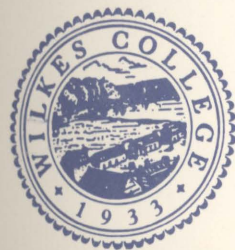


WILKES COLLEGE *Bulletin*

1973-1974



WILKES-BARRE
PENNSYLVANIA

TREASURE
ROOM

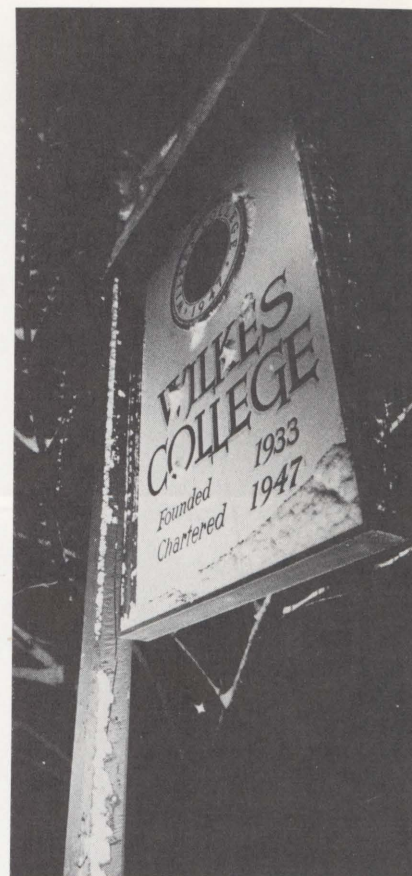
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Page 1

*'...unity
amidst
diversity ...'*



THE COVER

THE COLLEGE MACE is made of sterling silver throughout. At the lower end of the hammered shaft is a gilt (gold-plated) knob. The upper end of the shaft displays the inscription "Wilkes College 1933." Above the short, hammered neck rises a bowl to indicate that Wilkes-Barre acted as a melting pot in forming a new and vigorous community of people of many different backgrounds. This theme is clearly stated in the gilt inscription around the upper part of the bowl: "Unity Amidst Diversity." Set into the top of the bowl is the gilt seal of Wilkes College. The top of the mace is a gilt flame-like structure to indicate the enlightenment to be gained from higher education. A piece of anthracite coal from a local mine is set in the center of this "flame" to commemorate the origin of the community and the College in its coal mining past.

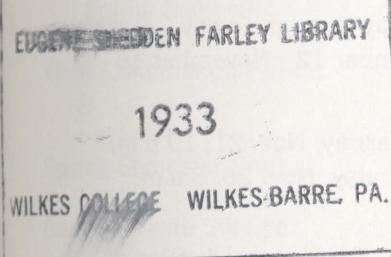


Eugene S. Farley Library — named in honor of the College's first President.

WILKES COLLEGE *Bulletin*

UNDERGRADUATE STUDIES

1973-1974



FALL AND SPRING SEMESTERS

VOL. XXII

Wilkes-Barre, Pennsylvania 18703

Telephone: (717) 824-4651

ARCHIVES

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College Calendar

FALL SEMESTER — 1973

Freshmen and other new students report for Orientation	Tuesday, September 4
Upperclassmen Registration	Wednesday, September 5
Classes Begin	Thursday, September 6
Progress Reports	Saturday, October 20
Pre-registration for Seniors and Juniors	Monday through Friday October 29 - November 2
Pre-registration for Sophomores	Monday through Friday November 5 - November 9
Pre-registration for Freshmen	Monday through Friday November 12 - November 16
Thanksgiving Recess	Wednesday, Nov. 21, 10 p.m. to Monday, Nov. 26, 8 a.m.
Classes End for Fall Semester	Friday, December 14, 10 p.m.
Final Examination Period	Monday, December 17 through Saturday, December 22
Fall Semester Ends	Saturday, December 22

College Calendar

SPRING SEMESTER — 1974

Registration — All Classes	Friday, January 18
Classes Begin	Monday, January 21
Incomplete Grades for Fall Semester Due	Saturday, January 26
Progress Reports	Saturday, March 2
Pre-registration for Juniors and Sophomores	Monday through Friday March 25 - March 29
Pre-registration for Freshmen	Monday through Friday April 1 - April 5
Spring Vacation	Friday, April 5, 10:00 p.m. to Monday, April 22, 8:00 a.m.
Classes End for Spring Semester	Friday, May 10, 10:00 p.m.
Final Examination Period	Monday, May 13 through Saturday, May 18
Spring Semester Ends	Saturday, May 18
Baccalaureate Service	Sunday, May 26
Commencement Exercises	Sunday, May 26
Incomplete Grades for Spring Semester Due	Saturday, June 22

(The College issues a supplementary Summer Session Bulletin)

76-135957



Chase Hall on South River Street houses Admissions office.

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Wilkes College

Wilkes College had its beginning in 1933 when Bucknell University, responding to a request of community leaders, established its Junior College in Wilkes-Barre. On June 26, 1947, Bucknell University Junior College came to an end and Wilkes College received its charter as a four-year, coeducational, liberal arts college. The College has grown slowly to its current enrollment of approximately 2400 full-time day students and 600 part-time evening school students and over 600 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.

AN INDEPENDENT COLLEGE

It was inevitable that the new college should be non-sectarian, 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.

UNITY AMIDST DIVERSITY

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 encourages them to create friendships based upon respect for differences, and to adhere to those ideals that create unity and good will amidst diversity.

While academic work is the basis of the College program, the faculty recognizes that academic training will be of little importance

unless students emerge as men and women of strong faith and fine character. In the words of John Stuart Mill, "Before you can make men doctors and lawyers, you must first make them men."

Wilkes College is committed to education as a way of life.

DECADES OF GROWTH

Because of their interest and faith, friends have multiplied their support during the past decades and the campus has expanded steadily so that it now includes most of the properties facing the River Common. A growing endowment has kept pace with the expansion of the campus.

