



# *Wilkes College*

1982-83 — 1983-84

**BULLETIN**

ARCHIVES

LD 6051

W2266

1982-83

**An** seeks truth, for without truth there can be no  
**Educated** understanding;  
**Man** 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.

## College Calendar

### 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	Wednesday, October 20 — 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.

### SUMMER — 1983

#### First Day Session

Classes Commence	Monday, June 13 — 8 a.m.
Classes End	Friday, July 15 — 12 noon

#### Second Day Session

Classes Commence	Monday, July 18 — 8 a.m.
Classes End	Friday, August 19 — 12 noon

#### Eight-week Evening Session

Classes Commence	Monday, June 13 — 6 p.m.
Classes End	Friday, August 5 — 10 p.m.

### FALL SEMESTER — 1983

Classes Commence	Monday, August 29 — 8 a.m.
Classes on Labor Day	Monday, September 5
Fall Break	Friday, October 14 — 5 p.m.
Classes Resume	Wednesday, October 19 — 8 a.m.
Thanksgiving Break	Tuesday, November 22 — 10 p.m.
Classes Resume	Monday, November 28 — 8 a.m.
Classes End	Friday, December 9 — 5 p.m.
Final Examinations Begin	Monday, December 12 — 8:30 a.m.
Final Examinations End	Wednesday, December 21 — 11:30 a.m.

### SPRING SEMESTER — 1984

Classes Commence	Monday, January 16 — 8 a.m.
Spring Break	Friday, March 2 — 5 p.m.
Classes Resume	Monday, March 12 — 8 a.m.
Easter Break	Thursday, April 19 — 10 p.m.
Classes Resume	Tuesday, April 24 — 8 a.m.
Classes End	Tuesday, May 1 — 5 p.m. (Tuesday, May 1, follow Friday schedule)
Final Examinations Begin	Friday, May 4 — 8:30 a.m.
Final Examinations End	Saturday, May 12 — 11:30 a.m.
Graduation	Sunday, May 20 — 2 p.m.

83-166481



*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*

**1982 - 1983**

**1983 - 1984**

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

Wilkes College is An Equal Opportunity / Affirmative Action Institution.

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

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

## Contents

COLLEGE CALENDAR .....	2
<b>HISTORY AND BACKGROUND</b>	
Wilkes College .....	7
College Life .....	8
The College and the Community .....	9
<b>POLICIES AND OBJECTIVES</b>	
Admissions .....	14
Counseling .....	18
Expenses .....	20
Financial Assistance .....	29
Registration .....	20
Scholarships .....	32
Trust Funds & Awards .....	36
<b>FACILITIES</b>	
Buildings and Plant .....	50
<b>THE ACADEMIC PROGRAM</b>	
Undergraduate Programs .....	56
Academic Requirements .....	57
Academic Majors and Course Descriptions .....	65
<b>SPECIAL DEGREE AND NON-DEGREE PROGRAMS</b>	
Pre-Professional Degree Program .....	188
Five-Year B.A. in History and M.A. in Business Administration .....	188
Five-Year B.S.-M.S. Degree — Mathematics Major .....	189
Medical Technology .....	189
Individualized Studies .....	190
International Studies .....	191
Urban Studies .....	192
Wilkes College/Temple University Dental Program .....	193
Wilkes College/Pennsylvania College of Optometry Program .....	194
Wilkes College/Temple University Pharmacy Program .....	196
Wilkes College/Pennsylvania College of Podiatric Medicine Program .....	197
Freshman Honors .....	198
Aerospace Studies .....	199
Division of Continuing Education .....	202
Cooperative Education Program .....	203
<b>PERSONNEL OF THE COLLEGE</b>	
Board of Trustees .....	206
Officers of Administration .....	208
Faculty .....	212
INDEX .....	226

## 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 non-denominational 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 under-prepared 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 four-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.

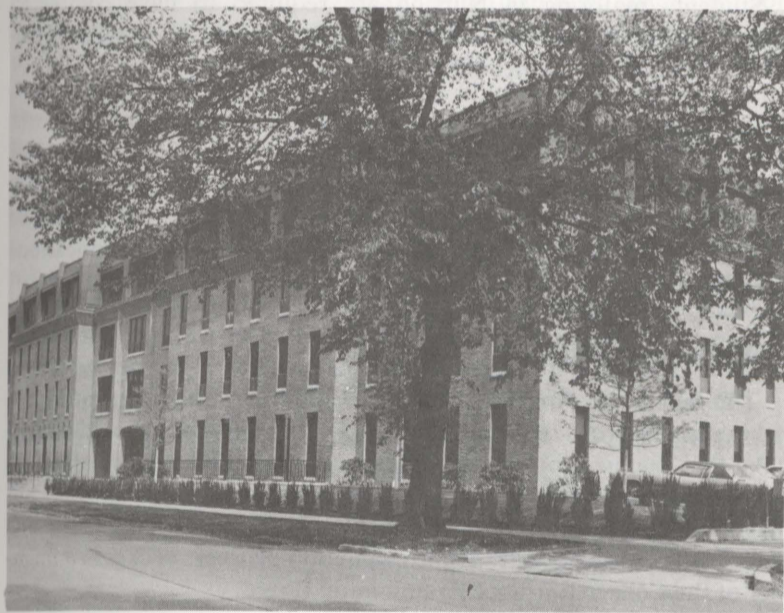
An active theater program, as well as a carefully selected Concert and Lecture Series, is presented throughout the regular college year. The Concert and Lecture Series is open to the College family and the public without charge as a Wilkes College service to the community as are the Town and Gown programs, 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 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.

### **Admission of International Students**

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

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

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

### **Advanced Placement Program**

Students who have successfully passed one or more Advanced Placement Tests administered by the College Entrance Examination Board may request advanced placement and/or credits. Advanced placement means that the student may be scheduled for a course at a more advanced level. Credit means that the student receives credit toward the hours required for graduation. Generally, credit will be granted for scores of 3, 4, or 5. 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. The College does not grant credit through General Examination of the College Level Examination Program. For further information contact: College Level Examination Program, Box 1824, Princeton, New Jersey 08540. Information on specific course exemptions and credits may be obtained from the Wilkes College Office of Admissions. Students wishing to be considered for CLEP credits should have the test results forwarded to the Office of Admissions.

### **Challenge Examinations**

Advanced placement and/or credit can be earned by challenge examinations administered by the appropriate department. Interested students should contact the department chairman. A fee of \$35 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.

### New Student Orientation Program

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

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

### Student Advisement

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

### The Family Educational Rights and Privacy Act of 1974

In accordance with the provisions of "The Family Educational Rights and Privacy Act of 1974," students, upon request, will be given access to all their evaluative records which have been established by Wilkes College. Such records might typically include those maintained by the Office of Career Services, the Health Services Office, the Registrar's, and the Deans' Offices. These records will be open to inspection in the presence of the appropriate college official. Students wishing to review their files must make an appointment at least one day in advance.

### Wilkes/King's Cross-Registration

Wilkes College and King's College offer their students an opportunity to cross-register for courses at either institution. The intention is to broaden the range of courses available to the student; only courses not offered at the college where the student is enrolled are open for cross-registration. Courses carry full credit and grade value and are

considered as part of the student's regular course load; no additional tuition charge is made. Students register through the Registrar at the College where they are enrolled as degree candidates. Interested students should confer with their Registrar for further details.

### Weekend Program

Wilkes offers upper-division courses on weekends on the campus of Keystone Junior College, La Plume, Pennsylvania. These courses provide students with the opportunity to complete their baccalaureate degree 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 of schedule 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 \$2,325 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 \$155 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 26-28 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 \$96 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 a flat \$250 per semester administrative service charge and pay hospital tuition directly. No financial aid will be available from Wilkes.

There is a fee of \$20 per semester for all music and music education majors. The cost of individual instruction in applied music is \$90 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 \$50. The fee is assessed regardless of participation in commencement exercises.

A Health Care fee of \$35 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

\$28. Sickness Insurance is also available to full and part-time students on an optional basis at a cost of \$35 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 \$8 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 be covered by professional liability insurance. The \$12 fee for this malpractice insurance is billed each fall.

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 com-

mute 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 \$1,180 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

$$11 \times \$89 + .40 (2,100 - 979) \\ \$979 + \$448.40 = \$1,427.40 = \text{newly computed cost of 11 credits}$$

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 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:

<b>Cash Price Advance</b>	<b>Monthly Payment</b>
\$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 assessed on the IPP, an application fee of \$40 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 Department of Education for purposes of the Pell Grant 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 must complete the Wilkes College Aid Application and shall submit confidential information pertaining to the applicant's financial needs and academic achievements. Because of the limited nature of College funds, applicants are *required* to submit applications for the Federal Pell Grant Program and for their State Grant/Scholarship Programs, where these are available. College grants may then be offered to students as supplements to these Federal and State funds.

**Pennsylvania residents** shall file the PHEAA/Federal Student Aid Composite application form, which gathers financial information about the applicant's family for the Pennsylvania State Grant Program, the Federal Pell Grant Program, and all the need-based pro-



grams 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/Federal Student Aid Composite form. As non-residents, applicants could not apply for the Pennsylvania Grant program, but the application will transmit the information to the Pell Grant Program and to the College for its use in determining the applicant's eligibility for its aid programs.

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

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

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

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-time 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 \$1,000, 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.

## Pell Grants

Federal Pell Grants, ranging from \$200 to \$1,674 in 1982-83 are available to those students who demonstrate financial need. The amount of individual grants is related directly to the student's Aid index as determined by the Pell Grant Program. Application is made by completing either the PHEAA/Federal Student Aid Composite form or a state Financial Aid Form (FAF).

## Nursing Student Scholarships

Federal grants ranging from \$100 to \$2,000 per year are available to students enrolled in the Department of Nursing. These grants are based on the financial need of the applicant and are contingent upon future funding by Congress.

## 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 Pell 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 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. 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. Full-time students may apply for loans of 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.

### Plus Loans

Plus Loans are available to parents of dependent undergraduate students, graduate/professional students, and to independent students.

Graduate/professional students and parents of undergraduate dependent students may borrow up to \$3,000 per academic grade level of full-time study (\$1,500 for part-time study) with an aggregate lending level of \$15,000. Independent undergraduate students may borrow up to \$2,500 per academic grade level of full-time study (\$1,250 for part-time study) with an aggregate of \$12,500. The yearly grade level and aggregate limits for independent undergraduate students include any Guaranteed Student Loan borrowings the student may have.

Repayment of these loans begins 60 days after the loan proceeds are disbursed. The current interest rate is 14%.

## 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 35 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 Pell 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 Zatzoff, successful businessmen in the Greater Wilkes-Barre area, in memory of their nephew Ira B. Zatzoff, 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, Pennsyl-

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

THE 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.

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

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

#### College and Community Organizations

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

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

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

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

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

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

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

This half-tuition scholarship is awarded to a football player from the Greater Wyoming Valley area selected by the football coaches and the athletic director of the College.

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

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

#### Commercial and Industrial Concerns

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

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

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

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

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

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

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

LAVENTHOL & HORWATH SCHOLARSHIP 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.

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

THE BOSCOV SCHOLARSHIP, established by Albert Boscov, President of Boscov's Department Stores, will be awarded annually to assist capable and worthy students who elect to study at Wilkes College. Preference will be given to qualified individuals who are sons or daughters of employees of Boscov's Department Stores.

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

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

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

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

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

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



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

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

#### 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.

*Faculty Division, Deane Hall and Center for the Performing Arts*

**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 Dart Center for the Performing Arts

A fully equipped, 500-seat cultural center is the gift of Dorothy Dickson Dart. 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 Dart 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 Dart Music Building**

Faculty offices, studios, classrooms, practice and rehearsal rooms are housed in the Dart 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**

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 is located in Max Roth Center and assists students at all stages of their career development. No appointment is usually necessary and students are encouraged to participate in this service program by registering with the office.

Typical services of the office include career counseling, workshops on resume preparation, interviewing skills and job search techniques. In addition, the Career Services Office operates a credentials service for all registered candidates, maintains contact with professional and educational organizations through an on-campus recruiting program, and provides job information service on various full-time and part-time opportunities of interest to students and alumni. First-year students are particularly advised not to consider part-time employment until they have had an adequate opportunity to determine the time needed to fully meet academic requirements.

Flexibility and planning are essential for choosing a major and determining career goals. A Career Library is available to identify the variety of career options for students in any major.

Each year, usually in October, the Career Services Office participates in a Career Day sponsored jointly by the area colleges. At this event, over a hundred organizations come to campus to meet with students about available career opportunities.

Registrants are urged to regularly update their credentials file and 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 Public Relations and Publications Office, the Office of College Development, the Director of Financial Aid, the Director of Planned Giving, the Director of Cultural Activities.

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

**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.

**Ross Hall**, 251 South River Street, contains the Upward Bound and Act 101 offices.

**The Annette Evans Faculty and Alumni House**, South River Street, provides rooms for alumni and faculty to meet informally and contains the Alumni Office.

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

**Founders Hall** contains the office of the Dean of Health Sciences.

# The Academic Program

## Undergraduate Degree Programs

## Academic Requirements

## Course Descriptions



*McClintock Hall — Women'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	English	Music
Biology	Foreign Languages:	Philosophy
Chemistry	French	Physics
Communication Studies	German	Political Science
Computer Science	Spanish	Psychology
Earth and	History	Social Science /
Environmental Sciences	Individualized Studies	Urban Affairs
Economics	International Studies	Sociology -
Elementary Education	Mathematics	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	Engineering
Business Education	Individualized Studies
Chemistry	Mathematics
Commerce and Finance	Medical Technology
(a) Accounting	Music
(b) Business Administration	Nursing
Computer Science	Physics
Earth and	
Environmental Sciences	

### 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 thirty-six credits, must maintain a minimum 1.70 in both their major and cumulative grade point averages. All other students must maintain a minimum 2.00 in both their major and cumulative grade point averages. Any student who falls below the minimum required will automatically be placed on academic probation.

**Academic Probation**

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 the student.

To graduate with honors from Wilkes College, a student must have completed a minimum of 60 credits of at least **cum laude** quality at Wilkes College.

#### Requirements for Honors are:

Summa Cum Laude	3.80
Magna Cum Laude	3.50
Cum Laude	3.25

### Graduation Requirements

All candidates for degrees and certificates are expected to be present at Commencement. If circumstances prevent their attendance, students must apply to the Dean of Student Affairs for permission to take the degree or certificate *in absentia*.



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

1. They must 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. (**Note: Music majors should take the following: 18 credits in the Humanities, including English 101, 102; 12 credits in the Social Sciences, including Psychology 101-102; 6 credits in Science/Mathematics.**)

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



Required General Core Courses	Credit Hours
English 101-102	6
Physical Education 100 (four semesters)	0
Art 101 or 111 (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 110 through 135, 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) <b>and</b> 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 51-55

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

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

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

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

The Department of Art offers programs leading to the B.A. degree and the B.F.A. (Bachelor of Fine Arts) degree. The B.A. curriculum requires a minimum of 41 credits in art. It provides a broad foundation in art, while allowing the student exceptional latitude to pursue studies in other areas of interest. The B.F.A. curriculum requires a minimum of 62 credits in art, and provides more intensive study in art, particularly within a chosen discipline. Areas of concentration include Ceramics, Painting, Photography, Printmaking, Sculpture, and Textile Design.

Students seeking teaching certification (K-12) may pursue either degree, but the B.F.A. will normally require an additional semester for completion of the art education component. (Please consult the department for course sequences in art education.)

Courses required for the B.A. degree (with recommended sequence):

**First Semester** — Art 201; **Second Semester** — Art 202, 208; **Third Semester** — Art 215, 220; **Fourth Semester** — Art 216, 225; **Fifth Semester** — Art 218, 221, 233; in addition, one course in Art 241, 243, or 248; Art 397, one other 300-level art course; one art elective, and Art 499.

The minimum B.F.A. curriculum contains all the requirements of the B.A. curriculum; in addition, nine more credits at the 300- or 400-level in a single discipline (for a total of 15 credits in the discipline); twelve additional credits of art electives.

Any student admitted to the College may begin work toward the B.F.A., but B.F.A. candidates should be aware that standards of performance will intensify at the advanced levels in their chosen concentrations. Formal intention to pursue the B.F.A. should be submitted to the Department in the sophomore or junior year. Each B.F.A. candidate must undergo a final senior review.

Additional requirements of all students majoring in art: submission of a portfolio for review by the art faculty at the end of the sophomore and junior years; presentation of a senior exhibition.

**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 111. INTRODUCTION TO ART HISTORY** Three credits  
A course for non-majors which will survey the outstanding masters, masterworks, and themes in art and architecture from antiquity to the present.

**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 I** 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 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 370. PHOTOGRAPHY II** Three Credits  
Advanced work in black and white photography, including the zone system; refined darkroom techniques and development of a personal style. Fee: \$10.  
Prerequisite: Art 270.

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

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

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

## Biology

Associate Professor Turoczi, chairman; Professor Ogren; Associate Professors Hayes, Houseknecht, Rigley; Assistant Professors Forks, Padgett.

**Total credits required for either B.A. or B.S. degree with major in Biology — 125.**

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 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 3.00 or better in all biology courses, pursuing independent research in biology and presenting results either at a national or regional scientific conference or through publication of a research paper. The distinction "Honors in Biology" will be recorded on the student's transcript upon graduation.

FIRST SEMESTER			SECOND SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Bio. 201-202	5	5	Bio. 203-204	5	5
Chem. 115	4	4	Chem. 116	4	4
Eng. 101	3	3	Eng. 102	3	3
Math. 105 or 111	4	4	Math. 106 or 112	4	4
P.E. 100	0	0	P.E. 100	0	0
	<hr/>	<hr/>		<hr/>	<hr/>
	16	16		16	16

THIRD SEMESTER			FOURTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Bio. 205-206	5	5	Bio. 207-208	5	5
Chem. 231	4	4	Chem. 232	4	4
Core Electives	6	6	Core Electives	6	6
P.E. 100	0	0	P.E. 100	0	0
	<hr/>	<hr/>		<hr/>	<hr/>
	15	15		15	15

FIFTH SEMESTER			SIXTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Bio. 397*	1	1	Bio. 397*	1	1
Bio. Elective/Research	3	6	Bio. Elective/Research	3	6
Phys. 105	4	4	Phys. 106	4	4
Core Electives	6	3	Core Electives	6	3
Elective**	3	—	Elective**	3	—
Math. 150	—	3	C.S. 123	—	3
	<hr/>	<hr/>		<hr/>	<hr/>
	16-17	16-17		16-17	16-17

SEVENTH SEMESTER			EIGHTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Bio. Elective/Research	3	3	Bio. Elective/Research	3	3
Core Electives	6	6	Core Electives	3	9
Electives**	6	6	Electives**	9	3
	<hr/>	<hr/>		<hr/>	<hr/>
	15	15		15	15

\* Only one semester of Bio. 397 is required but it must be taken in either the fifth or sixth semester.  
 \*\* Any course other than a biology course.

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

The minor in Biology shall consist of 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 prokaryotes and eukaryotes 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			SECOND SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Chem. 115	4	4	Chem. 116	4	4
Eng. 101	3	3	Eng. 102	3	3
Math. 111	4	4	Math. 112	4	4
Core Elective	3	3	Core Elective	3	3
P.E. 100	0	0	P.E. 100	0	0
Elective	2	2			
	16	16		14	14
THIRD SEMESTER			FOURTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Chem. 231	4	4	Chem. 222	4	4
Math. 211	4	4	Chem. 232	4	4
Phys. 201	4	4	Math. 212	—	4
Core Elective	3	3	Phys. 202	4	4
P.E. 100	0	0	P.E. 100	0	0
Elective	3	3	Core Elective	3	—
	18	18		15	16
FIFTH SEMESTER			SIXTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Chem. 241	4	4	Chem. 252	—	4
Chem. 251	4	4	Chem. 274	—	4
Phys. 203	3	3	Chem. 276	3	3
Core Electives	6	6	Core Electives	6	6
			Electives	9	—
	17	17		18	17
SEVENTH SEMESTER			EIGHTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Chem. 397	1	1	Chem. 397	1	1
Core Electives	6	6	Core Electives	3	6
Electives	9	9	Electives	12	9
	16	16		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 II 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 physicochemical 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.

Prerequisite: 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. 232.

**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 — 129.**

### 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
	<hr/>		<hr/>
	15		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		
	<hr/>		<hr/>
	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
	<hr/>		<hr/>
	18		18
SEVENTH SEMESTER		EIGHTH SEMESTER	
Acct. 221	3	Acct. 252	3
Acct. 231	3	B.A. 226	3
B.A. 209	3	Electives <sup>1</sup>	6
B.A. 225	3		
B.A. 251	3		
Elective <sup>1</sup>	3		
	<hr/>		<hr/>
	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. Fee: \$15.

<sup>1</sup>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. Fee: \$15.

**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 — 132.**

#### 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
	15		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		SIXTH SEMESTER	
B.A. 251	3	B.A. 222	3
Ec. 201	3	B.A. 252 or 254	3
Ec. 231	3	Ec. 228 or	3
Core Elective	3	C. & F. elective	3
Electives	6	Ec. 232	3
		Core Elective	3
		Elective	3
	<hr/>		<hr/>
	18		18
SEVENTH SEMESTER		EIGHTH SEMESTER	
B.A. 209	3	B.A. and Ec. electives	12
B.A. 225	3	Elective	3
B.A. and Ec. electives	9		
Elective	3		
	<hr/>		<hr/>
	18		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         | Ec. 224 — Economic Development                 |
| Acct. 112 — Intermediate Accounting II        | Ec. 225 — International Trade                  |
| B.A. 220 — Real Estate                        | Ec. 226 — International Investment and Finance |
| B.A. 226 — Investments                        | Ec. 236 — Public Finance                       |
| B.A. 240 — Property Insurance                 | Ec. 241 — Microeconomics I                     |
| B.A. 241 — Life Insurance                     | Ec. 251 — Macroeconomics I                     |
| C.S. 124 — COBOL Programming                  | Ec. 252 — Macroeconomics II                    |
| C.S. 224 — Advanced COBOL and File Management | Math. 105 — Introductory Calculus I            |
|   | Math. 106 — Introductory Calculus II           |

**ECONOMICS**

- |   |   |
|---|---|
| B.A. 217 — Logistics and Distribution Management                            | Ec. 228 — Economic Geography of Asia, Africa, and Latin America |
| C.S. 123 — FORTRAN Programming  | Ec. 229 — Comparative Economic Systems                          |
| C.S. 223 — Advanced Programming — FORTRAN                                   | Ec. 230 — Business Cycles                                       |
| C.S. 224 — Advanced COBOL and File Management                               | Ec. 236 — Public Finance  |
| Ec. 212 — Government and Business   | Ec. 241 — Microeconomics I                                      |
| Ec. 222 — American Labor Movement   | Ec. 242 — Microeconomics II                                     |
| Ec. 223 — Collective Bargaining   | Ec. 245 — Consumer Economics                                    |
| Ec. 224 — Economic Development  | Ec. 251 — Macroeconomics I                                      |
| Ec. 225 — International Trade   | Ec. 252 — Macroeconomics II                                     |
| Ec. 226 — International Investment and Finance                              | Ec. 395-396 — Independent Research                              |
| Ec. 227 — Economic Geography of North America, Europe, and the Soviet Union | Ec. 397 — Seminar   |
|   | Ec. 398 — Topics  |
|   | Math. 105 — Introductory Calculus I                             |
|   | Math. 106 — Introductory Calculus II                            |

**MANAGEMENT AND INDUSTRIAL RELATIONS**

- |   |   |
|---|---|
| Acct. 201 — Cost Accounting                               | C.S. 224 — Advanced COBOL and File Management |
| Acct. 204 — Managerial Accounting                         | Ec. 222 — American Labor Movement             |
| B.A. 217 — Logistics and Distribution Management          | Ec. 223 — Collective Bargaining               |
| B.A. 240 — Property Insurance                             | Math. 105 — Introductory Calculus I           |
| B.A. 241 — Life Insurance                                 | Math. 106 — Introductory Calculus II          |
| B.A. 252 — Operations and System Management or            | Math. 262 — Operations Research               |
| B.A. 254 — Organizational Design and Behavior             | P.S. 218 — Public Administration              |
| B.A. 256 — Business Policies and Corporate Responsibility | P.S. 327 — International Relations            |
| B.A. 395-396 — Independent Research                       | Psy. 232 — Human Behavior                     |
| C.S. 124 — COBOL Programming                              | Psy. 242 — Psychological Tests or             |
|   | Psy. 243 — Industrial Psychology              |
|   | Soc. 265 — Sociology of Industry              |

**MARKETING**

- |  |  |
|--|--|
| B.A. 114 — Salesmanship                          | Ec. 224 — Economic Development                 |
| B.A. 216 — Advertising                           | Ec. 225 — International Trade                  |
| B.A. 217 — Logistics and Distribution Management | Ec. 226 — International Investment and Finance |
| B.A. 222 — Marketing                             | Ec. 245 — Consumer Economics                   |
| B.A. 240 — Property Insurance                    | Math. 105 — Introductory Calculus I            |
| B.A. 241 — Life Insurance                        | Math. 106 — Introductory Calculus II           |
| B.A. 261 — Principles of Retailing               | P.S. 222 — International Relations             |
| B.A. 264 — Retail Buying                         | Psy. 232 — Human Behavior                      |
| B.A. 395-396 — Independent Research              | Psy. 243 — Industrial Psychology               |
| B.A. 398 — Topics                                | Soc. 265 — Sociology of Industry               |
| C.S. 124 — COBOL Programming                     |  |
| C.S. 224 — Advanced COBOL and File Management    |  |

**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.

**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.

**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 136).

**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 64, except the science/mathematics area which is specified below.	39
(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	35

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
<b>Electives: any one of the following matched pairs</b>	
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

**Minor in Management Information Systems**

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

**Minimum total credits required for minor — 21.**

Required courses	credit hours
C.S. 124, C.S. 224, C.S. 324, and C.S. 325	12
B.A. 251	3
Any two among: B.A. 252, B.A. 254, B.A. 256	6
<b>C.S. 122. BASIC PROGRAMMING</b>	<b>One credit</b>
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: \$20. (same as Engr. 241) Offered every fall, spring, and summer.	
<b>C.S. 123. FORTRAN PROGRAMMING</b>	<b>Three credits</b>
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: \$35. (same as Engr. 244) Offered every fall, spring, and summer.	
<b>C.S. 124. COBOL PROGRAMMING</b>	<b>Three credits</b>
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: \$35. Offered every fall, spring, and summer.	
<b>C.S. 223. ADVANCED PROGRAMMING: FORTRAN</b>	<b>Three credits</b>
A study of advanced programming techniques using FORTRAN IV. Topics include advanced data types, program optimization, and the use of various storage devices. Fee: \$35. (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: \$35.

