes-Barre, Pa., and the Williamsport Hospital in Williamsport, Pa. Fulfillment of the fourth year requirement at non-affiliated hospitals requires special permission of the department chairman and of the Academic Standards Committee.

FIRST SEMESTER		SECOND SEMESTER	
Bio. 201-202	5	Bio. 203-204	5
Chem. 115	4	Chem. 116	4
Eng. 101	3	Eng. 102	3
Math. 105 or 111	4	Math. 106 or 112	4
P.E. 100	0	P.E.100	0
		P.E. 110	2
	16		18

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205-206	5	Bio. 207-208	5
Chem. 241	4	Chem. 130	4
Eng. 151	3	Eng. 152	3
Hist. 101	3	Hist. 102	3
Social Science Elective	3	Social Science Elective	3
P.E. 100	0	P.E. 100	0
	18		18

FIFTH SEMESTER		SIXTH SEMESTER	
Bio. 303	3	Bio. 313	3
Bio. 307	3	Bio. 341	3
C.S. 123	3	Math. 150	3
Phys. 105	4	Phys. 106	4
Elective	3	Elective	3
	16		16

SEVENTH SEMESTER		EIGHTH SEMESTER	
Clinical Training	15	Clinical Training	15

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 five disciplines — Economics, History, Political Science, Sociology, and Anthropology — provides a broad and comprehensive background in world affairs.

Requirements for a major in International Studies:

Total hours for graduation: 131, including 53-57 hours of core requirements.

Total hours in requirements for major: 60, plus competency in a foreign language (12-18 of these credits may also be counted in the core requirements).

Required courses: Ec. 101-102; P.S. 102, 105; Soc. 101; Anth. 101; Seminar in International Studies I and II. Total — 24 credit hours.

Distribution Requirements: 9 credit hours (3 courses) to be selected from Ec. 224, 225, 227, 228, 229; 9 credit hours (3 courses) to be selected from Hist. 328, 341, 342, 348, 356, 361, 362, 363, 364, 367, 382; 9 credit hours (3 courses) to be selected from P.S. 323, 324, 325, 327, 398 (if topic relevant); 9 credit hours (3 courses) to be selected from Soc. 252, 275, 398 (if topic relevant), Anth. 270, 392, 398 (if topic relevant). Total — 36 credit hours.

Cognate courses required: Competency through the 204 level in a foreign language (0-12 credit hours). Hist. 101-102 is strongly recommended.

For initial advising or for information contact Dr. Jean Driscoll, Political Science department.

Urban Studies

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.

Advising will be in the department of the student's primary major, but admission to the program and the keeping of records will be under the supervision of the Political Science department.

Requirements for the urban studies concentration are as follows:

Total hours: 36, including 9 credits in introductory courses.

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. 314, 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). Total — 12 hours.

Electives: 15 hours selected from the following: Anth. 370, 392; Ec. 212, 223, 224, 236, 245; P.S. 203, 205, 218, 310, 311, 332; 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 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.

Health Sciences Programs

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 Col-

lege 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.

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. 110[3] (optional)	2		
	16-18		16-17

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. 110 (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/Temple University School of Dentistry Program

The affiliated dentistry program, which is designed to educate dentists to serve in the underserved areas of greater Pennsylvania, requires completion of three years at Wilkes College and four years at Temple University School of Dentistry.

All students in the program shall satisfy the general core education requirements including Psy. 101-102 and the mathematics, chemistry, physics, and biology courses which are listed in the following six semesters.

The remaining credits in the first three years may be used for depth education in an academic discipline or for other electives.

A student completing three years at Wilkes College in the program and four years at Temple University School of Dentistry will be awarded a Bachelor of Science degree by Wilkes College and a Doctor of Dental Surgery degree by Temple University. The components of the Bachelor of Science 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 Temple University School of Dentistry.

A student should declare a major at Wilkes College and, having been assigned an academic adviser, progress through the first three years in the major. If after three years the student is not chosen to enter the Temple University School of Dentistry, then he or she may complete the last year at Wilkes College and receive a baccalaureate degree as every other student does who completes an academic program satisfactorily.

A Joint Selection Committee of Wilkes College faculty and Temple University School of Dentistry faculty will select students for entrance into the dentistry component of the program. Both cognitive and noncognitive criteria will be utilized in the selection process.

FIRST SEMESTER		SECOND SEMESTER	
Bio. 201-202	5	Chem. 116	4
Chem. 115	4	Eng. 102	3
Eng. 101	3	Math. 106 or 112	4
Math. 105 or 111	4	Electives	5-6
P.E. 110	2	P.E. 100	0
P.E. 100	0	Health Profession Orientation	0
	18		16-17

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205-206	5	Chem. 232	4
Chem. 231	4	Psy. 102	3
Psy. 101	3	Electives	9-11
Electives	3-6	P.E. 100	0
P.E. 100	0	Health Profession Orientation	0
	15-18		16-18

FIFTH SEMESTER		SIXTH SEMESTER	
Phys. 105 or 201	4	Phys. 106 or 202	4
Electives	12-14	Electives	12-14
	16-18		16-18

Total electives available . . . . . 41-51 credits
Core requirements (not listed) . . . . . 27 credits
Credits available for other courses . . . . . 14-24 credits
In addition . . . . . four years at Temple University School of Dentistry

Wilkes College / Pennsylvania College of Optometry Program

The program requires completion of three years at Wilkes College and four years at Pennsylvania College of Optometry.

All students in the program shall satisfy the general core requirements. Note, however, that Psy. 101-102 and the mathematics, chemistry, physics, and biology courses 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		SECOND SEMESTER	
Bio. 201-202	5	Chem. 116	4
Chem. 115	4	Eng. 102	3
Eng. 101	3	Math. 106 or 112	4
Math. 105 or 111	4	Electives	5-6
P.E. 110	2	P.E. 100	0
P.E. 100	0	Health Profession Orientation	0
	18		16-17

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205-206	5	Bio. 207	2½
Chem. 231	4	Chem. 232	4
Psy. 101	3	Psy. 102	3
Electives	3-6	Electives	6-8
P.E. 100	0	P.E. 100	0
		Health Profession Orientation	0
	15-18		15½-17½

FIFTH SEMESTER		SIXTH SEMESTER	
Phys. 201	4	Phys. 202	4
Electives	12-14	Electives	12-14
		Health Profession Orientation	0
	16-18		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 / Temple University Pharmacy Program

The program is a five year program leading to a Bachelor of Science degree in Pharmacy at Temple University. The first two years are taken at Wilkes College and the last years at Temple University.

Ten students will enter Temple University School of Pharmacy each year and will be selected by a Joint Selection Committee of Wilkes College and Temple University faculty. This committee will be a subcommittee of the School of Pharmacy Admissions Committee and recommend candidates to the latter committee for admission.

Students eligible for admission to the program must be residents of greater Northeastern Pennsylvania, which includes contiguous counties of New York and New Jersey.

A high level of academic work is required for entrance into the pharmacy school. Non-cognitive criteria will also be considered for admission.

Students who do not apply at the end of their second year at Wilkes College may apply after their third year.

While at Wilkes College the students will be tested to determine their interest and aptitude.

All students must satisfactorily complete an English proficiency test at the end of two years at Wilkes College. The test will be administered by Temple University and is a Temple University requirement.

Two years at Wilkes College

FIRST SEMESTER		SECOND SEMESTER	
Chem. 115	4	Chem. 116	4
Bio. 201-202	5	Eng. 102	3
Eng. 101	3	Math. 106 or 112	4
Math. 105 or 111	4	Electives	5-7
	16		16-18

THIRD SEMESTER		FOURTH SEMESTER	
Chem. 231	4	Chem. 232	4
Phys. 105 or 201	4	Phys. 106 or 202	4
Ec. 101	3	Electives	8-10
Electives	5-7		
	16-18		16-18

Five credits in Biology must be elected.

All Physical Education and Health requirements must be met at Wilkes College.

Three Years at Temple University School of Pharmacy

The final year will include clinical clerkships in hospital and community pharmacies in Northeastern Pennsylvania.

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 one year 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		SECOND SEMESTER	
Bio. 201-202	5	Chem. 116	4
Chem. 115	4	Eng. 102	3
Eng. 101	3	Math. 106 or 112	4
Math. 105 or 111	4	Electives	5-6
P.E. 110	2	P.E. 100	0
P.E.100	0		
	18		16-17

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205-206	5	Chem. 232	4
Chem. 231	4	Psy. 102	3
Psy. 101	3	Electives	9-11
Electives	3-6	P.E. 100	0
P.E. 100	0		
	15-18		16-18

FIFTH SEMESTER		SIXTH SEMESTER	
Phys. 105 or 201	4	Phys. 106 or 202	4
Electives	12-14	Electives	12-14
	16-18		16-18

Total electives available . . . . . 41-51 credits
Core requirements (not listed) . . . . . 29 credits
Available for other courses . . . . . 12-22 credits
In addition . . . . . one year at Pennsylvania College of Podiatric Medicine

Freshman Honors

Freshman Honors is an interdisciplinary "introduction to knowledge" sequence of two, two credit-hour courses, open to entering freshmen of high academic achievement and promise by invitation of the Dean of Academic Affairs and a faculty committee on Honors.

HONORS 101. PROBLEMS OF INQUIRY **Two credits**
Examines the methods of inquiry used by individuals and characteristic of different disciplines. Discussions of basic assumptions, kinds of evidence and ways of interpreting, focusing on problems of knowing in criminal trials, in other cultures, in history, and in science. A two-hour session is scheduled each week for films and other presentations for all students, followed by two one-hour discussion sessions. Discussion sections are limited to 16 students.

Offered in the fall semester.

HONORS 102. SEMINAR ON PROBLEMS FOR INQUIRY **Two credits**
Topic is different for each Seminar and will vary from year to year. Students will research a problem and discuss methods, sources, and interpretations on the common topic. Students will write papers, portions of which will be critiqued by the Seminar. Meets two hours per week.

Offered in the spring semester.

Special Non-Degree Programs

Aerospace Studies

Professor Burke, chairman; Associate Professor Taylor; Assistant Professor Johnson.

Air Force Reserve Officer Training Corps Program

The Air Force ROTC participates 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 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.

Leadership Laboratory

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

Field Training

Candidates for enrollment in the POC will attend AFROTC field training during one summer. The training, conducted at selected Air Force bases, gives students an opportunity to observe Air Force units and people at work and at home, participate in marksmanship, survival, athletics, 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. . imited 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.

Division of Continuing Education

The Division of Continuing Education awards credits for non-degree training in numerous areas. Using the motto, *Quality Education: Linking Campus and Community,* the division offers public seminars, training in governmental operations, industrial and business management, humanities, cultural affairs, tax-related issues, legal-related issues, and family and personal concerns. The division is designed to offer pertinent and informative materials with a flexible schedule to fulfill the needs of the community.

Cooperative Education Program

Cooperative Education is a process which formally integrates a student's academic studies with productive work experiences in employing organizations. The word "cooperative" is used to mean a cooperative relationship between the employer and the College. Through alternating semesters of full-time study and **full-time** professional work experience, students 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 be 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.

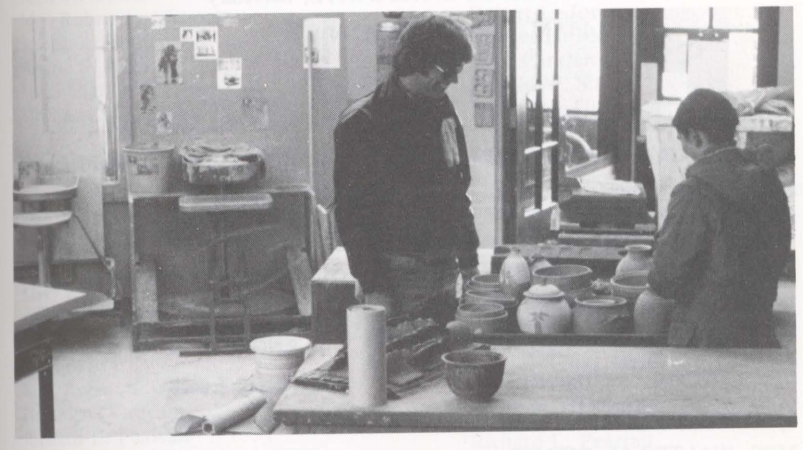
The program is open to students majoring in any of the College's academic disciplines when they obtain permission from their academic adviser. Interested students may contact Mr. Robert Koester in the Career Planning Center (rear 34 S. River Street) or Dr. Bradford Kinney, Room 206, Kirby Hall.

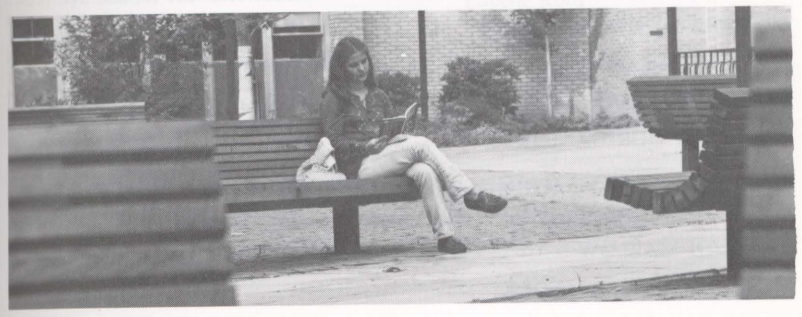
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Family Practice Residency Program, Kingston, Pa.

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* * * * * * * * * * * * * * * * * *

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HERBERT GARBER (1965), Assistant Professor of Music
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KENNETH G. LEWIS (1980), Assistant Professor of Business Administration
B.S., M.B.A. (Scranton)

HILDA A. MARBAN (1969), Professor of Foreign Languages
B.A., B.S. (Vedado Institute), Ph.D. (Havana), M.A. (Trinity), Ph.D. (Virginia)

ALLAN R. MAXWELL (1978), Assistant Professor of Art
B.F.A. (Florida Atlantic), M.F.A. (Kent State)

SAMUEL MERRILL, III (1973), Professor of Mathematics and Computer Science
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GAY F. MEYERS (1970), Assistant Professor of Physical Education and Hygiene
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JOHN F. MEYERS (1967), Assistant Professor of History
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RICHARD J. MINASZ (1981), Assistant Professor of Chemistry
B.S. (Holy Cross), M.S. (MIT), Ph.D. (Pittsburgh)

WILLIAM R. MORAN (1979), Assistant Professor of Accounting
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MOHAMMAD K. MOUSSAVI (1981), Assistant Professor of Engineering
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NANCY K. NALLY (1981), Assistant Professor of Nursing
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JOHN H. NATZKE (1973), Assistant Professor of Sociology and Anthropology
B.A. (Wisconsin State), M.A., Ph.D. (Western Michigan)

VIRGINIA NEHRING (1981), Professor of Nursing
B.S. (Bridgeport), M.S. (Yale), Ph.D. (Walden)

UMID R. NEJIB (1965), Professor of Engineering
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MARY ANN NOTARIANNI (1981), Instructor of Nursing
B.S. (Georgetown)

ROBERT E. OGREN (1963), Professor of Biology
B.A. (Wheaton), M.S. (Northwestern), Ph.D. (Illinois)

MICHAEL C. O'NEILL (1980), Assistant Professor of English and Theater Arts
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JOSEPH A. PARKER, JR. (1976), Assistant Professor of Mathematics and Computer Science / Engineering
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WALTER A. PLACEK, JR. (1969), Assistant Professor of Physics
B.S. (Wilkes), M.Ed. (Pennsylvania State)

JUDITH A. RASSON (1978), Assistant Professor of Sociology and Anthropology
B.A., M.A., M.L.S. (California)

BRIAN T. REDMOND (1976), Assistant Professor 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)

BRUCE J. REIPRICH (1980), Instructor of Music
B.M., M.A. (Eastman School of Music)

DIANE F. REISINGER (1980), Assistant Professor of Nursing
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LOUIS RIGLEY (1974), Associate Professor of Biology
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ROBERT C. RILEY (1949), Professor of Psychology
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JAMES P. RODECHKO (1968), Professor of History
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RALPH B. ROZELLE (1962), Professor of Chemistry
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FRANCIS J. SALLEY (1950), Professor of Chemistry
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JOSEPH H. SALSBURG (1959), Associate Professor of Mathematics and Computer Science
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ROSENDO E. SANTOS, JR. (1968), Assistant Professor of Music
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B.S. (Ursinus), M.S. (Syracuse)

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B.A. (Franklin & Marshall), M.A., Ph.D. (West Virginia)

PHILIP R. TUHY (1960), Assistant Professor of Political Science
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ROBERT E. WERNER (1955), Professor of Economics
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ROSE ANN S. CORDORA (1980), Business Administration
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LILLIAN W. DUFFY (1976), Nursing
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DONALD R. WEAVER (1981), Medical Director
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ANGEL BELIC
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CATHERINE H. BONE
Assistant Professor of Chemistry, Emerita. M.S., Pennsylvania State

FRANK J. J. DAVIES
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ELWOOD DISQUE
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RUTH W. McHENRY
Professor of Nursing, Emerita. M.A., Columbia

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LEOTA NEVIL
Assistant Professor of Library Science, Emerita. M.S., Wilkes

CHARLES B. REIF
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J. PHILIP RICHARDS
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THOMAS R. RICHARDS
Professor of Mathematics, Emeritus. M.S., Bucknell

RUTH T. ROBERTS
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CROMWELL E. THOMAS
Associate Professor of Engineering, Emeritus. B.S., Washington and Lee

PAUL R. WERNER
Associate Professor of Accounting, Emeritus. M.A., New York

ROY E. WILLIAMS
Professor of Philosophy, Emeritus. Ph.D., Drew

Standing Committees of the Faculty

The following are the Faculty Committee assignments made for the academic year 1981-82. The President is ex officio on all Committees except Committees on Academic Freedom.