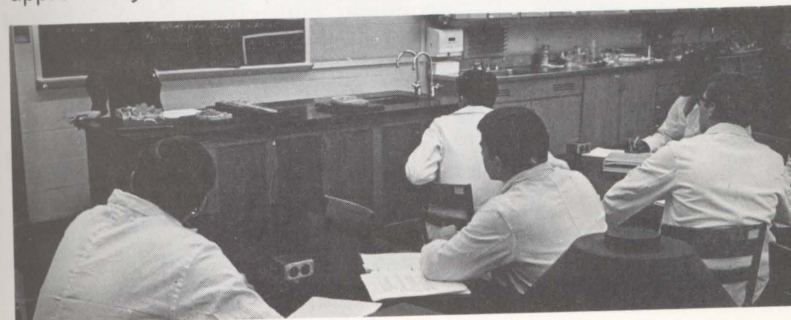
A COOPERATIVE EFFORT

The original concept of community services has been strengthened with the passing of the years and with growing experience. It has been clearly demonstrated that the students, the College, and the community all benefit from cooperative effort.

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 Accounting curriculum has been accredited by the Certified Public Accounting Examiners of the State of New York. The Chemistry curriculum is approved by the American Chemical Society.



An Educated Man

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

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

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

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

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

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

has ethical standards by which he lives;

respects the religious convictions of all men;

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

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

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

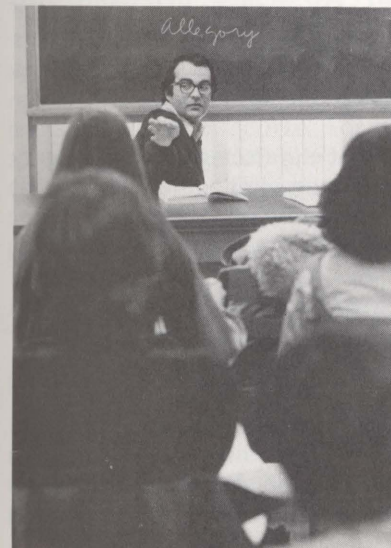
Policies and Objectives

Admissions

Registration

Tuition, Fees, and Expenses

Financial Assistance





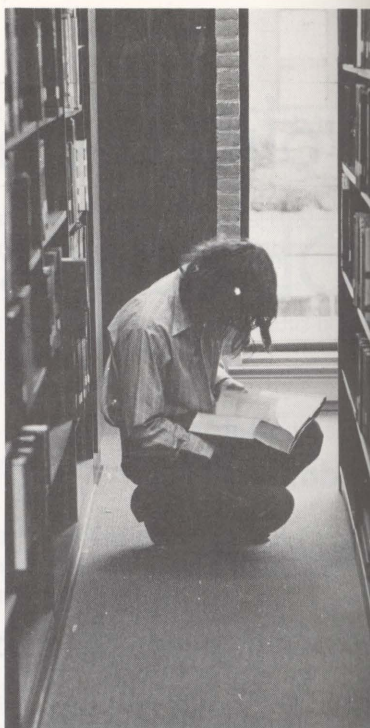
Education at Wilkes

The spirit of the College derives from the ideals of the faculty and the quality of its instruction; from its library, its laboratories and equipment.

The spirit of the College is the integrity of its mission, the intellectual climate that enriches the student as a person.

The College believes that no attention can be too great which intensifies a student's thinking or deepens his interest or develops his techniques and skills.

It believes that a good student commits himself to the disciplines of his work. To learn, to master, and to understand he must accept the responsibilities that he shares with others.



Admissions

True education demands a love of learning and a spirit of sacrifice and service. Education is not a right or privilege but an opportunity that carries with it obligations prescribed by the College and responsibilities shared with the student.

This concept has guided the faculty and trustees in developing the philosophy and procedures of the Admissions Committee, making it possible for students of ability, determination, and soundness of character to study at Wilkes.

Here the student will find an atmosphere of competitive learning in the world of ideas. His desire to undertake study at Wilkes places him among the ready men for whom education is an experience in excellence. He will be charged with the responsibility for fulfilling that trust.

The careful selection of able and committed students is deemed essential to the attainment of high standards and warm personal relationships between students and faculty.

Undergraduate Requirements

SECONDARY SCHOOL RECORD

Candidates applying for admission to Wilkes should be secondary school graduates and should offer at least fifteen units of work representing the equivalent of the usual four-year secondary school preparatory school course. For entrance into certain departments, specific courses in secondary school are necessary. Students interested in studying biology, chemistry, engineering, mathematics, medical technology, physics, and science education should be prepared to enter Math. 105 or 111 (Calculus) in the first semester.

APPLICATION FOR ADMISSION

To assist students seeking admission, the College has adopted procedures designed to simplify admissions.

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 to him with a \$10.00 application fee.

ADMISSIONS TESTS

The Scholastic Aptitude Test of the College Entrance Examination Board is required of all applicants. Students should plan to take this examination in December or January of their senior year. If unusual circumstances prevent the applicant from taking this test, he must notify the Dean of Admissions. Students who wish the Admissions Committee to review their application on the basis of College Boards taken in their junior year should make this request in writing to the Dean of Admissions. Wilkes is a member of the College Entrance Examination Boards.

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 \$100.00 tuition and dormitory deposit by May 1; local students are required to forward a \$50.00 tuition deposit by May 1 in order to guarantee their entry into the College.

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

ADMISSIONS COMMITTEE

The Admissions Committee is comprised of the Dean of Admissions and appointed faculty members. This committee acts upon special cases referred to it by the Dean of Admissions.

PERSONAL INTERVIEWS

A personal interview with each student is not required. Students and their families are invited 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.

Music applicants are required to audition for the music faculty.

TRANSFER STUDENTS

Candidates from other institutions wishing to enter with advanced standing shall follow the regular procedure for admission. The student should request the college or university he is attending to forward to Wilkes a transcript and an official statement of his honorable withdrawal. Students offered admission should secure a personal interview with the Dean of Admissions, at which time an evaluation of the transfer credits will be made and a tentative program scheduled. This program will be subject to final review by the faculty adviser at the time of registration. Acceptable credits will be placed on the Wilkes record of the student following a final evaluation.

College policy prohibits the Admissions Committee from considering for admission any student who has been placed on academic probation or who has been dismissed from any other college or university until a period of one year has elapsed.

ADVANCED COURSE STANDING

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

Students with demonstrated ability who have not taken college level courses in secondary school may be exempted from certain requirements at the discretion of the department.

Evening Division

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

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

When the student completes thirty hours, his record is reviewed by the Admissions Committee. At this time the Committee recommends that a student continue to work for a degree, or be placed on probation, or withdraw from the Evening Division.

Students who do not desire a degree 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 special courses of instruction in which he wishes to register.