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: \$35. (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 analysis 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. Micro-programming, soft-ware systems, and representative applications. Associated laboratory experiments consider topics such as bus structure, programming, data conversion, interfacing, data acquisition, and computer control. Two hours lecture and one two-hour laboratory per week. Fee: \$25. (see E.E. 342)  
Prerequisite: C.S. 320/E.E. 341.  
Offered 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

Assistant Professor Case, acting chairman; Assistant Professor Redmond.

The department offers several degree programs incorporating concepts in both the earth and environmental science areas. The B.S. degree program offers study of either earth science or environmental analysis. The B.A. program offers study of environmental planning. The Em.E. program offers study of pollution control strategy. The E. & E.S. program offers study which may lead to a Pennsylvania Secondary Teaching Certificate. The Minor program offers students an opportunity to relate earth and/or environmental science concepts to their majors:

### I. Total minimum credits for B.S. degree — 126.

- A. E. & E.S. — 32  
194, 211, 230, 240, 251, 397, and 12 elected credits of either earth or environmental sciences
- B. Core — 55  
including Math. 111-112 and Phys. 105-106
- C. Other required courses — 25-27  
Bio. 207, 208, and 301, Chem. 115-116, C.S. 123, plus a two course sequence of non-introductory science
- D. Free electives — 12-14

### II. Total minimum credits for B.A. degree — 123

- A. E. & E.S. — 32  
194, 211, 230, 240, 251, 397, and 14 elected credits of earth or environmental sciences
- B. Core — 51  
including P.S. 102-105, Phys. 101-102, Ec. 101-102, and Bio. 101-102



**C. Other required courses — 24.5**

Bio. 208, Chem. 111, P.S. 218, 314, and 354, Anth. 101, Math. 150, and C.S. 123

**D. Free electives — 15.5****III. Earth and Space Science Certification Program:****A. E. & E.S. —**

the B.S. degree program (or equivalent) including E. & E.S. 212, 280, and two geology electives; and Psy. 101-102

**B. Education —**

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

C. Certification nomination also includes non-course professional requirements.

**IV. Environmental Engineering —**

see Engineering department listing for details

**V. Minor —**

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, oceanic 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 on-site application of field procedures and investigative techniques. One hour lecture, plus field trip. Fee: variable.

**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 three 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 three 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 three 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 three hours laboratory. Fee: \$30.

**E. & E.S. 252. DYNAMIC METEOROLOGY** **Three credits**  
Topics include thermodynamics; heat, moisture, and momentum transfer; and atmospheric forces and motion fields. Three hours lecture and one hour discussion.

**E. & E.S. 280. PRINCIPLES OF ASTRONOMY** **Four credits**  
Topics include orbital mechanics, results of planetary probes, spectra and stellar evolution, and cosmology. Three hours lecture and three hours laboratory. Fee: \$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 inadvertent 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 three 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 three 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 three 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. One hour lecture, plus field trip. Fee: variable.  
Prerequisite: E. & E.S. 194 or equivalent experience.

**E. & E.S. 395-396. INDEPENDENT RESEARCH I & II** **One to three credits each**  
Independent study or research of a specific earth or environmental science topic at an advanced level under the direction of a departmental faculty member. For three credits, a defensible research paper is required. 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 Nevel, Curriculum Librarian; Professors Bellucci, Dart; Associate Professors Fahmy, Gera; Assistant Professor 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 — 60 credits.**

**General Core Requirements . . . . . 24 credits**  
 Eng. 101-102; P.E. 100 (four semesters); 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 — 120 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 techniques are examined.

Section A — Art (Grades K-12)

Section B — Business (Grades 7-12)

Section C — Communication/English (Grades 7-12)

Section D — Elementary (Grades K-6)

Section F — Foreign Languages (Grades K-12)

Section G — Mathematics (Grades 7-12)

Section H — Music (Grades K-12)

Section I — Sciences (Grades 7-12)

Section J — Social Studies (Grades 7-12)

**ED. 204. BASIC EDUCATION CURRICULA****Three credits**

An examination of curricula in the various disciplines. Programs of study developed by various organizations are examined.

Section A — Art (Grades K-12)

Section B — Business (Grades 7-12)

Section C — Communication/English (Grades 7-12)

Section D — Elementary (Grades K-6)

Section F — Foreign Languages (Grades K-12)

Section G — Mathematics (Grades 7-12)

Section H — Music (Grades K-12)

Section I — Sciences (Grades 7-12)

Section J — Social Studies (Grades 7-12)

**ED. 251. THE TEACHING OF ELEMENTARY READING****Three credits****ED. 252. THE TEACHING OF ELEMENTARY MATHEMATICS****Three credits**

83-166481

**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 transcribed as follows:**

**ED. 381. PROFESSIONAL PRACTICUM** Four credits

**ED. 382. INTERN TEACHING** Eleven credits

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

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

**ED. 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, Case, Dolny, Koch, Parker, Yaroushalmi, Yu; Adjunct Professor Osadchy; Lecturers Burton, Fladd, Petrokonis, Petyak, Sandwick.

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

The four-year programs in Electrical Engineering, Engineering Management, Environmental Engineering, and Materials Engineering leading to the Bachelor of Science degree offer various specializations. Students can choose to concentrate, within these programs, in bioengineering, computer engineering, electronic materials, microelectronics, microwave and antenna systems, or telecommunications. Specialization is achieved through the appropriate selection of the technical electives.

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

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

The student professional chapters of the Institute of Electrical and Electronic Engineers (I.E.E.E.), the American Society for Metals (A.S.M.), the Society of Women Engineers (S.W.E.), 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.

**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. 100 Physical Education	0	Phys. 201 General Physics II	4
		P.E. 100 Physical Education	0
	15		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 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**  
**Environmental Management**

**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	3	E.E. 332 Electromagnetics II	3
E.E. 333 Lab. I	1	E.E. 334 Lab. II	1
E.E. Elective	6	E.E. 272 Solid State Devices	3
Liberal Studies	3	E.E. Elective	3
	17	Liberal Studies	3
			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 — 136.**

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 — 131.
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.

**Engineering Management  
Second Year**

THIRD SEMESTER		FOURTH SEMESTER	
E.E. 211 Circuit Theory I	3	Ma.E. 210 Materials Engr.	3
Engr. 231 Statics & Dynamics	3	Engr. Elective	3
Engr. 283 Measurement Lab. I	1	Engr. 284 Measurement Lab. II	1
Math. 211 Differential Equations	4	Math. 150 Statistics	3
Phys. 202 General Physics I	4	Acct. 101 Accounting I	3
Ec. 101 Economics I	3	Ec. 102 Economics II	3
	18		18

**Engineering Management  
Third Year**

FIFTH SEMESTER		SIXTH SEMESTER	
B.A. 225 Managerial Finance	3	B.A. 252 Oper. & Syst. Management	3
B.A. 251 Principles of Management	3	B.A. 254 Org. Design & Behav.	3
Technical Electives*	6	Math. 262 Oper. Research	3
Liberal Studies***	6	Technical Electives*	6
	18	Liberal Studies***	3
			18

**Engineering Management  
Fourth Year**

SEVENTH SEMESTER		EIGHTH SEMESTER	
B.A. 222 Marketing	3	B.A. 231 or 232 Business Law	3
Liberal Studies	3	E. & E.S. 240 Principles of Env. Sci.	4
Technical Electives*	6	Technical Electives*	6
Engineering Management Elective**	3	Engineering Management Elective**	3
Engr. 397 Seminar	1	Engr. 397 Seminar	1
	16		17

\*Courses in approved engineering and science preference program.  
 \*\*May be in engineering management, independent research, case studies, or internship.  
 \*\*\*At least nine credits in the humanities.

### Environmental Engineering Second Year

THIRD SEMESTER		FOURTH SEMESTER	
Math. 211 Intro. to Differential Equations	4	Math. 212 Multivariable Calculus	4
Phys. 202 General Physics II	4	Phys. 203 General Physics III	3
Engr. 231 Statics & Dynamics	3	Engr. 284 Measurement Lab. II	1
Engr. 283 Measurement Lab. I	1	Ma.E. 210 Materials Engineering	3
E.E. 211 Circuit Theory I	3	E. & E.S. 251 Synoptic Meteorology	4
Liberal Studies	3	Liberal Studies	3
	18		18

### Environmental Engineering Third Year

FIFTH SEMESTER		SIXTH SEMESTER	
Bio. Biology or	4	Bio. Biology or	4
Chem. 231 Organic Chem. I		Chem. 232 Organic Chem. II	
E. & E.S. 211 Physical Geology	4	E. & E.S. 240 Princ. of Env. Sci.	4
E. & E.S. 310 Air Quality	3	Engr. 224 Heat Transfer	3
Engr. 233 Fluid Mechanics	3	Engr. 232 Strength of Materials	3
Liberal Studies	3	Liberal Studies	3
	17		17

### Environmental Engineering Fourth Year

SEVENTH SEMESTER		EIGHTH SEMESTER	
Engr. 397 Seminar	1	Engr. 397 Seminar	1
E. & E.S. 330 EQM I	4	E. & E.S. EQM II	4
E. & E.S. 320 Hydrology	3	Ma.E. 234 Electrochemistry	3
E. & E.S. 350 Env. Development	3	E. & E.S. 394 Field Study	1
Technical Elective	3	Technical Elective	3
Liberal Studies	3	Liberal Studies	3
	17		15

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

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

### 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. Fee: \$10.

#### 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. 233. FLUID MECHANICS **Three credits**

Thermodynamics and dynamic principles applied to fluid behavior, ideal, viscous, and compressible fluids under internal and external flow conditions.

Prerequisite: 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: \$20. (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: \$35. (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: \$35. (see C.S. 223)

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

#### ENGR. 250. BIOMEDICAL ENGINEERING **Three credits**

Engineering principles of biomedical instrumentation relating to circulation, respiration, and motor-neural systems are developed. The relationship between human anatomy, physiological system, and transducers is treated as a man-machine interface phe-



nomenon. Instruments emphasized include X-ray, ultrasonics, and coronary care devices.

Prerequisite: Junior or senior standing in engineering or science.

**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: \$35. (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.

**ENGR. 372. ENERGY MANAGEMENT ENGINEERING** **Three credits**  
Appraisal of energy conservation management, economic efficiency of energy sources, productivity analysis techniques. Principles of energy balance analysis and the availability of energy sources.  
Prerequisite: Junior or senior study in engineering or science.

**ENGR. 373. OCCUPATIONAL HEALTH** **Three credits**  
Appraisal of environmental health hazards, sampling techniques, instrumentation and analytic methods. Principles of substitutions, enclosure and isolation for the control of hazardous operations in industry. Three hours lecture/demonstration.  
Prerequisite: Junior or senior study in engineering or science.

**ENGR. 374. MANAGEMENT OF INDUSTRIAL ENGINEERING** **Three credits**  
Systems analysis that will include all types of problems frequently encountered by industrial engineers, their impact on the management of an industrial concern, and an exposure to the industrial engineering techniques available to solve the problems.  
Prerequisite: Senior engineering standing.

**ENGR. 375. PROJECT & SYSTEMS MANAGEMENT** **Three credits**  
Description of systems management, systems engineering management and the design process. The role of decision theory, modeling, and methodology in systems management analysis. Project environment and control. Program management, planning, and control.  
Prerequisite: Senior engineering standing.

**ENGR. 397. SEMINAR** **One to three credits**  
Presentations and discussions of selected topics and projects.  
Prerequisite: Senior engineering standing.

**ENGR. 398. TOPICS IN ENGINEERING** **Three credits**  
Selected topics in the field of engineering and related areas. These may include: mechanical engineering; civil engineering; engineering management; geotechnology; radiation; etc.  
Prerequisite: Senior engineering standing.

## Electrical Engineering

**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 terminal 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: \$35.  
Prerequisite: To be taken along with or after E.E. 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: \$35.  
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: \$30.

Prerequisite: E.E. 331.

**E.E. 331. ELECTROMAGNETICS I** **Three credits**

Vector analysis. The concept of fields. Dielectric and magnetic media; fields in conductors; electric and magnetic circuit elements. Maxwell's equations and boundary condition problems in one, two, and three dimensional space. Plane electromagnetic waves and power flow. Three hours lecture a week.

Prerequisite: Math 211, Phys. 202.

**E.E. 332. ELECTROMAGNETICS II** **Three credits**

Development of Maxwell's equations and boundary-value problems. Plane wave propagation and reflection from boundaries; the Poynting Theorem. Transmission lines and strip lines; impedance transformation and Smith Charts. Guided TEM, TE and TM waves. Radiation from dipole antenna. Three hours lecture a week.

Prerequisite: E.E. 331, 333.

**E.E. 333. ELECTROMAGNETICS I LABORATORY** **One credit**

Laboratory experiments are performed which illustrate fundamental electromagnetic field concepts in distributed systems and in lumped element circuits. Experiments are partially planned by the students and reported both formally and informally. One three-hour laboratory a week. Fee: \$30.

Prerequisite: To be taken along with or after E.E. 331.

**E.E. 334. ELECTROMAGNETICS II LABORATORY** **One credit**

A continuation of E.E. 333 with emphasis on transmission line concepts and the interaction of electromagnetic fields and matter. One three-hour laboratory a week. Fee: \$30.

Prerequisite: E.E. 333.

**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.

**E.E. 342. MICROCOMPUTER OPERATION AND DESIGN** **Three credits**

Microprocessor architecture, microcomputer design, and peripheral interfacing. Micro-programming, soft-ware systems, and representative applications. Associated laboratory experiments consider topics such as bus structure, programming, data conversion, interfacing, data acquisition, and computer control. Two hours lecture and one two-hour laboratory a week. Fee: \$35. (same as C.S. 329)

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

**E.E. 343. COMPUTER DATA STRUCTURES** **Three credits**

A study of the use of a high-level language to implement complex data structures. These include lists, trees, graphs, networks, storage allocation, file structure and information storage and retrieval. Three hours lecture a week. (see C.S. 227)

Prerequisite: Engr. 245.

**E.E. 344. OPERATING SYSTEM PRINCIPLES** **Three credits**

Analysis of the computer operating systems including Batch, Timesharing, and Real-time systems. Topics include sequential and concurrent processes, processor and storage management, resource protection, processor multiplexing, and handling of interrupts from peripheral devices. Three hours lecture a week. (see C.S. 326)

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

**E.E. 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. 350. MEDICAL INSTRUMENTATION** **Three credits**

Applied medical instruments such as ultrasonic devices and signal processing units for ECG and EEG are discussed. The design principles of electrodes, hemodialysis devices, catheters, clinical instruments, intensive care units (ICU's) and pacemakers are treated. Mechanical and electrical design techniques are developed.

Prerequisite: Junior or senior standing in engineering or science.

**E.E. 361. COMMUNICATION SYSTEMS** **Three credits**

Fundamental properties of signals. Principles and techniques of linear signal processing. Modulation and demodulation systems, including pulse. Sampling, channel capacity, and coding. Methods of multiplexing. Modulator and multiplexer design. Noise and its effects on communication. Three hours lecture a week.

Prerequisite: E.E. 212, E.E. 252.

**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. 332.

**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: \$35.

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: \$35.

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 ENGINEERING** **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-Scherrer and Preferred Orientation Techniques. Lane, Rotating, Weissenberg and Precession Single Crystal Methods. Three hours lecture and one three-hour laboratory a week. Fee: \$35.

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: \$35 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 51 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. 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. AMERICAN SOCIAL HISTORY** **Three credits**  
This course entails a consideration of the development of American society from the colonial period until present times. Attention will especially focus on the rise of industrialism and its impact on society in the late nineteenth and twentieth centuries.

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

**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 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.

**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. THE UNITED STATES, 1900-1945** Three credits  
The emergence of the United States as a world power and the corresponding development of its political, economic, social, and religious institutions.
- HIST. 335. THE UNITED STATES SINCE 1945** Three credits  
An examination of the political, social, and economic changes in the United States since World War II. Special attention is paid to America's dominant role in the immediate post-war world and how changing conditions over the past forty years have altered this role.
- 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. 365. HISTORY OF CHINESE COMMUNISM** Three credits  
This course is designed to examine the origins of Chinese Communism, the rise of the Chinese Communist Party to national power, and the essential features of Mao Tse-tung's strategies and policies.
- HIST. 367. HISTORY OF MODERN INDIA** Three credits  
A study of the political, social, and economic development of the Indian sub-continent since 1500.
- HIST. 376. WORLD WAR II** Three credits  
Consideration of the causes of the war, military strategy and tactics, diplomatic interests of the participants, and resulting cold war problems.
- 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 Fox, Karpinich, Kinney, Leslie, Jr., O'Neill, Schulman, Siegfried, Stoekl.

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

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

### English

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**ENG. 222. INTRODUCTION TO LINGUISTICS** **Three credits**  
An introduction to the methods and materials of linguistic analysis.  
Prerequisite: Eng. 152 or 254 and 220 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 Management; Communication 246, Broadcast Production; Communication 252, Internship.

Summary:

	Credit hours
Core	51
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
<b>Total:</b>	<b>120</b>

**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. Fee: \$20.

**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 — 120.**

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 B.A. degree — 120.

A major in any of the modern foreign languages consists of twenty-four credit hours in advanced language courses beyond the 204 course. These twenty-four credits must normally include 301-302. Students seeking public school certification must also take 205, 206, 207, 208 (or, in Spanish, 209), and 350; and in addition to the required twenty-four credit hours, 390 and English 222. In order to enhance their command of language and their understanding of culture, majors are urged to spend a summer or semester abroad.

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

A minor in any of the foreign languages shall consist of eighteen credit hours in one language beyond 102.

#### French

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

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

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

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

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

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

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

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

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

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

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

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

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

### German

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

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

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

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

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

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

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

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

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

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

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

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

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

### Spanish

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

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

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

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

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

**SP. 208. CULTURE AND CIVILIZATION** Three credits  
Systematic introduction to the political, social, economic, and cultural characteristics of Spain and the Spanish-speaking world. Readings from a variety of sources including the Spanish press.  
Prerequisite: Sp. 204 or permission of instructor.

**SP. 209. LATIN AMERICAN CULTURE AND CIVILIZATION** Three credits  
Systematic study of the historical, cultural, economic, and political development of the countries of Latin America (Spanish-speaking countries and Brazil). Pre-Columbus cultures (Maya, Aztec, and Inca) will be examined. Use of audio-visual material and other activities included.  
Prerequisite: Sp. 204 or permission of instructor.

**SP. 298. STUDIES IN LANGUAGE AND CULTURE** **Three credits**  
Development of a particular language skill or investigation of an aspect of Spanish culture. Possible topics include translation, commercial Spanish, Spanish for Health Science Careers, Spanish Folklore, Spanish-American Folklore, and others. May be repeated for credit.

Prerequisite: Sp. 204 or permission of instructor.

**SP. 301-302. SURVEY OF SPANISH LITERATURE** **Three credits each**  
Survey of representative works from the middle ages to the present. Introduction to major movements, literary traditions, genres, and writers.

Prerequisite: Sp. 204 or permission of instructor.

**SP. 308-309. SURVEY OF SPANISH-AMERICAN LITERATURE** **Three credits each**

A survey of the evolution of Spanish-American literature from the discovery to the present. Readings from outstanding works from different periods and regions.

Prerequisite: Sp. 204 or permission of instructor.

**SP. 350. ADVANCED GRAMMAR AND COMPOSITION** **Three credits**  
Analysis of a variety of Spanish texts and extensive writing practice. Work on special problems of grammar and idiomatic expression.

Prerequisite: Sp. 204 or permission of instructor.

**SP. 390. THE TEACHING OF SPANISH** **Three credits**  
Examination of methods and techniques of foreign-language teaching. Practical exercises in preparation and presentation of instructional materials.

Prerequisite: Senior standing and permission of department chairman.

**SP. 395-396. INDEPENDENT RESEARCH** **One to three credits each**  
Independent study and research in the field of the major under the direction of a staff member.

Prerequisite: Approval of department chairman.

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

Prerequisite: Approval of department chairman.

**SP. 398. TOPICS** **Three credits**  
Examination of special topics in Spanish literature. Possible topics include the drama of the Golden Age, the nineteenth century Spanish novel, Cervantes and Don Quixote, modernism, and the novel of the Mexican Revolution. May be repeated for credit.

Prerequisite: Sp. 301-302 or permission of instructor.

### Russian

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

**RUS. 203-204. INTERMEDIATE RUSSIAN** **Three credits each**  
Emphasis on development of proficiency in spoken and written Russian. Includes review and further study of grammar. Oral and written work based upon short cultural and literary texts. Work in language laboratory required.

Prerequisite: Rus. 102 or two years of high school Russian or permission of instructor.

### Other Languages

Languages not included in the regular curriculum may be offered as demand arises and as circumstances permit. Languages that may be offered include Polish, Ukrainian, Hebrew, Italian, and Latin. Interested students should contact the department chairman.

**101-102. Three credits each**  
Designed to develop fundamental skills in the selected language and to introduce students to the culture. Includes systematic coverage of basic grammar supplemented with work in language laboratory where appropriate.

**203-204. Three credits each**  
Continued study of grammar and development of proficiency in basic language skills. Exercises based on short cultural and literary texts.

Prerequisite: 102 or permission of instructor.

**298. STUDIES IN LANGUAGE AND CULTURE** **Three credits**  
Investigation of an aspect of the selected language and culture. May be repeated for credit.

Prerequisite: Permission of instructor.



### Mathematics

Professor 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 189). 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 88).

#### 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 64, except the science/mathematics area which is specified below. 39
- (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	34-32	34-32	16-14	31-29	31-29	10-8

**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.**

<b>Required Courses:</b>	<b>credit hours</b>
Math. 111-112, 202, 211 or 212, 311 or 331	19
<b>Electives:</b>	
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.**

<b>Required Courses:</b>	<b>credit hours</b>
Math. 105-106 or Math. 111-112, C.S. 123, Math. 351-352, and Math. 354	20
<b>Electives:</b>	
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; queuing 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 musi-

cian 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 or 131. **Ensemble (Minor)	1/2	Mus. 121 or 131. **Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2	Mus. 125. Ensemble (Major)	1/2
Eng. 101.	3	Eng. 102.	3
***Foreign Language	3	***Foreign Language	3
P.E. 100.	0	P.E. 100.	0
	<hr/> 17		<hr/> 17

\*competency must be passed  
 \*\*either one may be chosen  
 \*\*\*fulfills one component of humanities core requirement

#### THIRD SEMESTER

Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2
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
	<hr/> 16

\*either may be chosen  
 \*\*equivalent of 6 non-music electives, not additional humanities core

#### FOURTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2
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
	<hr/> 16

#### FIFTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
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
	<hr/> 16 1/2

\*public performance required

#### SIXTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
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
	<hr/> 16 1/2

#### SEVENTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
Mus. 128. *Chamber Performance	1
Mus. 400. Applied Performance	2
Mus. 407. Music Literature (Voice)	3
Electives	3
Core	6
	<hr/> 15 1/2

\*public performance required

#### EIGHTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
Mus. 400. Applied Performance	2
Mus. 401. Recital	0
Mus. 410. Chamber Literature	3
Electives	4
Core	6
	<hr/> 15 1/2

**Bachelor of Music — All Applied Instruments  
Except Voice and Keyboard**

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 or 131. *Ensemble (Major)	1/2	Mus. 121 or 131. *Ensemble (Major)	1/2
Mus. 125. Ensemble (Minor)	1/2	Mus. 125. Ensemble (Minor)	1/2
Eng. 101.	3	Eng. 102.	3
Core	3	Core	3
P.E. 100.	0	P.E. 100.	0
	<hr/>		<hr/>
	17		17

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

THIRD SEMESTER		FOURTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble (Major)	1/2	Mus. 121 or 131. *Ensemble (Major)	1/2
Mus. 125. Ensemble (Minor)	1/2	Mus. 125. Ensemble (Minor)	1/2
Mus. 200. Applied Performance	2	Mus. 200. Applied Performance	2
Mus. 203. Comp. Musicianship III	2	Mus. 204. Comp. Musicianship IV	2
Mus. 205. Harmonic Foundations III	3	Mus. 206. Harmonic Foundations IV	3
Mus. 207. Analysis of Music III	3	Mus. 208. Analysis of Music IV	3
Mus. 260. Conducting I	2	Mus. 261 or 262. Conducting II	2
Psy. 101.	3	Psy. 102.	3
P.E. 100.	0	P.E. 100.	0
	<hr/>		<hr/>
	16		16

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

FIFTH SEMESTER		SIXTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble	1/2	Mus. 121 or 131. *Ensemble	1/2
Mus. 128. **Chamber Performance	1	Mus. 128. **Chamber Performance	1
Mus. 263 or 264. Conducting III	2	Mus. 300. Applied Performance	2
Mus. 300. Applied Performance	2	Mus. 301. Recital	0
Mus. 305. Composition / Orchestration	2	Mus. 306. 20th Century Theory	2
Mus. 311-315. Pedagogy I	3	Mus. 312-316. Pedagogy II	3
Core	6	Mus. 411. Music Literature (Orchestra)	3
	<hr/>	Core	6
	16 1/2		17 1/2

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

\*\*public performance required

SEVENTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble	1/2
Mus. 128. **Chamber Performance	1
Mus. 400. Applied Performance	2
Mus. 407-415. Music Lit. (major idiom)	3

***Electives	6
Core	3
	<hr/>
	15 1/2

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

\*\*public performance required

\*\*\*six elective credits must be non-music

EIGHTH SEMESTER

Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble	1/2
Mus. 400. Applied Performance	2
Mus. 401. Recital	0
Mus. 407-415. Music Literature (Chamber Literature)	3

***Electives	6
Core	3
	<hr/>
	14 1/2

**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 or 131. *Ensemble (Minor)	1/2	Mus. 121 or 131. *Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2	Mus. 125. Ensemble (Major)	1/2
Eng. 101.	3	Eng. 102.	3
Core	3	Core	3
P.E. 100.	0	P.E. 100.	0
	<hr/>		<hr/>
	17		17

\*either one may be chosen

THIRD SEMESTER		FOURTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble (Minor)	1/2	Mus. 121 or 131. *Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2	Mus. 125. Ensemble (Major)	1/2
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
	<hr/>		<hr/>
	16		15

\*either one may be chosen

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

\*public performance required

SEVENTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
Mus. 128. *Chamber Performance	1
Mus. 400. Applied Performance	2
Mus. 409. Keyboard Literature	3
Core	3
**Electives	6
<hr/>	
	15 1/2

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

SIXTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
Mus. 128. *Chamber Performance	1
Mus. 215. Accompanying Practicum	1
Mus. 261 or 262. Conducting II	2
Mus. 300. Applied Performance	2
Mus. 301. Recital	0
Mus. 306. 20th Century Theory	2
Mus. 310. Pedagogy (Piano)	3
Core	6
<hr/>	
	17 1/2

EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble	1/2
Mus. 400. Applied Performance	2
Mus. 401. Recital	0
Mus. 410. Chamber Literature	3
Core	3
**Electives	6
<hr/>	
	14 1/2