Academic Freedom

Mediation
James DeCosmo (1982)
Howard Williams, Alt. (1982)
Umid Nejib (1983)
Joseph Bellucci (1984)

Faculty-Trustee
Benjamin Fiester (1982)
Francis Salley (1983)
Walter Placek, Alt. (1983)

Academic Standards

Robert Riley, Chairman (1984)
Herbert Garber (1982)
Philip Rizzo (1982)
Stanley Kay (1983)
Norma Schulman (1983)
Harold Cox (1984)
Joseph Salsburg (1984)
Gerald Hartdagen
George Ralston
Chris Fellin, student
Keith Sands, student, alt.

Admissions

John Koch, Chairman (1984)
Robert Bohlander (1982)
J. Michael Case (1983)
Edwin Johnson (1983)
William Stine (1984)
Adelaide Godek
Gerald Wuori
Robert J. Doty, student
Robert LaShock, student, alt.

Athletic

Welton Farrar, Chairman (1983)
Jerome Campbell (1982)
David Goode (1983)
Bruce Burke (1984)
Doris Saracino (1984)
Richard Raspen
John Reese
Eugene Chikowski, student
Linda Woods, student, alt.

Curriculum

James Rodechko, Chairman (1984)
Richard Aston (1982)
Robert Ogren (1982)
Olivia Ayres (1983)
John Stevens (1983)
Jean Driscoll (1984)
Samuel Merrill (1984)
Alene Harrison
Gerald Hartdagen
Douglas Fahringer, student
Janine Tucker, student, alt.

Faculty Policy

Joel Berlatsky, Chairman (1984)
Clyde Houseknecht (1982)
Francis Salley (1982)
Benjamin Fiester (1983)
Wagiha Taylor (1983)
Lee Terry (1984)
Robert S. Capin

Financial Aid

Jay Siegfried, Chairman (1982)
Lorna Darte (1983)
Gay Meyers (1983)
Walter Placek (1984)
Philip Tuhy (1984)
Linda Hobrock
Rachael Lohman
Joanne Rice, student
Thomas Rooney, student, alt.

Standing Committees of the Faculty

The President is ex officio on all Committees except Committees on Academic Freedom.

Graduate Studies

Wilbur Hayes, Chairman (1982)
Frank Bailey (1982)
Christopher Fox (1983)
Brian Redmond (1983)
Bruce Brown (1984)
Franck Darte (1984)
Louis Rigley (1984)
Jack Meyers
Howard Williams

Library

Kuo-kang Shao, Chairman (1984)
Levere Hostler (1982)
Judith Rasson (1983)
Catherine Schappert (1983)
Bradford Kinney (1984)
Dale Buehler
Alfred Groh
Lisa Warden, student
William Lourie, student, alt.

Student Life

Robert Freysinger, Chairman (1984)
Sharon Stevens (1982)
Rosendo Santos (1983)
Peter Siver (1983)
Allan Maxwell (1984)
Charles Abate
Arthur Hoover
Alan Wirkman, student
Melissa Monahan, student, alt.

Student Publications

Stephen Tillman, Chairman (1983)
Frederick Krohle (1982)
Richard Fuller (1983)
Michael O'Neill (1984)
William Sterling (1984)
Anne Graham
Randy Xenakis
JoAnn Magers, student
Phillip Goedecke, student, alt.

Teacher Recognition and Effectiveness

Carl Charnetski, Chairman (1984)
Marian Alexander (1982)
Joseph Parker (1983)
Howard Swain (1983)
Walter Karpinich (1984)
Eugene Domzalski
Hsi-ping Shao
Elaine Kerchusky, student
Deborah Vogt, student, alt.

Tenure and Promotion

Humanities
Stanley Gutin, Chairman (1983)
Donald Henson, (1983)

Natural Sciences and Mathematics
Bruce Berryman, Sec. (1982)
Bing Wong (1982)

Social Sciences
Eugene Hammer (1984)
John Natzke (1984)

Robert S. Capin
Gerald E. Hartdagen

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Wilkes College

Wilkes-Barre, Pennsylvania

WILKES COLLEGE

81/82 bulletin

GRADUATE PROGRAM

Academic Calendar

FALL SEMESTER — 1981

Registration —

Thursday, August 27	8:30 a.m. to 8:00 p.m.
Friday, August 28	8:30 a.m. to 8:00 p.m.

Classes begin —

Monday, August 31	8:00 a.m.

Fall Recess —

Friday, October 16	5:00 p.m.
to Wednesday, October 21	8:00 a.m.

Thanksgiving Recess —

Tuesday, November 24	10:00 p.m.
to Monday, November 30	8:00 a.m.

Classes end —

Friday, December 11	5:00 p.m.

Examinations —

Monday, December 14 thru Tuesday, December 22

SPRING SEMESTER — 1982

Registration —

Thursday, January 14	8:30 a.m. to 8:00 p.m.
Friday, January 15	8:30 a.m. to 8:00 p.m.

Classes begin —

Monday, January 18	8:00 a.m.

Last day to file application for assistantships —

Friday, February 5

Spring Recess —

Friday, March 5	5:00 p.m.
to Monday, March 15	8:00 a.m.

Easter Recess —

Thursday, April 8	10:00 p.m.
to Tuesday, April 13	8:00 a.m.

Classes end —

*Tuesday, May 4

Examinations —

Friday, May 7 thru Saturday, May 15

Commencement —

Sunday, May 23

**Tuesday, May 4 will follow the Friday class schedule.*

For further information, write or call:

John F. Meyers, Director
Graduate
and
Part-time Undergraduate Programs
16 South River Street
Wilkes-Barre, Pa. 18766
Phone: (717) 824-4651 Ext. 380

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 Programs 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 may 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 Programs 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 into a graduate program.

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 Programs. 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 1 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 Programs, the chairman of the appropriate department and the student's advisor. Application forms for transfer-credit requests are available at the Office of Graduate Programs.

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 Programs.

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 Programs Office and have it approved by the instructor, the faculty advisor and the Director of Graduate Programs. 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 Programs 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 Programs 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 Programs. 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: $120 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 Programs 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 residence halls 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 who have paid their tuition in full and who withdraw from courses or from the College during the time limits indicated below will receive tuition refunds, upon written request, according to the following formula.

	Time of withdrawal	Tuition refund
Academic Year:	First two weeks	80%
	Third and fourth week	60%
	Fifth week	40%
	After fifth week	No refund
5-week Summer Sessions:	First week	50%
8-week Summer Session:	First two weeks	50%

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 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 $4,300. 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 $8,600, in addition to transportation, on his graduate education at Wilkes College.

CONFIRMATION OF ACCEPTANCE

All entering international students must inform the Director of Graduate Programs 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 1981-1982 academic years are given below. Immediately upon his arrival the student should contact both the Director of Graduate Programs and the Foreign Students' Advisor.

Fall semester, 1981 — August 25, 1981

Spring semester, 1982 — January 10, 1982

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 the Director of Graduate Programs 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 301 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 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.

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

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.

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

BIOLOGY 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: Biology 201-208, or permission of instructor.

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.

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

BIOLOGY 307. ANALYTICAL CYTOLOGY **Three credits**

Experimental analysis of cell structure, organelles, chemistry and activities by means of microscopic techniques and instrumentation. Fee: $30.

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

BIOLOGY 308. ADVANCED GENETICS **Three credits**

This course will present a detailed treatment beyond the introductory level with particular emphasis on populational aspects of heredity. Topics will include plant and human genetics. Lecture, two hours; laboratory, three hours a week. Fee: $30.

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

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.

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

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.

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

BIOLOGY 312. COMPARATIVE PHYSIOLOGY **Three credits**

Advanced physiology encompasses the study of organ functions and organ system functions in different animal groups. Emphasis will be on the systemic physiology of vertebrate animals. Lecture, two hours; laboratory, three hours a week. Fee: $30.

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

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.

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

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.

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

BIOLOGY 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: Biology 201-208, or permission of instructor.

BIOLOGY 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: Biology 201-208, or permission of instructor.

BIOLOGY 317. ADVANCED ECOLOGY **Three credits**
Advanced ecology examines contemporary ecological thinking as it pertains to the interrelationship of organisms and their environments. Interactions at the population and community levels are emphasized. Lecture, two hours; laboratory, three hours a week. Fee: $30.

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

BIOLOGY 340. LIMNOLOGY **Three credits**
A study of the chemical, physical, and biological aspects of fresh water systems. Laboratory investigations will consist of in-depth analyses of local lakes and streams. Lecture, two hours; laboratory, three hours. Fee: $30.

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

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.

Prerequisite: Biology 201-208, or permission of 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.

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

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

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

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.

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.

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	Managerial Finance	1 semester
Business Law	1 semester	Money and Banking	1 semester
Economics	1 year (Principles)	Marketing	1 semester
Statistics	1 semester		

All undergraduate prerequisites MUST be satisfied at least one semester before the student expects to graduate.

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 prepar-

ation in Accounting are urged to take Accounting 503; students with more than twelve credits earned in accounting will not be admitted into Accounting 503, but may substitute Accounting 504 in its place. 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.

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.

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.

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.

Prerequisites: BA502 and BA505, or permission of instructor.

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**
Review of the attest function in financial reporting. The impact of the audit process (including professional ethics) is analyzed.

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.

Special Courses

ACCOUNTING 550. TOPICS **Three credits**
Special topics in accounting. This course will be offered from time to time as interest and demand justify it.

ACCOUNTING 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.

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 550. TOPICS **Three credits**
Special topics in economics. This course will be offered from time to time as interest and demand justify it.

ECONOMICS 595. INDEPENDENT STUDY **Three credits**
Independent study and research for advanced students in the field of the major under the direction of a staff member.

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 pi-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: $40.

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 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 Programs, 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 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.

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

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 314. HISTORY OF SCIENCE **Three credits**
The development of science and technology and its effect upon the growth of civilization.

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 324. AMERICAN ECONOMIC HISTORY **Three credits**
A survey of the evolution of the American economy from colonial dependency to modern industrial maturity. Emphasis will be placed upon the development of the United States as an industrial world power since about 1850.

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

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 348. HISTORY OF RUSSIA **Three credits**
A study of the political, social, and intellectual history of Russia. Emphasis is placed upon the emergence of Russia as a major power after 1700.

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

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

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

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 undergraduates. 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, partial 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: Comp. Sci. 223/Engr. 245, or Comp. Sci. 224

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.

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. 330 COMPUTER ARCHITECTURE (Same as E.E. 346)
Three credits

A study of the design, organization, and structure of computers, ranging from the microprocessors to the latest "supercomputers."

Prerequisite: C.S. 322/Engr. 342.

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: $30.

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 Director of Graduate Programs. 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

Frank G. Bailey	Associate Professor of Physics Ph.D. (Polytechnic Institute of Brooklyn)
Bruce W. Brown	Assistant Professor of Sociology and Anthropology Ph.D. (New Hampshire)
Franck G. Darte, II	Professor of Education Ed.D. (Pennsylvania)
Christopher B. Fox	Assistant Professor of English Ph.D. (SUNY, Binghamton)
Wilbur F. Hayes	Associate Professor of Biology Ph.D. (Lehigh)
Brian T. Redmond	Instructor of Earth and Environmental Sciences M.S. (Michigan State)
Louis Rigley	Associate Professor of Biology Ph.D. (West Virginia)
Gerald E. Hartdagen	Dean of Academic Affairs Ph.D. (Northwestern)

Information on the graduate programs may be obtained by writing to:

John F. Meyers
Director of Graduate Programs
Wilkes College
Wilkes-Barre, Pennsylvania 18766

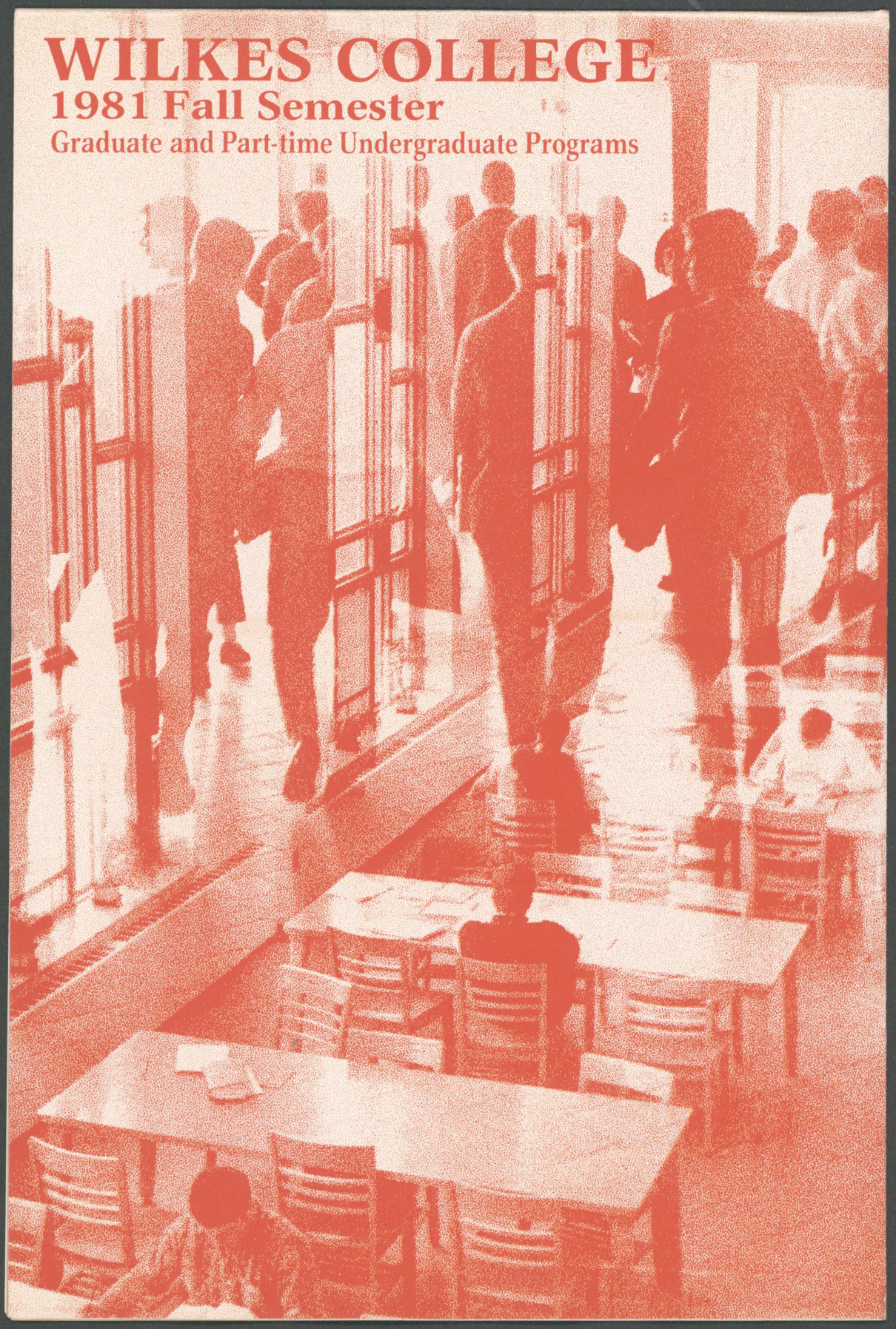
WILKES COLLEGE

Wilkes-Barre, Pa. 18766

WILKES COLLEGE

1981 Fall Semester

Graduate and Part-time Undergraduate Programs



WILKES COLLEGE FA

— GENERAL IN

Calendar for Fall Semester 1981

Registration for Evening College, Part-time and Graduate Students:

Thursday, Aug. 27 ..... 8:30 a.m. to 8:00 p.m.
Friday, Aug. 28 ..... 8:30 a.m. to 8:00 p.m.
Monday Aug. 31 ..... Classes begin at 8:00 a.m.
Friday, Oct. 16 ..... Fall recess begins at 5:00 p.m.
Wednesday, Oct. 21 ..... Classes resume at 8:00 a.m.
Tues., Nov. 24 .. Thanksgiving recess begins at 10:00 p.m.
Monday, Nov. 30 ..... Classes resume at 8:00 a.m.
Mon., Dec. 14 thru Tues., Dec. 22 ..... Final Examinations

Weekend College (at Keystone Junior College)

Sept. 11 to Dec. 13 (including Final Examinations)
Registration ..... September 11
(Weekender Office, La Plume, Pa.)
4:30-6:30 p.m.

Accreditation

Wilkes College is accredited by the Department of Public Instruction of the State of Pennsylvania and the Middle States Association of Colleges and Secondary Schools. The Chemistry curriculum has been certified by the American Chemical Society.

The 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 Office of Graduate and Part-time Undergraduate Programs, 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.

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.

Change Of Schedule

The College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. When possible, any change in the course schedule will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.

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The Graduate programs are approved by the Pennsylvania State Department of Education.

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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.

Degree Programs

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.