Summer Division

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

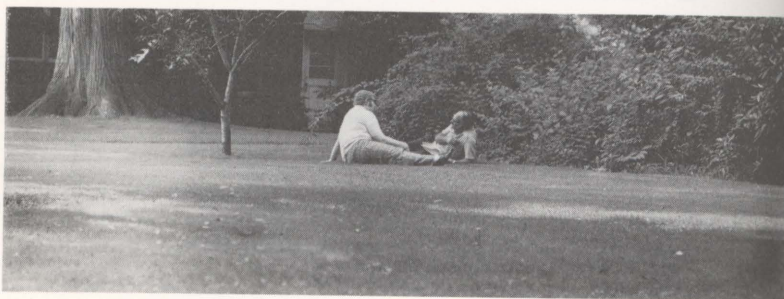
A student from another college who wishes to take summer work at Wilkes must secure the approval of the proper officer of his own institution if he expects to receive credit for such work.

A student from Wilkes College who wishes to take summer work at another institution must secure the approval of the Academic Standing Committee. Application in writing shall be made through the office of the appropriate deans.

Inquiries concerning summer graduate courses should be directed to the Director of Graduate Studies.

Graduate Division

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



Registration

Every student is expected to register on the dates specified in the College calendar. A student presenting himself for registration after the time designated for registration will pay a late registration fee of \$10.00.

Incoming freshmen will be registered during the summer in the program of courses they will be enrolled in for the first semester. Any questions or changes relating to this program should be directed to the Dean of Admissions immediately.

Expenses

TUITION

The flat tuition fee of \$925.00 per semester will be charged to all students taking a course load in excess of thirteen and up to eighteen hours. A student who registers for thirteen or fewer hours of work will be charged at a rate of \$60.00 per credit hour. A student who elects a heavier schedule than 18 hours will be charged \$60.00 for each additional credit hour.

RESIDENT STUDENTS

Students occupying residence halls on the campus will be charged \$600 for room and board per semester. This includes related fees such as linen rental and health service fees.

EVENING DIVISION

Students registered in the Evening Division will be charged \$60.00 per semester hour. Further information regarding the content of the courses, requirements for undergraduate and graduate degrees, and requirements for teacher certification may be secured from the Office of Admissions.

SUMMER DIVISION

Students registering for courses in the Summer Division sessions will be charged \$60.00 per semester hour of study payable before registration.

FEES

For those courses that require individual faculty supervision or the addition of supplies and equipment the College finds it neces-

sary to charge nominal fees. These fees are listed in the Bulletin with the course description. When these fees total more than \$50.00 a flat fee of \$50.00 per semester will be charged.

Medical technology students will be charged in both the seventh and eighth semesters a College and Hospital tuition fee each semester.

The cost of individual instruction in applied music is \$65.00 for full-time students (14 credits or more) for a series of fourteen half-hour lessons. The College accepts a limited number of part-time and special students for individual instruction in applied music for a series of fourteen half-hour lessons at a cost of \$75.00 per semester.

A student activities fee of \$20.00 provides for a number of special programs, including plays, recitals, and lectures, offered at the Center for the Performing Arts, and for home athletic events.

A graduation fee of \$25.00 is charged to all graduating seniors.

AUDIT

A full time enrolled student (14 hours or more) may audit a course for no additional charge. Part-time students may audit a course for one-half the regular tuition fee.

TRANSCRIPTS

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

When requests for more than one transcript are given on the same order the charge shall be:

- a. One dollar for the first copy.
- b. Seventy-five cents for the second copy.
- c. Fifty cents for the third copy.
- d. Twenty-five cents for each copy thereafter.

CHEMISTRY BREAKAGE

Students taking chemistry laboratory courses are required to deposit \$10.00 to cover possible charges for broken, lost, or damaged equipment. The unexpended balance of this fee is refundable.

HEALTH SERVICE

The College makes available both accident and accident and

health insurance to students. Each student will be required to pay an \$18 health fee which includes accident coverage. A health insurance policy is available to commuting students but is optional with them. Health insurance required of all resident students is prepaid as part of the dormitory fee. Both policies provide protection for twelve months and premiums are payable in full with the first semester charges. There are four fully accredited hospitals in the vicinity of the campus, and a college physician and college infirmary are available for emergency treatment.

PAYMENTS

All payments for tuition, room and board fees, etc., are due prior to final registration.

Payment of all charges for tuition, fees, room and board is to be made at the Finance Office, Parrish Hall, before registration. Several plans have been developed to assist students who do not have the cash in hand, and it is suggested these plans be considered when special assistance is needed. Students may consult with the Director of Financial Aid for information regarding scholarship and loan programs.

When the student is unable to make payments prior to registration, he may apply to the Comptroller for an extension of sixty days. Any student not meeting his obligations within this grace period of sixty days beyond the date of registration will be denied the privilege of class attendance and, if a residence hall student, he shall be excluded from the residence hall and dining hall.

REFUNDS

Students in good standing who withdraw from the College will receive a refund of tuition under the following conditions:

During the first six weeks of a term one-half of the tuition will be refunded upon request if the withdrawal is made for adequate and satisfactory reasons. After the first six weeks no refunds are allowed and the student is obligated for the full costs for the term.

Refund of dormitory charges will not be allowed except under conditions beyond the control of the student.

No student who is suspended or expelled shall be entitled to any refunds.

Residence Halls

On-campus living is available for single men and women students. Women are housed in sixteen converted mansions and homes situated throughout the campus. Men live in five houses and in one large hall which is divided into nine living units. Each residence hall is staffed by graduate or undergraduate Resident Assistants, who provide guidance and supervision, and assist in the development of a constructive learning environment in each residence hall.

Each room is equipped with beds, desks, chairs, bureaus and closets. Clean bed linen and towels are provided weekly. Students supply their own blankets, pillow and study lamps. Each residence hall has one or more lounges, most have television sets, and all are in close proximity to classroom buildings, administrative offices, and recreation centers. Laundry facilities are available on the campus. Prospective students and their families are invited to visit the residence halls at any time.

The admission of resident students is limited to the capacity of the residence halls. All students must live in residence halls with the exception of those students who live with parent or guardian, students who have reached their twenty-first birthday prior to the beginning of the academic year and students of senior class standing (not age twenty-one) who obtain parental consent to live off-campus. Freshmen students under the age of twenty-one must live in residence halls unless they live at home. Other students may request permission to live off-campus after consultation with the Director of Housing; such requests are granted on a limited basis and require consent of both parent and the College.