**Bachelor of Music — Music Education**  
**Choral Track (with certification)**

**Degree completed with 136 semester credits.**

FIRST SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0
Mus. 100. Applied Performance (Major)	2
Mus. 103. Comp. Musicianship I	2
Mus. 105. Harmonic Foundations I	3
Mus. 107. Analysis of Music I	3
Mus. 121 or 131. *Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2
Eng. 101.	3
Core	3
P.E. 100.	0
<hr/>	
	17

\*either one may be chosen

SECOND SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 010. Functional Piano	0
Mus. 100. Applied Performance (Major)	2
Mus. 104. Comp. Musicianship II	2
Mus. 106. Harmonic Foundations II	3
Mus. 108. Analysis of Music II	3
Mus. 121 or 131. *Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2
Eng. 102.	3
Core	3
P.E. 100.	0
<hr/>	
	17

THIRD SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 011. *Functional Guitar	0
Mus. 121 or 131. **Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2
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
<hr/>	
	16

\*if choral, elementary, or general music concentration  
\*\*either one may be chosen

FIFTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	1/2
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
<hr/>	
Ed. 201. Introduction to Education	3
Ed. 380. Field Experience	4
Core	3
<hr/>	
	18 1/2

SEVENTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	1/2
Mus. 254-257. *Instrumental Methods	2
Mus. 263. Adv. Choral Conducting III	2
Mus. 400. Applied Performance (Major)	2
Ed. 380. Field Experience	4
Core	6
<hr/>	
	16 1/2

\*student elects two of four instrumental methods courses

FOURTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 011. *Functional Guitar	0
Mus. 121 or 131. **Ensemble (Minor)	1/2
Mus. 125. Ensemble (Major)	1/2
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
<hr/>	
	16

SIXTH SEMESTER	
Mus. 000. Recital Attendance	0
Mus. 125. Ensemble (Major)	1/2
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
<hr/>	
	18 1/2

**Bachelor of Music — Music Education  
Instrumental 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	3
Mus. 121 or 131. *Ensemble (Major)	1/2	Mus. 121 or 131. *Ensemble (Major)	1/2
Mus. 125. Ensemble (Minor)	1/2	Mus. 125. Ensemble (Minor)	1/2
Eng. 101.	3	Eng. 102.	3
Core	3	Core	3
P.E. 100.	0	P.E. 100.	0
	<hr/> 17		<hr/> 17

THIRD SEMESTER		FOURTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 011. **Functional Guitar	0	Mus. 011. **Functional Guitar	0
Mus. 121 or 131. *Ensemble (Major)	1/2	Mus. 121 or 131. *Ensemble (Major)	1/2
Mus. 125. Ensemble (Minor)	1/2	Mus. 125. Ensemble (Minor)	1/2
Mus. 200. Applied Performance (Major)	1	Mus. 200. Applied Performance (Major)	1
Mus. 200. Applied Performance (Minor)	1	Mus. 200. Applied Performance (Minor)	1
Mus. 203. Comp. Musicianship III	2	Mus. 204. Comp. Musicianship IV	2
Mus. 205. Harmonic Foundations III	3	Mus. 206. Harmonic Foundations IV	3
Mus. 207. Analysis of Music III	3	Mus. 208. Analysis of Music IV	3
Mus. 254. Instrumental Methods	2	Mus. 255. Instrumental Methods	2
Psy. 101.	3	Psy. 102.	3
P.E. 100.	0	P.E. 100.	0
	<hr/> 16		<hr/> 16

FIFTH SEMESTER		SIXTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble (Major)	1/2	Mus. 121 or 131. *Ensemble (Major)	1/2
Mus. 250. Teaching of Elementary Music	2	Mus. 257. Instrumental Methods	2
Mus. 256. Instrumental Methods	2	Mus. 261 or 262. Conducting II	2
Mus. 260. Conducting I	2	Mus. 300. Applied Performance (Major)	1
Mus. 300. Applied Performance (Major)	1	Mus. 300. Applied Performance (Minor)	1
Mus. 300. Applied Performance (Minor)	1	Mus. 352. Teaching of Sec. Band/Orchestral Music	2
Ed. 201. Introduction to Education	3	Ed. 202. Educational Psychology	3
Ed. 380. Field Experience	4	Ed. 380. Field Experience	4
Core	3	Core	3
	<hr/> 18 1/2		<hr/> 18 1/2

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

SEVENTH SEMESTER		EIGHTH SEMESTER	
Mus. 000. Recital Attendance	0	Mus. 000. Recital Attendance	0
Mus. 121 or 131. *Ensemble (Major)	1/2	Mus. 121 or 131. *Ensemble (Major)	1/2
Mus. 264. Adv. Conducting III	2	Mus. 252. Teaching of General Music	2
Mus. 351. Teaching of Sec. Choral Music	2	Mus. 400. Applied Performance (Major)	2
Mus. 400. Applied Performance (Major)	2	Mus. 401. Recital	0
Ed. 380. Field Experience	4	Ed. 380. Field Experience	4
Core	6	Core	6
	<hr/> 16 1/2		<hr/> 14 1/2

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

**Core electives must include 18 credits in humanities, including English 101 and 102; 6 in mathematics/sciences; 12 in social sciences, including Psychology 101-102.**

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

**MUS. 010. FUNCTIONAL PIANO** **No credit**  
Class instruction in piano for music majors. Competency must be passed through examination before eligibility to upperclass status. Class meets two hours per week.  
Prerequisite: none.

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

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

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

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

**MUS. 101. INTRODUCTION TO MUSIC I** **Three credits**

The materials of music and their interrelationships. Illustrations are derived from literature of all periods for the purpose of developing understanding and enjoyment through perceptive listening.

**MUS. 102. INTRODUCTION TO MUSIC II** **Three credits**

A survey of performance literature extending from the 17th century to the present. Directed listening of various idioms, forms, and styles characteristic of each period. The purpose is to stimulate critical judgment.

Prerequisite: Mus. 101 or consent of instructor.

**MUS. 103-104, 203-204 COMPREHENSIVE MUSICIANSHIP I-IV** **Two credits**

A degree requirement. Intensive training in basic skills through ear-training, rhythmic, melodic and harmonic dictation, keyboard harmony, and aural analysis using modal, tonal and post-tonal compositions. Competency must be demonstrated before entrance into the junior class.

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

**MUS. 105-106, 205-206. HARMONIC FOUNDATIONS I-IV** **Three credits**

A degree requirement. A study of the functions, structures, and elements of music, modal through post-tonal styles. Written exercises and in-depth examination of musical examples.

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

**MUS. 107-108, 207-208. ANALYSIS OF MUSIC I-IV** **Three credits**

A degree requirement. In-depth studies of the historical evolution of musical styles, antiquity to the present, through class lectures, analysis of the literature, and performance practices.

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

**MUS. 111-112. CLASS PIANO I-II** **Two credits**

Class instruction in piano. A two-semester sequence designed to provide non-music majors with a rudimentary study of piano performance. The classes will be divided into small sections according to proficiency level.

Prerequisite: None.

**MUS. 121. WIND ENSEMBLE** **One-half credit**

Open to all members of the College community, by audition. A select organization of wind, brass, and percussion players that performs the best of the tradition Concert Band repertory, along with contemporary music for wind ensemble.

**MUS. 125. 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 rehearses and presents frequent performances of literature encompassing a wide range of jazz styles and techniques.

**MUS. 128. CHAMBER PERFORMANCE** **One credit**

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

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

**MUS. 131. COLLEGE ORCHESTRA** **One-half credit**

Open to all members of the College community, by audition. The orchestra performs concerts throughout the year of chamber and symphonic literature. Participation is required of all string applied performance and string music education majors.

**MUS. 203-204. See Mus. 103-104.****MUS. 205-206. See Mus. 105-106.****MUS. 207-208. See Mus. 107-108.****MUS. 212. KEYBOARD ACCOMPANYING** **Two credits**

A study of the techniques concerned with solo, chamber, and group accompanying. Required of all keyboard applied performance majors.

Prerequisite: Mus. 101, 103-106.

**MUS. 213-215. ACCOMPANYING PRACTICUM I-III** **One credit**

Practical accompanying experience, as assigned. Minimum time allotment is five hours per week of studio, chamber, or group accompanying, plus public performance accompanying when required.

Prerequisite: Mus. 212.

**MUS. 250. TEACHING OF ELEMENTARY MUSIC** **Two credits**

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

**MUS. 252. TEACHING OF GENERAL MUSIC** **Two credits**

A study of the contemporary approaches to teaching of general music in junior and senior high schools, such as creativity 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, Notariani; 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. It reflects 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

The practice of professional nursing is a deliberative process of assessing, diagnosing, planning, implementing, and evaluating a plan of care which promotes and restores health and prevents illness of clients in a variety of settings. The baccalaureate program is designed to prepare a beginning, self-directed practitioner who can function autonomously and collaboratively within the health care system.

Professional nursing is based upon research, nursing, theories, and the integration of knowledge from the humanities and the physical and social sciences. The primary theoretical basis for the philosophy of nursing is the development of man throughout the life cycle.

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.

Opportunities for independent learning are provided in the Learning Center which is equipped with electronic study carrels and audio-visual instructional materials. A simulated hospital environment allows the student to practice the psychomotor skills necessary in nursing practice. The center is open twelve hours a day. A faculty member is always available to assist the students to progress at their own pace.

### Clinical Resources

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

The cooperating hospitals which are utilized include: (1) N.P.W. Medical Center, (2) Nesbitt Memorial, (3) Mercy, Wilkes-Barre, (4) Veterans Administration Medical Center, (5) Wilkes-Barre General, (6) Community Medical Center, Scranton, (7) Hazleton State General, (8) St. Joseph's, Hazleton, (9) Nanticoke State General, (10) Scranton State, (11) the National Institutes of Health, Clinical Center, Bethesda, Maryland.

The community agencies utilized include: (1) Mental Health/Mental Retardation Centers of Luzerne/Wyoming County, (2) Hazleton/Nanticoke and Scranton Mental Health/Mental Retardation Centers, (3) Rural Health Corporation of Northeastern Pennsylvania clinics, (4) Home Health Services of Luzerne County, (5) Maternal Health Services of Northeastern Pennsylvania, (6) Pennsylvania Department of Health, (7) Public School Districts, (8) Little Flower Manor, (9) Wesley Village, (10) St. Stanislaus Medical Center, (11) Hospice St. John, (12) Child Development Council, and (13) Visiting Nurse Association, Home Health Maintenance Organization, Scranton.

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

### Expenses of the Nursing Program

The student of nursing assumes all the financial obligations listed in the section on fees in this bulletin. Additional expenses incurred in the nursing program include: uniforms, 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 completion of the program. A price list for the above items may be obtained at the Department of Nursing.

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

### Physical Examinations

Students should obtain, **early** each May, the appropriate health examination forms to be completed and returned to the Department of Nursing by August 1st.

Failure to have all examinations completed and documented by August 1st results in a \$25 late fee.

### Comprehensive Examinations

In addition to fulfilling the academic requirements of the College, students majoring in nursing are required to successfully complete the comprehensive examinations administered by the Department of Nursing before being eligible to graduate. The examinations are given in the fall term (December) of 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 (computer number for three credits of Nursing 201), 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-seven credits of nursing courses. Upon approval of the petition and acceptance of the 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 exception: 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 36 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 to prepare students for new and emerging roles in nursing.

**B.S. Degree with a Major in Nursing**

FIRST SEMESTER		SECOND SEMESTER	
Bio. 115.	4	Bio. 116	4
Chem. 111	4	Chem. 130	4
Eng. 101	3	Eng. 102	3
Psy. 101	3	Psy. 102	3
Soc. 101	3	Soc. 200	3
P.E. 100	0	P.E. 100	0
	17		17
THIRD SEMESTER		FOURTH SEMESTER	
Bio. 113	4	Nsg. 202. Nursing Care of the	8
Nsg. 200. Nutrition	3	Young Family	
Nsg. 201. Intro. to Nursing	6	Core Elective	3
Core Elective	3	Core Elective	3
P.E. 100	0	Elective	3
	16	P.E. 100	0
			17
FIFTH SEMESTER		SIXTH SEMESTER	
Nsg. 203. Nursing Care of the	8	Nsg. 204. Nursing Care of the	8
Adult Family I		Adult Family II	
Core Elective	3	Core Elective	3
Elective	3	Elective	3
	14		14
SEVENTH SEMESTER		EIGHTH SEMESTER	
Nsg. 301. Nursing Care of the	8	Nsg. 302. Senior Practicum	8
Older Family		Nsg. 303. Contemporary Problems	
Nsg. 303. Contemporary Problems		in Nursing or Elective	3
in Nursing or Elective	3	Core Elective	3
Ed. 290 or Alternative	3	Elective	3
Core Elective	3		
	17		17

**NSG. 102. INTRODUCTION TO NURSING**

**Three credits**

Introduces the Registered Nurse student to the philosophy and conceptual framework of the Wilkes College Department of Nursing. Baccalaureate nursing education professionalism, research and developmental stages of man, family, and community are explored. Seminars focus on application of the nursing process, resocialization and leadership. Hours weekly: 2 hours; Seminar/clinical practice: 3 hours weekly.

Prerequisite: R.N. status; Bio. 116, Chem. 130, Psy. 102, Soc. 200.

Corequisite: Nsg. 200, Bio. 113.

**NSG. 200. PRINCIPLES OF NORMAL NUTRITION** **Three credits**

An introduction of the basic science of human nutrition; principles of normal nutrition, meal planning, computation of diets, physiological, psychosocial and social effects of food and its constituents; and some contemporary local, national, and international nutrition problems.

Prerequisite: Chem. 130.

**NSG. 201. INTRODUCTION TO NURSING** **Six credits**

This course introduced the concepts of client, basic human needs, human development, wellness, holism, nursing process, nursing leadership, and research. Use of the nursing process is emphasized in meeting the basic health care needs of clients. Instruction in the Self-Learning Center and selected clinical agencies constitutes the laboratory component. Hours weekly: 5 hours class, 3 hours clinical practice. Placement: third semester. Fee: \$40.

Prerequisite: Bio. 116, Chem. 130, Psy. 102, Soc. 200.

Corequisite: Nsg. 200, Bio. 113.

**NSG. 202. NURSING CARE OF THE YOUNG FAMILY** **Eight credits**

Basic concepts introduced in Nsg. 201 are utilized in assisting the young families to meet their health care needs during childbearing and childrearing years. Theory is concurrent with practice in selected health care settings including community agencies. Hours weekly: 4 hours class, 12 hours clinical practice. Fee: \$40.

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

**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: \$40.

Prerequisite: Nsg. 202.

**NSG. 204. NURSING CARE OF THE ADULT FAMILY II** **Eight credits**

The nursing process is utilized in the care of the adult family member with increasingly complex biopsychosocial problems. Acute 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: \$40.

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: \$40.

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.

Prerequisite: Nsg. 204.

**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.

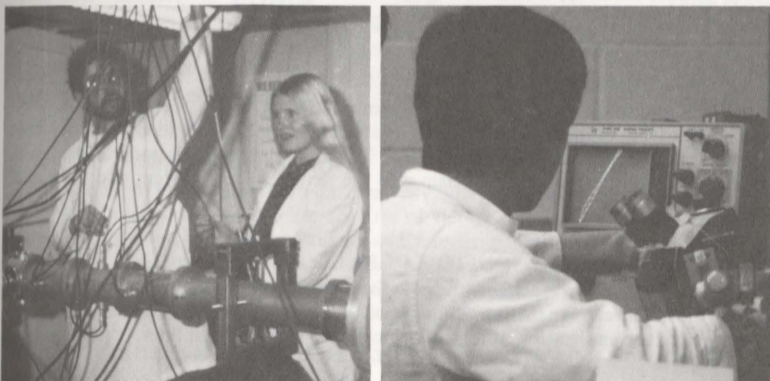
**NSG. 272. CLINICAL APPLICATION OF PHARMACOLOGY** **Three credits**

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 determinism, 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 Health

Associate Professor Saracino, chairman; Professor Reese; Associate Professor Schmidt; Assistant Professor Meyers; Instructors Bellairs, Roberts, Unsworth, Wingert.

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.

Activity in physical education includes soccer, flag football, basketball, baseball, volleyball, and other competitive games. Also included are bowling, tennis, badminton, bicycling, swim instruction, advanced life-saving, recreational water games, body mechanics, self-defense, golf, aerobic dance, modern dance, folk and social dance, and recreational games.

**P.E. 100. PHYSICAL EDUCATION\*** 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. CONTEMPORARY HEALTH PROBLEMS** Two credits  
A study of present-day health problems. The course undertakes to help students enjoy maximum health and happiness through a better understanding of themselves, their relationships with other people, and their functioning within today's environment. Topics covered: chemical use and abuse, consumer health, diet and weight control, diseases, emotional and mental disorders, exercise and physical fitness, human sexuality, etc. Two hours each week.

**P.E. 395-396. INDEPENDENT RESEARCH** One to three credits  
Independent study and research for advanced students in health and physical education under the direction of a staff member.  
Prerequisite: Approval of department chairman.

**P.E. 398. TOPICS IN HEALTH AND PHYSICAL EDUCATION** One to three credits  
A study in topics of special interest not extensively treated in regularly offered courses. This course will be offered from time to time when interest and demand justify it.

\*Students enrolled in AFROTC may substitute AS 101-102-201-202 for the P.E. 100 series.

### 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, 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		SECOND SEMESTER		
	B.A.	B.S.	B.A.	B.S.	
Phys. 201	4	4	Phys. 202	4	4
Eng. 101	3	3	Eng. 102	3	3
Math. 111	4	4	Math. 112	4	4
*Core elective	3	3	Speech 101	—	3
P.E. 100	0	0	*Core elective	3	3
Elective	2-3	2-3	P.E. 100	0	0
	16-17	16-17		14	17

\*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.

THIRD SEMESTER			FOURTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Phys. 203	3	3	Phys. 330	—	4
Phys. 321	—	3	Phys. 340	—	3
Chem. 115	4	4	Chem. 116	4	4
Math. 211	4	4	Math. 212	4	4
Core elective	6	3	Core elective	3	3
P.E. 100	0	0	Elective	6-7	—
			P.E. 100	0	0
	17	17		17-18	18

FIFTH SEMESTER			SIXTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Phys. 311	3	3	Phys. 312	—	3
Phys. 331	4	4	Phys. 332	—	4
Math. 361	—	3	Math. 362	—	3
Core elective	6	6	Core elective	6	6
Elective	3-4	—	Elective	9-10	—
	16-17	16		15-16	16

SEVENTH SEMESTER			EIGHTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Phys. 361	—	4	Phys. 380	—	4
Core elective	3	—	Core elective	3	—
Elective*	13	11-13	Elective*	13	11-13
	16	15-17		16	15-17

\*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. 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.

**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. 360. ATOMIC PHYSICS** **Three credits**

See Physics 361 below for course description. This course does not satisfy the requirements for the B.S. degree in physics. Three hours lecture-discussion a week.

Prerequisite: Phys. 203, 311 and 331 or approval of instructor.

**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

Assistant Professor Natzke, acting chairman; Professor Driscoll; Assistant Professors Freysinger, Tuhy; Adjunct Professor Shaw; Instructor 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 173.

### Requirements for a major in Political Science:

Total hours for graduation: 120, including 51-55 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: 120, including 51-55 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

Total Hours in the Core 51-53

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	American Political Thought or Social and Political Philosophy	3
Phil. 230	Political Philosophy	4
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	3
Additional Advanced Course in English, Philosophy, History, Political Science, Economics field — <b>not</b> 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	120

(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 Britain, France, West Germany, and Japan with some attention to the Scandinavian 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

**Minor in Psychology**

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

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

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

- PSY. 101-102. GENERAL PSYCHOLOGY** **Three credits each**  
An introduction to the field of psychology with emphasis on 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 the major under the direction of a staff member. A research paper at a level significantly beyond a term paper is required.  
Prerequisite: Approval of department chairman is required.
- PSY. 397. SEMINAR (Maximum of three credits per student)** **One to three credits**  
Presentations and discussions of selected topics.  
Prerequisite: Approval of department chairman is required.
- PSY. 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 99.

#### 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. 203. HUMAN EVOLUTION Three credits

The study of human biological and cultural evolution, including the ecological setting and artifactual remains, supplemented with ethological comparative material.

### ANTH. 204. LANGUAGE AND CULTURE Three credits

The study of relationships among language, culture and perception, and patterns of language use. Recent ethnographic approaches to the understanding of culture and cognition.

### ANTH. 250. ANTHROPOLOGY THROUGH FILM Three credits

A general survey of the use of still photography and cinematography in the depiction of the content of various cultures. Fee: \$20.

### 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. 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. 301. ARCHAEOLOGICAL FIELD METHODS** **Variable three to six 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. Fee: \$25.

**ANTH. 351. INDIANS OF NORTH AMERICA** **Three credits**

The prehistoric development and recent life-ways of native Americans.

**ANTH. 392. SOCIOCULTURAL CHANGE** **Three credits**

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

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

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

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

Prerequisite: By arrangement with an instructor.

**ANTH. 397. SEMINAR** **Three credits**

Presentations and discussions of selected themes and issues in anthropology.

Prerequisite: Criteria will vary according to content of seminar.

**ANTH. 398. TOPICS** **Three credits**

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

**ANTH. 399. PRACTICUM** **Six credits**

A supervised practical field experience designed for anthropology majors that involves work in a professional setting.

Prerequisite: Approval of department.

### Sociology

**SOC. 101. INTRODUCTION TO SOCIOLOGY** **Three credits**

A systematic view of sociology, providing essentials for an approach to questions about man in society; analysis of social processes, structures, and functions.

**SOC. 200. THE FAMILY** **Three credits**

History and ethnological studies of family. Role of family in the development of the individual. Interrelation of church, state, and family. Social conditions and changes affecting the American family. Family stability and disorganization.

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

**SOC. 215. SOCIOLOGY OF URBAN LIFE** **Three credits**

The development of modern cities; effects of urban life upon social organization and personality patterns; major social problems of the cities.

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

**SOC. 230. SOCIAL PROBLEMS** **Three credits**

A survey 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.

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.

### 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
	<hr/> 16		<hr/> 16
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
	<hr/> 18		<hr/> 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
	<hr/> 16		<hr/> 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**

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

The total number of hours required for graduation with an International Studies major is 123, of which 51 to 55 are the core requirements. Foreign language competency through the level of 204 (two years of college foreign language) is required. Since only six hours of foreign language may be counted in the Humanities sequences of the core, a student who enters with no foreign language may have to take an additional six hours which will have to count as electives.

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

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

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

Total credit hours for I. S. Core . . . . . 21 credits

Before completing the International Studies core, students should select the area of concentration in which 12 more credits are required. Options for this concentration are Business, Economics, Politics, or a cultural area, such as Western Europe, Latin America, Soviet Union, China, etc. Specific courses in Business, Economics, Political Science,

History, Anthropology, and Language will be worked out with the student's adviser and approved by the International Studies Committee. Lists of possible courses for each concentration are on file with the International Studies adviser.

Students in the International Studies major have 32-36 credit hours of electives. Students are strongly urged to take additional language credits to constitute a language minor or major. It is also possible to use electives to constitute a second major in a discipline such as Economics, History, or Political Science. However, no more than two courses may be counted in both the International Studies major and a discipline major.

Advising for this major is in the 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 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 95-107 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 non-cognitive 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. 100	0	P.E. 100	0
Elective	0-2	Health Profession Orientation	0
	<u>16-18</u>		<u>16-17</u>

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
	<u>15-18</u>		<u>16-18</u>

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

Total electives available . . . . . 43-53 credits  
 Core requirements (not listed) . . . . . 25 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 94½-106½ 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. 100	0	P.E. 100	0
Elective	0-2	Health Profession Orientation	0
	<u>16-18</u>		<u>16-17</u>

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
	<u>15-18</u>		<u>15½-17½</u>

FIFTH SEMESTER		SIXTH SEMESTER	
Phys. 201	4	Phys. 202	4
Electives	12-14	Electives	12-14
	<u>16-18</u>	Health Profession Orientation	0
			<u>16-18</u>

Total electives available . . . . . 40-50 credits  
 Core requirements (not listed) . . . . . 27 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 sub-committee 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
	<hr/>		<hr/>
	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		
	<hr/>		<hr/>
	16-18		16-18

Five credits in Biology must be elected.

All Physical Education 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 95-107 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. 100	0	P.E. 100	0
Elective	0-2		
	<hr/>		<hr/>
	16-18		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		
	<hr/>		<hr/>
	15-18		16-18

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

Total electives available . . . . . 43-53 credits  
 Core requirements (not listed) . . . . . 27 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 2 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 Professors Fox, Taylor; Assistant Professor Drakopoulos.

#### Air Force Reserve Officer Training Corps Program

The Air Force ROTC (AFROTC) participates with Wilkes College in a program which allows students upon graduation to earn commissions in the United States Air Force.

A student may elect to enroll in either a four-year AFROTC program or a two-year AFROTC program.

The AFROTC four-year program is divided into the General Military Course (GMC) in the first two years and the Professional Officer Course (POC) in the last two years. For the two-year program, the student must have two academic years remaining at either the undergraduate or graduate level or a combination of the two. Applications for the two-year program are normally submitted in January each year, or at the end of the student's third semester. For acceptance into the POC, the student must have passed a USAF physical examination and Air Force Officer Qualifying Test and must have attained acceptable academic standing in his/her course work.

Members of the program are eligible to compete for full-tuition AFROTC scholarships. See details under "Air Force ROTC Scholarships" in this Bulletin.

Uniforms, equipment, and textbooks for AFROTC work are supplied by Wilkes College and the United States Air Force. All POC students and GMC students with scholarships receive a \$100 per month tax-free 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 they have chosen consistent with Air Force needs. Qualified students have the opportunity to compete for entry into an Air Force training program in many areas such as nursing, computer science, engineering, pilot, missile, navigator, etc.

Four semester hours of credit may be earned in the GMC and 12 semester hours in the POC. There is also a one-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 USAF 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 \$400.00 for the four-week field training or \$600.00 for the six-week field 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 as well as 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.

All scholarship cadets must take one semester of a foreign language.

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 Instruction Program (FIP)

The FIP is designed primarily for cadets in the POC who propose to enter Air Force Pilot training upon graduation. It identifies applicants who possess the qualifications necessary to fly high-performance aircraft. The program consists of a ground phase given by officers of the detachment, and a flying phase with dual and solo flight instruction by a certified civilian flying school at government expense. **NOTE: EACH POC CADET WILL BE GIVEN AT LEAST ONE HOUR FLIGHT INSTRUCTION IN A CIVILIAN TRAINING AIR CRAFT AS FUNDING DICTATES.**

#### Advanced Training Program

This program allows POC members to visit a USAF base and work with an active duty officer in their specialty between their junior and senior year.