Bachelor of Arts:

- Art
- Biology
- Chemistry
- Communication Studies
- Computer Science
- Earth & Environmental Sciences
- Economics
- Elementary Education
- English
- Foreign Languages
- History
- Individualized Studies
- International Relations
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Social Science/Urban Affairs
- Sociology
- Sociology-Anthropology
- Theater Arts

Bachelor of Science:

- Biology
- Business Education
- Chemistry
- Commerce & Finance
  - (a) Accounting
  - (b) Business Administration
- Computer Science
- Earth & Environmental Sciences
- Engineering
- Mathematics
- Medical Technology
- Nursing
- Physics

Bachelor of Music

FALL SEMESTER 1981

L INFORMATION —

A "Certificate of Achievement" is available to undergraduate students in the field of Business Administration who earn 42 hours of credit in Evening College and Summer School programs with at least 24 hours in Business Administration and 18 hours in general education. Specific course requirements are available on request.

Expenses

All charges must be paid at the time registration forms are processed.

Undergraduate:

Undergraduate students who register for fewer than 12 credits pay $89 per credit.

Undergraduate students who register for 12 through 18 credits pay a flat tuition fee of $2100 per semester.

(Students who take more than 18 credits pay $140 for each credit above 18.)

Graduate:

All graduate students pay $120 per credit.

Financial Aid For Undergraduates

Part-time as well as full-time students have a variety of aid programs available to them, but students must make formal application to establish their eligibility. Therefore, ALL undergraduate students are urged to apply for Financial Aid. Forms for this purpose are available in the Financial Aid Office, lower level, Weckesser Hall. Inquiries about financial aid should be made to Mrs. Rachael Lohman, Director of Financial Aid. Information about Veterans' Benefits is available through the Veterans' Affairs Office, 2nd floor, Parrish Hall.

Library

The Eugene Shedden Farley Library is open to all Wilkes students. Students may borrow books from the Library by presenting their college identification cards. Hours are posted at the beginning of each academic session.

Withdrawal

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 who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, upon written request, according to the following schedule:

Financial Aid For Undergraduates

Part-time as well as full-time students have a variety of aid programs available to them, but students must make formal application to establish their eligibility. Therefore, ALL undergraduate students are urged to apply for Financial Aid. Forms for this purpose are available in the Financial Aid Office, lower level, Weckesser Hall. Inquiries about financial aid should be made to Mrs. Rachael Lohman, Director of Financial Aid. Information about Veterans' Benefits is available through the Veterans' Affairs Office, 2nd floor, Parrish Hall.

Library

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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 who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, upon written request, according to the following schedule:

Time of withdrawal	Tuition Refund
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Weekend College students who have paid their tuition in full and who withdraw from Weekend College classes will receive a refund of one-half of their tuition through the second weekend of classes, upon written request to the Director of Part-time Programs within this period. No refunds will be made after the second weekend of classes.

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

Information

For further information, write or call:

John F. Meyers, Director
Graduate & Part-time Undergraduate Programs
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380

REGISTRATION (Parrish Hall, Second Floor)

Thursday, August 27 ..... 8:30 a.m.-8:00 p.m.

Friday, August 28 ..... 8:30 a.m.-8:00 p.m.

Undergraduate Division

EVENING COLLEGE CLASSES

August 31 — December 22, 1981

Course	Description	Room	Day & Hour	Credits
ACCOUNTING:				
Acct. 101E1	Elementary Accounting I	Par. 35	M **6:30-9:30**	3
Acct. 101E2	Elementary Accounting I	Par. 35	W **6:30-9:30**	3
Acct. 102E1	Elementary Accounting II	Par. 35	Th **6:30-9:30**	3
Acct. 111E	Intermediate Accounting I	Par. 45	M **6:30-9:30**	3
Acct. 201E	Cost Accounting	Par. 35	Th **6:00-9:00**	3
Acct. 221E	Taxes I (Pre: Acct. 112 or approval of instructor)	Par. 45	W **6:00-9:00**	3
Acct. 231E	Auditing (Pre: Math 101-102 or equivalent sequence in mathematics)	Par. 45	T **6:30-9:30**	3
Acct. 241E	Advanced Accounting I (Pre: Acct. 112)	Par. 35	T **6:30-9:30**	3
AEROSPACE STUDIES:				
A.S. 101E1	U.S. Military Forces in the Contemporary World I	Library	Th **5:30-6:30**	1
A.S. 301B	Concepts of Management (Pre: POC membership)	Library	T Th **5:00-6:30**	3
ANTHROPOLOGY:				
Anth. 101E1	Introduction to Anthropology	SLC 380	W **6:30-9:30**	3
Anth. 392E1	Sociocultural Change (Pre: Soc 101 or Anth 101 or approval of instructor)	SLC 215	T **6:30-9:30**	3
ART:				
Art 101E1	Experiencing Art I	SLC 105	M **6:00-9:00**	3
Art 102E1	Experiencing Art II (Pre: Art 101)	SLC 115	W **6:00-9:00**	3
Art 245E1	Batik Fee: $10	SLC 105	W **6:00-9:00**	3
Art 310E	Topics in Art History: Modern Architecture	SLC 1	T **6:30-9:30**	3
BIOLOGY:				
Bio 101E1	Biological Science I	SLC 359	W **6:00-9:00**	3
Bio 398E1	Topics: Phycology	SLC 403	W **6:00-8:00**	1
BUSINESS ADMINISTRATION:				
B.A. 101E1	Introduction to Business	Par. 33	W **6:30-9:30**	3
B.A. 209E1	Business Correspondence and Reports	Par. 43	M **6:30-9:30**	3
B.A. 225E1	Managerial Finance	Par. 56	Th **6:00-9:00**	3
B.A. 231E1	Business Law-Introduction Contracts, and Sales	SLC 380	T **6:30-9:30**	3
B.A. 231E2	Business Law-Introduction	SLC 380	Th **6:30-9:30**	3
BUSINESS EDUCATION:				
B.Ed. 101E1	Elementary Typewriting Fee: $15	SLC 134	T Th **6:30-8:00**	3
B.Ed. 111E1	Elementary Shorthand	SLC 134	T Th **4:45-6:30**	3
B.Ed. 202E	Expert Typewriting Fee: $15	SLC 134	M W **6:30-8:00**	3
B.Ed. 211E	Advanced Shorthand	SLC 134	M W **4:45-6:30**	3
COMMUNICATION STUDIES:				
Comm. 211E1	Journalism: Basic News Writing Fee: $15 (Pre: Eng. 102)	Darte 101	M **6:30-9:30**	3
Comm. 245E1	Broadcast Management	Darte 101	W **6:30-9:30**	3
COMPUTER SCIENCE:				
C.S. 124E1	Cobol Programming Fee: $25	SLC 405	T Th **6:30-8:00**	3
EARTH & ENVIRONMENTAL SCIENCES:				
E.&E.S. 110E	Astronomy	SLC 318	W **6:00-8:00**	3
	Laboratory *E Fee: $20	SLC 435	W **8:00-10:00**	
E.&E.S. 230E	Ocean Science	SLC 411	T **6:00-8:00** Th **6:00-7:00**	4
	Laboratory *E Fee: $30	SLC 434	Th **7:00-9:00**	
E.&E.S. 398E	Topics: Urban Air — Quality Planning	SLC 411	M **6:30-9:30**	3
ECONOMICS:				
Econ. 101E1	Principles of Economics I	Par. 56	W **6:30-9:30**	3
Econ. 101E2	Principles of Economics I	SLC 318	Th **6:30-9:30**	3
Econ. 102E	Principles of Economics II	SLC 318	M **6:30-9:30**	3
Econ. 201E	Money & Banking	Par. 33	W **6:30-9:30**	3
Econ. 223E1	Collective Bargaining	Par. 56	M **6:00-9:00**	3
Econ. 225E	International Trade	Par. 43	Th **6:30-9:30**	3
Econ. 227E	Economic Geography of North America, Europe & the Soviet Union	WA	M **6:30-9:30**	3
Econ. 231E1	Applied General Statistics Fee: $20	Par. 33	Th **6:30-9:30**	3
Econ. 241E1	Microeconomics I	Par. 43	T **6:30-9:30**	3
EDUCATION:				
Ed. 203I	Special Methods of Teaching Sciences (Grades 7-12)	TBA	T Th **4:30-6:00**	3
Ed. 351E	Educational Measurements (Pre: Ed. 202)	SLC 424	Th **6:00-9:00**	3
Ed. 398E	Topics in Education: Futuristics (Methods of Studying the Future)	SLC 311	T **6:00-9:00**	3
ENGINEERING:				
Engr. 283E1	Engineering Measurement Lab I	SLC 20	T **5:00-7:00**	1
E.E. 331E1	Electromagnetics I	SLC 147	M **6:00-9:00**	4
	Laboratory Fee: $20 (Pre: Math. 212, Phys. 202)	SLC 125	W **6:00-9:00**	
E.E. 398E1	Topics in Electrical Engineering: Power Systems (Pre: Junior or Senior Standing)	SLC 222	M W **4:30-6:00**	3
Ma.E. 210E1	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 409	T **6:30-9:30**	3
Eng. 151E1	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	SLC 127	T **6:30-9:30**	3
Eng. 151E2	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	SLC 334	W **6:30-9:30**	3
Eng. 203E	Creative Writing (Pre: Eng. 102)	SLC 204	M **6:30-9:30**	3
Eng. 341E	Restoration & Eighteenth Century Drama (Pre: Eng. 152 or 254)	SLC 215	Th **6:30-9:30**	3
Eng. 360E	Victorian Prose & Poetry: Love, Death & the Disappearance of God (Pre: Eng. 152 or 254)	SLC 424	T **6:30-9:30**	3
Eng. 398E	Topics: Greek Myth in Classical Literature	SLC 215	W **6:30-9:30**	3
FRENCH:				
Fr. 101E	Elementary French I	SLC 204	W **6:30-9:30**	3
HISTORY:				
Hist. 101E1	World Civilization I	SLC 316	T **6:30-9:30**	3
Hist. 101E2	World Civilization I	SLC 316	Th **6:30-9:30**	3
Hist. 102E1	World Civilization II	SLC 316	W **6:30-9:30**	3
Hist. 102E2	World Civilization II	SLC 316	M **6:30-9:30**	3
Hist. 321E1	American Social & Intellectual History I	SLC 209	W **6:30-9:30**	3
Hist. 382E1	History of Latin America	SLC 209	Th **6:30-9:30**	3
Hist. 398E1	Topics: United States Since 1945	SLC 215	M **6:30-9:30**	3
MUSIC:				
Mus. 101E1	Introduction to Music I	Darte 202	T **6:30-9:30**	3
NURSING:				
Nsg. 298E	Topics in Nursing: Medical Terminology	SLC 311	M **5:00-6:00**	1
Nsg. 298E1	Topics in Nursing:	SLC 204	T **6:00-9:00**	3
Nsg. 398E1	Topics in Nursing: Physical Assessment (Pre: Limited to registered nurses)	SLC 311	Th **6:00-9:00**	3
PHILOSOPHY:				
Phil. 101E1	Introduction to Philosophy	SLC 207	T Th **6:30-8:00**	3
Phil. 152E1	Introduction to Logic	SLC 207	W **6:30-9:30**	3

Thursday, August 27 ..... 8:30 a.m.-8:00 p.m.
Friday, August 28 ..... 8:30 a.m.-8:00 p.m.

Division

8:30

EVENING COLLEGE CLASSES

August 31 — December 22, 1981

Course	Description	Room	Day & Hour	Credits
ACCOUNTING:				
Acct. 101E1	Elementary Accounting I	Par. 35	M **6:30-9:30**	3
Acct. 101E2	Elementary Accounting I	Par. 35	W **6:30-9:30**	3
Acct. 102E1	Elementary Accounting II	Par. 35	Th **6:30-9:30**	3
Acct. 111E	Intermediate Accounting I	Par. 45	M **6:30-9:30**	3
Acct. 201E	Cost Accounting	Par. 35	Th **6:00-9:00**	3
Acct. 221E	Taxes I (Pre: Acct. 112 or approval of instructor)	Par. 45	W **6:00-9:00**	3
Acct. 231E	Auditing (Pre: Math 101-102 or equivalent sequence in mathematics)	Par. 45	T **6:30-9:30**	3
Acct. 241E	Advanced Accounting I (Pre: Acct. 112)	Par. 35	T **6:30-9:30**	3
AEROSPACE STUDIES:				
A.S. 101E1	U.S. Military Forces in the Contemporary World I	Library	Th **5:30-6:30**	1
A.S. 301B	Concepts of Management (Pre: POC membership)	Library	T Th **5:00-6:30**	3
ANTHROPOLOGY:				
Anth. 101E1	Introduction to Anthropology	SLC 380	W **6:30-9:30**	3
Anth. 392E1	Sociocultural Change (Pre: Soc 101 or Anth 101 or approval of instructor)	SLC 215	T **6:30-9:30**	3
ART:				
Art 101E1	Experiencing Art I	SLC 105	M **6:00-9:00**	3
Art 102E1	Experiencing Art II (Pre: Art 101)	SLC 115	W **6:00-9:00**	3
Art 245E1	Batik Fee: $10	SLC 105	W **6:00-9:00**	3
Art 310E	Topics in Art History: Modern Architecture	SLC 1	T **6:30-9:30**	3
BIOLOGY:				
Bio 101E1	Biological Science I	SLC 359	W **6:00-9:00**	3
Bio 398E1	Topics: Phycology	SLC 403	W **6:00-8:00**	1
BUSINESS ADMINISTRATION:				
B.A. 101E1	Introduction to Business	Par. 33	W **6:30-9:30**	3
B.A. 209E1	Business Correspondence and Reports	Par. 43	M **6:30-9:30**	3
B.A. 225E1	Managerial Finance	Par. 56	Th **6:00-9:00**	3
B.A. 231E1	Business Law-Introduction Contracts, and Sales	SLC 380	T **6:30-9:30**	3
B.A. 231E2	Business Law-Introduction, Contracts, and Sales	SLC 380	Th **6:30-9:30**	3
B.A. 241E1	Life Insurance	Par. 53	Th **6:30-9:30**	3
B.A. 251E1	Principles of Management	WA	Th **6:30-9:30**	3
B.A. 261E1	Principles of Retailing	Par. 53	M **6:00-9:00**	3
B.A. 398E	Topics: Market Research	SLC 209	T **6:30-9:30**	3

Course	Description	Room	Day & Hour	Credits
BUSINESS EDUCATION:				
B.Ed. 101E1	Elementary Typewriting Fee: $15	SLC 134	T Th **6:30-8:00**	3
B.Ed. 111E1	Elementary Shorthand	SLC 134	T Th **4:45-6:30**	3
B.Ed. 202E	Expert Typewriting Fee: $15	SLC 134	M W **6:30-8:00**	3
B.Ed. 211E	Advanced Shorthand	SLC 134	M W **4:45-6:30**	3
COMMUNICATION STUDIES:				
Comm. 211E1	Journalism: Basic News Writing Fee: $15 (Pre: Eng. 102)	Darte 101	M **6:30-9:30**	3
Comm. 245E1	Broadcast Management	Darte 101	W **6:30-9:30**	3
COMPUTER SCIENCE:				
C.S. 124E1	Cobol Programming Fee: $25	SLC 405	T Th **6:30-8:00**	3
EARTH & ENVIRONMENTAL SCIENCES:				
E.&E.S. 110E	Astronomy	SLC 318	W **6:00-8:00**	3
	Laboratory *E Fee: $20	SLC 435	W **8:00-10:00**	
E.&E.S. 230E	Ocean Science	SLC 411	T **6:00-8:00** Th **6:00-7:00**	4
	Laboratory *E Fee: $30	SLC 434	Th **7:00-9:00**	
E.&E.S. 398E	Topics: Urban Air — Quality Planning	SLC 411	M **6:30-9:30**	3
ECONOMICS:				
Econ. 101E1	Principles of Economics I	Par. 56	W **6:30-9:30**	3
Econ. 101E2	Principles of Economics I	SLC 318	Th **6:30-9:30**	3
Econ. 102E	Principles of Economics II	SLC 318	M **6:30-9:30**	3
Econ. 201E	Money & Banking	Par. 33	W **6:30-9:30**	3
Econ. 223E1	Collective Bargaining	Par. 56	M **6:00-9:00**	3
Econ. 225E	International Trade	Par. 43	Th **6:30-9:30**	3
Econ. 227E	Economic Geography of North America, Europe & the Soviet Union	WA	M **6:30-9:30**	3
Econ. 231E1	Applied General Statistics Fee: $20	Par. 33	Th **6:30-9:30**	3
Econ. 241E1	Microeconomics I	Par. 43	T **6:30-9:30**	3
EDUCATION:				
Ed. 203I	Special Methods of Teaching Sciences (Grades 7-12)	TBA	T Th **4:30-6:00**	3
Ed. 351E	Educational Measurements (Pre: Ed. 202)	SLC 424	Th **6:00-9:00**	3
Ed. 398E	Topics in Education: Futuristics (Methods of Studying the Future)	SLC 311	T **6:00-9:00**	3
ENGINEERING:				
Engr. 283E1	Engineering Measurement Lab I Fee: $20	SLC 20	T **5:00-7:00**	1
E.E. 211E1	Circuit Theory I (Pre: Math. 112)	SLC 270	M W **5:30-7:00**	3
E.E. 253E1	Electronic Laboratory I Fee: $25 (Pre: To be taken along with or after E.E. 251)	SLC 125	T **5:30-8:30**	1
E.E. 331E1	Electromagnetics I	SLC 147	M **6:00-9:00**	4
	Laboratory Fee: $20 (Pre: Math. 212, Phys. 202)	SLC 125	W **6:00-9:00**	
E.E. 398E1	Topics in Electrical Engineering: Power Systems (Pre: Junior or Senior Standing)	SLC 222	M W **4:30-6:00**	3
Ma.E. 210E1	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 409	T **6:30-9:30**	3
Eng. 151E1	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	SLC 127	T **6:30-9:30**	3
Eng. 151E2	Western World Literature I (Pre: Eng. 102 or equivalent in composition)	SLC 334	W **6:30-9:30**	3
Eng. 203E	Creative Writing (Pre: Eng. 102)	SLC 204	M **6:30-9:30**	3
Eng. 341E	Restoration & Eighteenth Century Drama (Pre: Eng. 152 or 254)	SLC 215	Th **6:30-9:30**	3
Eng. 360E	Victorian Prose & Poetry: Love, Death & the Disappearance of God (Pre: Eng. 152 or 254)	SLC 424	T **6:30-9:30**	3
Eng. 398E	Topics: Greek Myth in Classical Literature	SLC 215	W **6:30-9:30**	3
FRENCH:				
Fr. 101E	Elementary French I	SLC 204	W **6:30-9:30**	3
HISTORY:				
Hist. 101E1	World Civilization I	SLC 316	T **6:30-9:30**	3
Hist. 101E2	World Civilization I	SLC 316	Th **6:30-9:30**	3
Hist. 102E1	World Civilization II	SLC 316	W **6:30-9:30**	3
Hist. 102E2	World Civilization II	SLC 316	M **6:30-9:30**	3
Hist. 321E1	American Social & Intellectual History I	SLC 209	W **6:30-9:30**	3
Hist. 382E1	History of Latin America	SLC 209	Th **6:30-9:30**	3
Hist. 398E1	Topics: United States Since 1945	SLC 215	M **6:30-9:30**	3
MUSIC:				
Mus. 101E1	Introduction to Music I	Darte 202	T **6:30-9:30**	3
NURSING:				
Nsg. 298E	Topics in Nursing: Medical Terminology	SLC 311	M **5:00-6:00**	1
Nsg. 298E1	Topics in Nursing:	SLC 204	T **6:00-9:00**	3
Nsg. 398E1	Topics in Nursing: Physical Assessment (Pre: Limited to registered nurses)	SLC 311	Th **6:00-9:00**	3
PHILOSOPHY:				
Phil. 101E1	Introduction to Philosophy	SLC 207	T Th **6:30-8:00**	3
Phil. 152E1	Introduction to Logic	SLC 207	W **6:30-9:30**	3
Phil. 220E1	Philosophy of Religion (Pre: Phil. 101 or 201)	SLC 207	M **6:30-9:30**	3
PHYSICS:				
Phys. 101E1	Physical Science I	SLC 166	Th **6:30-9:30**	3
Phys. 331E	Electricity & Magnetism	SLC 147	M **6:00-9:00**	4
	Laboratory E1 Fee: $20 (Pre: Phys. 202 and Math. 212)	SLC 125	W **6:00-9:00**	