A non-refundable \$50 deposit and signed housing contracts are required to reserve residence hall and dining accommodations. Housing contracts are binding for the full academic year unless the student ceases enrollment at the College. The cost of room and board is \$600 per semester. This charge includes the cost of health service, linen rental, room rent, and twenty meals per week.

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

Each resident student is required to maintain a minimum balance of \$50 on deposit with the College so long as the student is

enrolled. Charges for damage to College property may be automatically deducted from this deposit. When the student graduates or terminates matriculation at the College, he will be given the refundable portion of this deposit.

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

Financial Assistance

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

In accepting any form of aid from the College the student accepts an obligation — which is also the obligation of every other conscientious student — to:

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

In planning to meet any difference between his own resources and the cost of education the students should consider a combination of work, loans, and grants.

Scholarships

A few honor scholarships are awarded without regard to financial need to students of outstanding achievement in appreciation of their contribution to the intellectual life of the group. High school seniors who desire to be considered for an honor award should apply in writing to the Dean of Admissions at the time of their application for admission.

Financial Aid

REQUIREMENTS

1. Students must be admitted to the College before their applications for financial aid will be considered.

2. 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 costs of his education as possible. When such home support is lacking, the College will seek to develop with the student a plan whereby his education may be continued through work, loans, and scholarships.

3. Every applicant for financial aid shall submit confidential information pertaining to his financial needs and his record of achievement.

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

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

6. No financial aid is awarded for more than one year; however, aid will be renewed upon request, provided this request is supported by a good academic record, by evidence of continued need, and by constructive participation in at least one all-college activity of his choice.

7. The amount of the grant is confidential, and any breach of this confidence shall terminate the award.

INSTRUCTIONS TO THE APPLICANT

1. To establish eligibility for financial aid, the student must first apply for admission to the College, and must be accepted.

2. Students requesting consideration for assistance shall indicate this in the appropriate space on the application for admission to the College.

Wilkes College participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in the College Scholarship Service subscribe to the principle that the amount of financial aid granted a student should be based on financial need. The College Scholarship Service assists colleges and universities in determining the student's need for financial assistance. All entering students applying for financial aid are required

to submit a copy of the Parents' Confidential Statement (PCS) form to the College Scholarship Service, designating Wilkes College as one of the recipients, by February 1. The Parents' Confidential Statement form may be obtained from a secondary school guidance office or the College Scholarship Service, P. O. Box 176, Princeton, New Jersey 08540.

3. After the student has been accepted for admission to the College, and after a copy of the Parents' Confidential Statement is received, the Committee on Financial Aid acts on all completed applications. Notification of action by the Committee is sent immediately.

Grants-In-Aid

WILKES SCHOLARSHIPS

To assist able and ambitious students, friends and alumni support a substantial scholarship fund that enables the College with its limited resources to more adequately serve those for whom it was created. Because these funds are given by generous men and women who are desirous of helping young people in their effort toward self-improvement and self-development, it is essential that worthy and able students be carefully selected. Wilkes College is dedicated to the belief that no student who has met the competition for admission to the College should be denied the chance to begin his college education, nor forced to withdraw after he has matriculated, for purely financial reasons.

Wilkes Scholarship grants are available to students with good records of achievement and performance in high school or college who cannot finance fully the cost of their education. The amount of each grant shall be based on the financial need of the student. These funds, combined with those furnished by the State and Federal governments, are offered to students in packages consisting usually of grants, loans, and work.

BASIC EDUCATIONAL OPPORTUNITY GRANTS

Federal Grants ranging from \$200 to \$1,400 are available to those students who demonstrate need for this assistance. Available for the first time in 1973-74, the amount of individual grants are related directly to the student's family contribution and cost of education. Application forms are available at any Federal Office or the College Financial Aid Office.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS

Federal grants ranging from \$200 to \$1,000 are available to those students demonstrating exceptional financial need, who except for this aid, would be unable to obtain a higher education. Although these grants are intended to be supplemental Basic Grants, these also may be awarded to students whose expected parental contribution, as determined by the College Scholarship Service, does not exceed \$625 per year.

STATE SCHOLARSHIPS

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

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 revaluing 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. Interested students should apply in writing to the Director of Financial Aid.

NATIONAL DIRECT STUDENT LOAN FUND

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

STATE GUARANTY LOAN PROGRAMS

Most states now operate guaranteed loan programs which enable students to borrow from their local banks to meet educational expenses. Ordinarily, no interest is charged while the student remains in school on that portion of the loan recommended by the Financial Aid Office after an evaluation of the financial need of the student. Applications and further information are available at the student's hometown bank, savings-and-loan association, or credit union participating in the program.

Employment

PART-TIME EMPLOYMENT

College makes strict demands on a student's time. The student who finds it necessary to seek full-time employment during the school year is advised to work a year and then apply for admission.

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

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

COLLEGE EMPLOYMENT

The College also participates in the College Work-Study Program, funded jointly by the Federal Government and the College. Part-time employment not to exceed 15 hours per week during class periods, is available in the dining rooms, offices, laboratories, reception desk, library, or maintenance staff. Since this program is

designed to provide financial aid to students, prospective employees must meet financial need requirements set forth by the Federal Government. The holders of these jobs shall meet all obligations of their assignments or forfeit this help from the College. Interested students should contact the Financial Aid Office for information.

DEFERRED PAYMENT PLANS

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

The Tuition Plan, Inc.
575 Madison Avenue
New York, N.Y. 10022

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

Founders of Scholarships

Some 1000 friends contribute to the scholarship fund of the College on an annual basis. Other friends have created scholarships which bear the names of the donors or of persons whom they have memorialized by means of a scholarship.

Trust Funds and Endowed Scholarships

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 Board and former President of their Company.

It is appropriate that this scholarship should bear his name for no person has done more to bring new opportunities to the young people of Wyoming Valley. As President of Bucknell University, he 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. Because of his vision and faith in the young people of this region, he has supported and guided every forward-looking and constructive effort of the College.

The Arnaud C. Marts Scholarship will be awarded each year to that 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 our nation.

WALTER S. CARPENTER SCHOLARSHIPS IN ENGINEERING. Two full tuition scholarships are awarded annually to Freshmen planning a career in Materials Science or Electrical Engineering. The recipients of these awards are selected by the faculty of the Engineering Department on the basis of the applicant's high school record and Scholastic Aptitude Test scores, without regard to financial need. Scholarships are renewable annually upon recommendation of the Department of Engineering. Interested students should apply in writing to the Chairman, Department of Engineering, Wilkes College.