#### Leadership Laboratory

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

#### Field Training

Candidates for enrollment in the POC will attend AFROTC field training during one summer. The training, conducted at selected Air Force bases, gives students an opportunity to observe Air Force units and people at work and at home, participate in marksmanship, survival, athletics, leadership training activities, take aircraft orientation flights, and work with contemporaries from other colleges and universities.

#### General Military Courses

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

#### AS 101. U.S. MILITARY FORCES IN THE CONTEMPORARY WORLD I

Fall — One credit

Background, missions, and functions of U.S. military forces, with emphasis on U.S. Air Force organization, doctrine, and strategic forces.

#### AS 102. U.S. MILITARY FORCES IN THE CONTEMPORARY WORLD II

Spring — One credit

U.S. general purpose military forces; insurgency and counter-insurgency; aerospace support forces and organizations.

#### AS 201. THE DEVELOPMENT OF AIR POWER I

Fall — One credit

Air power development in historical perspective through the end of World War II; evolution of missions, concepts, doctrine, and employment, with emphasis on changes in conflict and factors which have prompted technological developments.

#### AS 202. THE DEVELOPMENT OF AIR POWER II

Spring — One Credit

Air power development from the end of World War II to the present; changing missions and employment of air power in support of national objectives.

Prerequisite: AS 201 or permission of instructor.

#### AS 251. FLIGHT PROGRAM GROUND TRAINING

Spring — One credit

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

### Professional Officer Courses

The Professional Officer Courses (POC) constitute a four-semester program, normally taken during the junior and senior years, leading to commissioning as an Air Force officer. The POC concentrates on concepts and practices of management, concepts and practices of leadership, national defense policy, and communicative skills.

**AS 301. CONCEPTS OF MANAGEMENT** **Fall — Three credits**  
General theory and practice of management with special reference to the Air Force; study of information systems, quantitative approach to decision making, and resource control techniques; development of communicative skills.

Prerequisite: POC membership. **Note: AFROTC cadets may substitute AS 301 for B.A. 251.**

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

Prerequisite: AS 301 or permission of instructor.

**AS 311. NATIONAL SECURITY FORCES IN AMERICAN SOCIETY I** **Fall — Three credits**  
The role and functions of the professional military officer in a democratic society and civil-military interaction; basic framework of defense policy and formulation of defense strategy; development of individual communicative skills.

Prerequisite: POC membership or permission of instructor.

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

Prerequisite: AS 311 or permission of instructor.

### Division of Continuing Education

The Division of Continuing Education, under the direction of Dr. Mahmoud H. Fahmy, is designed to offer pertinent and informative programs with a flexible schedule to fulfill the needs of the community. The division awards credits for non-degree training in numerous areas.

*Quality Education: Linking Campus and Community* serves as the motto under which 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.

Utilizing the continuing education unit, a uniform unit of measurement, the division maintains records for all who participate in the instructional sessions. The continuing education units are nationally recognized units which students earn for participating in qualified contin-

uing education programs. Similar to credits which allow students to carry degree work from one school to another, CEU's make it possible to document non-degree credit work completed. The CEU's may be used as evidence of increased performance capabilities and for job advancement. One CEU is awarded for ten contact hours of participation.

The division is accredited as a member of the Council on the Continuing Education Unit. The Council is a nonprofit federation of education and training organizations and individuals devoted to the constructive and consistent use of the Continuing Education Unit and to improvement of the quality and effectiveness of continuing education, training, and development.

### 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 mutual 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 three to 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.)

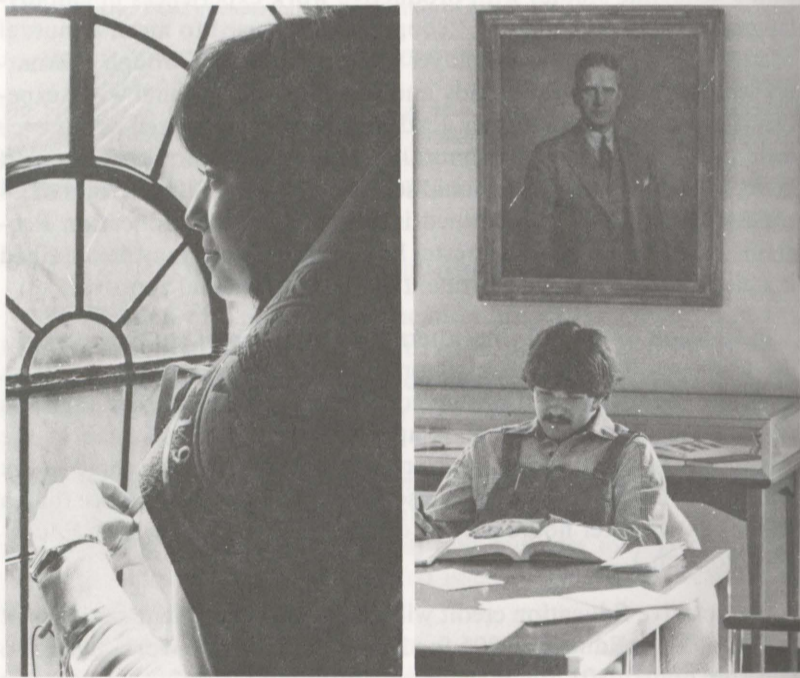
Cooperative Education credit will appear on the student's transcript as Cooperative Education 301 for 3 semester hours of work, 302 for 6 semester hours, 303 for 9 semester hours, and 304 for 12 semester hours of work. If some of the credit is taken in a participating department, a special department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

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

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

An engineering student will have three choices for the type of credit given in the co-op internship, co-op (additive), engineering (departmental), and social science or humanities credit (non-technical electives). Further instructions concerning the engineering requirements should be obtained from the Co-Op Office. *Modifications of any co-op requirements must be approved in writing by the Co-Op office and the dean of academic affairs.*

All interested students should contact the Co-Op office in the Max Roth Center (rear 34 S. River Street).

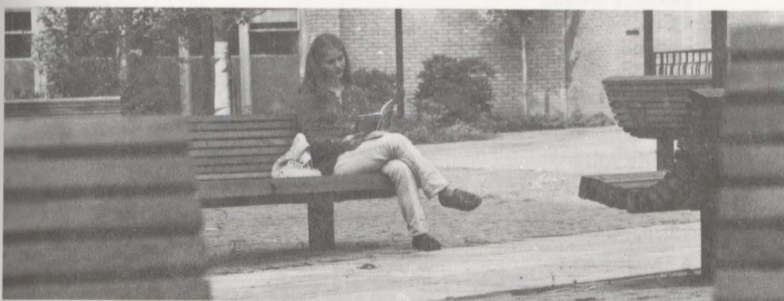


# Personnel of the College

## Board of Trustees

## Administration

## Faculty





## Board of Trustees

MARY R. KOONS, Honorary Member  
 DONALD F. CARPENTER, Trustee Emeritus  
 MARTHA S. DIENER, Trustee Emerita  
 ELOISE W. EHRET, Trustee Emerita  
 JULIA T. FABER, Trustee Emerita  
 ALAN M. GLOVER, Trustee Emeritus  
 THOMAS H. KILEY, Trustee Emeritus  
 CHARLES H. MINER, JR., Trustee Emeritus  
 F. E. PARKHURST, Trustee Emeritus  
 MAX ROSENN, Trustee Emeritus  
 LOUIS SHAFFER, Trustee Emeritus

## Officers

WILLIAM L. CONYNGHAM, Chairman  
 RICHARD M. ROSS, JR., Vice Chairman  
 ESTHER B. DAVIDOWITZ, Secretary  
 WILLIAM J. UMPHRED, Treasurer

JAMES A. ADONIZIO  
 BENJAMIN BADMAN  
 ROBERT S. CAPIN, President  
 WILLIAM L. CONYNGHAM  
 ESTHER B. DAVIDOWITZ  
 PATRICIA S. DAVIES  
 LOUIS D. DAVIS, JR.  
 ALEXANDRA F. EHRET  
 W. CAREY EVANS  
 JAMES F. FERRIS  
 DAVID C. HALL  
 FRANK M. HENRY  
 ANDREW HOURIGAN, JR.  
 JOHN J. KARAKASH  
 RICHARD MASLOW  
 CONSTANCE MAYOCK  
 GERALD A. MOFFATT  
 RICHARD L. PEARSALL

WILLIAM A. PERLMUTH  
 JOSEPH J. PINOLA  
 KENNETH E. QUICKEL, JR.  
 MARY B. RHODES  
 ARNOLD S. RIFKIN  
 HAROLD J. ROSE, JR.  
 RICHARD M. ROSS, JR.  
 EUGENE ROTH  
 JOSEPH J. SAVITZ  
 RONALD W. SIMMS  
 ELIZABETH A. SLAUGHTER  
 STEPHEN SORDONI  
 LUCIANA SURACI  
 WILLIAM J. UMPHRED  
 STEPHEN A. VAN DYCK  
 NORMAN E. WEISS  
 JOSEPH A. WIENDL

## Committee Membership 1982-1983

### Academic Program

Richard M. Ross, Jr., Chairman  
 Benjamin Badman  
 Donald F. Carpenter\*  
 Esther B. Davidowitz  
 Patricia S. Davies  
 James F. Ferris  
 John J. Karakash  
 Max Rosenn\*  
 Joseph J. Savitz  
 Joseph A. Wiendl

### Audit

Gerald A. Moffatt, Chairman  
 Harold J. Rose, Jr.  
 William J. Umphred  
 Norman E. Weiss

### College Development

Eugene Roth, Chairman  
 W. Carey Evans  
 David C. Hall  
 John J. Karakash  
 Constance Mayock  
 Joseph J. Pinola  
 Arnold S. Rifkin  
 Louis Shaffer\*

### Executive

William L. Conyngham, Chairman  
 Benjamin Badman  
 Esther B. Davidowitz  
 W. Carey Evans  
 James F. Ferris  
 Frank M. Henry  
 Richard Maslow  
 Constance Mayock  
 Gerald A. Moffatt  
 Richard L. Pearsall  
 William A. Perlmuth  
 Mary B. Rhodes  
 Arnold S. Rifkin  
 Richard M. Ross, Jr.  
 Eugene Roth  
 William J. Umphred  
 Joseph A. Wiendl

### Ex Officio On All Committees

Robert S. Capin, President  
 William L. Conyngham, Chairman of the Board

### Finance

Frank M. Henry, Chairman  
 Thomas H. Kiley\*  
 Richard L. Pearsall  
 William A. Perlmuth  
 Kenneth E. Quickel, Jr.  
 Harold J. Rose, Jr.  
 Stephen A. Van Dyck

### Nominations

Richard Maslow, Chairman  
 Frank M. Henry  
 Constance Mayock  
 Gerald A. Moffatt  
 Richard L. Pearsall  
 William A. Perlmuth  
 Richard M. Ross, Jr.  
 Eugene Roth

### Physical Facilities

W. Carey Evans, Chairman  
 James A. Adonizio  
 Benjamin Badman  
 David C. Hall  
 Andrew Hourigan, Jr.  
 Charles H. Miner, Jr.\*  
 F. E. Parkhurst\*  
 Ronald W. Simms  
 Stephen Sordoni  
 Luciana Suraci  
 William J. Umphred  
 Norman E. Weiss

### Student Affairs

Mary B. Rhodes, Chairman  
 Patricia S. Davies  
 Louis D. Davis, Jr.  
 Alexandra F. Ehret  
 Kenneth E. Quickel, Jr.  
 Arnold S. Rifkin  
 Joseph J. Savitz  
 Elizabeth A. Slaughter  
 Stephen Sordoni

### Faculty/Trustee

Richard L. Pearsall  
 Eugene Roth  
 Mary B. Rhodes (alternate)

\*Trustee Emeritus

## Administration

ROBERT S. CAPIN (1959), President  
B.S. (Wilkes), C.P.A. (State of Pennsylvania), M.B.A. (Lehigh)

GERALD E. HARTDAGEN, Dean of Academic Affairs

ANDREW SHAW, JR., Dean of Management

THOMAS F. KELLY, Dean of External Affairs

GEORGE F. RALSTON, Dean of Student Affairs

GERALD K. WUORI, Dean of Admissions

JOSEPH J. CHISARICK, Comptroller

## Dean of Academic Affairs

GERALD E. HARTDAGEN (1979), Dean of Academic Affairs  
B.A. (Maryland), M.A., Ph.D. (Northwestern)

DORIS E. BARKER (1965), Registrar  
(Wyoming Seminary Dean's School of Business)

MARY C. BLACK (1981), Reading/Study Skills Specialist and Activity Director of  
the Developmental Learning Center  
B.S., M.S. (Temple)

DEAN B. FRIEDMAN (1981), Media Coordinator  
B.A. (Fairleigh Dickinson), M.Ed. (Bowling Green)

ANNE A. GRAHAM (1979), Director, Project Upward Bound  
B.A., M.S. (Wilkes)

PATRICIA M. HEAMAN (1966), Director, Writing Lab  
B.A. (Wilkes), M.A., Ph.D. (Pennsylvania)

JOHN F. MEYERS (1967), Director of Graduate and Part-Time Undergraduate  
Programs  
B.A. (Minnesota), M.A. (Clark)

RALPH B. ROZELLE (1962), Dean of Health Sciences  
B.S. (Wilkes), Ph.D. (Alfred)

HSI-PING SHAO (1980), Director of Eugene Shedden Farley Library  
B.A. (Taiwan Normal), M.S. in L.S. (Drexel), M.A., Ph.D. (Pennsylvania)

ERIC D. WATTERS (1981), Director of Institutional Research  
B.A. (Lafayette), M.A. (SUNY, Binghamton), Ph.D. (Kentucky)

JOHN P. WHITBY (1947), Director of Act 101 Program and Dean of Special  
Programs  
B.S. (Bloomsburg), M.S. (Columbia)

## Dean of Management

ANDREW SHAW, JR. (1972), Dean of Management; Director of  
Institute of Regional Affairs; Affirmative Action Officer  
B.S. (Wilkes), M.G.A. (Pennsylvania), D.P.A. (Nova)

CHARLES R. ABATE (1966), Business Manager  
B.S., M.B.A. (Wilkes)

SANDRA BEYNON (1982), Director of Grants and Research and The Small  
Business Development Center  
B.S. (University of Scranton)

MAHMOUD FAHMY (1968), Director of Continuing Education  
B.A. (Alexandria, Egypt), M.A. (Columbia), Ph.D. (Syracuse)

MILDRED GITTINS (1944), Manager of the Bookstore

EUGENE L. MANGANELLO (1973), Personnel and Systems Coordinator

DAVID WILLIAMS (1970), Director of Computer Center  
B.S. (Wilkes)

## Dean of External Affairs

THOMAS F. KELLY (1977), Dean of External Affairs  
B.A. (Wilkes), M.A. (Lehigh), Ph.D. (Cornell)

JAMES H. AIKMAN (1976), Director of Development  
B.G.E. (Nebraska, Omaha), M.S. (USC), D.P.A. (Nova)

JOHN J. CHWALEK (1946), Community Relations Coordinator  
B.S. (East Tennessee), M.A. (Columbia)

BETSY B. CONDRON (1979), Director of Planned Giving  
B.S. (Skidmore), M.S. (Wilkes)

EUGENE S. DOMZALSKI (1969), Director of Career Services  
B.S. (Wyoming), M.S. (Wilkes)

ALFRED S. GROH (1947), Director, Cultural Activities  
B.A. (Syracuse), M.A. (Columbia)

JOSEPH H. KANNER (1949), Director of Testing Service  
B.A. (Bucknell), M.A. (New School for Social Research)

JUDITH HANSEN O'TOOLE (1982), Director of Sordani Art Gallery  
B.A. Art History (University of Minnesota), M.A. Art History (The Pennsylvania  
State University)

RICHARD G. RASPEN (1967), Director, Alumni Relations  
B.S., M.B.A. (Wilkes), M.Ed. (Bloomsburg)

PHILIP L. WINGERT (1982), Sports Information Director and Soccer Coach  
B.S. (SUNY, Cortland), M.Ed. (VPI & SU)

RANDALL XENAKIS (1980), Director of Public Relations and Publications  
B.A., M.B.A. (Rollins College)

**Dean of Student Affairs**

GEORGE F. RALSTON (1946), Dean of Student Affairs  
B.A. (North Carolina), M.A. (Columbia)

JEAN REITER ADAMS (1979), Associate Director of Housing  
B.A. (Wilkes)

PAUL S. ADAMS (1979), Director of Housing  
B.A., M.Ed. (Wilkes)

WILLIAM R. BURKE (1982), Assistant Director of Financial Aid  
B.S. Bus. Adm. (Bloomsburg State)

ARTHUR J. HOOVER (1955), Associate Dean of Student Affairs  
B.S. (Wilkes), M.Ed. (Pennsylvania State)

JANE KATHLEEN LAMPE (1969), Associate Dean of Student Affairs  
B.A. (Rosary), M.A. (Michigan), M.Ed. (Virginia)

RACHAEL L. LOHMAN (1981), Director, Financial Aid  
B.S. (Wilkes), M.Ed. (Bloomsburg)

IDA RIGLEY R.N. (1975), College Nurse  
B.S. Nursing (Wilkes)

JAY TUCKER (1981), Assistant Director of Housing and Student Center  
Coordinator  
B.S. (Stroudsburg), M.S. (Scranton)

**Dean of Admissions**

GERALD K. WUORI (1975), Dean of Admissions  
B.A. (Northern Illinois), M.A., Ph.D. (Purdue)

JAMES P. CARMODY (1982), Assistant to the Dean of Admissions  
B.S. (University of Scranton), M.A. (Indiana University of Pennsylvania)

LINDA HOBROCK (1969), Associate Dean of Admissions  
B.S. (Bowling Green), M.Ed. (Lehigh)

BARBARA KING (1980), Assistant to the Dean of Admissions  
B.S. (Wilkes)

WILLIAM R. UNSWORTH (1982), Assistant to the Director of Admissions and  
Head Football Coach  
B.S. (Franklin), M.Ed. (Indiana)

BARBARA J. WELCH (1980), Assistant to the Dean of Admissions  
B.S. (Bloomsburg), M.S. (Wilkes)

**Comptroller**

JOSEPH J. CHISARICK (1970), Comptroller  
B.S., M.B.A. (Wilkes), C.P.A. (State of Pennsylvania)

KAREN CAMPBELL (1979), Assistant Comptroller  
B.S. (Wilkes)

RICHARD MACKEY (1982), Assistant Comptroller  
B.S., M.B.A. (Wilkes)

**Academic Officers**

ROBERT S. CAPIN President  
GERALD E. HARTDAGEN Dean of Academic Affairs

**Department Chairmen**

BRUCE L. BURKE Aerospace Studies  
WILLIAM H. STERLING Art  
LESTER J. TUROCZI Biology  
JAMES J. BOHNING Chemistry  
HOWARD J. WILLIAMS Commerce and Finance  
J. MICHAEL CASE Acting, Earth & Environmental Sciences  
EUGENE L. HAMMER Education  
UMID R. NEJIB Engineering  
JAMES P. RODECHKO History  
THOMAS N. KASKA Language & Literature  
BING K. WONG Mathematics & Computer Science  
TERRANCE A. ANDERSON Music  
VIRGINIA NEHRING Nursing  
DONALD A. HENSON Philosophy  
DORIS SARACINO Physical Education & Hygiene  
FRANCIS J. DONAHOE Physics  
JOHN H. NATZKE Acting, Political Science  
ROBERT C. RILEY Psychology  
JOHN H. NATZKE Sociology & Anthropology  
HSI-PING SHAO Library

## Faculty

In alphabetical order, with date of appointment following the name.

ROBERT S. CAPIN (1959), Professor of Commerce and Finance/President  
B.S. (Wilkes), C.P.A. (State of Pennsylvania), M.B.A. (Lehigh)

GERALD E. HARTDAGEN (1979), Professor of History/  
Dean of Academic Affairs  
B.A. (Maryland), M.A., Ph.D. (Northwestern)

\* \* \* \* \*

ALIREZA AFRASHTEH (1977), Assistant Professor of Engineering (On Leave)  
B.S., M.S. (Pahlavi, Iran), Ph.D. (Texas at Austin)

CLAUDE W. ANDERSON, III (1981), Assistant Professor of Mathematics and  
Computer Science  
B.S. (CIT), M.S., Ph.D. (Illinois at Urbana)

TERRANCE A. ANDERSON (1979), Professor of Music  
B.M., M.M. (Wisconsin), Ph.D. (Iowa)

KATHERINE K. ANSELM (1982), Assistant Professor of Nursing  
B.S. (Wilkes), M.S. (Pennsylvania)

RICHARD ASTON (1978), Associate Professor of Engineering  
B.S., M.S. (Pennsylvania State), Ph.D. (Ohio State),  
P.E. (State of Pennsylvania)

FRANK G. BAILEY (1968), Associate Professor of Physics (On Leave)  
B.S. (Pennsylvania), M.S. (Stevens), M.A. (Columbia), Ph.D. (Polytechnic  
Institute of Brooklyn)

BART BELLAIRS (1981), Instructor of Physical Education and Hygiene  
B.S. (Warren Wilson), M.S. (Western Illinois)

FREDERIC E. BELLAS (1961), Professor of Physics  
B.S., M.S., Ph.D. (Pennsylvania State)

JOSEPH T. BELLUCCI (1967), Professor of Education  
B.S. (Scranton), M.Ed., Ed.D. (Lehigh)

LOUISE McNERTNEY BERARD (1980), Assistant Professor of Mathematics and  
Computer Science  
B.S. (King's), Ph.D. (Brown)

JAMES P. BERG (1965), Assistant Professor of History  
B.A. (Harvard), B.D., M.Div. (Lutheran Seminary), M.A. (Pennsylvania)

JOEL BERLATSKY (1970), Associate Professor of History  
B.A. (Carleton), M.A. (Brown), Ph.D. (Northwestern)

ROBERT W. BOHLANDER (1979), Assistant Professor of Psychology  
B.A. (Lebanon Valley), Ph.D. (Rochester)

JAMES J. BOHNING (1959), Professor of Chemistry  
B.S. (Valparaiso), M.S. (New York), Ph.D. (Northeastern)

FLORENCE R. BOURCIER (1979), Assistant Professor of Nursing  
B.S., M.S. (Boston)

KENNETH A. BROADT (1980), Associate Professor of Accounting  
B.S. (Bloomsburg), M.S. (Bucknell), C.P.A. (State of Pennsylvania)

BRUCE W. BROWN (1978), Assistant Professor of Sociology and Anthropology  
B.A. (SUNY, Plattsburgh), M.A., Ph.D. (New Hampshire)

DALE A. BUEHLER (1962), Associate Professor of Library Science  
B.A. (Franklin & Marshall), M.S. (Drexel Institute of Technology)

BRUCE L. BURKE (1980), Professor of Aerospace Studies  
B.A. (Akron), M.S. (Tennessee)

TIMOTHY J. CAIN (1982), Instructor of English  
B.A. (Penn State), M.A. (Villanova)

JEROME W. CAMPBELL (1979), Assistant Professor of Music  
B.M., M.M. (Boston)

SHEILA CARAPICO (1981), Instructor of Political Science  
B.A. (Alfred), M.A. (SUNY, Binghamton)

JAMES MICHAEL CASE (1978), Assistant Professor of Earth and  
Environmental Sciences  
B.S., (Duke), M.S., Ph.D. (Dalhousie, Halifax)

RICHARD B. CHAPLINE (1959), Professor of Music  
B.S., M.S. (Juilliard); Fulbright Fellow, Staatliche Hochschule fur Musik,  
Köln, Germany, 1954-1955, 1955-1956

CARL J. CHARNETSKI (1976), Assistant Professor of Psychology  
B.A. (Wilkes), M.A., Ph.D. (Temple)

CYNTHIA J. CHISARICK (1981), Assistant Professor of Accounting  
B.S. (Wilkes), C.P.A. (State of Pennsylvania)

JOSEPH J. CHMIOLA (1979), Assistant Professor of Business Administration  
B.A., M.B.A. (Wilkes)

JOHN A. COONEY (1976), Assistant Professor of Business Administration  
B.S. (Wilkes), M.L. (Pittsburgh)

CYNTHIA L. CORISON (1982), Assistant Professor of Communication Studies  
B.S. (Lewis and Clark), M.S., Ph.D. (Oregon)

HAROLD E. COX (1963), Professor of History (On Leave)  
B.A. (William and Mary), M.A., Ph.D. (Virginia)

FRED J. CROOP (1981), Assistant Professor of Accounting  
B.S., M.B.A. (Wilkes)

FRANCK G. DARTE, II (1968), Professor of Education  
B.S. (Yale), M.S., Ed.D. (Pennsylvania)

LORNA C. DARTE (1969), Assistant Professor of Library Science  
B.A. (George Washington), M.S. (Drexel Institute of Technology)

JAMES G. DeCOSMO (1962), Associate Professor of Mathematics and  
Computer Science  
B.S. (West Chester), M.A. (Adelphi)

- ROBERT DeYOUNG (1960), Associate Professor of Economics  
B.S. (Rhode Island), M.A. (Columbia)
- GARY M. DOLNY (1981), Assistant Professor of Engineering  
B.S. (Haverford), M.S., Ph.D. (Pittsburgh)
- FRANCIS J. DONAHOE (1964), Professor of Physics  
B.A. (LaSalle), Ph.D. (Pennsylvania)
- DENNIS DRAKOPOULOS (1982), Assistant Professor of Aerospace Studies  
B.S. (City College of New York), M.A. (Rider)
- JEAN M. DRISCOLL (1973), Professor of Political Science (On Leave)  
B.A., M.A. (Michigan), Ph.D. (Northwestern)
- SUZANNE M. DRUFFNER (1982), Associate Professor of Nursing  
B.S. (Georgetown), M.S. (Pennsylvania)
- BERENICE D'VORZON (1968), Associate Professor of Art  
B.F.A. (Cranbrook Academy of Art), M.A. (Columbia)
- BOYD L. EARL (1963), Associate Professor of Mathematics and  
Computer Science  
B.S. (Wilkes), M.S. (Bucknell)
- THEODORE J. ENGEL (1966), Associate Professor of Business Administration  
B.B.A., M.A. (Miami)
- MAHMOUD H. FAHMY (1968), Professor of Education  
B.A. (Alexandria, Egypt), M.A. (Columbia), Ph.D. (Syracuse)
- WELTON FARRAR (1948), Professor of Economics  
B.S., M.S. (Pennsylvania)
- OWEN D. FAUT (1967), Professor of Chemistry  
B.S. (Muhlenberg), Ph.D. (M.I.T.)
- DIANE FELICE (1980), Assistant Professor of Nursing  
B.S. (Pennsylvania), M.A. (Columbia)
- BENJAMIN F. FIESTER, JR. (1956), Professor of English  
B.A. (Wilkes), M.A. (Bucknell), Ph.D. (Pennsylvania State)
- THOMAS P. FORKS (1982), Assistant Professor of Biology  
B.A. (St. Mary's), M.S. (Texas), Ph.D. (Southern Mississippi)
- CHRISTOPHER B. FOX (1978), Assistant Professor of English  
B.A. (Cleveland State), M.A., Ph.D. (SUNY, Binghamton)
- RAYMOND M. FOX (1981), Associate Professor of Aerospace Studies  
B.S. (Michigan State), M.S. (Troy State)
- ROBERT C. FREYSINGER (1976), Assistant Professor of Political Science  
B.A. (Hartford), M.A., Ph.D. (Massachusetts)
- RICHARD A. FULLER (1969), Associate Professor of Art  
B.S. (New York), M.A. (Columbia)
- HERBERT GARBER (1965), Associate Professor of Music  
B.A. (New York), M.A., Ed.D. (Columbia)
- WILLIAM R. GASBARRO (1958), Professor of Music  
B.S. (Juilliard), M.A. (Columbia)