graduate
ision

EARLY REGISTRATION WILL BE ACCEPTED

8:30 A.M.-4:30 P.M. AFTER AUGUST 3, 1981

Course	Description	Room	Day & Hour	Credits
E.E. 331E1	Electromagnetics I	SLC 147	M **6:00-9:00**	4
	Laboratory	SLC 125	W **6:00-9:00**	
	Fee: $20			
	(Pre: Math. 212, Phys. 202)			
E.E. 398E1	Topics in Electrical Engineering: Power Systems	SLC 222	M W **4:30-6:00**	3
	(Pre: Junior or Senior Standing)			
Ma.E. 210E1	Introduction to Materials Science	SLC 403	T Th **5:30-7:00**	3
	(Pre: Engr. 231 or Phys. 201)			
ENGLISH:				
Eng. 101E1	Composition I	SLC 409	T **6:30-9:30**	3
Eng. 151E1	Western World Literature I	SLC 127	T **6:30-9:30**	3
	(Pre: Eng. 102 or equivalent in composition)			
Eng. 151E2	Western World Literature I	SLC 334	W **6:30-9:30**	3
	(Pre: Eng. 102 or equivalent in composition)			
Eng. 203E	Creative Writing	SLC 204	M **6:30-9:30**	3
	(Pre: Eng. 102)			
Eng. 341E	Restoration & Eighteenth Century Drama	SLC 215	Th **6:30-9:30**	3
	(Pre: Eng. 152 or 254)			
Eng. 360E	Victorian Prose & Poetry: Love, Death & the Disappearance of God	SLC 424	T **6:30-9:30**	3
	(Pre: Eng. 152 or 254)			
Eng. 398E	Topics: Greek Myth in Classical Literature	SLC 215	W **6:30-9:30**	3
FRENCH:				
Fr. 101E	Elementary French I	SLC 204	W **6:30-9:30**	3
HISTORY:				
Hist. 101E1	World Civilization I	SLC 316	T **6:30-9:30**	3
Hist. 101E2	World Civilization I	SLC 316	Th **6:30-9:30**	3
Hist. 102E1	World Civilization II	SLC 316	W **6:30-9:30**	3
Hist. 102E2	World Civilization II	SLC 316	M **6:30-9:30**	3
Hist. 321E1	American Social & Intellectual History I	SLC 209	W **6:30-9:30**	3
Hist. 382E1	History of Latin America	SLC 209	Th **6:30-9:30**	3
Hist. 398E1	Topics: United States Since 1945	SLC 215	M **6:30-9:30**	3
MUSIC:				
Mus. 101E1	Introduction to Music I	Darte 202	T **6:30-9:30**	3
NURSING:				
Nsg. 298E	Topics in Nursing: Medical Terminology	SLC 311	M **5:00-6:00**	1
Nsg. 298E1	Topics in Nursing:	SLC 204	T **6:00-9:00**	3
Nsg. 398E1	Topics in Nursing: Physical Assessment	SLC 311	Th **6:00-9:00**	3
	(Pre: Limited to registered nurses)			
PHILOSOPHY:				
Phil. 101E1	Introduction to Philosophy	SLC 207	T Th **6:30-8:00**	3
Phil. 152E1	Introduction to Logic	SLC 207	W **6:30-9:30**	3
Phil. 220E1	Philosophy of Religion	SLC 207	M **6:30-9:30**	3
	(Pre: Phil. 101 or 201)			
PHYSICS:				
Phys. 101E1	Physical Science I	SLC 166	Th **6:30-9:30**	3
Phys. 331E	Electricity & Magnetism	SLC 147	M **6:00-9:00**	4
	Laboratory E1	SLC 125	W **6:00-9:00**	
	Fee: $20			

Course	Description	Room	Day & Hour	Credits
POLITICAL SCIENCE:				
P.S. 102E	Introduction to American Politics	SLC 380	M **6:30-9:30**	3
P.S. 318E	Public Personnel Administration	SLC 318	T **6:30-9:30**	3
	(Pre: P.S. 102 or consent of instructor)			
P.S. 398E1	Topics in Political Science: History of Latin America	SLC 209	Th **6:30-9:30**	3
	(Pre: Permission of Department Chairman)			
PSYCHOLOGY:				
Psy. 101E1	General Psychology I	SLC 334	Th **6:30-9:30**	3
Psy. 398E1	Topics in Psychology: Exceptional Child	SLC 347	M **6:30-9:30**	3
SOCIOLOGY:				
Soc. 101E1	Introduction to Sociology	SLC 127	W **6:30-9:30**	3
Soc. 200E1	The Family	SLC 127	M **6:30-9:30**	3
	(Pre: Soc. 101 or Anth. 101 or approval of instructor)			
Soc. 251E1	Fields of Social Work	SLC 270	Th **6:30-9:30**	3
	(Pre: Soc. 101 or Anth. 101 or Psy. 101-102 or approval of instructor)			
Soc. 398E1	Topics: Sex Roles	SLC 311	W **6:30-9:30**	3
SPANISH:				
Span. 101E	Elementary Spanish I	SLC 209	M **6:30-9:30**	3
Span. 101E2	Elementary Spanish I	Kirby 302	M **6:30-9:30**	3
SPEECH:				
Spch. 101E	Fundamentals of Speech	Darte 101	T **6:30-9:30**	3

WEEKEND COLLEGE CLASSES

September 11 — December 13, 1981

on the Campus of Keystone Junior College
LaPlume, Pennsylvania — September 11-December 13

Calendar — Fall Semester, 1981

September	**11, 12, 13**
October	**2, 3, 4,**
	16, 17, 18
November	**6, 7, 8,**
	20, 21, 22
December	**11, 12, 13**

Unless otherwise indicated, all courses in the Weekend College meet according to the following schedule:

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

Schedule A	**Schedule B**	**Schedule C**
Fri. **6:30-8:30**	Sat. 8:00-10:00	Sat. **6:00-8:00**
Sat. 10:10-**12:10**	Sat. **1:00-3:00**	Sun. 8:00-10:00
Sat. **3:10-5:10**	Sun. 10:10-**12:10**	Sun. **1:00-3:00**

Course	Description	Room	Day & Hour	Credits

B.A. 251E1	Principles of Management	WA	Th **6:30-9:30**	3
B.A. 261E1	Principles of Retailing	Par. 53	M **6:00-9:00**	3
B.A. 398E	Topics: Market Research	SLC 209	T **6:30-9:30**	3

E.E. 253E1	Electronic Laboratory I Fee: $25 (Pre: To be taken along with or after E.E. 251)	SLC 125	T **5:30-8:30**	1

PHYSICS:

Phys. 101E1	Physical Science I	SLC 166	Th **6:30-9:30**	3
Phys. 331E	Electricity & Magnetism	SLC 147	M **6:00-9:00**	4
	Laboratory E1 Fee: $20 (Pre: Phys. 202 and Math. 212)	SLC 125	W **6:00-9:00**	

Graduate Division

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Instructor
BIOLOGY:				
Bio. 301A	General Botany	SLC 380	T Th **1:00-2:00**	Siver
	Laboratory A1 Fee: $30 (Pre: Bio 201-208 or permission of instructor)	SLC 349	F 8:00-11:00	
Bio 303A	Bacteriology	SLC 359	W F 11:00-12:00	Doty
	Laboratory A1 Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 305	F **2:00-5:00**	
Bio 304A	Vertebrate Life	SLC 380	M W **1:00-2:00**	Rigley
	Laboratory A1 Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 349	T **2:00-5:00**	
Bio. 307A	Analytical Cytology	SLC 380	T Th 9:00-10:00	Ogren
	Laboratory A1 Fee: $30 (Pre: Bio 201-208 or permission of instructor)	SLC 377	W 8:00-11:00	
Bio. 312A	Comparative Physiology	SLC 380	M W 9:00-10:00	Hayes
	Laboratory A1 Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 377	W **2:00-5:00**	
BUSINESS ADMINISTRATION:				
Acct. 503E	Managerial Accounting	SLC 127	Th **6:30-9:30**	B. Williams
Acct. 504E	Accounting Theory&Thought	Par. 33	T **6:00-9:00**	Broadt
Acct. 543E	Accounting Policies & Practices	SLC 147	Th **6:30-9:30**	Moran
B.A. 502E	Management Science	Par. 56	T **6:00-9:00**	Engel
B.A. 502E2	Management Science	SLC 409	W **6:00-9:00**	Engel
B.A. 522E	Quantitative Aspects of Management	Par. 54	W **6:00-9:00**	H. Williams
B.A. 550A	Topics: Techniques of Work Measurement, Simplification, and Performance Appraisal	Par. 53	W **6:30-9:30**	Chmiola
B.A. 550B	Topics: Contemporary Marketing Management Problems	Par. 54	Th **6:00-9:00**	Lewis
B.A. 550C	Topics: SBA	TBA	TBA	Chmiola
B.A. 550D	Topics: Pension Administration	Par. 53	T **6:30-9:30**	Farrar
Econ. 505E	Managerial Statistics	Par. 33	M **6:00-9:00**	H. Williams
Econ. 506E	Labor-Management Economics	Par. 43	W **6:00-9:00**	Werner
Econ. 511E	Modern International Commerce	Par. 54	T **6:30-9:30**	Taylor

Course	Description	Room	Day & Hour	Instructor
CHEMISTRY:				
Chem. 325A	Advanced Inorganic Chemistry (Pre: Chem. 231 and 252)	SLC 215	M W F **12:00-1:00**	Staff
Chem. 335A	Advanced Organic Chemistry (Pre: Chem. 231 and 252)	TBA	TBA	Staff
Chem. 361A	Biochemistry I (Pre: Chem. 232)	SLC 270	T Th **1:00-2:30**	Stine
Chem. 398A	Topics:	TBA	TBA	TBA
COMPUTER SCIENCE:				
C.S. 320A	Logic & Switching Circuits (Pre: EE 211 or Phys. 202)	SLC 318	T Th 9:30-11:00	Koch
C.S. 324A	Systems Analysis (Pre: C.S. 224)	SLC 403	T Th **1:00-2:30**	Tillman
C.S. 326A	Operating System Principles (Pre: C.S. 227/EE 343)	SLC 403	T Th 8:00-9:30	Parker
EDUCATION:				
Educ. 510E	Psychological Foundations of Education	SLC 160	M **6:00-9:00**	Staff
Educ. 511E	Philosophical Foundations of Education	SLC 160	W **6:00-9:00**	Fahmy
Educ. 520E	Tests & Measurements	SLC 424	Th **6:00-9:00**	Bellucci
Educ. 526E	Educational Research II	SLC 133	W **6:00-9:00**	Staff
Educ. 536E	Elementary School Reading Instruction	SLC 147	T **6:00-9:00**	Scapatticci
Educ. 537E	Reading Disabilities	SLC 160	Th **6:00-9:00**	Scapatticci
Educ. 598P1	Topics: Project Teach	TBA	TBA	Staff
Educ. 598P2	Topics: Project Pride	TBA	TBA	Staff
ENGLISH:				
Eng. 312A	Chaucer	DDD 220	M W F **2:00-3:00**	Fiester
Eng. 341E	Restoration & Eighteenth Century Drama	SLC 215	Th **6:30-9:30**	Fox
Eng. 345A	Early English Novel	DDD 220	M W F **12:00-1:00**	Terry
Eng. 381A	American Literature I	DDD 220	M W F 11-12	Gutin
Eng. 397A	Seminar-Renaissance Humanism: The Tradition and the Heritage	SLC 215	T Th 9:30-11:00	Kaska
Eng. 398A	Topics: Images of Alienation in 20th Century Literature	SLC 215	M W **3:00-4:30**	Schulman
Eng. 398E	Topics: Greek Myth in Classical Literature	SLC 215	W **6:30-9:30**	Rizzo
Eng. 450E	Victorian Prose & Poetry: Love, Death, & the Disappearance of God	SLC 424	T **6:30-9:30**	R. Heaman

Course	Description	Room	Day & Hour	Instructor
HISTORY:				
Hist. 321E	American Social and Intellectual History I	SLC 209	W **6:30-9:30**	Rodechko
Hist. 351A	Medieval Europe	SLC 215	M W F 11-12	Berg
Hist. 353A	Age of Absolutism	SLC 311	MWF 10-11	Berlatsky
Hist. 363A	History of Modern China	SLC 147	T Th **1:00-2:30**	Shao
Hist. 382E1	History of Latin America	SLC 209	Th **6:30-9:30**	Freysinger
Hist. 398E1	Topics: U.S. Since 1945	SLC 215	M **6:30-9:30**	Cox
MATHEMATICS:				
Math. 311A	Functions of a Real Variable	SLC 409	M W F 8:00-9:00	Sours
Math. 334A	Linear Algebra	SLC 424	M W F 9-10	Wong
Math. 351A	Probability and Mathematical Statistics I	SLC 403	MWF **2:00-3:00**	Richards
Math. 361A	Introduction to Applied Mathematics I	SLC 403	MWF 11-12	DeCosmo
PHYSICS:				
Phys. 311A	Mechanics I	SLC 147	T Th 9:30-11	Donahoe
Phys. 320A	Electronic Instrumentation for the Life and Behavioral Sciences Fee: $25	SLC 161	T **2:00-5:00** Th **3:00-5:00**	Staff
Phys. 321A	Electronic Instrumentation for the Physical Sciences Fee: $25	SLC 161	T **2:00-5:00** Th **3:00-5:00**	Staff
Phys. 331A	Electricity & Magnetism	SLC 166	M W F **1:00-2:00**	Hostler
Phys. 331A1	Lab	SLC 125	T **2:00-5:00**	Aston
Phys. 331A2	Lab Fee: $25	SLC 125	Th **2:00-5:00**	Aston
Phys. 331E	Electricity & Magnetism	SLC 147	M **6:00-9:00**	Hostler
Phys. 331E1	Lab Fee: $25	SLC 125	W **6:00-9:00**	Hostler
Phys. 351A	Quantum Mechanics	SLC 147	M T Th 8:00-9:00	Bellas
Phys. 361A	Atomic Physics	SLC 42	M W Th 9-10	Bailey
Phys. 361A1	Lab Fee: $25	SLC 42	T **2:00-5:00**	Bailey

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Wilkes College

Fri. 6:30-8:30	Sat. 8:00-10:00	Sat. **6:00-8:00**
Sat. 10:10-**12:10**	Sat. **1:00-3:00**	Sun. 8:00-10:00
Sat. **3:10-5:10**	Sun. 10:10-**12:10**	Sun. **1:00-3:00**

Course	Description	Room	Day & Hour	Credits
ACCOUNTING:				
Acct. 241W	Advanced Accounting I (Pre: Acct. 112)	TBA	C	3
EARTH & ENVIRONMENTAL SCIENCES:				
E.&E.S. 135W	World Physical Geography Fee: $20	TBA	C	3
ECONOMICS:				
Econ. 101W	Principles of Economics I	TBA	A	3
Econ. 228W	Economic Geography of Asia, Africa, and the Soviet Union	TBA	B	3
Econ. 231W*	Applied General Statistics Fee: $20 *Fridays, 8:30-10:30 p.m. mandatory discussion section	TBA	A	3
ENGLISH:				
Eng. 151W	Western World Literature I (Pre: Eng. 102 or equivalent in Composition)	TBA	C	3
HISTORY:				
Hist. 398W	Topics: World War II	TBA	A	3
PHYSICS:				
Phys. 101W	Physical Science I	TBA	B	3
POLITICAL SCIENCE:				
P.S. 218W	Introduction to Public Administration (Pre: P.S. 102 or consent of instructor)	TBA	B	3
PSYCHOLOGY:				
Psych. 331W	Abnormal Psychology (Pre: Psych 232)	TBA	A	3
Psych. 398W	Topics: Sleep & Dreaming	TBA	C	3
SOCIOLOGY:				
Soc. 275W	Sociology of Minorities (Pre: Soc. 101 or Anth. 101 or approval of instructor)	TBA	B	3

DAY CLASSES

August 31 – December 22, 1981

Part-time students interested in day-school classes should contact the Office of Part-time Undergraduate Programs.