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

JOHN WELLES HOLLENBACK SCHOLARSHIP. Miss Anna Hollenback has created a scholarship in memory of her father, John Welles Hollenback, and the annual interest of the principal is used for scholarship purposes.

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.

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.

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.

WILLIAM B. SCHAEFFER MEMORIAL SCHOLARSHIPS. In 1951 a substantial bequest was left to the College by Mr. Schaeffer with the thought that it would be used 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 individual must be a Palestinian Arab, or the descendant of a Palestinian Arab. In addition, the student must demonstrate his ability to successfully complete the work of the College and must submit evidence of financial need.

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

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

JESSIE STURDEVANT MEMORIAL SCHOLARSHIP awarded to a student of unusual promise and ability has been made available from the interest of 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.

THE BRUCE SMULOWITZ MEMORIAL SCHOLARSHIP was created in memory of a former student of Wilkes College, Bruce Smulowitz, by his parents and friends. This scholarship offers assistance to a capable student of limited financial means. The student must be in good standing at the college and must demonstrate need for such assistance.

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 ability during each academic year.

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

Annual Name Scholarships

THE WILLIAM H. CONYNGHAM MEMORIAL SCHOLARSHIP is awarded annually by Mrs. Conyngham in memory of her late husband, a friend and neighbor of the College and for years an outstanding leader in business and community life.

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.

College and Community Organizations

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

ALPHA RHO CHAPTER OF DELTA KAPPA GAMMA annually awards a partial scholarship to a deserving woman student in need of financial assistance.

THE WYOMING VALLEY CHAPTER OF THE AMERICAN BUSINESS WOMEN'S ASSOCIATION offers to an outstanding woman student of the College a scholarship each year. The education committee of the club in cooperation with the administration chooses a young

woman who shows promise of making an outstanding contribution in business or professional life following graduation.

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

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 one of the most beloved athletes of Wilkes, Neil Dadurka, 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 this athlete who was fatally injured in a Wilkes College football game in 1972. 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 as 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.

WEST SIDE EVENING WOMAN'S CLUB SCHOLARSHIP shall be awarded annually to a Wyoming Valley girl who matriculates at Wilkes College with the intention of working toward a degree.

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.

BALESTER OPTICAL COMPANY, INC. annually makes scholarship funds available to assist students of proved academic ability in need of financial assistance in order to complete their education.

CONSOLIDATED CIGAR CORPORATION. This scholarship is awarded annually to students demonstrating scholarship excellence 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.

HEAVENLY SHOES, INC. An annual scholarship is granted by Irving Schor, company president, who manifests concerned dedication to aiding worthy students of Wyoming Valley.

THE GIBBONS SCHOLARSHIP is awarded each year to a deserving male student as selected by the Scholarship Committee.

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 OF CRAFT ASSOCIATES, INC. have created a half-tuition scholarship which will be awarded to a high school graduate who has demonstrated leadership in his scholastic and extracurricular activities and who, without scholarship aid, would be unable to attend college.

LAVENTHOL, KREKSTEIN, HORWATH & HORWATH SCHOLARSHIP. This award is presented annually to a senior accounting major by the firm of Laventhol, Krekstein, Horwath & 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.

STEGMAIER SCHOLARSHIPS. Two one-half tuition scholarships are awarded to senior male students who have made outstanding contributions to the College community.

Employee's Family Scholarships

THE LESLIE FAY SCHOLARSHIP is granted each year to the son or daughter of an employee of the Company whose record in secondary 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 the College are deemed outstanding by the faculty.