- GEORGE GERA (1958), Associate Professor of Business Administration and  
Business Education  
B.S. (Bloomsburg), M.A. (Columbia)
- DAVID A. GOODE (1980), Assistant Professor of Sociology/Anthropology  
B.A., M.A. (Queens College, City University of New York)  
Ph.D. (California, Los Angeles)
- THERESA GRABO (1980), Assistant Professor of Nursing  
B.S. (SUNY, Buffalo), M.S. (Marywood)
- ALFRED S. GROH (1947), Associate Professor of Theater Arts  
B.A. (Syracuse), M.A. (Columbia)
- ROSALIE ANN GULLA (1980), Instructor of Nursing (On Leave)  
B.S. (Misericordia)
- CHARLES S. GURDIN, JR. (1969), Assistant Professor of  
Business Administration  
B.A. (Michigan), J.D. (Toledo)
- STANLEY S. GUTIN (1959), Professor of English  
B.A., M.A. (Maryland), Ph.D. (Pennsylvania)
- JOYCE J. HAMLIN (1982), Assistant Professor of Nursing  
B.S. (Carlow), M.S. (Pennsylvania)
- EUGENE L. HAMMER (1953), Professor of Education  
B.S. (Wheaton), M.A. (Northwestern), Ed.D. (Columbia)
- B. ALENE HARRISON (1980), Assistant Professor of Nursing  
B.S. (Idaho State), M.S. (Michigan)
- WILBUR F. HAYES (1967), Associate Professor of Biology  
B.A. (Colby), M.S., Ph.D. (Lehigh)
- ROBERT J. HEAMAN (1969), Associate Professor of English  
B.A. (Detroit), M.A., Ph.D. (Michigan)
- DOLORES B. HEINLEIN (1982), Associate Professor of Nursing  
B.S. (Mercy), M.S. (Case Western Reserve)
- DONALD A. HENSON (1970), Associate Professor of Philosophy  
B.A., M.A., Ph.D. (Purdue)
- KLAUS HOLM (1970), Associate Professor of Theater Arts  
B.S. (New York), M.F.A. (Yale)
- LEVERE C. HOSTLER (1967), Professor of Physics/Engineering  
B.S. (M.I.T.), M.S., Ph.D. (Stanford)
- CLYDE R. HOUSEKNECHT (1972), Associate Professor of Biology  
B.A. (Lycoming), M.S. (Pennsylvania State), Ph.D. (Minnesota)
- SUSAN C. HUNT (1982), Assistant Professor of Nursing  
B.S. (Temple), M.S. (Texas)
- EDWIN G. E. JAHNGEN, JR. (1978), Assistant Professor of Chemistry  
(On Leave)  
B.S. (Bates), Ph.D. (Vermont)
- JOHN J. JANECEK (1982), Assistant Professor of Engineering  
B.S. (Wisconsin), M.S., Ph.D. (Illinois)

- THERESA B. JEZEWSKI (1980), Instructor of Nursing  
B.S. (Pennsylvania), M.P.A. (Marywood)
- EDWIN L. JOHNSON (1966), Associate Professor of Education  
B.A. (Wilkes), M.A. (Bucknell)
- WALTER KARPINICH (1975), Assistant Professor of Foreign Languages  
B.S., M.A. (Temple), Ph.D. (Ukrainian Free University, Munich)
- THOMAS N. KASKA (1966), Professor of English  
B.A. (Wilkes), M.A., Ph.D. (Duquesne)
- MARY LOU KASPUTIS (1981), Assistant Professor of Nursing  
B.S. (Villa Maria), M.S. (Case Western Reserve)
- STANLEY B. KAY (1964), Professor of Philosophy  
B.A. (Case Western Reserve), M.A. (Michigan), Ph.D. (Ohio State)
- BRADFORD L. KINNEY (1973), Assistant Professor of Speech  
B.A. (Florida Southern), M.A. (Indiana), Ph.D. (Pittsburgh)
- KENNETH M. KLEMOW (1982), Assistant Professor of Biology  
B.S. (Miami), M.S., Ph.D. (SUNY, Syracuse)
- JOHN A. KOCH (1976), Associate Professor of Mathematics and  
Computer Science/Engineering  
B.S. (Bucknell), M.S., Ph.D. (Illinois)
- ANN MARIE KOLANOWSKI (1979), Assistant Professor of Nursing  
B.S. (Misericordia), M.S. (Pennsylvania State)
- MARY JO A. KONKLOSKI (1980), Assistant Professor of Nursing  
B.S. (Edinboro State), M.S. (SUNY, Binghamton)
- FREDERICK J. KROHLE (1965), Associate Professor of Library Science  
B.A. (Wilkes), M.S. (Drexel Institute of Technology)
- MILDRED E. KRZYWICKI (1981), Assistant Professor of Nursing  
B.S., M.S. (Pennsylvania)
- JEROME KUCIRKA (1980), Assistant Professor of Engineering/Physics  
B.S. (Wilkes), M.S., Ph.D. (Drexel)
- DAVID M. LEACH (1969), Professor of History  
B.A. (Whitman), Ph.D. (Rochester)
- FRANK B. LEIB (1982), Assistant Professor of English  
B.A. (Dartmouth), M.Ed. (Harvard), M.A., Ph.D. (Temple)
- DONALD M. LESLIE, JR. (1978), Assistant Professor of English and Foreign  
Languages  
B.A. (Davidson), M.A., Ph.D. (Oregon)
- KENNETH G. LEWIS (1980), Assistant Professor of Business Administration  
B.S., M.B.A. (Scranton), D.B.A. (Western Colorado)
- FREDRICK W. LOTT, III (1982), Assistant Professor of Physics  
B.A. (Carleton), M.A., Ph.D. (California, Berkeley)
- 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  
B.A. (Tulane), M.A., Ph.D. (Yale)
- GAY F. MEYERS (1970), Assistant Professor of Physical Education and Hygiene  
B.S. (Lock Haven), M.S. (Wilkes)
- JOHN F. MEYERS (1967), Assistant Professor of History  
B.A. (Minnesota), M.A. (Clark)
- 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  
B.S. (Wilkes), M.B.A. (Pennsylvania State), C.P.A. (State of New York), (State  
of Pennsylvania)
- NANCY K. NALLY (1981), Assistant Professor of Nursing  
B.S. (St. Louis), M.S. (SUNY, Buffalo)
- 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  
B.S. (Baghdad), M.S., Ph.D. (Carnegie-Mellon)
- ROOSEVELT NEWSON (1982), Assistant Professor of Music  
B.M. (Southern), M.M., D.M.A. (Peabody Conservatory of Music)
- 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  
B.A. (Fordham), M.A., Ph.D. (Purdue)
- JOHN L. OREHOTSKY (1971), Professor of Engineering  
B.S. (M.I.T.), M.S. (Polytechnic Institute of Brooklyn), Ph.D. (Syracuse)
- PENELOPE J. PADGETT (1982), Assistant Professor of Biology  
B.A. (North Carolina), Ph.D. (Virginia Polytechnic)
- JOSEPH A. PARKER, JR. (1976), Associate Professor of Mathematics  
and Computer Science/Engineering  
B.S. (Stanford), Ph.D. (California Institute of Technology)
- WALTER A. PLACEK, JR. (1969), Assistant Professor of Physics  
B.S. (Wilkes), M.Ed. (Pennsylvania State)
- LORRAINE C. POHUTSKY (1982), Associate Professor of Nursing  
B.S., M.S. (Hunter), M.Ed., Ed.D. (Columbia)
- 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)
- LOUIS RIGLEY (1974), Associate Professor of Biology  
B.S. (Alderson-Broadus), Ph.D. (West Virginia)
- ROBERT C. RILEY (1949), Professor of Psychology  
B.A. (Bucknell), Ph.D. (Pennsylvania State)
- PHILIP L. RIZZO (1957), Professor of English  
B.A., M.A., Ph.D. (Pennsylvania)
- NANCY LEE ROBERTS (1979), Instructor of Physical Education and Hygiene  
B.S. (East Stroudsburg)
- JAMES P. RODECHKO (1968), Professor of History  
B.A. (Hofstra), M.A., Ph.D. (Connecticut)
- RALPH B. ROZELLE (1962), Professor of Chemistry  
B.S. (Wilkes), Ph.D. (Alfred)
- FRANCIS J. SALLEY (1950), Professor of Chemistry  
B.S. (St. Joseph's), M.S. (Pennsylvania)
- JOSEPH H. SALSBURG (1959), Associate Professor of Mathematics  
and Computer Science  
B.A. (Bucknell), M.A. (Columbia)
- ROSENDO E. SANTOS, JR. (1968), Assistant Professor of Music  
B.M. (Philippines), M.M. (Catholic University of America)
- DORIS B. SARACINO (1960), Associate Professor of Physical Education  
and Hygiene  
B.S., M.S. (East Stroudsburg)
- CATHERINE HANSON SCHAPPERT (1980), Instructor of Library Science  
B.A. (King's), M.L.S. (Pittsburgh)
- ROLAND C. SCHMIDT, JR. (1962), Associate Professor of Physical Education  
and Hygiene  
B.S. (Bloomsburg), M.S. (Scranton)
- JUDITH K. SCHREIBER (1974), Assistant Professor of Nursing  
B.S. (Wilkes), M.S. (Pennsylvania), M.S. (Scranton)
- NORMA M. SCHULMAN (1979), Assistant Professor of English and  
Communication Studies  
B.A. (Barnard), M.A., M.S. (Boston), Ph.D. (Tufts)
- KUO-KANG SHAO (1966), Professor of History  
B.A. (Taiwan), M.S., Ph.D. (Pennsylvania)
- JAY D. SIEGFRIED (1979), Assistant Professor of Theater Arts  
B.A. (Yankton), M.A., M.F.A. (Iowa)
- JOHN W. SIMMONS, II (1982), Assistant Professor of Mathematics  
and Computer Science  
B.S. (Samford), M.A., Ph.D. (Indiana)

- HERBERT B. SIMON (1969), Associate Professor of Art  
B.A., M.A. (New York)
- RICHARD E. SOURS (1965), Associate Professor of Mathematics  
and Computer Science  
B.S. (Towson), M.S. (Michigan State), Ph.D. (Virginia)
- WILLIAM H. STERLING (1976), Associate Professor of Art  
B.A. (William & Mary), Ph.D. (Iowa)
- ROBERT D. STETTEN (1968), Associate Professor of Psychology  
B.A., Ph.D. (Lehigh), M.S., M.A. (Iowa)
- JOHN C. STEVENS (1979), Assistant Professor of Philosophy  
B.A. (Reed), M.A., Ph.D. (Chicago)
- SHARON F. STEVENS (1979), Assistant Professor of Nursing  
B.S. (Wilkes), M.S. (Maryland at Baltimore)
- RODERICK M. STEWART (1980), Assistant Professor of Philosophy  
B.A. (Austin), M.A., Ph.D. (Syracuse)
- WILLIAM R. STINE (1965), Professor of Chemistry  
B.S. (Union), Ph.D. (Syracuse)
- ALLAN STOEKL (1980), Assistant Professor of English and Foreign Languages  
B.A., M.A. (Wisconsin), Ph.D. (SUNY, Buffalo)
- HOWARD A. SWAIN, JR. (1960), Professor of Chemistry  
B.S. (Grove City), Ph.D. (Pennsylvania)
- AYSIT TANSEL (1981), Assistant Professor of Economics  
B.S. (Middle East Technical, Ankara, Turkey), M.A. (Minnesota),  
Ph.D. (SUNY, Binghamton)
- GARY R. TAYLOR (1980), Associate Professor of Aerospace Studies  
B.S. (Ohio State), M.A. (Texas Tech)
- WAGIHA ABDEL-GAWAD TAYLOR (1969), Professor of Economics  
B.A. (Alexandria), M.A. (Brown), Ph.D. (Clark)
- SHARON G. TELBAN (1975), Assistant Professor in Nursing  
B.S., M.S. (Wilkes), M.S. (Pennsylvania State)
- LEE C. TERRY (1968), Associate Professor of English  
B.A. (Southern Methodist), Ph.D. (Texas)
- STEPHEN J. TILLMAN (1970), Associate Professor of Mathematics  
and Computer Science  
B.S. (Brown), M.S. (Lehigh), Ph.D. (Brown)
- SUE A. TOPFER (1979), Assistant Professor of Library Science  
B.S. (Ursinus), M.S. (Syracuse)
- PHILIP R. TUHY (1960), Assistant Professor of Political Science  
B.A. (Valparaiso), M.G.A. (Pennsylvania)
- LESTER J. TUROCZI (1972), Associate Professor of Biology  
B.A., M.S., Ph.D. (Rutgers)
- ROBERT E. WERNER (1955), Professor of Economics  
B.A. (Roosevelt), M.S., Ph.D. (Wisconsin)

- HOWARD J. WILLIAMS (1973), Associate Professor of Economics  
B.S. (Wilkes), M.A., Ph.D. (Pennsylvania State)
- BING K. WONG (1968), Professor of Mathematics and Computer Science  
B.A. (Kansas State at Pittsburgh), M.A., Ph.D. (Illinois)
- MORAD K. YERUSHALMI (1981), Assistant Professor of Engineering  
B.S. (Arya-Mehr, Iran), M.S., Ph.D. (Drexel)
- CHYANG JOHN YU (1981), Assistant Professor of Engineering  
B.S. (Cheng Kung, Taiwan), M.A. (Wayne), Ph.D. (Illinois at Urbana)
- LOIS PATRICIA ZONG (1980), Assistant Professor of Nursing  
B.S., M.S. (Pennsylvania)
- BETTY P. ZURAW (1980), Assistant Professor of Nursing  
B.S. (Hunter), M.A. (Columbia)

#### Teaching Associate Faculty

- PAMELA S. BAKER (1981), Nursing  
B.A., B.S. (Wilkes)
- RICHARD J. BOROFSKI (1982), Nursing  
B.S. (Wilkes)
- MARY JOAN BURNS (1981), Nursing  
B.S. (Marywood)
- ROSE ANN S. CORDORA (1980), Business Administration  
B.S., M.B.A. (Wilkes)
- LINDA DESMOND (1982), Nursing  
B.S. (Cedar Crest)
- DOROTHY B. GLOMAN (1982), Nursing  
B.S. (Wilkes)
- DIANA W. MORGAN (1975), Nursing  
B.S. (Wilkes)
- ANN W. RUSSIN (1982), Nursing  
B.S. (Cornell)
- MARY ANN SAUERAKER (1980), Nursing  
B.S. (Wilkes)
- DAVID G. SCHAPPERT (1981), Library  
B.A. (Michigan)
- JOANN M. SIMONS (1980), Nursing  
B.S. (Marywood)
- JEAN R. STEELMAN (1982), Nursing  
B.S. (Wilkes)
- CAROL WOLFE ZACK (1979), Nursing  
B.S. (Bloomsburg)

#### Adjunct Faculty

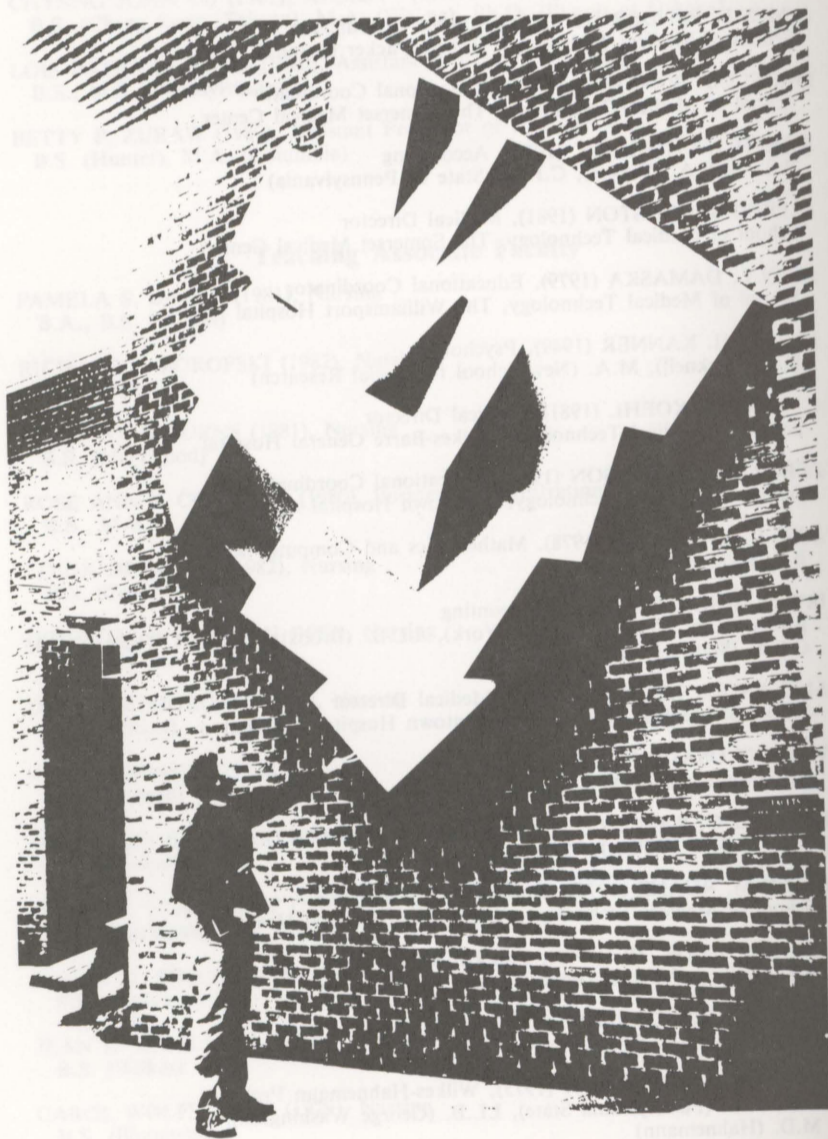
- CHARLES R. ABATE (1966), Accounting  
B.S., M.B.A. (Wilkes)
- MARY P. BABCOCK (1972), Nursing  
B.A. (Wilkes), M.S. (Scranton)
- ABRAHAM D. BARRAS (1971), Philosophy  
B.A. (Columbia), B.Rel.Ed., M.H.L., D.H.L. (Jewish Theological Seminary)
- JAMES L. BENDER (1974), Educational Coordinator  
School of Medical Technology, Robert Packer Hospital
- MADLINE BONADIES (1978), Educational Coordinator  
School of Medical Technology, The Somerset Medical Center
- JOSEPH J. CHISARICK (1970), Accounting  
B.S., M.B.A. (Wilkes), C.P.A. (State of Pennsylvania)
- ALFRED S. CONSTON (1981), Medical Director  
School of Medical Technology, The Somerset Medical Center
- JOHN L. DAMASKA (1979), Educational Coordinator  
School of Medical Technology, The Williamsport Hospital
- JOSEPH H. KANNER (1949), Psychology  
B.A. (Bucknell), M.A. (New School for Social Research)
- C. WARREN KOEHL (1981), Medical Director  
School of Medical Technology, Wilkes-Barre General Hospital
- DEBORAH L. JOHNSON (1982), Educational Coordinator  
School of Medical Technology, Allentown Hospital Association
- ROSS L. MANTIONE (1978), Mathematics and Computer Science  
B.A. (Wilkes)
- IRWIN MORRISON (1974), Accounting  
B.B.A. (City College of New York), LL.B. (Brooklyn), LL.M. (New York),  
C.P.A. (State of New York)
- ALEXANDER NEDWICK (1981), Medical Director  
School of Medical Technology, Allentown Hospital Association
- VINCENT OSADCHY (1976), Engineering  
B.S. (Muhlenberg), M.S. (Wilkes)
- RICHARD G. RASPEN (1967), Business Administration  
B.S., M.B.A. (Wilkes), M.Ed. (Bloomsburg)
- HELEN M. RUANE (1974), Educational Coordinator  
School of Medical Technology, Wilkes-Barre General Hospital
- ANDREW SHAW, JR. (1972), Political Science  
B.S. (Wilkes), M.G.A. (Pennsylvania), D.P.A. (Nova)
- TOM TOMKIEWICZ (1980), Sociology  
B.A. (Wilkes), M.S. (Marywood)
- ANTHONY J. TURCHETTI (1973), Wilkes-Hahnemann Program  
B.S., M.S. (Pennsylvania State), LL.B. (George Washington),  
M.D. (Hahnemann)



RICHARD N. TUTWILER (1981), Sociology  
B.A. (Macalester), M.A. (SUNY, Binghamton)

DONALD K. WEAVER (1981), Medical Director  
School of Medical Technology, The Williamsport Hospital

DONALD R. WEAVER (1981), Medical Director  
School of Medical Technology, Robert Packer Hospital



### Emeriti

MARIAN E. ALEXANDER  
Assistant Professor of Nursing, Emerita. M.S., Simmons

MICHAEL J. BARONE  
Associate Professor of Education, Emeritus. M.S., Bucknell

ALFRED W. BASTRESS  
Professor of Chemistry, Emeritus. Ph.D., Yale

ANGEL BELIC  
Associate Professor of French, Emeritus. Ph.D., Rome, Italy

CATHERINE H. BONE  
Assistant Professor of Chemistry, Emerita. M.S., Pennsylvania State

CHESTER E. COLSON  
Professor of Art, Emeritus. M.S., Columbia

ELWOOD DISQUE  
Associate Professor of German, Emeritus. B.A., Dickinson

RUTH W. JESSEE  
Professor of Nursing Education, Emerita. Ed.D., Pennsylvania

BRONIS KASLAS  
Professor of History, Emeritus. Ph.D., Strasbourg

ANNE VANKO LIVA  
Associate Professor of Music, Emerita. Juilliard

CHARLOTTE V. LORD  
Professor of English, Emerita. Ph.D., Pennsylvania

RUTH W. McHENRY  
Professor of Nursing, Emerita. M.A., Columbia

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

CHARLES B. REIF  
Professor of Biology, Emeritus. Ph.D., Minnesota

J. PHILIP RICHARDS  
Associate Professor of Art, Emeritus. B.F.A., Syracuse

THOMAS R. RICHARDS  
Professor of Mathematics, Emeritus. M.S., Bucknell

RUTH T. ROBERTS  
Instructor of English, Emerita. B.A., Goucher

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

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 (1985)  
Howard Williams, Alt. (1985)  
Joseph Bellucci (1984)  
Umid Nejib (1983)

##### Faculty-Trustee

Walter Placek (1985)  
Walter Karpinich, Alt. (1983)  
Francis Salley (1983)

#### Academic Standards

Robert Riley, Chairman (1984)  
Owen Faut (1985)  
Virginia Nehring (1985)  
Joseph Salsburg (1984)  
Stanley Kay (1983)  
Norma Schulman (1983)  
Herbert Simon (1983)  
Gerald Hartdagen  
George Ralston

#### Admissions

John Koch, Chairman (1984)  
Hilda Marban (1985)  
Claude Anderson (1984)  
Michael Case (1983)  
Edwin Johnson (1983)  
Nancy Nally  
Gerald Wuori

#### Athletic

Welton Farrar, Chairman (1983)  
James DeCosmo (1983)  
Bruce Burke (1984)  
Doris Saracino (1984)  
David Goode (1983)  
Richard Raspen  
John Reese

#### Curriculum

James Rodechko, Chairman (1984)  
Richard Aston (1985)  
Alene Harrison (1985)  
Kenneth Lewis (1984)  
Frederic Bellas (1983)  
Robert Ogren (1983)  
John Stevens (1983)  
Gerald Hartdagen  
Hsi-ping Shao

#### Faculty Policy

Joel Berlatsky, Chairman (1984)  
Donald Leslie (1985)  
Francis Salley (1985)  
Lee Terry (1984)  
Benjamin Fiester (1983)  
Wagjha Taylor (1983)  
Robert S. Capin

#### Financial Aid

Lorna Darte, Chairman (1983)  
Diane Felice (1985)  
Walter Placek (1984)  
Philip Tuhy (1984)  
Gay Meyers (1983)  
Linda Hobrock  
Rachael Lohman

### Standing Committees of the Faculty

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

#### Graduate Studies

Wilbur Hayes, Chairman (1985)  
Judith Schreiber (1985)  
Terrance Anderson (1984)  
Bruce Brown (1984)  
Kenneth Broadt (1983)  
Christopher Fox (1983)  
Brian Redmond (1983)  
Jack Meyers  
Robert Stetten

#### Library

Philip Rizzo, Chairman (1985)  
Bradford Kinney (1984)  
Judith Rasson (1983)  
Bruce Reiprich (1983)  
Catherine Schappert (1983)  
Mary Lou Kasputis  
Frederick Krohle

#### Student Life

Boyd Earl, Chairman (1983)  
Les Turoczi (1985)  
Allan Maxwell (1984)  
Bart Bellairs (1983)  
Rosendo Santos (1983)  
Charles Abate  
Arthur Hoover

#### Student Publications

Michael O'Neill, Chairman (1984)  
Robert Heaman (1985)  
William Sterling (1984)  
Richard Fuller (1983)  
Stephen Tillman (1983)  
Anne Graham  
Randy Xenakis

#### Teacher Recognition and Effectiveness

Walter Karpinich, Chairman (1984)  
William Stine (1985)  
Carl Charnetski (1984)  
Joseph Parker (1983)  
Howard Swain (1983)  
Eugene Domzalski  
Patricia Zong

#### Tenure and Promotion

##### Humanities

Stanley Gutin (1983)  
Donald Henson (1983)

##### Natural Sciences and Mathematics

Samuel Merrill (1983)  
Louis Rigley (1985)

##### Social Sciences

Eugene Hammer, Secy. (1984)  
John Natzke (1984)