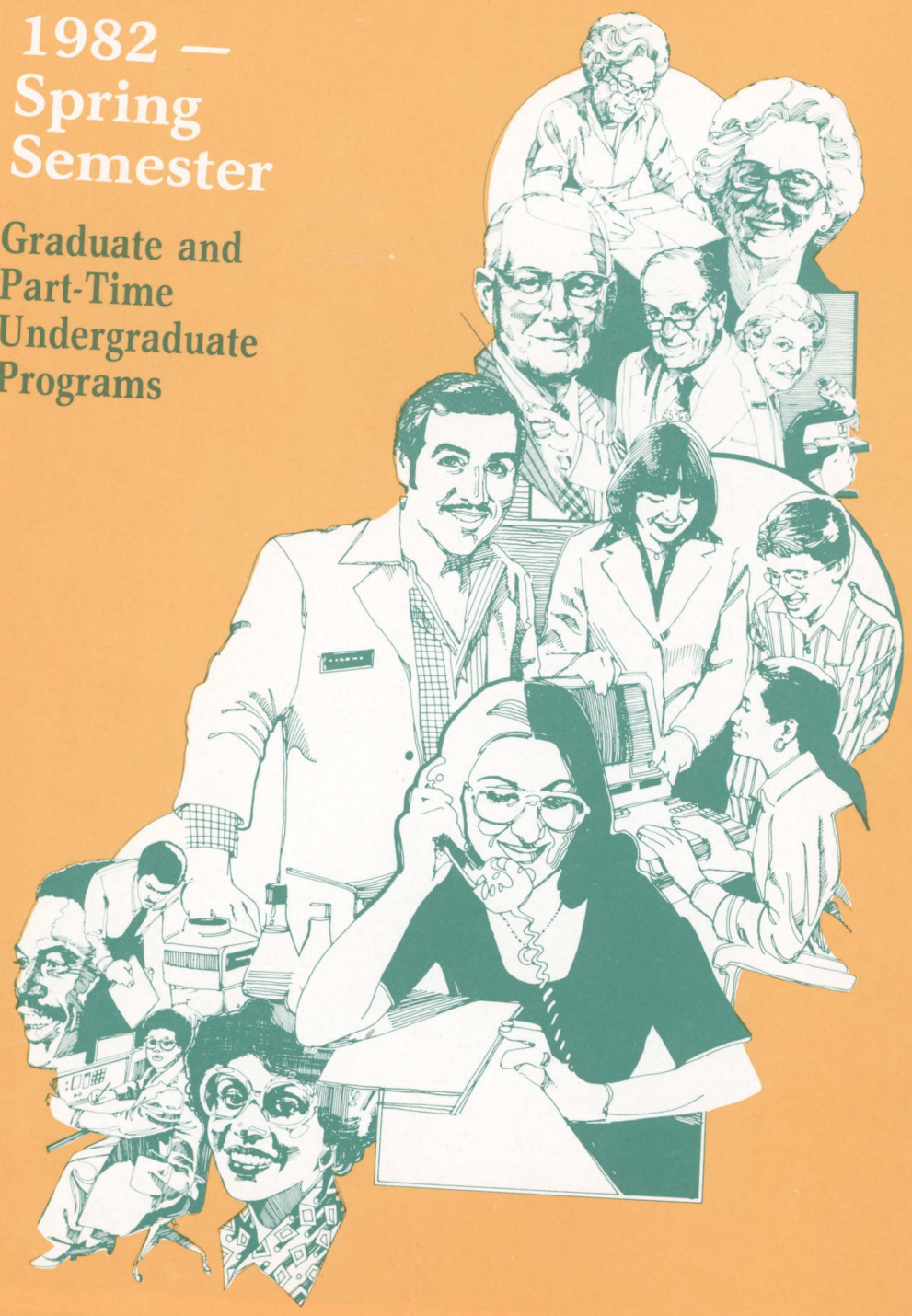
For further information, contact:

JOHN F. MEYERS, *Director*
Graduate and Part-Time
Undergraduate Programs
WILKES COLLEGE
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380

WILKES COLLEGE

1982 — Spring Semester

Graduate and Part-Time Undergraduate Programs



WILKES COLLEGE SPR

— GENERAL IN

Calendar for Spring Semester 1982

Thursday, Jan. 14 . . . . . Registration 8:30 a.m. to 8:00 p.m.
Friday, Jan. 15 . . . . . Registration 8:30 a.m. to 8:00 p.m.
Monday, Jan. 18 . . . . . Classes begin at 8:00 a.m.
Friday, March 5 . . . . . Spring recess begins at 5:00 p.m.
Monday, March 15 . . . . . Classes resume at 8:00 a.m.
Thursday, April 8 . . . . . Easter recess begins at 10:00 p.m.
Tuesday, April 13 . . . . . Classes resume at 8:00 a.m.
*Tuesday, May 4 . . . . . Classes end
Friday, May 7, thru Saturday, May 15 . . . . . Final Examinations
*Tuesday, May 4, follows the Friday schedule.

Weekend College (at Keystone Junior College)

January 8 to April 25 (including Final Examinations)
Registration . . . . . January 8
(Weekender Office, La Plume, Pa.)
4:30-6:30 p.m.

Accreditation

Wilkes College is accredited by the Department of Public Instruction of the State of Pennsylvania and the Middle States Association of Colleges and Secondary Schools. The Chemistry curriculum has been certified by the American Chemical Society.

The Graduate programs are approved by the Pennsylvania State Department of Education.

Admissions

Application for admission to Wilkes College as a part-time (evening college, weekend college, or day-school) or graduate student should be made to the Office of Graduate and Part-time Undergraduate Programs, 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.

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.

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.

Colleges and Secondary Schools. The Chemistry curriculum has been certified by the American Chemical Society.

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Degree Programs

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.

Bachelor of Arts:

- Art
- Biology
- Chemistry
- Communication Studies
- Computer Science
- Earth & Environmental Sciences
- Economics
- Elementary Education
- English
- Foreign Languages
- History
- Individualized Studies
- International Relations
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Social Science/Urban Affairs
- Sociology
- Sociology-Anthropology
- Theater Arts

Bachelor of Science:

- Biology
- Business Education
- Chemistry
- Commerce & Finance
  - (a) Accounting
  - (b) Business Administration
- Computer Science
- Earth & Environmental Sciences
- Engineering
- Mathematics
- Medical Technology
- Nursing
- Physics

Bachelor of Music

RING SEMESTER 1982

INFORMATION —

A "Certificate of Achievement" is available to undergraduate students in the field of Business Administration who earn 42 hours of credit in Evening College and Summer School programs with at least 24 hours in Business Administration and 18 hours in general education. Specific course requirements are available on request.

Expenses

All charges must be paid at the time registration forms are processed.

Undergraduate:

Undergraduate students who register for fewer than 12 credits pay $89 per credit.

Undergraduate students who register for 12 through 18 credits pay a flat tuition fee of $2100 per semester.

(Students who take more than 18 credits pay $140 for each credit above 18.)

Graduate:

All graduate students pay $120 per credit.

Financial Aid For Undergraduates

Part-time as well as full-time students have a variety of aid programs available to them, but students must make formal application to establish their eligibility. Therefore, ALL undergraduate students are urged to apply for Financial Aid. Forms for this purpose are available in the Financial Aid Office, lower level, Weckesser Hall. Inquiries about financial aid should be made to Mrs. Rachael Lohman, Director of Financial Aid. Information about Veterans' Benefits is available through the Veterans' Affairs Office, 2nd floor, Parrish Hall.

Library

The Eugene Shedden Farley Library is open to all Wilkes students. Students may borrow books from the Library by presenting their college identification cards. Hours are posted at the beginning of each academic session.

Withdrawal

A 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 who have paid their tuition in full and who withdraw from

Financial Aid For Undergraduates

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Students who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, **upon written request to the Comptroller's Office,** according to the following schedule:

Time of withdrawal	**Tuition Refund**
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Weekend College students who have paid their tuition in full and who withdraw from Weekend College classes will receive a refund of one-half of their tuition through the second weekend of classes, **upon written request to the Comptroller's Office** within this period. No refunds will be made after the second weekend of classes.

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

Information

For further information, write or call:

John F. Meyers, Director
Graduate & Part-time Undergraduate Programs
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380

Undergraduate Division

REGISTRATION (Parrish Hall, Second Floor)

Thursday, January 14 ..... 8:30 a.m.-8:00 p.m.

Friday, January 15 ..... 8:30 a.m.-8:00 p.m.

EVENING COLLEGE CLASSES

January 18 — May 15, 1982

Course	Description	Room	Day & Hour	Credits
ACCOUNTING:				
Acct. 101E1	Elementary Accounting I	Par. 35	Th **6:30-9:30**	3
Acct. 102E1	Elementary Accounting II (Pre: No day-school students)	Par. 35	M **6:00-9:00**	3
Acct. 102E2	Elementary Accounting II	Par. 35	W **6:30-9:30**	3
Acct. 112E1	Intermediate Accounting II	Par. 45	M **6:30-9:30**	3
Acct. 204E1	Managerial Accounting	Par. 45	Th **6:00-9:00**	3
Acct. 222E1	Taxes II (Pre: Acct. 221)	Par. 45	W **6:00-9:00**	3
Acct. 242E1	Advanced Accounting II (Pre: Acct. 241 and permission of instructor)	Par. 35	T **6:00-9:00**	3
Acct. 252A	Accounting Internship	TBA	TBA	3
AEROSPACE STUDIES:				
A.S. 102E1	U.S. Military Forces in the Contemporary World II	Library	Th **5:30-6:30**	1
A.S. 302E1	Concepts of Leadership (Pre: A.S. 301 or permission of instructor)	Kirby 160	T Th **5:00-6:30**	3
ANTHROPOLOGY:				
Anth. 101E1	Introduction to Anthropology	SLC 380	T **6:30-9:30**	3
Anth. 398E1	Topics: Indians of North America	SLC 215	T **6:30-9:30**	3
ART:				
Art 101E1	Experiencing Art I	SLC 105	M **6:00-9:00**	3
Art 102E1	Experiencing Art II (Art History Survey) (Pre: Art 101)	SLC 1	M **6:00-9:00**	3
Art 248E1	Fiber I	Con Gal 201	T **6:00-9:00**	3
BIOLOGY:				
Bio. 102E1	Biological Science II	SLC 405	W **6:00-9:00**	3
Bio. 313E	Parasitology	SLC 411	M **6:00-8:00**	3
Bio. 313E1	Laboratory Fee: $30	SLC 377	W **6:00-9:00**	
BUSINESS ADMINISTRATION:				
B.A. 101E1	Introduction to Business	Par. 33	W **6:00-9:00**	3
B.A. 209E1	Business Correspondence and Reports	WA	W **6:00-9:00**	3
B.A. 216E1	Advertising	Par. 43	M **6:30-9:30**	3
B.A. 220E1	Real Estate	SLC 334	M **6:30-9:30**	3
B.A. 222E1	Marketing	SLC 209	T **6:30-9:30**	3
B.A. 226E1	Investments	Par. 56	M **6:00-9:00**	3
B.A. 232E1	Business Law — Agency, Partnerships, Corporations and Real Property	SLC 334	T **6:30-9:30**	3
B.A. 232E2	Business Law — Agency, Partnerships, Corporations and Real Property	WA	Th **6:30-9:30**	3
B.A. 240E1	Property Insurance	SLC 204	Th **6:30-9:30**	3
B.A. 254E1	Organizational Design and Behavior	Par. 33	T **6:30-9:30**	3
B.A. 256E1	Business Policies and Corporate Responsibility	Par. 43	Th **6:00-9:00**	3
B.A. 264E1	Retail Buying	SLC 127	M **6:00-9:00**	3
B.A. 398A	Topics: Internship (Pre: Permission of Department Chairman)	TBA	TBA	3
B.A. 398E1	Topics: Business & Banking	SLC 347	W **6:30-9:30**	3
BUSINESS EDUCATION:				
B.Ed. 201E1	Advanced Typewriting Fee: $15	SLC 134	T Th **6:45-8:30**	3
B.Ed. 202E1	Expert Typewriting Fee: $15	SLC 134	T Th **6:45-8:30**	3
B.Ed. 211E1	Advanced Shorthand	SLC 134	T Th **4:45-6:30**	3
B.Ed. 212E1	Expert Shorthand	SLC 134	M W **4:30-6:15**	3
B.Ed. 221A	Office Equipment Fee: $15	SLC 133	MTW **3:00-4:00** Th **2:00-4:00**	3
B.Ed. 222A	Office Administration	SLC 133	MTW **2:00-3:00**	3
COMMUNICATION STUDIES:				
Comm. 212E1	Journalism: Editing and Advanced News Writing Fee: $15 (Pre: Comm. 211)	SLC 134	M **6:30-9:30**	3
Comm. 215E1	Public Relations	SLC 134	W **6:15-9:15**	3
Comm. 240E1	Intro. to Broadcasting	TBA	TBA	3
COMPUTER SCIENCE:				
C.S. 123E1	Fortran Programming Fee: $25	SLC 405	T Th **6:30-8:00**	3
C.S.198A	Topics in Computer Science: RPG (Pre: Knowledge of Cobol or Fortran)	SLC 424	M W **4:00-5:00**	2
C.S. 224E1	Advanced Cobol and File Management Fee: $25 (Pre: C.S. 124)	SLC 405	T Th **8:00-9:30**	3
C.S. 227E1	Computer Data Structures (Pre: C.S. 223/Engr. 245 or C.S. 224)	SLC 405	M W **6:30-8:00**	3
EARTH & ENVIRONMENTAL SCIENCES:				
E.&E.S. 115E	Survey of Geology	SLC 318	W **6:00-8:00**	3
E.&E.S. 115E1	Laboratory (Fee: $25)	SLC 435	W **8:00-10:00**	
E.&E.S. 394A	Advanced Field Study (Oceanography) (Pre: E.&E.S 194 or equivalent experience)	SLC 441	F **12:00-1:00**	1
E.&E.S. 398E1	Topics: Radiation	SLC 435	Th **6:30-7:30**	1
ECONOMICS:				
Econ. 101E1	Principles of Economics I	Par. 56	T **6:30-9:30**	3
Econ. 101E2	Principles of Economics I	SLC 318	Th **6:30-9:30**	3
Econ. 102E1	Principles of Economics II	SLC 318	M **6:30-9:30**	3
Econ. 102E2	Principles of Economics II	Par. 53	W **6:30-9:30**	3
Econ. 212E1	Government and Business	SLC 270	T **6:30-9:30**	3
Econ. 222E1	The American Labor Movement	Par. 43	W **6:00-9:00**	3
Econ. 226E1	International Investments and Finance	SLC 127	W **6:30-9:30**	3
Econ. 228E1	Economic Geography of Asia, Africa, and Latin America	Par. 53	M **6:00-9:00**	3
Econ. 230E1	Business Cycles	SLC 411	W **6:30-9:30**	3
Econ. 232E1	Economic Statistics (Pre: No day-school students)	Par. 33	Th **6:00-9:00**	3
EDUCATION:				
Ed. 203I	Special Methods of Teaching: Sciences (Grades 7-12)	King's	T Th **4:30-6:00**	3
Ed. 203J	Special Methods of Teaching: Social Studies (Grades 7-12)	SLC 209	T Th **4:30-6:00**	3
Ed. 398E1	Topics in Education: Study of the Future	SLC 147	T **7:00-10:00**	3
ENGINEERING:				
E.E. 212E1	Circuit Theory II (Pre: E.E. 211)	SLC 270	M W **5:30-7:00**	3
E.E. 254E1	Electronic Laboratory II Fee: $25 (Pre: To be taken along with or after E.E. 252)	SLC 125	T **5:30-8:30**	1
E.E. 332E	Electromagnetics II	SLC 166	T **6:00-9:00**	4
E.E. 332E1	Laboratory Fee: $20 (Pre: Math. 212, Phys. 202)	SLC 125	Th **6:00-9:00**	
E.E. 343E1	Computer Data Structures (Pre: Engr. 245)	SLC 405	M W **6:30-8:00**	3
Engr. 244E1	Fortran Programming Fee: $25	SLC 405	T Th **6:30-8:00**	3
Engr. 284E1	Engineering Measurement Laboratory II Fee: $20	SLC 23	W **5:30-7:00**	1
Ma.E. 210E1	Introduction to Materials Science (Pre: Engr. 231 or Phys. 201)	SLC 403	T Th **5:30-7:00**	3
Ma.E. 342A	Mechanical Metallurgy (Pre: Ma.E. 210 or Phys. 203)	SLC 223	M W **3:30-5:00**	3
ENGLISH:				
Eng. 102E1	Composition II (Pre: Eng. 101 or Eng. 100)	SLC 409	T **6:30-9:30**	3
Eng. 152E1	Western World Literature II (Pre: Eng. 151)	SLC 318	T **6:30-9:30**	3
Eng. 152E2	Western World Literature II (Pre: Eng. 151)	SLC 334	W **6:30-9:30**	3
Eng. 201A	Advanced Composition (Pre: Eng. 102)	SLC 215	M W **4:00-5:30**	3
Eng. 222A	Introduction to Linguistics (Pre: Eng. 152 or 254 and 220 and consent of instructor)	SLC 215	T Th **4:00-5:30**	3
Eng. 253E1	Survey of English Literature (Pre: Eng. 102)	SLC 380	W **6:30-9:30**	3
Eng. 343E1	The Eighteenth Century: Studies in Energy and Order (Pre: Eng. 152 or 254)	SLC 215	Th **6:30-9:30**	3
Eng. 366E1	Later English Novel (Pre: Eng. 152 or 254)	SLC 215	W **6:30-9:30**	3
FRENCH:				
Fr. 102E1	Elementary French II (Pre: Fr. 101 or the equivalent)	SLC 204	W **6:30-9:30**	3
Fr. 302A	Survey of French Literature (Pre: Fr. 204 or the equivalent)	Kirby 302	M W **4:00-5:30**	3
HISTORY:				
Hist. 101E1	World Civilization I	SLC 316	W **6:30-9:30**	3
Hist. 102E1	World Civilization II	SLC 316	M **6:30-9:30**	3
Hist. 102E2	World Civilization II	SLC 316	T **6:30-9:30**	3
Hist. 324E1	American Economic History	SLC 160	M **6:30-9:30**	3
Hist. 354E1	The Era of the French Revolution and Napoleon	SLC 160	Th **6:30-9:30**	3
Hist. 391E1	Historiography and Research (Pre: Approval of instructor)	Kirby 302	T **6:30-9:30**	3
Hist. 398E1	Topics: World War II	SLC 160	W **6:30-9:30**	3
MATHEMATICS:				
Math. 111E1	Calculus I (Pre: Math. 100 or at least three years of Secondary School Mathematics	SLC 403	T Th **6:00-8:00**	4