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

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

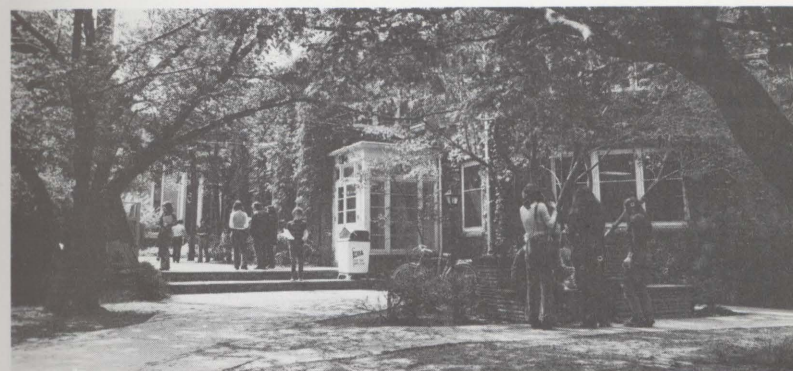
Special Endowments

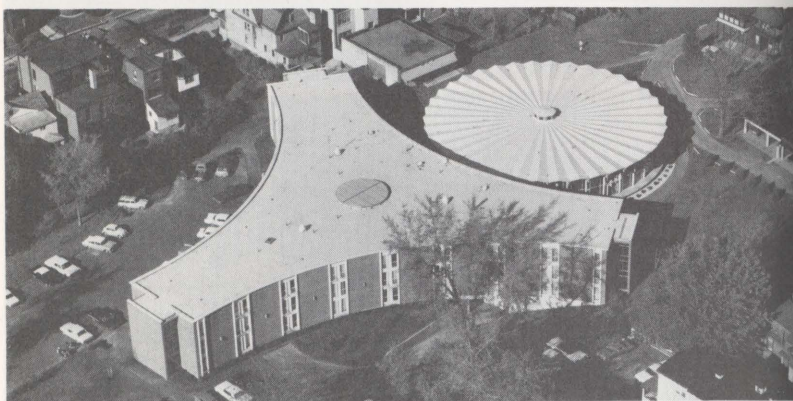
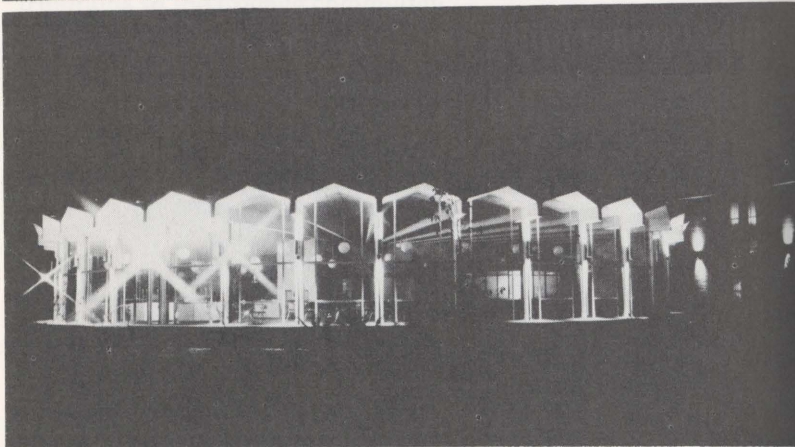
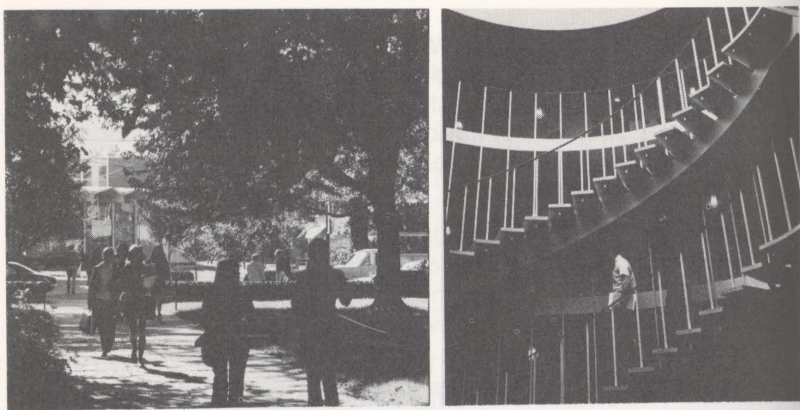
THE W. S. CARPENTER MEMORIAL AWARD FUND was established in 1965 by W. S. Carpenter, Jr. and his sons in memory of W. S. Carpenter, who was born in Wilkes-Barre on April 5, 1853, and lived in this community during his entire active business life. The fund

was given to strengthen the work of the science division by subsidizing research projects, assisting the College in attaining able teachers, providing scholarships for outstanding students, providing lectures by speakers of national prominence, purchasing exceptional tools, apparatus, or other equipment for use in the science department.

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 scholarships, and creative writing in the field of literature.

GILBERT S. McCLINTOCK was the chairman of the Junior College Committee of Bucknell University when, in answer to a local need, 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.

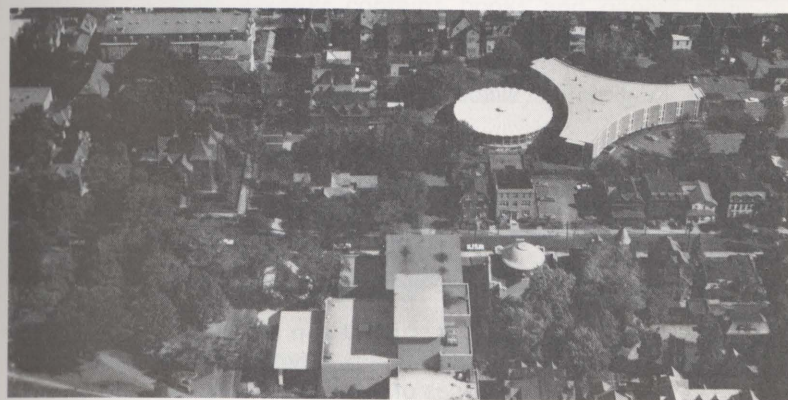
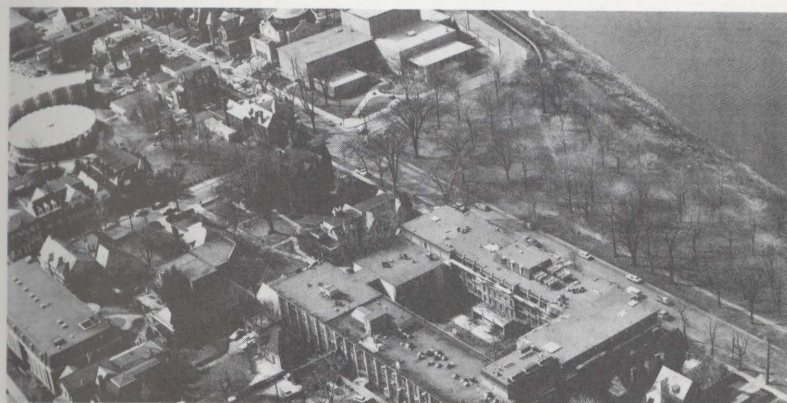




Dining Hall and New Men's Residence Hall.

The Facilities of the College

Buildings and Plant



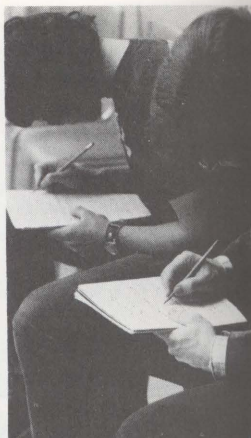


Experience at Wilkes

Education is the process of connecting and relating, of testing and retesting, of discovery and rediscovery.

The faculty can teach the student facts, but his contribution to a free society depends upon the continual expansion of his knowledge and upon its relevance to human experience.

The student can strive for technical and professional competence, but the inner resources of the mind and spirit must nourish and enrich his achievement.



The Facilities of the College

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 new library, completed in the summer of 1968, has been named by the Trustees in honor of the first president of Wilkes College.

From 1947 to 1968 Kirby Hall, the former residence of Mr. and Mrs. Fred Morgan Kirby, was used as the College library. The building, first named the Kirby Home for Education, was presented to the College in 1941 as a gift of Allan Kirby, son of Wilkes-Barre's most generous benefactors. It is presently being used by the Modern Foreign Language Department and contains the language laboratory, initiated by a gift of the graduating class of 1962.

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

Library space has been provided for 300,000 volumes and study area for 600 students. Books may be borrowed for periods of two weeks. Reserve books for particular courses circulate for the time period specified by the instructor. Students may borrow books from twelve nearby libraries (public and college) through the inter-library loan system.

The schedule of library hours is announced at the beginning of each academic session.

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, Stark Hall houses the Science Research Center, where faculty, graduate students, and selected undergraduate students conduct various research programs, many with industrial or governmental financial support. Also located in Stark Hall 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.