## Index

- | (A)   | (B)  |
|---|--|
| Academic Ineligibility . . . . . 59         | Bachelor of Arts . . . . . 56                |
| Academic Officers . . . . . 211             | Degree Requirements . . . . . 62             |
| Academic Probation . . . . . 59             | Selection of a Major . . . . . 56            |
| Academic Progress . . . . . 36, 57, 59      | Bachelor of Fine Arts . . . . . 65           |
| Academic Requirements . . . . . 36, 57, 62  | Bachelor of Science . . . . . 56             |
| Academic Standards                          | Degree Requirements . . . . . 62             |
| Committee . . . . . 17, 19, 59, 60, 188     | Selection of a Major . . . . . 57            |
| Accounting . . . . . 78                     | Band . . . . . 8                             |
| Accreditation . . . . . 7                   | Biology . . . . . 68                         |
| Act 101 Program . . . . . 10                | Board of Trustees . . . . . 206              |
| Adjunct Faculty . . . . . 221               | Bookstore . . . . . 53                       |
| Administrative Offices . . . . . 53, 54     | Buildings and Plant . . . . . 50             |
| Administrative Personnel . . . . . 208      | Business Administration . . . . . 81, 188    |
| Admissions . . . . . 14                     | Business Education . . . . . 98              |
| Acceptance . . . . . 15                     |  |
| Advanced Placement . . . . . 16             | (C)  |
| Applications . . . . . 14                   | Calendar . . . . . 2                         |
| Deposit . . . . . 15, 20                    | Career Services (Roth Center) . . . . . 53   |
| International Students . . . . . 16         | Career Library . . . . . 53                  |
| Interviews . . . . . 15                     | Certification . . . . . 97                   |
| Office . . . . . 53                         | in Art Education . . . . . 65                |
| Readmission . . . . . 17                    | in Communication . . . . . 121               |
| Tests . . . . . 14                          | in Earth and Space Science . . . . . 94      |
| Transfer Students . . . . . 15, 61, 97, 179 | in Education . . . . . 183                   |
| Attendance . . . . . 59                     | in English . . . . . 121                     |
| Advanced Course Standing . . . . . 16       | in Mathematics . . . . . 136                 |
| Advanced Placement . . . . . 16, 157        | in Music Education . . . . . 143             |
| Advisement . . . . . 18, 53                 | in Social Studies . . . . . 99               |
| Aerospace Engineering . . . . . 104         | Certification Requirements . . . . . 98      |
| Aerospace Studies . . . . . 199             | Challenge Examinations . . . . . 17, 89, 136 |
| Air Force ROTC . . . . . 199                | Change of Major . . . . . 61                 |
| Air Force ROTC Scholarships . . . . . 33    | Chemistry . . . . . 74                       |
| Alumni Office . . . . . 54                  | Chorus . . . . . 8                           |
| Anthropology . . . . . 182                  | Class Attendance . . . . . 59                |
| Art . . . . . 65                            | Class Standing . . . . . 59                  |
| Art Gallery . . . . . 51, 52                | CLEP (College Level Examination              |
| Athletics . . . . . 9                       | Program) . . . . . 16                        |
| Attendance . . . . . 59, 60                 | Clubs . . . . . 8                            |
| Auditing Courses . . . . . 21, 60           | College and Community . . . . . 9            |
| Awards . . . . . 36, 45                     | College Testing Service . . . . . 52         |
| All-College . . . . . 46                    | Commencement Awards . . . . . 45             |
| Commencement . . . . . 45                   |  |

## Index

- |   |   |
|---|---|
| Commerce and Finance . . . . . 78             | German . . . . . 132                        |
| Communication Studies . . . . . 124, 126      | Hebrew . . . . . 135                        |
| Commuter Council . . . . . 8                  | History . . . . . 116                       |
| Computer Science . . . . . 88                 | Five-Year B.A. in . . . . . 188             |
| Concert and Lecture Series . . . . . 12       | Individualized Studies . . . . . 190        |
| Continuing Education . . . . . 202            | Industrial Engineering . . . . . 104        |
| Conyngnam Art Gallery . . . . . 52            | International Studies . . . . . 191         |
| Conyngnam Student Union . . . . . 53          | Italian . . . . . 135                       |
| Cooperative Education Program . . . . . 203   | Language and Literature . . . . . 120       |
| Core Requirements . . . . . 63, 64            | Latin . . . . . 135                         |
| Counseling . . . . . 18, 52                   | Materials Engineering . . . . . 106, 114    |
| Course Credits . . . . . 58                   | Mathematics . . . . . 136                   |
| Course Load . . . . . 20                      | Mechanical Engineering . . . . . 104        |
| Course Requirements and                       | Medical Technology . . . . . 189            |
| Description . . . . . 65                      | Music . . . . . 143                         |
| Aerospace Engineering . . . . . 104           | Music Education . . . . . 148, 150          |
| Aerospace Studies (ROTC) . . . . . 199        | Nursing . . . . . 155                       |
| Accounting . . . . . 78                       | Optometry . . . . . 194                     |
| Anthropology . . . . . 182                    | Pharmacy . . . . . 196                      |
| Art . . . . . 65                              | Philosophy . . . . . 162                    |
| Biology . . . . . 68                          | Physical Education and Health . . . . . 166 |
| Business Administration . . . . . 81          | Physics . . . . . 167                       |
| M.A. in . . . . . 188                         | Podiatric Medicine . . . . . 197            |
| Business Education . . . . . 98               | Polish . . . . . 135                        |
| Chemical Engineering . . . . . 104            | Political Science . . . . . 172             |
| Chemistry . . . . . 74                        | Pre-Law . . . . . 173                       |
| Civil Engineering . . . . . 104               | Psychology . . . . . 179                    |
| Commerce and Finance . . . . . 78             | Russian . . . . . 134                       |
| Communication Studies . . . . . 124, 126      | Social Studies . . . . . 99                 |
| Computer Science . . . . . 88, 90             | Sociology and Anthropology . . . . . 182    |
| Dentistry . . . . . 193                       | Spanish . . . . . 133                       |
| Earth and Environmental Sciences . . . . . 93 | Speech . . . . . 129                        |
| Earth and Space Science . . . . . 94          | Statistics . . . . . 138                    |
| Economics . . . . . 85                        | Theater Arts . . . . . 127                  |
| Education . . . . . 97                        | Ukrainian . . . . . 135                     |
| Electrical Engineering . . . . . 105, 111     | Urban Studies . . . . . 183, 192            |
| Elementary Education . . . . . 97             | Cultural Activities . . . . . 11, 52        |
| Engineering . . . . . 102                     |   |
| Engineering Management . . . . . 107          |   |
| English . . . . . 120                         |   |
| Environmental Engineering . . . . . 108       |   |
| Foreign Languages . . . . . 130               |   |
| French . . . . . 130                          |   |

## Index

**(D)**

Damage Deposit	23
Dean's List	61
Deans' Offices	54
Debate	8
Deferred Payment Plans	26
Degree Requirements	58, 62
Bachelor of Arts Degree	56
Bachelor of Science Degree	56
Dentistry Program	193
Development Office	54
Dormitories (Residence Halls)	22, 23
Dorothy Dickson Dart Center for the Performing Arts	51
Dorothy Dickson Dart Music Building	52
Double Major	57

**(E)**

Earth and Environmental Sciences	93
Earth and Space Science	94
Economic Development Council	10
Economics	85
Education	97
Business	98
Elementary	98
Music	148, 150
Secondary	97
Educational Development Center	10
Educational Testing Center	14
Electrical Engineering	111
Employment	35, 36, 53
Engineering	102
Aerospace	104
Chemical	104
Civil	104
Electrical	105, 111
Environmental	108
Industrial	104
Management	107
Materials	106, 114
Mechanical	104
English	120

Evening Program	19, 60
Expenses	20
Extracurricular Activities	8

**(F)**

Faculty	212
Adjunct	221
Committees	224
Emeriti	223
Family Educational Rights and Privacy Act	18
Fees	20, 21
Accident Insurance	21, 22
Application	14, 17, 20
Auditing Courses	21, 60
Challenge Examination	17, 89, 136
Graduation	21, 62
Health Care	21, 22
Installment Payment Plan	27
Laboratory	21, 22
Late Registration	20
Liability Insurance	22
Medical Technology	21
Music	21
Readmission	17
Refunds	23, 24, 25
Residence Halls	22
Sickness Insurance	22
Student Activities	21
Transcript	22
Financial Aid Director	54
Financial Assistance	26, 29, 31, 36
Deferred Payment Plans	26
Employment	35, 36, 53
Grants	32, 33
Loans	34, 35
Scholarships	32
State Scholarships	33
Trust Funds	36
Tuition Discounts	26
Foreign Languages	130
French	130

## Index

Freshman Honors	198
Freshman Orientation	18

**(G)**

German	132
Grade Point Average	58, 59
Grades	57, 58, 61
Graduate Program	20, 188, 189
Graduation Requirements	61, 62
Grants	32, 33
Guidance	18, 53
Gymnasium	52

**(H)**

Health Sciences Programs	193
Health Services	18, 21
Hebrew	135
History	116, 188
Honors	61
Honors Programs	
in Biology	69
in Engineering	103
in English	120
Housing Contracts	23

**(I)**

Individualized Studies	190
Ineligibility	59
Institute of Regional Affairs	9
Insurance — Accident and Health	21, 22
International Students	16
International Studies	191
Inter-Residence Council	8
Interviews	15
Italian	135

**(L)**

Language and Literature	120
Languages	130, 135
Latin	135

Law	173
Learning Center	51
Library	50
Loans	34, 35

**(M)**

Madrigal Singers	8
Major	56, 57
Change of Major	61
Double	57
Management Information Systems	90
Mathematics	136
Mathematics Five-Year B.S. — M.S.	
Degree Program	189
Meals	23, 25
Medical Technology	21, 189
Minor	57
Modern Foreign Languages	130
Municipal Government Program	9
Music	143
Music Education	148, 150

**(N)**

National Direct Student Loan Fund	34
Nursing	155
Nursing Student Loans	34

**(O)**

Optometry Program	194
Orientation for New Students	18
Overloads	60

**(P)**

Part-time	20, 21, 22, 24, 35
Payments	25, 27, 28
Pharmacy Program	196
Philosophy	162
Physical Education and Health	166
Physical Plant	50
Physics	167

## Index

Plus Loans . . . . . 35  
 Podiatric Medicine Program . . . . . 197  
 Polish . . . . . 135  
 Polish Room . . . . . 42, 50  
 Political Science . . . . . 172  
 Pre-Law . . . . . 173  
 Pre-Professional Degree Program . . . . . 188  
 Probation and Dismissal . . . . . 59  
 Psychology . . . . . 179  
 Public Relations Office . . . . . 54

### (R)

Ralston Field . . . . . 52  
 Reading Improvement Center . . . . . 11  
 Readmission . . . . . 17  
 Refunds . . . . . 23, 24, 25  
 Registration . . . . . 20  
 Research Center . . . . . 50, 51  
 Resident Assistants . . . . . 22  
 Residence Halls . . . . . 22, 23  
 ROTC . . . . . 33, 199  
 Roth Center . . . . . 52, 53  
 Russian . . . . . 134

### (S)

Scholarships . . . . . 31, 32, 33, 36  
 Second Baccalaureate Degree . . . . . 62  
 Sigma XI . . . . . 11  
 Social Studies . . . . . 99  
 Sociology . . . . . 182, 184  
 Sordoni Art Gallery . . . . . 51  
 Spanish . . . . . 133  
 Special Degree Programs . . . . . 188  
 Speech . . . . . 129  
 Stark Hall of Science . . . . . 50  
 Stark Learning Center . . . . . 51  
 Statistics . . . . . 138  
 Student Access to Files . . . . . 18  
 Student Activities . . . . . 8  
 Student Activities Fee . . . . . 21  
 Student Advisement . . . . . 18, 53

Student Government . . . . . 8  
 Student Life . . . . . 8  
 Student Load . . . . . 23, 58  
 Student Responsibility . . . . . 8  
     Access to Files . . . . . 18  
     Admissions . . . . . 14, 17  
     Advisement . . . . . 18, 53  
     Athletics . . . . . 9  
     Attendance . . . . . 59, 60  
     Auditing . . . . . 21, 60  
     Bachelor of Arts . . . . . 56, 62  
     Bachelor of Science . . . . . 56, 62  
     Calendar . . . . . 2  
     Career Services . . . . . 53  
     Certification . . . . . 97  
     Class Standing . . . . . 59  
     Commencement . . . . . 61, 62  
     Core Requirements . . . . . 63, 64  
     Counseling . . . . . 18, 52  
     Cultural Activities . . . . . 11, 52  
     Employment . . . . . 35, 36, 53  
     Evening Program . . . . . 19, 60  
     Expenses . . . . . 20  
     Extracurricular Activities . . . . . 8  
     Grade Averages . . . . . 58  
     Graduate Study . . . . . 20  
     Graduation . . . . . 61, 62  
     Honors . . . . . 61  
     Housing Contracts . . . . . 23  
     Incompletes . . . . . 58  
     Individualized Studies . . . . . 190  
     Interdisciplinary Program . . . . . 191, 192  
     Loans . . . . . 34, 35  
     Major . . . . . 56, 57  
     Meals . . . . . 23, 25  
     Minor . . . . . 57  
     Orientation . . . . . 18  
     Payments . . . . . 25, 27, 28  
     Placement Office . . . . . 35  
     Policy . . . . . 8  
     Readmission . . . . . 17  
     Refunds . . . . . 23, 24, 25  
     Registration . . . . . 20

## Index

Residence Halls . . . . . 22, 23  
 Scholarships . . . . . 31, 32, 33, 36  
 Social Activities . . . . . 8  
 Special Programs . . . . . 188  
 Student Evaluation Files . . . . . 18  
 Student Union Building . . . . . 53  
 Summer Program . . . . . 19, 25, 61  
 Teacher Certification Requirements . . . . . 95  
 Transcripts . . . . . 22  
 Transfer Credit . . . . . 15, 17, 61  
 Transfer Students . . . . . 15, 61, 97, 179  
 Tuition . . . . . 20, 21, 26  
 Weekend Program . . . . . 19, 24, 25  
 Withdrawals . . . . . 23, 24, 25, 60  
 Student Union Building . . . . . 53  
 Summer Program . . . . . 19, 25, 61

### (T)

Teacher Certification . . . . . 97  
 Testing Center . . . . . 52  
 Theater Arts . . . . . 127  
 Town and Gown Programs . . . . . 12  
 Transcripts . . . . . 22  
 Transfer Credit . . . . . 15, 17, 61  
 Transfer Students . . . . . 15, 61, 97, 179  
 Trust Funds . . . . . 36  
 Tuition . . . . . 20, 21  
 Tuition Discounts . . . . . 26  
 Tuition Payment Plans . . . . . 26, 27, 28  
 Tuition Refund . . . . . 23, 24, 25

### (U)

Ukrainian . . . . . 135  
 Undergraduate Degree Programs . . . . . 56  
 Upward Bound Program . . . . . 10  
 Urban Studies . . . . . 183, 192

### (V)

Volunteers for Literacy . . . . . 11

### (W)

WCLH-FM . . . . . 8  
 Weekend Program . . . . . 19, 24, 25  
 Wilkes College  
     Accreditation . . . . . 7  
     Background . . . . . 7  
     Calendar . . . . . 2  
     Faculty Guide . . . . . 1  
     Installment Payment Plan . . . . . 26, 28  
     Policy . . . . . 8, 16, 18  
 Wilkes/King's Cross-Registration . . . . . 18  
 Wilkes/Pennsylvania College of  
     Optometry Program . . . . . 194  
 Wilkes/Pennsylvania College of  
     Podiatric Medicine Program . . . . . 197  
 Wilkes/ Temple Univeristy  
     Dentistry Program . . . . . 193  
 Wilkes/ Temple University  
     Pharmacy Program . . . . . 196  
 Withdrawals . . . . . 23, 24, 25, 36, 60  
 Women's Committee for the Polish  
     Room at Wilkes College . . . . . 50  
 Work-Study Program . . . . . 35  
 Wrestling Tournament . . . . . 9



**Wilkes College**  
Wilkes-Barre, Pennsylvania

# WILKES COLLEGE

## 1982 Fall Semester

Graduate and Part-Time Undergraduate Programs



# WILKES COLLEGE FALL SEMESTER 1982

## — GENERAL INFORMATION —

### Calendar for Fall Semester 1982

#### Registration for Evening College, Part-Time and Graduate Students:

Thursday, Aug. 26 . . . . . 8:30 a.m. to 8:00 p.m.  
Friday, Aug. 27 . . . . . 8:30 a.m. to 8:00 p.m.  
Monday, Aug. 30 . . . . . Classes begin at 8:00 a.m.  
Friday, Oct. 15 . . . . . Fall recess begins at 5:00 p.m.  
Wednesday, Oct. 20 . . . . . Classes resume at 8:00 a.m.  
Tues., Nov. 23 . . . . . Thanksgiving recess begins at 10:00 p.m.  
Monday, Nov. 29 . . . . . Classes resume at 8:00 a.m.  
Mon., Dec. 13 thru Tues., Dec. 21 . . . . . Final Examinations

### Weekend College (at Keystone Junior College)

Sept. 10 to Dec. 12 (including Final Examinations)  
Registration . . . . . September 10  
(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.

Wilkes offers the Master of Business Administration Degree: Master

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.

All Charges must be paid at the time registration forms are processed.

#### Undergraduate:

Undergraduate students who register for fewer than 12 credits pay \$96 per credit.

Undergraduate students who register for 12 through 18 credits pay a flat tuition fee of \$2,325 per semester. (Students who take more than 18 credits pay \$155 for each credit above 18.)

#### Graduate:

All graduate students pay \$130 per credit.

**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.

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.

Evening college, part-time, weekend college or graduate students may withdraw, without prejudice, from any course at any time during the first 4 weeks of the semester, providing that they give written notice to the instructor and to the Director of Graduate and Part-time Undergraduate Programs within this 4-week period. (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official withdrawal form.)

Students who have paid their tuition in full and who withdraw from



leges 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.

## 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                            | Individualized Studies       |
| Biology                        | International Relations,     |
| Chemistry                      | Mathematics                  |
| Communication Studies          | Philosophy                   |
| Computer Science               | Physics                      |
| Earth & Environmental Sciences | Political Science            |
| Economics                      | Psychology                   |
| Elementary Education           | Social Science/Urban Affairs |
| English                        | Sociology                    |
| Foreign Languages              | Sociology-Anthropology       |
| History                        | Theater Arts                 |

### Bachelor of Science:

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

- Bachelor of Fine Arts
- Bachelor of Music

**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.

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.

Evening college, part-time, weekend college or graduate students may withdraw, without prejudice, from any course at any time during the first 4 weeks of the semester, providing that they give written notice to the instructor and to the Director of Graduate and Part-time Undergraduate Programs within this 4-week period. (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official withdrawal form.)

Students who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, upon written request to the Comptroller's Office, according to the following schedule:

Time of withdrawal	Tuition Refund
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Weekend College students who have paid their tuition in full and who withdraw from Weekend College classes will receive a refund of one-half of their tuition through the second weekend of classes, upon written request to the Comptroller's Office within this period. No refunds will be made after the second weekend of classes.

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

**For further 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**

# ALL 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.

All Charges must be paid at the time registration forms are processed.

### **Undergraduate:**

Undergraduate students who register for fewer than 12 credits pay \$96 per credit.

Undergraduate students who register for 12 through 18 credits pay a flat tuition fee of \$2,325 per semester. (Students who take more than 18 credits pay \$155 for each credit above 18.)

### **Graduate:**

All graduate students pay \$130 per credit.

## Expenses

**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.

## Financial Aid For Undergraduates

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.

## Library

Evening college, part-time, weekend college or graduate students may withdraw, without prejudice, from any course at any time during the first 4 weeks of the semester, providing that they give written notice to the instructor and to the Director of Graduate and Part-time Undergraduate Programs within this 4-week period. (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official withdrawal form.)

## Withdrawal

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.

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.

Evening college, part-time, weekend college or graduate students may withdraw, without prejudice, from any course at any time during the first 4 weeks of the semester, providing that they give written notice to the instructor and to the Director of Graduate and Part-time Undergraduate Programs within this 4-week period. (Charges for courses from which a student withdraws will be calculated as of the date recorded on the official withdrawal form.)

Students who have paid their tuition in full and who withdraw from courses or from the College will receive a refund of tuition, upon written request to the Comptroller's Office, according to the following schedule:

<b>Time of withdrawal</b>	<b>Tuition Refund</b>
First two weeks	80%
Third and fourth weeks	60%
Fifth week	40%
After fifth week	no refund

Weekend College students who have paid their tuition in full and who withdraw from Weekend College classes will receive a refund of one-half of their tuition through the second weekend of classes, upon written request to the Comptroller's Office within this period. No refunds will be made after the second weekend of classes.

Fees are non-refundable. No student who is suspended or expelled shall be entitled to any refund.

**For further 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**

## Financial Aid For Undergraduates

## Library

## Withdrawal

## Information

# Undergraduate Division

**REGISTRATION (Parrish Hall, Second Floor)**

Thursday, August 26 .....8:30 a.m.-8:00 p.m.

Friday, August 27 .....8:30 a.m.-8:00 p.m.

**EVENING COLLEGE CLASSES**

*August 30 — December 21, 1982*

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN **BOLD FACE** P.M.)

Course	Description	Room	Day & Hour	Credits
<b>ACCOUNTING:</b>				
Acct 101-E1	Elementary Accounting I (No day students)	Par. 35	M <b>6:30-9:30</b>	3
Acct 102-E1	Elementary Accounting II (No day students)	Par. 45	W <b>6:30-9:30</b>	3
Acct 111-E1	Intermediate Accounting I	Par. 45	T <b>6:30-9:30</b>	3
Acct 201-E1	Cost Accounting	Par. 35	T <b>6:30-9:30</b>	3
Acct 221-E1	Taxes I (Pre: Acct 112 or approval of instructor)	Par. 35	W <b>6:00-9:00</b>	3
Acct 231-E1	Auditing (Pre: Math 101-102 or equivalent sequence in mathematics)	Par 45	M <b>6:30-9:30</b>	3
Acct 241-E1	Advanced Accounting I (Pre: Acct 112)	Par. 35	Th <b>6:30-9:30</b>	3
Acct 398-E1	Topics: Accounting for Non-profit Organizations (Pre: Acct 242 or permission of instructor)	SLC 147	T <b>6:30-9:30</b>	3
<b>AEROSPACE STUDIES:</b>				
A S 101-E1	U.S. Military Forces in the Contemporary World I	Library	Th <b>4:30-5:30</b>	1
A S 201-E1	The Development of Air Power I	Library	Th <b>5:30-6:30</b>	1
A S 301-E1	Concepts of Management (Pre: POC membership)	SLC 209	T Th <b>5:00-6:30</b>	3
A S 311-E1	National Security Forces in American Society I (Pre: POC membership or permission of instructor)	SLC 316	T Th <b>5:00-6:30</b>	3
<b>ANTHROPOLOGY:</b>				
Anth 101-E1	Introduction to Anthropology	SLC 380	W <b>6:30-9:30</b>	3
Anth 398-E1	Topics: Art and Culture	SLC 215	T <b>6:30-9:30</b>	3
<b>ART:</b>				
Art 101-E1	Experiencing Art I	SLC 105	W <b>6:00-9:00</b>	3
Art 245-E1	Batik Fee: \$10	Cong Gal	T <b>6:00-9:00</b>	3
<b>BIOLOGY:</b>				
Bio 101-E1	Biological Science I	SLC 380	T <b>6:30-9:30</b>	3
Bio 115-E	Human Anatomy and Physiology	SLC 270	W <b>6:30-9:30</b>	4
Bio 115-E1	Laboratory Fee: \$30	SLC 364	Sat 9:00-12:00	
<b>BUSINESS ADMINISTRATION:</b>				
B A 101-E1	Introduction to Business	Par. 53	W <b>6:30-9:30</b>	3
B A 209-E1	Business Correspondence and Reports	SLC 127	M <b>6:30-9:30</b>	3
B A 225-E1	Managerial Finance	SLC 127	Th <b>6:00-9:00</b>	3
B A 231-E1	Business Law — Introduction, Contracts and Sales	SLC 334	T <b>6:30-9:30</b>	3
B A 231-E2	Business Law — Introduction, Contracts and Sales	SLC 403	Th <b>6:30-9:30</b>	3
B A 234-E1	Business Law — Property	Par. 54	M <b>6:30-9:30</b>	3
B A 241-E1	Life Insurance	SLC 334	Th <b>6:30-9:30</b>	3
B A 251-E1	Principles of Management	Par 56	Th <b>6:30-9:30</b>	3
B A 261-E1	Principles of Retailing	Par 43	M <b>6:00-9:00</b>	3
B A 398-B	Topics: Human Resources Management	Par 43	MWF 7:00-8:00	3
<b>BUSINESS EDUCATION:</b>				
B Ed 100-E1	The Keyboard (5 weeks) Fee: \$10	SLC 134	T Th <b>6:45-8:30</b>	1
B Ed 101-E1	Elementary Typewriting Fee: \$15	SLC 134	T Th <b>6:45-8:30</b>	3

Course	Description	Room	Day & Hour	Credits
<b>COMPUTER SCIENCE:</b>				
C S 123-E1	Fortran Programming Fee: \$35	SLC 411	M W <b>6:30-9:30</b>	3
C S 198-E1	Pascal (Must be taken concurrently with C S 227)	SLC 405	M <b>6:00-7:00</b>	1
C S 227-E1	Computer Data Structures (Must be taken concurrently with C S 198) (Pre: C S 223/Engr 245 or C S 224)	SLC 405	M <b>7:00-8:00</b> W <b>6:00-8:00</b>	3
C C 324-E1	Systems Analysis (Pre: C S 224)	SLC 411	M W <b>8:10-9:40</b>	3
C S 326-E1	Operating System Principles (Pre: C S 227/E E 343)	SLC 424	T Th <b>6:30-8:00</b>	3
<b>EARTH &amp; ENVIRONMENTAL SCIENCES:</b>				
E&ES 135-E	World Physical Geography	SLC 334	W <b>6:00-8:00</b>	3
E&ES 135-E1	Laboratory Fee: \$25	SLC 435	W <b>8:00-10:00</b>	
E&ES 381-E	Mineralogy	SLC 434	T <b>6:30-8:30</b>	3
E&ES 381-E1	Laboratory Fee: \$30 (Pre: E & E S 211 and Chem 111 or 115)	SLC 434	Th <b>6:30-9:30</b>	
E&ES 398-E	Topics: Soils	SLC 434	W <b>6:00-8:00</b>	3
E&ES 398-E1	Laboratory Fee: \$40	SLC 434	W <b>8:00-10:00</b>	
<b>ECONOMICS:</b>				
Econ 101-E1	Principles of Economics I	Par. 56	T <b>6:30-9:30</b>	3
Econ 101-E2	Principles of Economics I	Par. 56	W <b>6:30-9:30</b>	3
Econ 102-E1	Principles of Economics II	SLC 380	M <b>6:30-9:30</b>	3
Econ 201-E1	Money and Banking	SLC 318	W <b>6:30-9:30</b>	3
Econ 223-E1	Collective Bargaining	Par. 56	M <b>6:00-9:00</b>	3
Econ 225-E1	International Trade	SLC 209	Th <b>6:30-9:30</b>	3
Econ 227-E1	Economic Geography of North America, Europe, and the Soviet Union	Par. 53	M <b>6:30-9:30</b>	3
Econ 231-E1	Applied General Statistics (No day students)	Par. 33	Th <b>6:30-9:30</b>	3
Econ 251-E1	Macroeconomics I	Par. 54	W <b>6:00-9:00</b>	3
<b>EDUCATION:</b>				
Ed 201-B	Introduction to Education	SLC 160	T Th <b>4:00-5:30</b>	3
Ed 203-B	Special Methods of Teaching: Business (Grades 7-12)	Par. 43	T Th <b>4:00-5:30</b>	3
Ed 203-I	Special Methods of Teaching: Science (Grades 7-12)	King's	T Th <b>4:30-6:00</b>	3
Ed 203-J	Special Methods of Teaching: Social Studies (Grades 7-12)	SLC 207	T Th <b>4:30-6:00</b>	3
Ed 398-E1	Topics in Education: Diagnosis and Prevention of Athletic Injuries	DDD 218	M <b>6:30-9:30</b>	3
<b>ENGINEERING:</b>				
EE211-E1	Circuit Theory I (Pre: Math 112)	SLC 409	T Th <b>5:30-7:00</b>	3
EE251-E1	Electronics I (Pre: E E 212)	SLC 409	M W <b>5:30-7:00</b>	3
EE253-E1	Electronic Laboratory I Fee: \$35 (Pre: To be taken along with or after E E 251)	SLC 125	Th <b>5:30-8:30</b>	1
EE271-E1	Physical Electronics (Pre: MaE 210, Phys 203)	SLC 223	T Th <b>5:30-7:00</b>	3
EE335-E1	Microwaves and Antenna Systems (Pre: EE 332)	SLC 318	M <b>6:00-9:00</b>	3