EARLY REGISTRATION WILL BE ACCEPTED

8:30 A.M.-4:30 P.M. AFTER DECEMBER 1, 1981

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Credits
MUSIC:				
Mus. 101E1	Introduction to Music I	Darte 202	T **6:30-9:30**	3
PHILOSOPHY:				
Phil. 101E1	Introduction to Philosophy	SLC 207	W **6:30-9:30**	3
Phil. 240E1	Problems in Metaphysics (Pre: Phil. 101 or 201)	SLC 207	M **6:30-9:30**	3
Phil. 298E1	Topics: Business and Professional Ethics (Pre: Phil. 101 or 201)	SLC 207	T Th **6:30-8:00**	3
PHYSICS:				
Phys. 102E1	Physical Science II	SLC 166	Th **6:30-9:30**	3
Phys. 202A	General Physics II	SLC 166	T Th **4:00-5:00**	4
Phys. 202A3	Discussion	SLC 160	M **4:00-5:00**	
Phys. 202H	Laboratory Fee: $30 (Pre: Phys. 201)	SLC 151	Sat. 9:00-12:00	
Phys. 332E	Electricity & Magnetism	SLC 166	T **6:00-9:00**	4
Phys. 332E1	Laboratory Fee: $30 (Pre: Phys. 202 and Math. 212)	SLC 125	Th **6:00-9:00**	
Phys. 401E1	Topics in Mathematical Physics (Pre: Permission of instructor **and** department chairman, Math. 362 or equivalent)	TBA	TBA	3
POLITICAL SCIENCE:				
P.S. 105E1	Modern Political Systems	SLC 380	M **6:30-9:30**	3
P.S. 314E1	Planning in Urban Development (Pre: P.S. 102 or 205 or 310 or 311)	SLC 160	T **6:30-9:30**	3
P.S. 398E1	Topics in Political Science: Middle East Politics	WA	M **6:30-9:30**	3
PSYCHOLOGY:				
Psy. 102E1	General Psychology II	SLC 316	Th **6:30-9:30**	3
Psy. 242E1	Psychological Tests (Pre: Psy. 101-102)	SLC 204	T **6:00-9:00**	3
Psy. 398E1	Topics: Exceptional Child	SLC 204	M **6:30-9:30**	3
SOCIOLOGY:				
Soc. 101E1	Introduction to Sociology	SLC 411	T **6:30-9:30**	3
Soc. 200E1	The Family (Pre: Soc. 101 or Anth. 101 or permission of instructor)	SLC 166	M **6:30-9:30**	3
Soc. 275E1	Sociology of Minorities (Pre: Soc. 101 or Anth. 101 or Psy. 101-102 or permission of instructor)	SLC 147	W **6:30-9:30**	3
Soc. 398E1	Topics: Intervention Strategies	SLC 147	Th **6:30-9:30**	3
SPANISH:				
Span. 102E1	Elementary Spanish II (Pre: Span. 101 or the equivalent)	SLC 209	M **6:00-9:00**	3
Span. 102E2	Elementary Spanish II (Pre: Span. 101 or the equivalent)	Kirby 302	M **6:00-9:00**	3
SPEECH:				
Spch. 101E1	Fundamentals of Speech	Darte 101	W **6:30-9:30**	3

Graduate Division

Course	Description	Room	Day & Hour	Instructor
BIOLOGY:				
Bio. 309GA	Evolution Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 380	MWF 11-12	Houseknecht
Bio. 310GA	Animal Behavior	SLC 380	M W **1:00-2:00**	Rigley
Bio. 310GA1	Laboratory Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 349	F **2:00-5:00**	
Bio. 313GE	Parasitology	SLC 411	M **6:00-8:00**	Rigley
Bio. 313GE1	Laboratory Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 377	W **6:00-9:00**	
Bio. 315GA	Molecular Biology (Pre: Bio. 201-208 or permission of instructor)	SLC 318	MWF **12-1**	Turoczi
Bio. 317GA	Advanced Ecology	SLC 316	T Th **1-2**	Houseknecht
Bio. 317GA1	Laboratory Fee: $30 (Pre: Bio. 201-208 or permission of instructor)	SLC 365	Th **2:00-5:00**	
Bio. 341GA	Immunology and Immunochemistry (Pre: Bio. 201-208 or permission of instructor)	SLC 316	MWF 10-11	Doty
Bio. 398GA	Topics: Aquatic Botany	SLC 380	T Th 10-11	Siver
Bio. 398GA1	Laboratory (Pre: Bio. 201-208 or permission of instructor)	SLC 359	T **2:00-5:00**	
BUSINESS ADMINISTRATION:				
Acct. 541GE1	Advanced Problems	Par. 56	Th **6:30-9:30**	Moran
Acct. 542GE1	Financial and Tax Planning	Par. 45	T **6:00-9:00**	Broadt
B.A. 507GE1	Business and Society	Par. 56	W **6:30-9:30**	Chmiola
B.A. 512GE1	Price Policy and Procedure	Par. 43	T **6:30-9:30**	Taylor
B.A. 521GE1	Organizational Theory	Par. 54	Th **5:00-8:00**	Lewis
B.A. 550GA	Topics: SBA (Pre: Written permission of instructor)	TBA	TBA	Chmiola
B.A. 550GB	Topics: Personnel Selection and Evaluation	SLC 409	W **6:00-9:00**	Bellucci
B.A. 550GC	Topics: Corporate Entrepreneurship (Pre: Written permission of Department Chairman)	Par. 54	W **6:00-9:00**	Maslow
B.A. 552GE1	Financial Management	Par. 53	T **6:00-9:00**	Engel

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

Course	Description	Room	Day & Hour	Instructor
C.S. 408GE1	Management Information Systems (Pre: 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.)	SLC 409	M **6:30-9:30**	Parker
Econ. 505GE1	Managerial Statistics	Par. 33	M **6:00-9:00**	Williams
Econ. 510GE1	Managerial Economics	Par. 53	Th **6:00-9:00**	Williams
Econ. 532GE1	Wage Determination and Administration	Par. 54	M **6:00-9:00**	Werner
Econ. 550GA	Topics: The Japanese Economy	SLC 147	M **6:00-9:00**	DeYoung
Econ. 550GB	Topics: Collective Bargaining and Industrial Organization	SLC 1	W **6:30-9:30**	Arnold
CHEMISTRY:				
Chem. 344GA	Advanced Analytical Chemistry	SLC 207	M W 9:00-10:00	Salley
Chem. 344GA1	Laboratory Fee: $40 (Pre: Chem. 252)	SLC 203	M W **3:00-6:00**	
Chem. 362GA	Biochemistry II (Pre: Chem. 361)	SLC 270	T Th **1:00-2:30**	Stine
COMPUTER SCIENCE:				
C.S. 322GA	Machine Language Fee: $25 (Pre: C.S. 223/Engr. 245 or C.S. 224)	SLC 424	T Th 8:00-9:30	Koch
C.S. 325GA	Data Base Management (Pre: C.S. 324)	SLC 424	T Th **1:00-2:30**	Tillman
C.S. 328GA	Analysis of Algorithms (Pre: C.S. 227)	SLC 424	M W F **12-1**	Koch
C.S. 329GA	Microcomputer Operation and Design	SLC 405	M W 10-11	Parker
C.S. 329GA1	Laboratory (Fee: $25) (Pre: C.S. 320/E.E. 341)	SLC 25	M **3:00-5:00**	
C.S. 329GA2	Laboratory (Fee: $25)	SLC 25	W **3:00-5:00**	
C.S. 364GA	Numerical Analysis (Pre: A course in elementary differential equations and knowledge of Fortran)	SLC 403	M W F **3-4**	Merrill
C.S. 408GE1	Management Information Systems	SLC 409	M **6:30-9:30**	Parker

Course	Description	Room	Day & Hour	Instructor
EDUCATION:				
Educ. 512GE1	Social Foundations of Education	SLC 127	T **4:30-7:00**	Staff
Educ. 521GE1	Statistics in Education (Pre: Educ. 520 or equivalent)	SLC 209	Th **6:00-9:00**	Bellucci
Educ. 532GA	PEE: Mathematics	SLC 215	M **6:00-9:00**	Staff
Educ. 532GC	PEE: Language Arts	SLC 127	Th **4:30-7:30**	Darte
Educ. 598GA	Topics: Study of the Future	SLC 147	T **7:00-10:00**	Darte
Educ. 598GP1	Topics: Project T.E.A.C.H.	TBA	TBA	Staff
Educ. 598GP2	Topics: Project P.R.I.D.E.	TBA	TBA	Staff
ENGLISH:				
Eng. 325GA	Shakespeare (Pre: Eng. 152 or 254)	SLC 257	M W F **1-2**	Kaska
Eng. 374GA	Modern Drama	SLC 257	M W F 11-12	O'Neill
Eng. 382GA	American Literature II (Pre: Eng. 152 or 254)	SLC 257	T Th F 8:00-9:00	Gutin
Eng. 397GA	Seminar: Myth and Allegory in Medieval Literature (Pre: Approval of Chairman)	SLC 257	M W F **1-2**	Fiester
Eng. 398GA	Topics: Romanticism, Marxism, and the Industrial Revolution: A Survey of 19th Century Response to Mechanization of England (Pre: Eng. 151 or 254)	SLC 257	T Th **2:30-4**	R. Heaman
Eng. 398GB	Topics: Contemporary American Fiction	SLC 257	T Th 9:30-11	P. Heaman
Eng. 440GE	Restoration and Eighteenth Century Literature: Studies in Energy and Order	SLC 215	Th **6:30-9:30**	Fox
Eng. 450GE	Studies in Romantic and Victorian Literature: Later English Novel	SLC 215	W **6:30-9:30**	Terry
HISTORY:				
Hist. 322GA	American Social and Intellectual History II	SLC 204	M W F 9-10	Hanlon
Hist. 324GE	American Economic History	SLC 160	M **6:30-9:30**	Cox
Hist. 354GE	The Era of the French Revolution and Napoleon	SLC 160	Th **6:30-9:30**	Berlatsky

UNDERGRADUATE WEEKEND COLLEGE CLASSES

January 8 — April 25, 1982

on the Campus of Keystone Junior College
La Plume, Pennsylvania — January 8-April 25

Calendar — Spring Semester, 1982

January	**8, 9, 10**
	29, 30, 31
February	**19, 20, 21**
March	**12, 13, 14**
April	**2, 3, 4**
	23, 24, 25

Unless otherwise indicated, all courses in the Weekend College meet according to the following schedule:

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE P.M.**)

Schedule A	Schedule B	Schedule C
Fri. **6:30-8:30**	Sat. 8:00-10:00	Sat. **6:00-8:00**
Sat. 10:10-**12:10**	Sat. **1:00-3:00**	Sun. 8:00-10:00
Sat. **3:10-5:10**	Sun. 10:10-**12:10**	Sun. **1:00-3:00**

Course	Description	Room	Schedule	Credits
ACCOUNTING:				
Acct. 242W	Advanced Accounting II (Pre: Acct. 241 and permission of instructor)	TBA	C	3
BUSINESS ADMINISTRATION:				
B.A. 261W	Principles of Retailing	TBA	B	3
EARTH & ENVIRONMENTAL SCIENCES:				
E.&E.S.130W	Environmental Awareness Fee: $25	TBA	C	3
ECONOMICS:				
Econ. 102W	Principles of Economics II	TBA	A	3
Econ. 223W	Collective Bargaining	TBA	B	3
Econ. 232W*	Economic Statistics Fee: $20 *Fridays, **8:30-10:30**, mandatory discussion section	TBA	A	3
ENGLISH:				
Eng. 152W	Western World Literature II (Pre: Eng. 151)	TBA	C	3
Eng. 398W	Topics: Age of Johnson (Pre: Eng. 152 or 254)	TBA	C	3

Course	Description	Room	Schedule	Credits
HISTORY:				
Hist. 102W	World Civilization II	TBA	A	3
PHYSICAL EDUCATION:				
P.Ed. 110W	Hygiene **Fridays, **8:40-10:40**; Saturdays, **8:10-10:10**	TBA	**	2
PHYSICS:				
Phys. 102W	Physical Science II	TBA	B	3
POLITICAL SCIENCE:				
P.S. 327W	International Relations (Pre: P.S. 105 or consent of instructor)	TBA	B	3
PSYCHOLOGY:				
Psych. 203W	Contemporary Psychological Theories (Pre: Psych. 101-102)	TBA	A	3
SOCIOLOGY:				
Soc. 255W	Introduction to Social Psychology (Pre: Soc. 101 or Anth. 101 or Psych. 101-102 or approval of instructor)	TBA	B	3
Soc. 398W	Topics: Social Gerontology	TBA	C	3

Course	Description	Room	Day & Hour	Instructor
Hist. 364GA	Diplomatic History of the Far East	Kirby 302	T Th **1:00-2:30**	Shao
Hist. 391GE1	Historiography & Research	Kirby 302	T **6:30-9:30**	Cox
Hist. 398GA	Topics: American Revolution	SLC 215	T Th 9:30-11	Hartdagen
Hist. 398GE1	Topics: World War II	SLC 160	W **6:30-9:30**	Rodechko
MATHEMATICS:				
Math. 314GE	Functions of a Complex Variable	SLC 411	M W F 11-12	Earl
Math. 352GA	Probability and Mathematical Statistics II	SLC 411	MWF **2-3**	Richards
Math. 354GA	Statistical Methodology	SLC 409	MWF 9-10	Merrill
Math. 362GA	Introduction to Applied Mathematics II	SLC 403	M W F **12-1**	DeCosmo
Math. 364GA	Numerical Analysis (Pre: A course in elementary differential equations and knowledge of Fortran)	SLC 409	M W F 8:00-9:00	Merrill
PHYSICS:				
Phys. 312GA	Mechanics II	SLC 147	T Th 9:30-11	Donahoe
Phys. 320GA	Electronic Instrumentation for the Life and Behavioral Sciences Fee: $25	SLC 161	T **2:00-5:00** Th **3:00-5:00**	Kucirka
Phys. 321GA	Electronic Instrumentation for the Physical Sciences Fee: $25	SLC 161	T **2:00-5:00** Th **3:00-5:00**	Kucirka
Phys. 330GA	Optics and Light	SLC 147	M W F 11-12	Donahoe
Phys. 330GA1	Laboratory Fee: $25	SLC 158	Th **3:00-5:00**	
Phys. 332GA	Electricity & Magnetism II	SLC 166	M W F **1-2**	Aston
Phys. 332GA1	Laboratory	SLC 125	T **2:00-5:00**	
Phys. 332GA2	Laboratory Fee: $25	SLC 125	Th **2:00-5:00**	
Phys. 332GE	Electricity & Magnetism II	SLC 166	T **6:00-9:00**	Aston
Phys. 332GE1	Laboratory Fee: $25	SLC 125	Th **6:00-9:00**	
Phys. 340GA	Thermodynamics	SLC 147	M W F 8-9	Bellas
Phys. 380GA	Nuclear Physics	SLC 215	M W F 10-11	Bailey
Phys. 380GA1	Laboratory Fee: $25	SLC 42	Th **2:00-5:00**	
Phys. 401GE	Topics in Mathematical Physics	TBA	TBA	Hostler

DAY CLASSES

January 18 – May 15, 1982

Part-time students interested in day-school classes should contact the Office of Part-time Undergraduate Programs.