Research in the sciences has included such varied work as research in allergy, immunochemistry, developmental plant morphology, protozoology, limnology, theoretical acoustics, atmospheric physics, experimental solid state physics, thermochemistry, surface chemistry, fuel cell research, organic synthesis, trace elements and environmental health, magnetic susceptibility of sedimentary rocks, and regional geology.

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.

NEW LEARNING CENTER

A new \$6,000,000 learning center has been opened and connects with the Stark Hall of Science. This facility provides additional classrooms, studios and laboratory space for programs in materials and electrical engineering, environmental science, fine arts, computer science, experimental psychology, mathematics, and nursing. It also will house the Sordoni Gallery, a fine arts lecture hall and extensive classroom space.

CENTER FOR THE PERFORMING ARTS

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

Until 1965, theatrical activity was in Chase Theater, formerly the carriage house behind Chase Hall, presented to the College in 1937 by Admiral and Mrs. Harold R. Stark, as a memorial to Fred M. Chase and his wife, the sister of Admiral Stark.

Cue and Curtain, the student drama group, has given one-act plays by O'Neill, Sartre, Albee, Anouilh, Tennessee Williams, and others. One-act plays are student directed. Over the years the College has presented Elizabethan plays of Shakespeare, Webster, Dekker, Middleton, as well as plays of Moliere, Shaw, Ibsen, Pirandello, Wilder, Osborne, Noel Coward and Philip Barry.

The College, in cooperation with the Wilkes-Barre Kiwanis Club, has presented the following musical comedies, the proceeds from which have assisted in the establishment of the Wilkes-Barre Kiwanis Charitable Foundation: **Bloomer Girl, Paint Your Wagon, Annie Get Your Gun, The Music Man, The Sound of Music, Camelot, How To Succeed in Business Without Really Trying, and Guys and Dolls.**

DOROTHY DICKSON DARTE MUSIC CENTER

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

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

CONYNGHAM GALLERY

The art club holds its annual Art Fair in the Conyngham Gallery, where the works of students and of local and professional artists

are shown. The public is invited to the displays and exhibits. Opportunities are offered to the students to enter their works in local and regional competition.

GYMNASIUM AND OUTDOOR ATHLETIC PLANT

Completed in September of 1950, the Gymnasium is well equipped for intramural and intercollegiate athletic events. It has a seating capacity of 2400. Recently, the College added modern training room facilities off campus adjacent to Kirby Park. Here also are located Ralston Field, named in honor of Wilkes' first athletic coach and present Dean of Student Affairs, and the playing fields for soccer, baseball, and hockey, as well as asphalt tennis courts and an archery range. All students are invited by the Jewish Community Center, on South River Street, and the YM-YWCA, on South Franklin Street, to use their swimming pools and bowling alleys. During the 1973 football season the Robert J. McBride Field House was dedicated at Ralston Field in memory of the Wilkes player who died of injuries received during the 1972 season.

GUIDANCE CENTER

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

PLACEMENT OFFICE

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

Complete information about job opportunities and graduate schools is available. Each year the Office is visited by over one hundred representatives of industries and one hundred school systems from all parts of the United States to interview students for business and teaching positions.

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

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

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

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

The Placement Office is located in the Guidance Center, on South River Street, next to McClintock Hall.

ALUMNI OFFICE

The Alumni Office keeps records of all graduates and alumni of the College. It publishes, through the Public Relations Office, the quarterly "Wilkes College Report," acts as liaison for the College with alumni, and interprets to the alumni chapters the changes and needs of the institution.

Prospective students interested in finding out more about the College may write for information to the Alumni Office. They are always welcome at Alumni Chapter meetings.

Current active Chapters are located in Pennsylvania in Wilkes-Barre, Allentown, Bethlehem, Easton, Harrisburg, Scranton, Philadelphia; in New Jersey in Newark, Somerville, Morristown, Trenton; Wilmington, Delaware; Baltimore, Maryland; Washington, D. C.

THE BOOKSTORE

Books, stationery, and supplies may be purchased at the College Bookstore in the new men's residence 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 \$100 per semester.

THE COMMONS

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

SNACK BAR

Cafeteria service is also provided at the College's newly furnished Snack Bar, behind Parrish Hall.

CLASSROOMS AND INSTRUCTION

The Institute of Regional Affairs occupies offices in Franklin Hall. Classes and faculty offices in Commerce and Finance, Political Science, Psychology, and Sociology are in Parrish Hall.

Conyngham Hall, located on South River Street, was one of the earliest properties acquired by the College. The Conyngham home was a gift in 1937 of Mrs. Bertha Robinson Conyngham, in memory of her husband, John N. Conyngham. The building was destroyed by fire on December 28, 1968.

Bedford Hall, a gift of Mr. and Mrs. Paul Bedford, is the home of the English Department.

OFFICES OF ADMISSION — 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 are the Dean of Admissions and the Director of Financial Aid.

Weckesser Hall, 170 South Franklin Street, is the gift of Mr. and Mrs. Frederick J. Weckesser. The President and the Dean of Academic Affairs have their offices in Weckesser Hall. Also in Weckesser Hall are the Deans of Men, the Deans of Women, the Director of Athletics, the Registrar, the Director of Evening and Summer Division, the Alumni Office, the Public Relations Office, and the Office of College Development.

Parrish Hall, formerly the Glen Alden Building of the Lehigh and Wilkes-Barre Coal Company, was acquired in 1958. Presently, the Finance Office occupies the first floor. The new men's residence hall, constructed in 1965, is the location of the Housing Office.

RESIDENCE HALLS

Over 20 residence halls are named after prominent local families and for patriots of the American Revolutionary War, whose history forms part of the rich heritage of the Wyoming Valley region.