Course	Description	Room	Day & Hour	Credits
MaE 210-E1	Introduction to Materials Science (Pre: Engr 231 or Phys 201)	SLC 27	T Th <b>5:30-7:00</b>	3
MaE 321-E1	Thermodynamics and Phase Equilibria I (Pre: MaE 210)	SLC 223	M W <b>5:30-7:00</b>	3
<b>ENGLISH:</b>				
Eng 101-S	Composition I	DDD 218	Sat 9-12	3
Eng 101-E1	Composition I	Kirby 302	T <b>6:30-9:30</b>	3
Eng 151-H	Western World Literature I (Pre: Eng 102 or equivalent in composition)	DDD 101	Sat 9:00-12:00	3
Eng 151-E1	Western World Literature I (Pre: Eng 102 or equivalent in composition)	SLC 127	W <b>6:30-9:30</b>	3
Eng 151-E2	Western World Literature I (Pre: Eng 102 or equivalent in composition)	SLC 270	Th <b>6:30-9:30</b>	3
Eng 203-E1	Creative Writing (Pre: Eng 102)	SLC 209	M <b>6:30-9:30</b>	3
Eng 254-E1	Survey of English Literature (Pre: Eng 253)	SLC 270	T <b>6:30-9:30</b>	3
Eng 325-A	Shakespeare (Pre: Eng 152 or 254)	DDD 202	Sat 9:00-12:00	3
<b>FRENCH:</b>				
Fr 101-E1	Elementary French I	SLC 160	T <b>6:30-9:30</b>	3
Fr 207-A	Linguistics (Pre: Fr 204 and Eng 222)	SLC 257	M W <b>4:00-5:30</b>	3
<b>HISTORY:</b>				
Hist 101-E1	World Civilization I	SLC 316	M <b>6:30-9:30</b>	3
Hist 102-E1	World Civilization II	SLC 127	T <b>6:30-9:30</b>	3
Hist 334-E1	The United States, 1900-1945	SLC 160	W <b>6:30-9:30</b>	3
Hist 365-E1	History of Chinese Communism	SLC 160	Th <b>6:30-9:30</b>	3
Hist 367-E1	History of Modern India	SLC 316	T <b>6:30-9:30</b>	3
<b>MATHEMATICS:</b>				
Math 112-E1	Calculus II	SLC 403	M W <b>6:00-8:00</b>	4
Math 211-E1	Introduction to Linear Algebra and Differential Equations (Pre: Math 112)	SLC 411	T Th <b>6:00-8:00</b>	4
<b>MUSIC:</b>				
Mus 101-E1	Introduction to Music I	DDD 202	T <b>6:30-9:30</b>	3
<b>NURSING:</b>				
Nsg 102-E1	Introduction to Nursing (Pre: Registered Nurses only)	SLC 311	T <b>6:00-8:00</b> W <b>6:00-9:00</b>	3
Nsg 298-E1	Topics in Nursing: Health Care Terminology	SLC 166	M <b>6:30-9:30</b>	3
Nsg 398-E1	Topics in Nursing: Physical Assessment (Pre: Registered Nurses only)	SLC 311	M <b>6:00-9:00</b>	3
<b>PHILOSOPHY:</b>				
Phil 101-E1	Introduction to Philosophy	SLC 316	W <b>6:30-9:30</b>	3
Phil 152-E1	Introduction to Logic	SLC 204	M <b>6:30-9:30</b>	3
Phil 298-E1	Topics: Business and Professional Ethics (Pre: Phil. 101 or 201)	SLC 405	T Th <b>6:30-8:00</b>	3
<b>PHYSICS:</b>				
Phys 101-E1	Physical Science I	SLC 166	Th <b>6:30-9:30</b>	3

B Ed 111-E1	Elementary Shorthand	SLC 134	h 4:45-6:30	3
<b>COMMUNICATION STUDIES:</b>				
Comm 101-E1	Principles of Communication	SLC 318	T 6:30-9:30	3
Comm 211-E1	Journalism: Basic News Writing	SLC 134	M 6:30-9:30	3
	Fee: \$15 (Pre: Eng 102)			
Comm 298-E1	Topics: Satellite and Cable Technology	SLC 166	W 6:30-9:30	3
	(Pre: Permission of Department)			

EE344-E1	Operating System Principles	SLC 424	T Th 6:30-8:00	3
	(Pre: EE 343/CS 227)			
Engr 231-E1	Statics and Dynamics	SLC 223	M W 7:00-8:30	3
	(Pre: Phys 201)			
Engr 244-E1	Fortran	SLC 411	M W 6:30-8:00	3
	Fee: \$35			
Engr 283-E1	Engineering Measurement Laboratory I	SLC 23	M 5:00-7:00	1
	Fee: \$20			

Physics I				
<b>POLITICAL SCIENCE:</b>				
PS 102-E1	Introduction to American Politics	SLC 270	M 6:30-9:30	3
PS 398-E1	Topics in Political Science: Planning	SLC 207	T 6:30-9:30	3
	(Pre: Permission of Department, criterion depending on topic)			

# Graduate Division

(TIMES IN LIGHT FACE REPRESENT A.M. and TIMES IN BOLD FACE P.M.)

Course	Description	Room	Day & Hour	Instructor
<b>BIOLOGY:</b>				
Bio 301G	General Botany Laboratory	SLC 380 SLC 349	TTh 10:00-11:00 F 2:00-5:00	Siver
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
Bio 303G	Bacteriology Laboratory	SLC 380 SLC 305	M W 1:00-2:00 M 2:00-5:00	Staff
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
Bio 305G	Invertebrate Biology Laboratory	SLC 380 SLC 349	TTh 9:00-10:00 W 8:00-11:00	Rigley
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
Bio 307G	Analytical Cytology Laboratory	SLC 380 SLC 377	MW 11:00-12:00 F 8:00-11:00	Ogren
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
Bio 308G	Advanced Genetics Laboratory	SLC 380 SLC 383	MW 9:00-10:00 T 2:00-5:00	Turoczi
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
Bio 312G	Comparative Physiology Laboratory	SLC 380 SLC 377	T Th 1:00-2:00 W 2:00-5:00	Hayes
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
Bio 340G	Limnology Laboratory	SLC 359 SLC 377	WF 12-1 Th 2:00-5:00	Houseknecht
	Fee: \$30 (Pre: Bio 201-208 or permission of instructor)			
<b>BUSINESS ADMINISTRATION:</b>				
Acct 503G-E1	Managerial Accounting	Par 35	Th 6:30-9:30	Staff
Acct 504G-E1	Accounting Theory and Thought	Par 33	T 5:30-8:30	Broadt
Acct 543G-E1	Accounting Policies and Practices	Par 45	T 6:30-9:30	Moran
Acct 550G-E1	Topics: Accounting for Non-Profit Organizations	SLC 147	T 6:30-9:30	B. Williams
BA 502G-E1	Management Science	SLC 334	M 6:00-9:00	Engel
BA 502G-E2	Management Science	Par 33	W 6:00-9:00	Engel
BA 514G-E1	Market Research and Experimentation	Par 54	T 6:00-9:00	Lewis
BA 550G-A1	Topics: Risk Management	Par 53	T 6:30-9:30	Farrar
BA 550G-B1	Topics: SBA	TBA	TBA	Chmiola
	(Pre: Written approval of instructor)			
BA 550G-C1	Topics: Case Studies in Administrative Management	SLC 209	T 6:30-9:30	Tweedy
BA 550G-D1	Topics: Health Care Marketing	Par 54	Th 5:30-8:30	Lewis
BA 550G-E1	Topics: Human Resource Management	Par 43	MWF 7:00	Chmiola
BA 551G-A1	Investment Portfolio Management	Par 45	MTTh 7:00	Engel
Econ 505G-E1	Managerial Statistics	Par 33	M 6:00-9:00	Tansel
Econ 506G-E1	Labor-Management Economics	Par 43	W 6:00-9:00	Werner

Course	Description	Room	Day & Hour	Instructor
Econ 510G-E1	Managerial Economics	Par 43	Th 6:00-9:00	Williams
Econ 511G-E1	Modern International Commerce	Par 43	T 6:30-9:30	Taylor
Econ 550G-E1	Topics: Health Care Economics	SLC 1	T 6:30-9:30	Healey
<b>CHEMISTRY:</b>				
Chem 325G-A	Advanced Inorganic Chemistry	SLC 270	MWF 1:00-2:00	Faut
	(Pre: Chem 252)			
Chem 335G-A	Advanced Organic Chemistry	SLC 270	MWF 11:00-12:00	Staff
	(Pre: Chem 231, Chem 252)			
Chem 361G-A	Biochemistry I	SLC 270	T Th 1:00-2:30	Stine
	(Pre: Chem 232)			
<b>COMPUTER SCIENCE:</b>				
CS 320G-A	Logic & Switching Circuits	SLC 411	T Th 9:30-11:00	Koch
	(Pre: EE 211 or Phys 201)			
CS 321G-A	Simulation and Data Analysis	SLC 411	TTh 1:00-2:30	Parker
	(Pre: CS 223 or CS 224)			
CS 323G-A	Formal Languages & Automata Theory	SLC 424	MWF 11:00-12:00	Koch
	(Pre: Math 202)			
CS 324G-A	Systems Analysis	SLC 411	MWF 8-9	Tillman
	(Pre: CS 224)			
CS 324G-E1	Systems Analysis	SLC 411	MW 8:10-9:40	Mantione
	(Pre: CS 224)			
CS 326G-E1	Operating System Principles	SLC 424	TTh 6:30-8:00	Parker
	(Pre: CS 227/EE 343)			
<b>EDUCATION:</b>				
Educ 513G-E1	Comparative Foundations of Education	SLC 204	Th 6:00-9:00	Fahmy
Educ 532G-E1	PEE: Mathematics	SLC 147	M 6:00-9:00	Hammer
Educ 534G-E1	Elementary School Curriculum	DDD 220	T 6:00-9:00	Darte
	(Pre: 15 Graduate credits)			
Educ 541G-E1	Secondary School Curriculum	DDD 220	T 6:00-9:00	Staff
Educ 598G-E1	Topics: Diagnosis and Treatment of Athletic Injuries	DDD 218	M 6:30-9:30	Aed
Educ 598G-P1	Topics: Project T.E.A.C.H.	TBA	TBA	Staff
Educ 598G-P2	Topics: Project P.R.I.D.E.	TBA	TBA	Staff
Educ 598G-P3	Topics: Teaching Through Learning Channels	TBA	TBA	Staff
<b>ENGLISH:</b>				
Eng 312G-1	Chaucer	SLC 147	TTh 1:00-2:30	Fiester
	(Pre: Eng 152 or 254)			
Eng 325G-1	Shakespeare	DDD 202	S 9:00-12:00	Kaska
	(Pre: Eng 152/254)			
Eng 354G-1	Romantic Prose and Poetry	SLC 160	TTh 8:30-10	R. Heaman
Eng 370G-1	Modern British Poetry	SLC 215 SLC 147	TTh 10:00-11:00 F 10:00-11:00	Gutin

Course	Description	Room	Day & Hour	Instructor
Eng 372G-1	Modern Novel	SLC 215	MWF 8:00-9:00	Rizzo
Eng 384G-1	American Drama	DDD 201	MWF 11-12	O'Neill
	(Pre: Eng 152 or 254)			
Eng 397G-1	Seminar: Age of Johnson	SLC 215	TTh 2:30-4:00	Fox
	(Pre: Written approval of department chairman)			
<b>HISTORY:</b>				
Hist 315G-1	Ancient History: Near East	SLC 215	MWF 11-12	Berg
Hist 332G-1	The National Period	SLC 215	MWF 1:00-2:00	Meyers
Hist 334G-E1	The United States, 1900-1945	SLC 160	W 6:30-9:30	Rodechko
Hist 365G-E1	The History of Chinese Communism	SLC 160	Th 6:30-9:30	Shao
Hist 367G-E1	History of Modern India	SLC 316	T 6:30-9:30	Berlatsky
Hist 398G-1	Topics: World War I	SLC 215	MWF 10-11	Berlatsky
<b>MATHEMATICS:</b>				
Math 334G-A	Linear Algebra	SLC 403	MWF 10-11	Sours
Math 343G-A	Introduction to Geometry	SLC 409	MWF 11-12	Earl
Math 351G-A	Probability and Mathematical Statistics I	SLC 223	TTh 9:30-11	Merrill
Math 361G-A	Introduction to Applied Mathematics I	SLC 403	M W F 2-3	DeCosmo
<b>PHYSICS:</b>				
Phys 311G-A	Mechanics I	SLC 147	T Th 9:30-11	Hostler
Phys 320G-A	Electronic Instrumentation for the Life and Behavioral Sciences	SLC 161	T 2:00-5:00 Th 3:00-5:00	Staff
	Fee: \$25			
Phys 321G-A	Electronic Instrumentation for the Physical Sciences	SLC 161	T 2:00-5:00 Th 3:00-5:00	Staff
	Fee: \$25			
Phys 331G-A	Electricity & Magnetism I	SLC 166	MWF 10-11	Hostler
Phys 331G-A1	Laboratory	SLC 125	M 2:00-5:00	
Phys 331G-A2	Laboratory	SLC 125	W 2:00-5:00	
Phys 331G-A3	Laboratory	SLC 125	F 2:00-5:00	
	Fee: \$30			
Phys 351G-1	Quantum Mechanics	SLC 147	MWF 11-12	Bellas
Phys 361G-1	Atomic Physics Laboratory	SLC 42 SLC 42	MWF 9:00-10:00 T 2:00-5:00	Staff
	Fee: \$25			
Phys 401G-1	Topics in Mathematical Physics I	TBA	TBA	Bellas
Phys 511G-1	Analytical Mechanics	TBA	TBA	Hostler
	(Pre: Differential equations, undergraduate mechanics)			



Wilkes College

## EARLY REGISTRATION WILL BE ACCEPTED

8:30 A.M.-4:30 P.M. AFTER AUGUST 2, 1982

Course	Description	Room	Day & Hour	Credits
<b>PSYCHOLOGY:</b>				
Psy 101-E1	General Psychology I	SLC 316	Th <b>6:30-9:30</b>	3
Psy 398-E1	Topics in Psychology: The Exceptional Child	SLC 403	T <b>6:30-9:30</b>	3
<b>SOCIOLOGY:</b>				
Soc 101-E1	Introduction to Sociology	SLC 207	M <b>6:30-9:30</b>	3
Soc 200-E1	The Family (Pre: Soc 101 or Anth 101 or permission of instructor)	SLC 166	T <b>6:30-9:30</b>	3
Soc 230-E1	Social Problems (Pre: Soc 101 or Anth 101 or approval of instructor)	SLC 207	W <b>6:30-9:30</b>	3
Soc 251-E1	Fields of Social Work (Pre: Soc 101 or Anth 101 or Psy 101-102 or approval of instructor)	SLC 207	Th <b>6:30-9:30</b>	3
<b>SPANISH:</b>				
Span 101-E1	Elementary Spanish I	SLC 424	M <b>6:30-9:30</b>	3
Span 101-E2	Elementary Spanish I	SLC 334	M <b>6:30-9:30</b>	3
Span 203-E1	Intermediate Spanish I (Pre: Span 101 or the equivalent)	Kirby 302	M <b>6:30-9:30</b>	3
<b>SPEECH:</b>				
Spch 101-E1	Fundamentals of Speech	DDD 101	W <b>6:30-9:30</b>	3

## WEEKEND COLLEGE CLASSES

*September 10 — December 12, 1982*

on the Campus of Keystone Junior College  
La Plume, Pennsylvania — September 10-December 12

### Calendar — Fall Semester, 1982

September	10, 11, 12
*October	1, 2, 3 15, 16, 17
*November	5, 6, 7 19, 20, 21
December	10, 11, 12

\*2-week interval between classes.

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. <b>6:00-8:00</b>
Sat. 10:10-12:10	Sat. <b>1:00-3:00</b>	Sun. 8:00-10:00
Sat. <b>3:10-5:10</b>	Sun. 10:10-12:10	Sun. <b>1:00-3:00</b>

Course	Description	Room	Schedule	Credits
<b>ACCOUNTING:</b>				
Acct 201-W	Cost Accounting	TBA	C	3
<b>BUSINESS ADMINISTRATION:</b>				
BA 225-W	Managerial Finance	TBA	B	3
BA 251-W	Principles of Management	TBA	C	3

**EARTH & ENVIRONMENTAL SCIENCES:**

E&ES398-W	Topics: Human Health and Environmental Pollutants (Pre: Background in Science not required; this course can be used as one of the two Earth and Environmental Science courses to meet part of the core requirements.)	TBA	C	3
-----------	---	-----	---	---

**ECONOMICS:**

Econ 241-W	Microeconomics	TBA	A	3
------------	----------------	-----	---	---

**ENGLISH:**

Eng 151-W	Western World Literature I (Pre: Eng 102 or equivalent in composition)	TBA	A	3
-----------	---	-----	---	---

**HISTORY:**

Hist 101-W	World Civilization I	TBA	B	3
------------	----------------------	-----	---	---

**PHILOSOPHY:**

Phil 220-W	Philosophy of Religion	TBA	A	3
------------	------------------------	-----	---	---

**POLITICAL SCIENCE:**

PS 327-W	International Relations (Pre: PS 105 or consent of instructor)	TBA	B	3
----------	---	-----	---	---

**PSYCHOLOGY:**

Psy 102-W	General Psychology II	TBA	A	3
Psy 215-W	Research Design and Analysis	TBA	C	3

**SOCIOLOGY:**

Soc 398-W	Topics: Sex Roles	TBA	B	3
-----------	-------------------	-----	---	---

## COURSES AT HAZLETON STATE GENERAL HOSPITAL

Course	Description	Room	Day & Hour	Credits
<b>ENGLISH:</b>				
Eng 101H	Composition I	Ed. Bldg	M 9:00-12:00	3
<b>HISTORY:</b>				
Hist 101H	World Civilization I	Ed. Bldg	M 1:30-4:30	3
<b>PHYSICAL EDUCATION:</b>				
PE 100H	Dance	Ed. Bldg	M 9:00-11:00	0
<b>PSYCHOLOGY:</b>				
Psy 101H	General Psychology I	Ed. Bldg	W 2:00-5:00	3
<b>SOCIOLOGY:</b>				
Soc 101H	Introduction to Sociology	Ed. Bldg	M 1:00-4:00	3

**DAY CLASSES**

August 30 – December 21, 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

**ES-BARRE, PA. 18766**



**WILKES  
COLLEGE**

**1983  
Summer  
Sessions**



# WILKES COLLEGE

## Summer Sessions — 1983

### GENERAL INFORMATION

FIRST SESSION — JUNE 13-JULY 15

SECOND SESSION — JULY 18-AUGUST 19

EIGHT-WEEK EVENING SESSION — JUNE 13-AUGUST 5

Students who register for courses in more than one session **MUST COMPLETE** a registration form for each session.

#### First Session

**June 13 to July 15 (including Final Examinations)**  
 Registration . . . . Thursday, June 9 and Friday, June 10  
 Parrish Hall — 8:30 a.m. to 8:00 p.m.

#### Second Session

**July 18 to August 19 (including Final Examinations)**  
 Registration . . . . Thursday, July 14 and Friday, July 15  
 Parrish Hall — 8:30 a.m. to 6:00 p.m.

#### Eight Week Evening Session

**June 13 to August 5 (including Final Examinations)**  
 Registration . . . . Thursday, June 9 and Friday, June 10  
 Parrish Hall — 8:30 a.m. to 8:00 p.m.

#### Weekend College at Keystone Junior College)

**May 13 to August 21 (including Final Examinations)**  
 Registration . . . . . May 13  
 (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 May 13 through August 21, 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.

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.

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 13 to August 5.

Inquiries concerning residence halls or dining facilities should be made through:

The Housing Office  
 Wilkes College  
 Wilkes-Barre, Pennsylvania 18766

Tuition for the summer sessions is \$96 per credit hour for undergraduate and \$130 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 15. Books and supplies may be purchased at the Bookstore and must be paid for at the time of purchase.

**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.

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.

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

#### Dormitory And Dining Facilities

#### Expenses

#### Financial Aid For Undergraduates

#### Library

#### Withdrawal

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 May 13 through August 21, 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.**

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.

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.

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.

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.

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                            | History                      |
| Biology                        | Individualized Studies       |
| Chemistry                      | International Studies        |
| Communication Studies          | Mathematics                  |
| Computer Science               | Philosophy                   |
| Earth & Environmental Sciences | Physics                      |
| Economics                      | Political Science            |
| Elementary Education           | Psychology                   |
| English                        | Social Science/Urban Affairs |
| Foreign Languages              | Sociology                    |
|                                | Theater Arts                 |

**Bachelor of Science:**

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

**Bachelor of Fine Arts**

**Bachelor of Music**

## Accreditation

## Admissions

## Bookstore

## Change of Schedule

## Degree Programs

tuition for the summer sessions is \$50 per credit hour for undergraduate and \$130 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 15. Books and supplies may be purchased at the Bookstore and must be paid for at the time of purchase.

**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.

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.

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 recorded on the official withdrawal form.)

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.

**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  
Toll-free from Scranton, Pennsylvania 342-5617**

## Expenses

## Financial Aid For Undergraduates

## Library

## Withdrawal

## Information

Affirmative Action/Equal Opportunity Institution

Wilkes College is an equal opportunity institution and prohibits and rejects any discrimination in admissions or hiring practices based on race, age, sex, color, creed, national origin, handicap, or marital status.

**REGISTRATION (Parrish Hall, Second Floor)**

First Session: Thursday, June 9 and Friday, June 10 . . . . . 8:30 a.m.-8:00 p.m.  
 Second Session: Thursday, July 14 and Friday, July 15 . . . . . 8:30 a.m.-6:00 p.m.  
 Eight-Week Evening Session: Thursday, June 9 and Friday, June 10 . . . . . 8:30 a.m.-8:00 p.m.