For further information, contact:

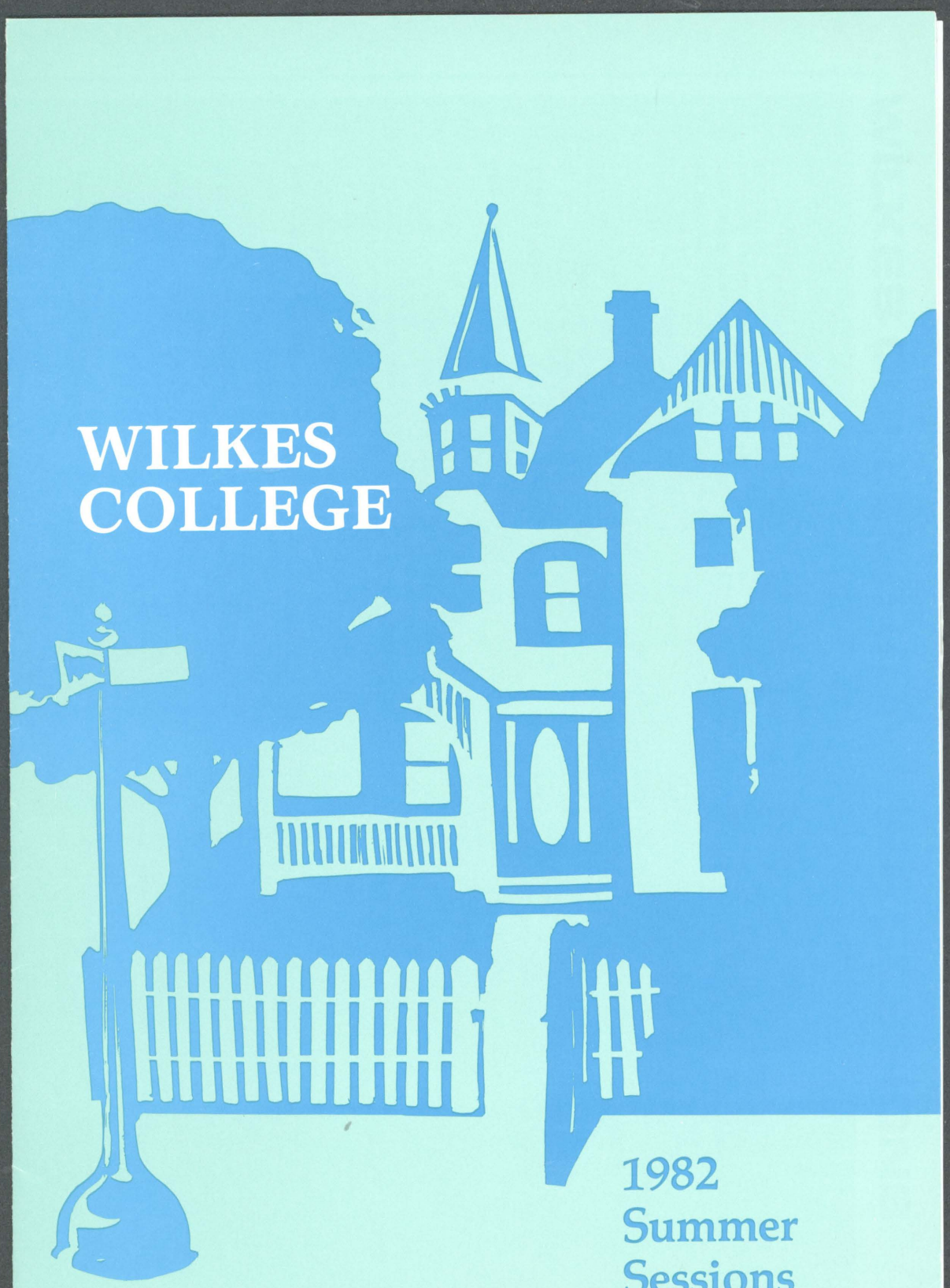
JOHN F. MEYERS, *Director*
Graduate and Part-Time
Undergraduate Programs
WILKES COLLEGE
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380

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Wilkes College

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WILKES COLLEGE



1982
Summer
Sessions

WILKES COLLEGE

Summer Sessions — 1982

GENERAL INFORMATION

FIRST SESSION —
EIGHT

Students who regis

First Session

June 14 to July 16 (including Final Examinations)
Registration . . . . Thursday, June 10 and Friday, June 11
Parrish Hall — 8:30 a.m. to 8:00 p.m.

Second Session

July 19 to August 20 (including Final Examinations)
Registration . . . . . Thursday, July 15 and Friday, July 16
Parrish Hall — 8:30 a.m. to 6:00 p.m.

Eight Week Evening Session

June 14 to August 6 (including Final Examinations)
Registration . . . . Thursday, June 10 and Friday, June 11
Parrish Hall — 8:30 a.m. to 8:00 p.m.

Weekend College (at Keystone Junior College)

April 30 to August 1 (including Final Examinations)
Registration . . . . . April 30
(Weekender Office, La Plume, Pa.)
4:30-6:30 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.

Weekend College classes meet for six hours on each of six weekends, from April 30 through August 1, on the campus of Keystone Junior College, La Plume, Pennsylvania.

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.

Accreditation

Wilkes College is accredited by the Department of Public Instruction of the State of Pennsylvania and the Middle States Association of Colleges and Secondary Schools. The Chemistry curriculum has been certified by the American Chemical Society.

The 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 Office of Graduate and Part-time Undergraduate Programs, 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.

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.

Cl... Of

The College reserves the right to cancel or reschedule any course

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Change Of Schedule

The College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. When possible, any change in the course schedule will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.

Degree Programs

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.

Bachelor of Arts:

- Art
- Biology
- Chemistry
- Communication Studies
- Computer Science
- Earth & Environmental Sciences
- Economics
- Elementary Education
- English
- Foreign Languages
- History
- Individualized Studies
- International Studies
- Mathematics
- Philosophy
- Physics
- Political Science
- Psychology
- Sociology
- Theater Arts
- Urban Studies

Bachelor of Science:

- Biology
- Business Education
- Chemistry
- Commerce & Finance
  - (a) Accounting
  - (b) Business Administration
- Computer Science
- Earth & Environmental Sciences
- Engineering
- Individualized Studies
- Mathematics
- Medical Technology
- Nursing
- Physics

Bachelor of Music

JUNE 14-JULY 16 SECOND SESSION — JULY 19-AUGUST 20

IT-WEEK EVENING SESSION — JUNE 14-AUGUST 6

gister for courses in more than one session **MUST COMPLETE** a registration form for each session.

A "Certificate of Achievement" is available to undergraduate students in the field of Business Administration who earn 42 hours of credit in evening College and Summer School programs with at least 24 hours in Business Administration and 18 hours in general education. Specific course requirements are available on request.

Dormitory And Dining Facilities

Residence halls will be available for both male and female students during all summer sessions.

The Snack Bar in the Student Union is 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 14 to August 20.

Inquiries concerning residence halls or dining facilities should be made through:

The Housing Office
Wilkes College
Wilkes-Barre, Pennsylvania 18766

Expenses

Tuition for the summer sessions is $89 per credit hour for undergraduate and $120 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 Pell (Basic) Grant.

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.

Library

The Eugene Shedden Farley Library is open to all Wilkes students. Students may borrow books from the Library by presenting their college identification cards. Hours are posted at the beginning of each academic session.

Withdrawal

Students who withdraw from the summer sessions or drop courses **must** receive **written approval** from the instructor(s) and the Director of Graduate and Part-time Undergraduate Programs so that their records will not unjustly show failure in courses. (Charges for courses from which a student withdraws will be calculated as of the date

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Students who have paid their tuition in full and who withdraw from courses or from the College during the first week of the first or second sessions or during the first two weeks of the eight-week evening session will receive a refund of one-half of their tuition, upon written request to the Comptroller's Office. Students who have paid their tuition in full and who withdraw from weekend courses or from the Weekend College will receive a refund of one-half of their tuition through the second weekend of classes, upon written request to the Comptroller's Office. No refunds will be made to students who withdraw from courses or from the College after these periods.

Fees are non-refundable. Students who are suspended or expelled shall not be entitled to any refund.

Information

For further information, write or call:

John F. Meyers, Director
Office of Graduate & Part-time Undergraduate Programs
Wilkes College
16 South River Street
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380

Affirmative Action/Equal Opportunity Institut

WILKES COLLEGE SUMMER SESSIONS

REGISTRATION (Parrish Hall, Second Floor)

First Session: Thursday, June 10, and Friday, June 11 . . . . . 8:30 a.m.-8:00 p.m.
Second Session: Thursday, July 15, and Friday, July 16 . . . . . 8:30 a.m.-6:00 p.m.
Eight-Week Evening Session: Thursday, June 10, and Friday, June 11 . . . . 8:30 a.m.-8:00 p.m.

Undergradu

First Session Undergraduate Schedule

June 14 - July 16, 1982 — 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 101-S1	Elementary Accounting I	Par 35	8:00-9:50	3
Acct 102-S1	Elementary Accounting II	Par 35	10:10-12:00	3
Acct 111-S1	Intermediate Accounting I	Par 45	10:10-**12:30**	3
Acct 221-S1	Taxes I (Pre: Acct 112 or approval of instructor)	Par 54	10:10-12:00	3
ANTHROPOLOGY:				
Anth 301-S1	Archaeological Field Methods (Pre: Anth 101 or approval of instructor)	TBA	8:00-12:00	3
ART:				
Art 101-S1	Experiencing Art I	SLC 105	**6:00-7:50**	3
Art 270-S1	Photography I Fee: $10	SLC 105	10:10-12:00	3
BIOLOGY:				
Bio 398A	Topics: Aquatic Biology (May 17-June 4) ***at Lake Lacawac*** Fee: $30 (Pre: Bio 201-208; permission of instructor)		TBA	3
Bio 398B	Topics: Marine Biology (June 1-June 9) ***in Jamaica*** Fee: $30 (Pre: Bio 201-208; permission of instructor)		TBA	3
BUSINESS ADMINISTRATION:				
B A 222-S1	Marketing	Par 53	8:00-9:50	3
B A 251-S1	Principles of Management	Par 56	8:00-9:50	3
B A 261-S1	Principles of Retailing	Par 53	10:10-12:00	3
CHEMISTRY:				
Chem 111-S	Introduction to Chemical Reactions and Principles (June 14-July 16)	SLC 318	10:10-12:00	4
	Laboratory-S1	SLC 259	MWTh **12:30-3:00**	
	Fee: $30			
Chem 115-S	Elements and Compounds (June 7-July 16)	SLC 334	8:30-10:00	4
	Laboratory-S1	SLC 263	MWTh 12:00-**3:00**	
	Laboratory-S2	SLC 263	MWTh **3:00-6:00**	
	Fee: $30			
Chem 231-S	Organic Chemistry I (June 7-July 16)	SLC 334	10:00-11:30	4
	Laboratory-S1	SLC 264	T Th **1:00-5:00**	
	Fee: $30 (Pre: Chem 116 or Chem 118)			
EARTH & ENVIRONMENTAL SCIENCES:				
E & ES 110-S1	Survey of Astronomy Fee: $25	SLC 434	10:10-12:00	3
E & ES 212-S1	Historical Geology	SLC 434	**1:00-3:00**	3
ECONOMICS:				
Econ 101-S1	Principles of Economics I	Par 43	10:10-12:00	3
Econ 201-S1	Money and Banking	Par 43	8:00-9:50	3
Econ 223-S1	Collective Bargaining	Par 56	10:10-12:00	3
Econ 231-S1	Applied General Statistics	Par 33	10:10-12:00	3
EDUCATION:				
Educ 201-S1	Introduction to Education	SLC 207	10:10-12:00	3
Educ 202-S1	Educational Psychology (Pre: Psy 102)	SLC 215	8:00-9:50	3
Educ 398A	Topics: Care and Prevention of Athletic Injuries	SLC 160	10:10-12:00	3
ENGINEERING:				
Engr 283-S1	Engineering Measurement	SLC 125	8:00-9:30	1

Course	Description	Room	Day & Time	Credits
*(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)*				
HISTORY:				
Hist 101-S1	World Civilization I	SLC 411	8:00-9:50	3
Hist 102-S1	World Civilization II	SLC 424	10:10-12:00	3
Hist 102-S2	World Civilization II	TBA	**5:00-7:00**	3
Hist 398-S1	Topics: American Intellectual History	SLC 411	10:10-12:00	3
MATHEMATICS:				
Math 101-S1	Fundamentals of Mathematics I (Not open to students with credits in Math 103 or 104)	SLC 424	8:00-9:50	3
Math 103-S1	Mathematics for Elementary School Teachers I (Not open to students with credits in Math 101 or 102)	SLC 403	8:00-9:50	3
Math 105-S1	Introductory Calculus I (June 7-July 16)	SLC 409	10:10-**12:15**	4
	(Pre: Geometry, Algebra II, and some knowledge of Trigonometry)			
MUSIC:				
Mus 101-S1	Introduction to Music I	DDD 202	8:00-9:50	3
Mus 101-S2	Introduction to Music I	DDD 202	10:10-12:00	3
Mus 298-S1	Topics: Pre-freshman Theory	DDD 218	8:00-9:50	3
PHILOSOPHY:				
Phil 101-S1	Introduction to Philosophy	SLC 209	8:00-9:50	3
Phil 220-S1	Philosophy of Religion (Pre: Phil 101 or 201)	SLC 209	10:10-12:00	3
PHYSICS:				
Phys 101-S1	Physical Science I (Pre: Background in science and mathematics not necessary.)	SLC 166	8:00-9:50	3
POLITICAL SCIENCE:				
P S 102-S1	Introduction to American Politics	SLC 160	8:00-9:50	3
P S 398-S1	Topics: Administrative Law (Pre: Permission of department, criterion depending on topic)	SLC 160	10:10-12:00	3
PSYCHOLOGY:				
Psy 101-S1	General Psychology I	SLC 101	10:10-12:00	3
Psy 221-S1	Child Psychology (Pre: Psy 101-102)	SLC 101	8:00-9:50	3
Psy 232-S1	Human Behavior (Pre: Psy 101-102)	SLC 316	10:10-12:00	3
RUSSIAN:				
Russ 101-S1	Elementary Russian I	TBA	TBA	3
Russ 203-S1	Intermediate Russian I (Pre: Russ 102 or the equivalent)	TBA	TBA	3
SOCIOLOGY:				
Soc 101-S1	Introduction to Sociology	SLC 405	10:10-12:00	3
Soc 200-S1	The Family (Pre: Soc 101 or Anth 101 or approval of instructor)	SLC 347	10:10-12:00	3
Soc 255-S1	Introduction to Social Psychology (Pre: Soc 101 or Anth 101 or Psy 101-102 or approval of instructor)	SLC 403	10:10-12:00	3
Soc 398A	Topics: Observing Social Behavior	SLC 405	8:00-9:50	3
Soc 398B	Topics: Family Dynamics	SLC 316	**1:00-3:00**	3
SPANISH:				
Span 101-S1	Elementary Spanish I	Kby 302	8:00-9:50	3
Span 203-S1	Intermediate Spanish I (Pre: Span 102 or the equivalent)	Kby 302	10:10-12:00	3
Span 206-S1	Spanish Conversation (Pre: Span 204 or the equivalent)	TBA	TBA	3
THEATER ARTS:				
T A 101-S1	Approach to Theater	DDD 201	10:10-12:00	3

E E 211-S1	Circuit Theory I (Pre: Math 112)	SLC 223	**6:00-7:50**	3
E E 251-S1	Electronics I (Pre: E E 212)	SLC 240	**6:00-7:50**	3
E E 253-S1	Electronic Laboratory I Fee: $25 (Pre: To be taken along with or after EE 251)	SLC 125	**8:00-9:30**	1
E E 298-S1	Topics: Medical Instrumentation for Health Care (Pre: Permission of instructor)	SLC 223	8:00-9:50	3
MaE 210-S1	Introduction to Materials Science (Pre: Engr 231 or Phys 201)	SLC 34	10:10-12:00	3

ENGLISH:

Eng 101-S1	Composition I	SLC 342	8:00-9:50	3
Eng 101-S2	Composition I	SLC 204	10:10-12:00	3
Eng 151-S1	Western World Literature I (Pre: Eng 102 or equivalent in composition)	SLC 270	10:10-12:00	3
Eng 151-S2	Western World Literature I (Pre: Eng 102 or equivalent in composition)	SLC 270	8:00-9:50	3
Eng 397-S1	Seminar: The Initiation Theme in Modern Fiction (Pre: Approval of Department Chairman)	SLC 342	10:10-12:00	3

FRENCH:

Fr 101-S1	Elementary French I	SLC 147	10:10-12:00	3
Fr 203-S1	Intermediate French I (Pre: Fr 102 or the equivalent)	SLC 147	8:00-9:50	3