# Undergraduate Schedule

**First Session Undergraduate Schedule**  
**June 13-July 15, 1983 — 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 45	8:00-9:50	3
Acct 102-S2	Elementary Accounting II	Par 45	10:10-12:00	3
Acct 111-S1	Intermediate Accounting I	Par 35	10:10-12:30	3

**ANTHROPOLOGY:**

Anth 101-S1	Introduction to Anthropology	Par 43	10:10-12:00	3
-------------	------------------------------	--------	-------------	---

**ART:**

Art 101-S1	Experiencing Art I	SLC 206	10:10-12:00	3
Art 270-S1	Photography I Fee: \$10	SLC 115	10:10-12:00	3
Art 380-S1	Topics in Studio Art: Drawing Workshop	SLC 115	1:00-3:00	3

**BIOLOGY:**

Bio 113-S	Microbiology (June 6-July 15)	SLC 359	M W 10:00-12:00 F 10:00-1:00	4
Bio 113-S1	Laboratory Fee: \$30	SLC 305	T Th 10:00-1:00	
Bio 398-A	Topics: Marine Biology (June 10-19) in Jamaica (Enrollment limited; contact instructor to reserve space)	TBA	TBA	3
Bio 398-B	Topics: Herpetology (May 23-June 10)	SLC 359	8:00-11:00	3
	Laboratory/Field Trips (3 during the course) Fee: \$20 (Prereq: Bio 201-208 or permission of instructor)	TBA	11:00-3:00	

**BUSINESS ADMINISTRATION:**

B A 222-S1	Marketing	Par 53	10:10-12:00	3
B A 231-S1	Business Law-Introduction Contracts, and Sales	Par 54	8:00-9:50	3
B A 232-S1	Business Law-Agency, Partnerships, Corporations, and Real Property	Par 54	10:10-12:00	3
B A 261-S1	Principles of Retailing	Par 53	8:00-9:50	3
B A 398-S1	Topics: Human Resource Management	Par 56	7:00-9:00	3

**CHEMISTRY:**

Chem 111-S	Introduction to Chemical (June 13-July 15) Reactions and Principles	SLC 204	10:10-12:00	4
Chem 111-S1	Laboratory Fee: \$30	SLC 263	MWTh 12:00-3:00	
Chem 115-S	Elements and Compounds (June 13-July 15)	SLC 204	8:00-9:50	4
Chem 115-S1	Laboratory Fee: \$30	SLC 259	MWTh 12:00-3:00	
Chem 231-S	Organic Chemistry I (June 6-July 15)	SLC 409	10:10-12:00	4
Chem 231-S1	Laboratory Fee: \$30	SLC 264	T W 12:00-4:00	

**EARTH & ENVIRONMENTAL SCIENCES:**

E & ES 125-S	Survey of Oceanography	SLC 434	10:10-12:30	3
E & ES 125-S1	Laboratory Fee: \$25	SLC 434	TBA	

**ECONOMICS:**

Econ 101-S1	Principles of Economics I	Par 33	10:10-12:00	3
Econ 102-S1	Principles of Economics II	Par 43	8:00-9:50	3
Econ 201-S1	Money and Banking	Par 33	8:00-9:50	3
Econ 223-S1	Collective Bargaining	Par 56	10:10-12:00	3
Econ 225-S1	International Trade	Par 35	8:00-9:50	3
Econ 231-S1	Applied General Statistics	Par 33	12:00-2:00	3

**EDUCATION:**

Educ 201-S1	Introduction to Education	SLC 316	10:10-12:00	3
Educ 202-S1	Educational Psychology (Prereq: Psych 102)	SLC 316	8:00-9:50	3
Educ 398-A	Topics in Education: Treatment of Athletic Injuries	SLC 318	8:00-9:50	3

**GERMAN:**

Germ 101-S1	Elementary German I	SLC 147	8:00-9:50	3
Germ 203-S1	Intermediate German I (Prereq: Ger 102 or two years of high school German or permission of instructor)	SLC 147	10:10-12:00	3

**HISTORY:**

Hist 101-S1	World Civilization I	SLC 160	8:00-9:50	3
Hist 102-S1	World Civilization II	SLC 411	10:10-12:00	3
Hist 102-S2	World Civilization II	TBA	5:00-7:00	3
Hist 398-S1	Topics: Modern Ireland	SLC 160	10:10-12:00	3

**MATHEMATICS:**

Math 100-S1	Pre-calculus Mathematics (June 6-July 15) (Prereq: Two years of secondary school mathematics in algebra and geometry)	SLC 405	10:10-12:00	4
Math 101-S1	Fundamentals of Mathematics I	SLC 403	8:00-9:50	3
Math 103-S1	Mathematics for Elementary School Teachers I	SLC 403	10:10-12:00	3

**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 152-S1	Introduction to Logic	SLC 209	10:10-12:00	3

**PHYSICS:**

Phys 101-S1	Physical Science I (Prereq: Background in Science and Mathematics not necessary)	SLC 166	8:00-9:50	3
Phys 105-S	Introductory Physics I (June 6-July 15)	SLC 166	10:10-12:00	4
Phys 105-S1	Laboratory Fee: \$30	SLC 149	MWF 1:00-4:00	

**POLITICAL SCIENCE:**

P S 105-S1	Modern Political Systems	SLC 318	10:10-12:00	3
P S 398-S1	Topics in Political Science: The American Ideology	TBA	TBA (Evenings)	3

**PSYCHOLOGY:**

Psy 101-S1	General Psychology I	SLC 101	10:10-12:00	3
Psy 221-S1	Child Psychology (Prereq: Psy 101-102)	SLC 101	8:00-9:50	3
Psy 242-S1	Psychological Tests (Prereq: Psy 101-102)	SLC 380	10:10-12:00	3
Psy 255-S1	Introduction to Social Psychology (Prereq: Soc 101 or Anth 101 or Psy 101-102 or approval of instructor)	SLC 207	10:10-12:00	3

**RUSSIAN:**

Russ 101-S1	Elementary Russian I	TBA	TBA	3
Russ 203-S1	Intermediate Russian I (Prereq: Russ 102 or two years of high school Russian or permission of instructor)	TBA	TBA	3

**SOCIOLOGY:**

Soc 101-S1	Introduction to Sociology	SLC 270	8:00-9:50	3
Soc 200-S1	The Family (Prereq: Soc 101 or Anth 101 or approval of instructor)	SLC 270	1:00-3:00	3
Soc 255-S1	Introduction to Social Psychology (Prereq: Soc 101 or Anth 101 or Psy 101-102 or approval of instructor)	SLC 207	10:10-12:00	3
Soc 398-S1	Topics: Sex Roles	SLC 424	10:10-12:00	3

**SPANISH:**

Span 101-S1	Elementary Spanish I	Kby 302	8:00-9:50	3
Span 203-S1	Intermediate Spanish I (Prereq: Span 102 or two years of high school Spanish or permission of instructor)	Kby 302	10:10-12:00	3

**SPEECH:**

Spch 101-S1	Fundamentals of Speech	DDD 101	10:10-12:00	3
-------------	------------------------	---------	-------------	---

**THEATER ARTS:**

T A 101-S1	Approach to Theater	DDD 201	10:10-12:00	3
------------	---------------------	---------	-------------	---

**CHEMISTRY:**

Chem 116-S	The Chemical Reaction (July 18-August 19)	SLC 204	8:00-9:50	4
Chem 116-S1	Laboratory Fee: \$30 (Prereq: Chem 115)	SLC 259	MWTh 12:00-3:00	
Chem 130-S	Organic and Biological Chemistry (July 18-August 19)	SLC 204	10:10-12:00	4
Chem 130-S1	Laboratory Fee: \$30 (Prereq: Chem 111 or 115)	SLC 275	MWTh 12:00-3:00	
Chem 232-S	Organic Chemistry II (July 18-August 26)	SLC 209	10:10-12:00	4
Chem 232-S1	Laboratory Fee: \$30 (Prereq: Chem 231)	SLC 264	T W 12:00-4:00	

**ECONOMICS:**

Econ 102-S1	Principles of Economics II	Par 33	10:10-12:00	3
Econ 226-S1	International Investment and Finance	Par 35	8:00-9:50	3
Econ 232-S1	Economic Statistics	Par 33	12:00-2:00	3

**ENGINEERING:**

E E 212-S1	Circuit Theory II (Prereq: E E 211)	SLC 223	10:10-12:00	3
E E 212-S2	Circuit Theory II (Prereq: E E 211)	SLC 223	6:00-7:50	3
E E 252-S1	Electronics II (Prereq: E E 251)	SLC 240	10:10-12:00	3
E E 252-S2	Electronics II (Prereq: E E 251)	SLC 240	6:00-7:50	3
E E 254-S1	Electronic Laboratory II Fee: \$35 (Prereq: To be taken along with or after E E 252)	SLC 125	10:10-12:00	1
E E 254-S2	Electronic Laboratory II Fee: \$35 (Prereq: To be taken along with or after E E 252)	SLC 125	6:00-7:50	1
Engr 284-S1	Engineering Measurement Lab II Fee: \$20	SLC 27	MTWTh 10:10-12:00	1
Engr 284-S2	Engineering Measurement Lab II Fee: \$20	SLC 27	MTWTh 6:00-7:50	1

**ENGLISH:**

Eng 102-S1	Composition II (Prereq: Eng 100 or 101)	SLC 316	8:00-9:50	3
Eng 152-S1	Western World Literature II (Prereq: Eng 151)	SLC 270	8:00-9:50	3
Eng 152-S2	Western World Literature II (Prereq: Eng 151)	SLC 270	10:10-12:00	3
Eng 397-S1	Seminar: Shakespeare— The Romances (Prereq: Approval of Department Chairman)	SLC 316	10:10-12:00	3

**GERMAN:**

Germ 102-S1	Elementary German II	SLC 147	8:00-9:50	3
Germ 204-S1	Intermediate German II	SLC 147	10:10-12:00	3

**HISTORY:**

Hist 101-S1	World Civilization I	SLC 160	10:10-12:00	3
Hist 102-S1	World Civilization II	SLC 405	8:00-9:50	3
Hist 352-S1	The Renaissance and Reformation	SLC 160	8:00-9:50	3

**MATHEMATICS:**

Math 102-S1	Fundamentals of Mathematics II (Prereq: Math 101)	SLC 403	8:00-9:50	3
Math 104-S1	Mathematics for Elementary School Teachers II (Prereq: Math 103)	SLC 403	10:10-12:00	3

Course	Description	Room	Day & Time	Credits
Educ 398-A	Topics in Education: Treatment of Athletic Injuries (Fee for materials assessed in class)	SLC 318	8:00-9:50	3
<b>ENGINEERING:</b>				
E E 211-S1	Circuit Theory I (Prereq: Math 112)	SLC 223	10:10-12:00	3
E E 211-S2	Circuit Theory I (Prereq: Math 112)	SLC 223	8:00-9:50	3
E E 251-S1	Electronics I (Prereq: E E 212)	SLC 240	10:10-12:00	3
E E 251-S2	Electronics I (Prereq: E E 212)	SLC 240	6:00-7:50	3
E E 253-S1	Electronic Laboratory I (Prereq: to be taken along with or after E E 251)	SLC 125	10:10-12:00	1
E E 253-S2	Electronic Laboratory I (Prereq: to be taken along with or after E E 251)	SLC 125	6:00-7:50	1
Engr 283-S1	Engineering Measurement Lab I Fee: \$20	SLC 27	M T W Th 10:10-12:00	1
MaE 210-S1	Introduction to Materials Engineering (Prereq: Engr 231 or Physics 201)	SLC 34	8:00-9:50	3
MaE 210-S2	Introduction to Materials Engineering (Prereq: Engr 231 or Physics 201)	SLC 34	6:00-7:50	3
<b>ENGLISH:</b>				
Eng 101-S1	Composition I	SLC 207	8:00-9:50	3
Eng 101-S2	Composition I	SLC 270	10:10-12:00	3
Eng 151-S1	Western World Literature I (Prereq: Eng 102 or equivalent in Composition)	SLC 127	8:00-9:50	3
Eng 151-S2	Western World Literature I (Prereq: Eng 102 or equivalent in Composition)	SLC 127	10:10-12:00	3
Eng 382-S1	American Literature II (Prereq: Eng 152 or 254)	SLC 257	10:10-12:00	3

## Second Session Undergraduate Schedule

July 18-August 19, 1983 — 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.)				
<b>ACCOUNTING:</b>				
Acct 102-S1	Elementary Accounting II	Par 45	8:00-9:50	3
Acct 112-S1	Intermediate Accounting II	Par 35	10:10-12:30	3
<b>BIOLOGY:</b>				
Bio 385-S	Floristic Biology	SLC 359	9:00-10:00	3
Bio 385-S1	Laboratory (Prereq: Written permission of the instructor)	TBA	10:00-1:00	
<b>BUSINESS EDUCATION:</b>				
B Ed 100-S1	The Keyboard (July 18-July 28) Fee: \$10	SLC 133	M T W Th 6:00-8:00	1
B Ed 100-S2	The Keyboard (July 18-July 28) Fee: \$10	SLC 133	10:10-12:00	1
B Ed 101-S1	Elementary Typewriting (Fee: \$15)	SLC 133	10:10-12:00	3
B Ed 111-S1	Elementary Shorthand	SLC 133	8:00-9:50	3
<b>BUSINESS ADMINISTRATION:</b>				
B A 101-S1	Introduction to Business	Par 53	10:10-12:00	3
B A 225-S1	Managerial Finance	Par 43	8:00-9:50	3
B A 226-S1	Investments	Par 43	10:10-12:00	3
B A 231-S1	Business Law-Introduction, Contracts, and Sales	Par 54	8:00-9:50	3
B A 232-S1	Business Law-Agency, Partnerships, Corporations, and Real Property	Par 54	10:10-12:00	3

### 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

### PHILOSOPHY:

Phil 152-S1	Introduction to Logic	SLC 127	8:00-9:50	3
Phil 210-S1	Ethics (Prereq: Phil 101 or 201)	SLC 127	10:10-12:00	3

### PHYSICS:

Phys 102-S1	Physical Science II	SLC 166	8:00-9:50	3
Phys 106-S	Introductory Physics II (July 18-August 25)	SLC 166	10:10-12:00	4
Phys 106-S1	Laboratory Fee: \$30	SLC 151	MWF 1:00-4:00	

### POLITICAL SCIENCE:

P S 102-S1	Introduction to American Politics	SLC 207	10:10-12:00	3
P S 398-S1	Topics in Political Science: Administrative Law	SLC 207	8:00-9:50	3

### PSYCHOLOGY:

Psy 102-S1	General Psychology II	SLC 101	10:10-12:00	3
------------	-----------------------	---------	-------------	---

### RUSSIAN:

Russ 102-S1	Elementary Russian II	TBA	TBA	3
Russ 204-S1	Intermediate Russian II	TBA	TBA	3

### SPANISH:

Span 102-S1	Elementary Spanish II	KBY 302	8:00-9:50	3
Span 204-S1	Intermediate Spanish II	KBY 302	10:10-12:00	3

Math 212-E1	Multivariable Calculus (Prereq: Math 112)	SLC 424	MTWTh	
Math 334-E1	Linear Algebra (Prereq: Math 211 or consent of instructor)	TBA		

### MUSIC:

Mus 101-E1	Introduction to Music I	DDD 218		
------------	-------------------------	---------	--	--

### PHILOSOPHY:

Phil 101-E1	Introduction to Philosophy	SLC 204		
Phil 152-E1	Introduction to Logic	SLC 270		
Phil 216-E1	Philosophy of Art (Prereq: Phil 101 or 201)	SLC 204		

### PHYSICAL EDUCATION:

P Ed 105-E1	Contemporary Health Problems	SLC 160		
P Ed 106-E1	Contemporary Health Problems	SLC 160		
P Ed 110-E1	Contemporary Health Problems	SLC 160		

### PSYCHOLOGY:

Psy 245-E1	Clinical Psychology (Prereq: Psy 242 and Psy 331)	SLC 209		
Psy 331-E1	Abnormal Psychology (Prereq: Psy 232)	SLC 209		
Psy 398-E1	Topics in Psychology: Sleep and Dreaming	SLC 316		

## Post Session • August 22-26

### CHEMISTRY:

Chem 99-A	Basic Mathematics for Introductory Chemistry (For students registered for Chemistry 115 during the Fall Semester)	TBA		
Chem 99-B	Basic Mathematics for Introductory Chemistry (For students registered for Chemistry 111 during the Fall Semester)	TBA		

## Graduate Division

Course	Description	Room	Day & Time	Instructor
(Times in Light Face Represent A.M. and Times in Bold Face P.M.)				
<b>BIOLOGY:</b>				
<b>Special Sessions</b>				
Bio 398G-A	Topics: Marine Biology in Jamaica (June 10-June 19) (Enrollment limited; contact instructor to reserve space) (Prereq: Bio 201-208 or permission of instructor)	TBA	TBA	Rigley
Bio 398G-B	Topics: Herpetology (May 23-June 10) Laboratory/Field trips (3 during the course) Fee: \$20 (Prereq: Bio 201-208 or permission of instructor)	SLC 359 TBA	8:00-11:00 11:00-3:00	Forks
<b>Second Session—July 18-August 19</b>				
Bio 385G-A	Floristic Biology Laboratory (Prereq: Bio 201-208 or permission of instructor)	SLC 359 TBA	9:00-10:00 MWF 10:00-1:00	
<b>BUSINESS ADMINISTRATION:</b>				
<b>First Session—June 13-July 15</b>				
B A 512G-A	Price Policy and Procedure	Par 43	12:00-2:00	Taylor
B A 550G-A	Topics: Human Resource Management	Par 56	7:00-9:00	Chmiola
<b>Eight-week Evening Session—June 13-August 5</b>				
Acct 544G-E	Controllershship	Par 45	TTh 6:00-9:00	Croop
B A 522G-E	Quantitative Aspects of Management	Par 33	MW 5:30-8:30	Williams
B A 550G-E	Topics: Health Care Management	Par 45	MW 6:00-9:00	Healey
B A 551G-E	Investment and Portfolio Management	Par 53	TTh 6:00-9:00	Engel
Econ 505G-E	Managerial Statistics	Par 53	MW 6:00-9:00	Tansel
Econ 510G-E	Managerial Economics (Prereq: B A 502 and Econ 505 or permission of instructor)	Par 33	TTh 5:30-8:30	Williams
<b>EDUCATION:</b>				
<b>Pre-Session—May 9-June 9</b>				
Educ 578G-S	School Law	SLC 133	MTWTh 4:00-6:00	Johnson

<b>First Session—June 13-July 15</b>				
Educ 510G-S1	Psychological Foundations of Education	SLC 334	10:10-12:00	Hammer
Educ 520G-S1	Tests and Measurements	SLC 334	8:00-9:50	Bellucci
Educ 576G-S1	Introduction to Educational Administration	SLC 342	8:00-9:50	Johnson
Educ 598G-A	Topics: Diagnosis and Treatment of Athletic Injuries	SLC 318	8:00-9:50	Aed
Educ 598G-P1	Topics: Project T.E.A.C.H. (On Wilkes campus, June 27-July 8, 9:00-11:30, SLC 133)	TBA	TBA	Staff
Educ 598G-P2	Topics: P.R.I.D.E.	TBA	TBA	Staff
Educ 598G-P3	Topics: T.L.C.	TBA	TBA	Staff

<b>Second Session—July 18-August 19</b>				
Educ 542G-S1	Extra-curricular Activities	SLC 409	8:00-9:50	Staff
Educ 575G-S1	Group Dynamics	SLC 411	8:00-9:50	Johnson
Educ 598G-S1	Topics: Education of Disadvantaged	SLC 405	10:10-12:00	Johnson
Educ 598G-P1	Topics: Project T.E.A.C.H. (On Wilkes campus, July 18-July 29, 9:00-1:00, SLC 318)	TBA	TBA	Staff
Educ 598G-P2	Topics: Project P.R.I.D.E. (On Wilkes campus, July 18-July 29, 9:00-1:00, SLC 334)	TBA	TBA	Staff
Educ 598G-P3	Topics: T.L.C. (On Wilkes campus, August 1-August 12, 9:00-1:00, SLC 318)	TBA	TBA	Staff

### ENGLISH:

<b>First Session—June 13-July 15</b>				
Eng 480G-S1	Studies in American Literature	SLC 257	10:10-12:00	Gutin
<b>Second Session—July 18-August 19</b>				
Eng 497G-S1	Seminar in Special Problems: Shakespeare—the Romances	SLC 316	10:10-12:00	Kaska

### HISTORY:

<b>First Session—June 13-July 15</b>				
Hist 398G-S1	Topics: Modern Ireland	SLC 160	10:10-12:00	Berlatsky
<b>Second Session—July 18-August 19</b>				
Hist 352G-S1	The Renaissance and Reformation	SLC 160	8:00-9:50	Berg

### MATHEMATICS:

<b>Eight-week Evening Session—June 13-August 5</b>				
Math 334G-E1	Linear Algebra	TBA	TBA	Staff

## Undergraduate Weekend College Classes

May 13-August 21, 1983

on the campus of Keystone Junior College  
La Plume, Pennsylvania — May 13 - August 21

### Calendar — Summer Session, 1983

May 13, 14, 15 June 3, 4, 5 June 24, 25, 26	July 8, 9, 10 July 29, 30, August 1 August 19, 20, 21
---	---

Unless otherwise indicated, all courses in the Weekend College meet according to the following schedule:

(Times in Light Face Represent A.M. and Times in Bold Face P.M.)

Course	Description	Room	Schedule	Credits
<b>Schedule A</b>				
Fri. 6:30-8:30				
Sat. 10:10-12:10				
Sat. 3:10-5:10				
<b>Schedule B</b>				
Sat. 8:00-10:00				
Sat. 1:00-3:00				
Sun. 10:10-12:10				
<b>Schedule C</b>				
Sat. 6:00-8:00				
Sun. 8:00-10:00				
Sun. 1:00-3:00				
Acct 222-W	Taxes II (Prereq: Acct 221)	TBA	C	3
Acct 231-W	Auditing (Prereq: Math 101-102 or equivalent sequence in Mathematics)	TBA	A	3

### BUSINESS ADMINISTRATION:

B A 254-W	Organizational Design and Behavior	TBA	B	3
-----------	------------------------------------	-----	---	---

### EARTH & ENVIRONMENTAL SCIENCES:

E & ES 115-W	Survey of Geology Fee: \$25	TBA	C	3
--------------	--------------------------------	-----	---	---

### ECONOMICS:

Econ 102-W	Principles of Economics II	TBA	A	3
Econ 201-W	Money and Banking	TBA	B	3
Econ 236-W	Public Finance	TBA	A	3
Econ 398-W	Topics: Health Care Economics	TBA	C	3

### ENGLISH:

Eng 151-W	Western World Literature I	TBA	C	3
-----------	----------------------------	-----	---	---

### HISTORY:

Hist 101-W	World Civilization I	TBA	B
------------	----------------------	-----	---

### PHYSICS:

Phys 102-W	Physical Science II (Background in science and mathematics not necessary)	TBA	B
------------	--	-----	---

### PSYCHOLOGY:

Psy 213-W	Physiological Psychology (Prereq: Psy 101-102)	TBA	C
Psy 242-W	Psychological Tests	TBA	A

### SOCIOLOGY:

Soc 200-W	The Family	TBA	B
-----------	------------	-----	---

## Academic Support Center

offers  
College Skills Improvement Program  
for Wilkes students  
July 18 — August 19

Free diagnostic testing; preparedness courses in Math, W 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 7:00 a.m. to 6:00 p.m. at Child Development Centers near campus. These services are partially subsidized by the C

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  
Toll-free from Scranton, Pennsylvania 342-5617

ule

**FIRST SESSION**  
**JUNE 13-JULY 15**

**SECOND SESSION**  
**JULY 18-AUGUST 19**

**EIGHT-WEEK EVENING SESSION**  
**JUNE 13-AUGUST 5**

**Eight-Week Evening Session**  
**Undergraduate Schedule**

*June 13-August 5, 1983*

*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-S1	Topics in Studio Art: Painting Workshop	SLC 117	<b>6:00-7:45</b>	3
------------	--	---------	------------------	---

**BUSINESS ADMINISTRATION:**

B A 209-E1	Business Correspondence and Reports	Par 43	<b>6:00-7:45</b>	3
B A 240-E1	Property Insurance	Par 35	<b>6:00-7:45</b>	3
B A 241-E1	Life Insurance	Par 35	<b>8:00-9:45</b>	3
B A 251-E1	Principles of Management	Par 43	<b>8:00-9:45</b>	3

**CHEMISTRY:**

Chem 130-E	Organic and Biological (July 5-August 18) Chemistry	SLC 207	TTh <b>6:00-9:00</b>	4
Chem 130-E1	Laboratory Fee: \$30 (Open only to part-time Wilkes College students)	SLC 275	MW <b>6:00-9:00</b>	

**COMMUNICATION STUDIES:**

Comm 101-E1	Principles of Communication	SLC 160	<b>6:00-7:45</b>	3
Comm 205-E1	Mass Media	SLC 160	<b>8:00-9:45</b>	3

**COMPUTER SCIENCE:**

C S 122-E1	BASIC Programming Fee: \$20	SLC 403	W <b>6:00-8:00</b>	1
C S 123-E1	Fortran Programming Fee: \$35	SLC 403	<b>8:00-9:45</b>	3
C S 124-E1	Cobol Programming Fee: \$35	SLC 403	<b>6:00-7:45</b>	3
C S 198-E1	Topics: Pascal (Prereq: Must be taken concurrently with C S 227-E1)	SLC 409	W <b>8:00-9:45</b>	1
C S 224-E1	Advanced Cobol and File Management Fee: \$35 (Prereq: C S 124)	SLC 409	<b>6:00-7:45</b>	3
C S 227-E1	Computer Data Structures Requires concurrent registration with C S 198-E1 (Prereq: C S 223/Engr 245 or C S 224)	SLC 409	<b>8:00-9:45</b>	3

**ENGINEERING:**

E E 343-E1	Computer Data Structures Must be taken concurrently with C S 198-E1 (Prereq: Engr 245)	SLC 409	<b>8:00-9:45</b>	3
Engr 241-E1	BASIC Programming Fee: \$20	SLC 403	W <b>6:00-8:00</b>	1
Engr 244-E1	Fortran Fee: \$35	SLC 403	<b>8:00-9:45</b>	3

**ENGLISH:**

Eng 102-E1	Composition II (Prereq: Eng 100 or 101)	SLC 127	<b>6:00-7:45</b>	3
Eng 152-E1	Western World Literature II (Prereq: Eng 151)	SLC 127	<b>8:00-9:45</b>	3

**MATHEMATICS:**

Math 100-E1	Pre-calculus Mathematics (Prereq: Two years of secondary school mathematics in algebra and geometry)	SLC 405	MTWTh <b>6:00-7:50</b>	4
Math 106-E1	Introductory Calculus II (Prereq: Math 105)	SLC 424	MTWTh <b>8:00-9:45</b>	4
Math 111-E1	Calculus I (Prereq: Math 100 or at least three years of secondary school mathematics including geometry, algebra II and topics in trigonometry)	SLC 411	MTWTh <b>6:00-7:50</b>	4
Math 112-E1	Calculus II	SLC 405	MTWTh <b>8:00-9:50</b>	4
Math 211-E1	Introduction to Linear Algebra and Differential Equations (Prereq: Math 112)	SLC 411	MTWTh <b>8:00-9:50</b>	4
Math 212-E1	Multivariable Calculus	SLC 424	MTWTh <b>6:00-7:50</b>	4

Math 334-E1	Linear Algebra (Prereq: Math 211 or consent of instructor)	TBA	TBA	3
-------------	---	-----	-----	---

**MUSIC:**

Mus 101-E1	Introduction to Music I	DDD 218	6:00-7:45	3
------------	-------------------------	---------	-----------	---

**PHILOSOPHY:**

Phil 101-E1	Introduction to Philosophy	SLC 204	6:00-7:45	3
Phil 152-E1	Introduction to Logic	SLC 270	6:00-7:45	3
Phil 216-E1	Philosophy of Art (Prereq: Phil 101 or 201)	SLC 204	8:00-9:45	3

**PHYSICAL EDUCATION:**

P Ed 105-E1	Contemporary Health Problems	SLC 160	W 6:00-9:00	1
P Ed 106-E1	Contemporary Health Problems	SLC 160	W 6:00-9:00	1
P Ed 110-E1	Contemporary Health Problems	SLC 160	W 6:00-9:00	2

**PSYCHOLOGY:**

Psy 245-E1	Clinical Psychology (Prereq: Psy 242 and Psy 331)	SLC 209	6:00-7:45	3
Psy 331-E1	Abnormal Psychology (Prereq: Psy 232)	SLC 209	8:00-9:45	3
Psy 398-E1	Topics in Psychology: Sleep and Dreaming	SLC 316	6:00-7:45	3

**Post Session • August 22-26**

**CHEMISTRY:**

Chem 99-A	Basic Mathematics for Introductory Chemistry (For students registered for Chemistry 115 during the Fall Semester, 1983)	TBA	M thru F 9:00-12:00	0
Chem 99-B	Basic Mathematics for Introductory Chemistry (For students registered for Chemistry 111 during the Fall Semester, 1983)	TBA	M thru F 1:00-4:00	0

**HISTORY:**

Hist 101-W	World Civilization I	TBA	B	3
------------	----------------------	-----	---	---

**PHYSICS:**

Phys 102-W	Physical Science II (Background in science and mathematics not necessary)	TBA	B	3
------------	--	-----	---	---

**PSYCHOLOGY:**

Psy 213-W	Physiological Psychology (Prereq: Psy 101-102)	TBA	C	3
Psy 242-W	Psychological Tests	TBA	A	3

**SOCIOLOGY:**

Soc 200-W	The Family	TBA	B	3
-----------	------------	-----	---	---

**Academic Support Center**

*offers*

College Skills Improvement Program  
for Wilkes students  
**July 18 — August 19**

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

Toll-free from Scranton, Pennsylvania 342-5617