GERMAN:

Ger 101-S1	Elementary German I	SLC 127	8:00-9:50	3
Ger 203-S1	Intermediate German I (Pre: Ger 102 or the equivalent)	SLC 127	10:10-12:00	3

(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 102-S1	Elementary Accounting II	Par 35	10:10-12:00	3
Acct 112-S1	Intermediate Accounting II	Par 45	10:10-**12:30**	3

BIOLOGY:

Bio 113-S	Microbiology	SLC 359	MWF 10:10-**1:00**	4
	Laboratory-S1 Fee: $30	SLC 305	MWF **2:00-5:00**	

BUSINESS ADMINISTRATION:

B A 225-S1	Managerial Finance	Par 33	8:00-9:50	3
B A 226-S1	Investments	Par 53	10:10-12:00	3

CHEMISTRY:

Chem 116-S	The Chemical Reaction (July 19-August 20)			
		SLC 334	8:00-9:50	4
	Laboratory-S1	SLC 263	MWTh 12:00-**3:00**	
	Laboratory-S2	SLC 259	MWTh 12:00-**3:00**	
	Fee: $30 (Pre: Chem 115)			
Chem 130S	Organic and Biological Chemistry (July 19-August 20)			
		SLC 318	10:10-12:00	4
	Laboratory-S1	SLC 275	MWTh 12:00-**3:00**	
	Laboratory-S2	SLC 275	MWTh **3:00-6:00**	
	Fee: $30 (Pre: Chem 111 or 115)			

Graduate Division

Course	Description	Room	Day & Time	Instructor

*(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)*

BIOLOGY:

Special Sessions

Bio 398G-A	Topics: Aquatic Biology (May 17-June 4) ***at Lake Lacawac*** Fee: $30 (Pre: Approval of instructor)	TBA		Siver
Bio 398G-B	Topics: Marine Biology (June 1-9) ***in Jamaica*** Fee: $30 (Pre: Approval of instructor)	TBA		Rigley

BUSINESS ADMINISTRATION:

First Session — June 14 - July 16

B A 512G-S1	Price Policy and Procedure	Par 43	12:00-**2:00**	Taylor

Eight-week Evening Session — June 14 - August 6

Acct 503G-E1	Managerial Accounting	Par 45	T Th **6:00-9:00**	B. Williams
Acct 544G-E1	Controllership	Par 35	T Th **6:00-9:00**	Croop
B A 507G-E1	Business and Society	Par 33	T Th **6:00-9:00**	Chmiola
B A 550G-E1	Topics: Case Studies in Administrative Management	SLC 35	M W **6:30-9:30**	Tweedy
B A 554G-E1	Managerial Finance Seminar: Mergers, Acquisitions and Divestitures	Par 45	M W **6:00-9:00**	Engel
Econ 505G-E1	Managerial Statistics	Par 33	M W **6:00-9:00**	H. Williams

EDUCATION:

For information on Summer School offerings in the Reading Specialist Program, contact the Department of Education.

First Session — June 14 - July 16

Educ 510G-S1	Psychological Foundations of Education	SLC 215	10:10-12:00	Hammer
Educ 520G-S1	Tests and Measurements	SLC 380	10:10-12:00	Bellucci
Educ 534G-S1	Elementary School Curriculum	SLC 207	8:00-9:00	Darte
Educ 541G-S1	Secondary School Curriculum	SLC 207	8:00-9:50	Darte

Course	Description	Room	Day & Time	Instructor

*(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)*

Educ 576G-S1	Introduction to Educational Administration	SLC 204	8:00-9:50	Johnson
Educ 578G-S1	School Law	DDD 218	10:10-12:00	Johnson
Educ 598G-A	Topics: Care and Prevention of Athletic Injuries	SLC 166	10:10-12:00	Aed
Educ 598G-P1	Topics: Project TEACH	TBA	TBA	Staff
Educ 598G-P2	Topics: PRIDE	TBA	TBA	Staff
Educ 598G-P3	Topics: MIND	TBA	TBA	Staff

Second Session — July 19 - August 20

Educ 542G-S1	Extra Curricular Activities	SLC 147	8:00-9:50	Johnson
Educ 598G-A	Topics: Family Violence	SLC 347	8:00-9:50	Brown
Educ 598G-B	Topics: Education of the Disadvantaged	SLC 147	10:10-12:00	Johnson
Educ 598G-P1	Topics: Project TEACH	TBA	TBA	Staff
Educ 598G-P2	Topics: PRIDE	TBA	TBA	Staff

ENGLISH:

First Session — June 14 - July 16

Eng 497G-S1	Seminar: The Initiation Theme in Modern Fiction	SLC 342	10:10-12:00	Fiester

Second Session — July 19 - August 20

Eng 420G-S1	Studies in Renaissance Literature: Shakespeare's Tragedies	SLC 204	10:10-12:00	Kaska

Eight-Week Evening Session — July 14 - August 6

Eng 382G-E1	American Literature II (Pre: Eng 152 or 254)	SLC 127	**8:00-9:45**	Gutin

HISTORY:

First Summer Session — June 14 - July 16

Hist 398G-S1	Topics: American Intellectual History	SLC 411	10:10-12:00	Leach

Second Summer Session — July 19 - August 20

Hist 352G-S1	The Renaissance and Reformation	SLC 342	10:10-12:00	Berg

PLEASE POST

late Division

FIRST SESSION
JUNE 14 - JULY 16

SECOND SESSION
JULY 19 - AUGUST 20

EIGHT-WEEK EVENING SESSION
JUNE 14 - AUGUST 6

Course	Description	Room	Day & Time	Credits
	*(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)*			
Chem 232S	Organic Chemistry II (July 19-August 20)			
		SLC 318	8:00-9:50	4
	Laboratory-S1	SLC 264	T Th **1:00-5:00**	
	Fee: $30			
	(Pre: Chem 231)			
EARTH AND ENVIRONMENTAL SCIENCES:				
E & ES 135-S1	World Physical Geography	SLC 435	**1:00-3:00**	3
	Fee: $25			
ECONOMICS:				
Econ 102-S1	Principles of Economics II	Par 43	10:10-12:00	3
Econ 229-S1	Comparative Economic Systems	Par 43	8:00-9:50	3
Econ 232-S1	Economic Statistics	Par 33	10:10-12:00	3
ENGINEERING:				
Engr 254-S1	Engineering Measurement Lab II	SLC 125	TBA	1
	Fee: $20			
E E 212-S1	Circuit Theory II	SLC 223	**6:00-7:50**	3
	(Pre: E E 211)			
MaE 210-S1	Introduction to Materials Science	SLC 34	10:10-12:00	3
	(Pre: Engr 231 or Phys 201)			
ENGLISH:				
Eng 102-S1	Composition II	SLC 204	8:00-9:50	3
	(Pre: Eng 101 or 100)			
Eng 152-S1	Western World Literature II	SLC 207	8:00-9:50	3
	(Pre: Eng 151)			
Eng 152-S2	Western World Literature II	SLC 207	10:10-12:00	3
	(Pre: Eng 151)			
Eng 325-S1	Shakespeare	SLC 204	10:10-12:00	3
	(Pre: Eng 152 or 254)			
FRENCH:				
Fr 102-S1	Elementary French II	SLC 215	10:10-12:00	3
	(Pre: Fr 101 or the equivalent)			
Fr 204-S1	Intermediate French II	SLC 215	8:00-9:50	3
	(Pre: Fr 203 or the equivalent)			
GERMAN:				
Ger 102-S1	Elementary German II	SLC 160	8:00-9:50	3
	(Pre: Ger 101 or the equivalent)			
Ger 204-S1	Intermediate German II	SLC 160	10:10-12:00	3
	(Pre: Ger 203 or the equivalent)			
HISTORY:				
Hist 101-S1	World Civilization I	SLC 209	10:10-12:00	3
Hist 102-S1	World Civilization II	SLC 209	8:00-9:50	3
Hist 352-S1	The Renaissance and Reformation	SLC 342	10:10-12:00	3
MATHEMATICS:				
Math 100-S1	Pre-Calculus Mathematics (July 12-August 20)			
		SLC 409	10:10-**12:15**	4
	(Pre: Two years of secondary school Mathematics in Algebra and Geometry)			
Math 102-S1	Fundamentals of Mathematics II	SLC 403	8:00-9:50	3
	(Pre: Math 101)			
Math 104-S1	Mathematics for Elementary School Teachers II	SLC 405	8:00-9:50	3
	(Pre: Math 103)			
Math 106-S1	Introductory Calculus II (July 19-August 27)			
		SLC 403	10:10-**12:15**	4
	(Pre: Math 105)			
MUSIC:				
Mus 101-S1	Introduction to Music I	DDD 202	8:00-9:50	3
Mus 101-S2	Introduction to Music I	DDD 202	10:10-12:00	3

Eight-Week Evening Session Undergraduate Schedule

June 14 - August 6, 1982
Monday, Tuesday & Thursday
(unless otherwise indicated)

Course	Description	Room	Day & Time	Credits
	*(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)*			
ART:				
Art 380-E1	Topics in Studio Art: Painting Workshop	SLC 117	**6:00-7:45**	3
	(Pre: Painting I or equivalent)			
BUSINESS ADMINISTRATION:				
B A 209-E1	Business Correspondence and Reports	Par 56	**6:00-7:45**	3
B A 231-E1	Business Law-Introduction, Contracts, and Sales	Par 54	**6:00-7:45**	3
B A 232-E1	Business Law-Agency, Partnerships, Corporations, and Real Property	Par 54	**8:00-9:45**	3
B A 234-E1	Business Law-Property	Par 53	**8:00-9:45**	3
B A 240-E1	Property Insurance	Par 43	**6:00-7:45**	3
B A 241-E1	Life Insurance	Par 43	**8:00-9:45**	3
B A 251-E1	Principles of Management	Par 56	**8:00-9:45**	3
COMPUTER SCIENCE:				
C S 123-E1	Fortran Programming	SLC 424	**8:00-9:45**	3
	Fee: $25			
C S 124-E1	Cobol Programming	SLC 411	**8:00-9:45**	3
	Fee: $25			
C S 223-E1	Advanced Programming: Fortran	SLC 424	**6:00-7:45**	3
	Fee: $25			
	(Pre: CS 123/Engr 244)			
C S 224-E1	Advanced Cobol and File Management	SLC 411	**6:00-7:45**	3
	Fee: $25			
	(Pre: C S 124)			
ENGINEERING:				
Engr 244-E1	Fortran	SLC 424	**8:00-9:45**	3
	Fee: $25			
Engr 245-E1	Advanced Fortran	SLC 424	**6:00-7:45**	3
	Fee: $25			
	(Pre: Engr 244/C S 123)			
MaE 210-E1	Introduction to Materials Science	SLC 34	**6:00-7:45**	3
	(Pre: Engr 231 or Phys 201)			
ENGLISH:				
Eng 102-E1	Composition II	SLC 160	**6:00-7:45**	3
	(Pre: Eng 101 or 100)			
Eng 151-E1	Western World Literature I	SLC 127	**6:00-7:45**	3
	(Pre: Eng 102 or equivalent in composition)			
Eng 152-E1	Western World Literature II	SLC 160	**8:00-9:45**	3
	(Pre: Eng 151)			
Eng 382-E1	American Literature II	SLC 127	**8:00-9:45**	3
	(Pre: Eng 152 or 254)			
MATHEMATICS:				
Math 100-E1	Pre-Calculus Mathematics	SLC 403	MTWTh **6:00-7:45**	4
	(Pre: Two years of secondary school Mathematics in Algebra and Geometry)			
Math 111-E1	Calculus I	SLC 405	MTWTh **6:00-7:45**	4
	(Pre: Math 100 or at least three years of secondary school Mathematics including Geometry, Algebra II, and topics in Trigonometry)			
Math 112-E1	Calculus II	SLC 405	MTWTh **8:00-9:45**	4
Math 211-E1	Introduction to Linear Algebra and Differential Equations	SLC 409	MTWTh **6:00-7:45**	4
	(Pre: Math 112)			
Math 212-E1	Multivariable Calculus	SLC 403	MTWTh **8:00-9:45**	4
	(Pre: Math 112)			
MUSIC:				

(Pre: Phil 101 or 201)

PHYSICS:

Phys 102-S1	Physical Science II	SLC 166	8:00-9:50	3

POLITICAL SCIENCE:

P S 105-S1	Modern Political Systems	SLC 316	10:10-12:00	3
P S 398-S1	Topics: Inter-American Relations (Pre: Permission of department, criterion depending on topic)	SLC 316	TBA	3

PSYCHOLOGY:

Psy 102-S1	General Psychology II	SLC 101	10:10-12:00	3
Psy 398-S1	Topics: Sleep and Dreaming	SLC 342	8:00-9:50	3

RUSSIAN:

Russ 102-S1	Elementary Russian II (Pre: Russ 101 or the equivalent)	TBA	TBA	3
Russ 204-S1	Intermediate Russian II (Pre: Russ 203 or the equivalent)	TBA	TBA	3

SOCIOLOGY:

Soc 398-S1	Topics: Family Violence	SLC 347	8:00-9:50	3

SPANISH:

Span 102-S1	Elementary Spanish II (Pre: Span 101 or the equivalent)	Kby 302	8:00-9:50	3
Span 204-S1	Intermediate Spanish II (Pre: Span 203 or the equivalent)	Kby 302	10:10-12:00	3

Phil 152-E1	Introduction to Logic	SLC 207	**6:00-7:45**	3
Phil 230-E1	Social and Political Philosophy (Pre: Phil 101 or 201)	SLC 204	**8:00-9:45**	3

PHYSICAL EDUCATION:

P Ed 105-E1	Hygiene	SLC 160	W **6:00-9:00**	1
P Ed 106-E1	Hygiene	SLC 160	W **6:00-9:00**	1
P Ed 110-E1	Hygiene	SLC 160	W **6:00-9:00**	2

PSYCHOLOGY:

Psy 245-E1	Clinical Psychology (Pre: Psy 242 and Psy 331)	SLC 147	**6:00-7:45**	3
Psy 331-E1	Abnormal Psychology (Pre: Psy 232)	SLC 147	**8:00-9:45**	3

SPEECH:

Spch 101-E1	Fundamentals of Speech	DDD 201	**6:00-7:45**	3

Post Session • August 23-27

CHEMISTRY:

Chem 99A	Basic Mathematics for introductory Chemistry (For students registered for Chemistry 115 during the Fall Semester, 1982)	TBA	M thru F 9-12	0
Chem 99B	Basic Mathematics for introductory Chemistry (For students registered for Chemistry 111 during the Fall Semester, 1982)	TBA	M thru F **1:00-4:00**	0

Undergraduate Weekend College Classes

April 30 - August 1, 1982

on the campus of Keystone Junior College
La Plume, Pennsylvania — April 30 - August 1

Calendar — Summer Session, 1982

April 30, May 1, 2
May 14, 15, 16
June 4, 5, 6
June 25, 26, 27
July 9, 10, 11
July 30, 31, August 1

Unless otherwise indicated, all courses in the Weekend College meet according to the following schedule:

*(Times in Light Face Represent A.M. and Times in **Bold Face P.M.**)*

Schedule A	Schedule B	Schedule C
Fri. **6:30-8:30**	Sat. 8:00-10:00	Sat. **6:00-8:00**
Sat. 10:10-**12:10**	Sat. **1:00-3:00**	Sun. 8:00-10:00
Sat. **3:10-5:10**	Sun. 10:10-**12:10**	Sun. **1:00-3:00**

Course	Description	Room	Schedule	Credits
ACCOUNTING:				
Acct 221W	Taxes I	TBA	A	3
BUSINESS ADMINISTRATION:				
B A 264W	Retail Buying	TBA	B	3
EARTH & ENVIRONMENTAL SCIENCES:				
E & ES 125W	Survey of Oceanography	TBA	A	3
ECONOMICS:				
Econ 201W	Money and Banking	TBA	B	3
Econ 212W	Government and Business	TBA	A	3
Econ 225W	International Trade	TBA	C	3
ENGLISH:				
Eng 152W	Western World Literature (Pre: Eng 151)	TBA	C	3
HISTORY:				
Hist 102W	World Civilization	TBA	B	3
PHILOSOPHY:				
Phil 101W	Introduction to Philosophy	TBA	A	3
PHYSICAL EDUCATION:				
P Ed 110W	Hygiene	TBA	**	2
PSYCHOLOGY:				
Psy 213W	Physiological Psychology	TBA	C	3
Psy 242W	Psychological Tests	TBA	A	3
SOCIOLOGY:				
Soc 370W	Methods of Research in Sociology	TBA	B	3

Fridays, **8:40-10:40; Saturday, **8:10-10:10**

Academic Support Center

offers

College Skills Improvement Program
for Wilkes students
July 19 — August 27

Free diagnostic testing; preparedness courses in Math, Writing, Reading and Study Skills, Biology and Chemistry; tutoring . . .

For information, contact:
Ms. Mary Black
824-4651 ext. 334

Day-care

Day-care is available for young children of Wilkes students from 7:00 a.m. to 6:00 p.m. at Child Development Centers near the campus. These services are partially subsidized by the College.

For information, contact:
Ms. Anne Graham
824-4651, ext. 367

For further information, contact:

JOHN F. MEYERS, *Director*
Graduate and Part-Time
Undergraduate Programs
WILKES COLLEGE
Wilkes-Barre, Pennsylvania 18766
Phone: (717) 824-4651 Ext. 380