Student Life

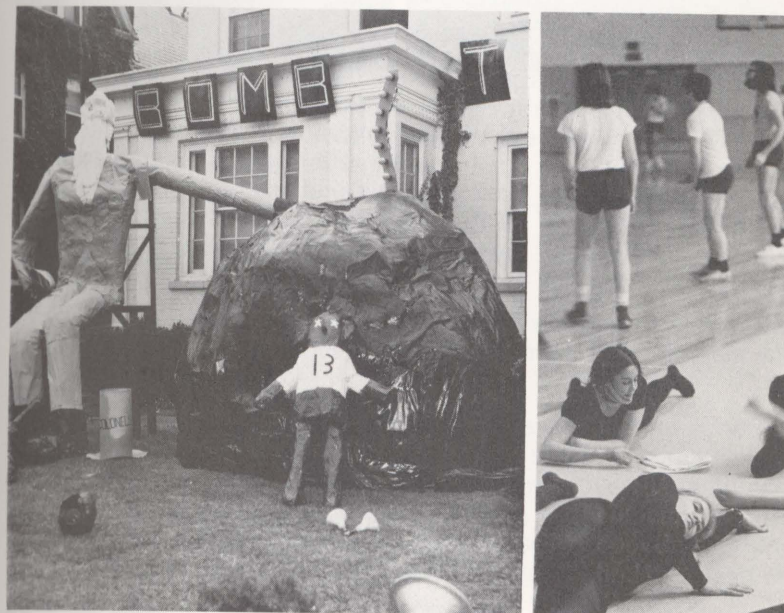
Counseling

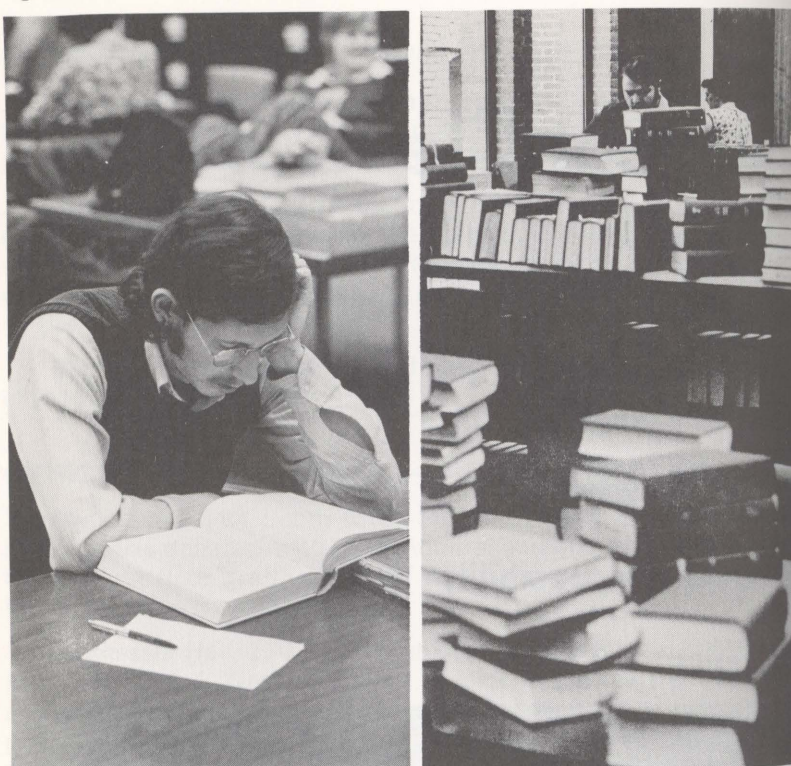
Student Activities

Social Activities

Student Responsibility

Athletics





Studying at Wilkes

In college the teacher works with the student, challenging him to extend the limits of his mind. He encourages him to think courageously and truthfully and to create with all his resources so that he may act with independent judgment.

In a college community freedom of inquiry is essential.

In the world community the right of the individual to differ safeguards the freedom of all men.

As student and teacher engage in the experience of creative thinking, the heritage of learning becomes the responsibility of everyone.

Counseling

The guiding principle of all Wilkes counseling is to encourage the student to discover his own abilities and potentialities and to assist him in making sound, independent decisions. Most of all, he must learn to assume responsibility for all he does.

FRESHMAN ORIENTATION PROGRAM

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

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

STUDENT ADVISEMENT

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

Student Activities

The College encourages a program of extracurricular activities that contribute to the educational development of the student who chooses to participate.

Student activities are designed to appeal to a wide variety of tastes and talents; as such they enjoy the support of the College community. The student activities include Intercollegiate and Intramural Athletics, Theater, the College Band, College Choruses, numerous brass, woodwind and percussion ensembles, Madrigal Singers, the College newspaper, the yearbook, the radio station, and the literary magazine.

There are four class organizations. In addition, special departmental clubs stimulate and satisfy individual interest in academic, professional, and artistic fields. These clubs are developed for students in cooperation with the faculty. All women students may become members of Theta Delta Rho, headed by its own executive committee, which plans and arranges social activities.

POLICY

The College requires 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 advisors and the deans.

STUDENT GOVERNMENT

Government of student affairs rests in a Council composed of annually elected members representing the classes and other student groups. The Council serves as a coordinating agency. It formulates the student activities budget; it submits this budget to the Administrative Council for approval and is responsible for the supervision of expenditures within the budget. It plans and supervises the social calendar of the College; it is responsible for the Homecoming programs; it recommends to the Council of Deans social regulations pertaining to student life. It consults with and advises the deans and the Administrative Council. It recommends to the Administration student nominees for appointment to selected faculty committees.

INTER-DORMITORY COUNCIL

The Inter-Dormitory Council, made up of elected representatives from the men's and women's residence halls, plans and coordinates residence hall educational and social programs. The Director of Housing advises and works closely with this organization and develops and administers residence hall policy in conjunction with the Council of Deans.

COMMUTER COUNCIL

The Commuter Council, made up of elected representatives from among men and women day students, plans and coordinates educational and social activities. This council works closely with the Council of Deans.

PUBLICATIONS — RADIO

The students publish the **Beacon**, a weekly newspaper; the **Manuscript**, a literary magazine, issued in the Spring; and the **Amnicola**, the College annual. There are opportunities for students on the editorial, art, and business staffs.

Graduated amounts, in the form of tuition stipends, are available to students in the upper classes who hold editorial and managerial positions on the **Beacon**, the **Manuscript**, and the **Amnicola**. Students eligible for these grants should make written application to the faculty adviser of the publication before April 1 for review by the publications committee and the Administrative Council.

The college also maintains an FM radio station, WCLH, which broadcasts daily at 90.7 Mz. Interested students are invited to participate.

CONCERT AND LECTURE SERIES

A carefully selected Concert and Lecture Series is presented throughout the regular college year. All programs are subject to change. They are open to the college family and the public without charge.

Social Activities

The College believes in helping students to help themselves. Groups are encouraged to initiate programs that will serve their interests and benefit others. It has been found that students gain most from those activities, social and cultural, which release the best talents of the individual.

Special projects include the following: TDR's Golden Agers Christmas party, at which residents of Convalescent Homes are entertained; Student Government's party for children of St. Stanislaus Orphanage; Wilkes J. C.'s party for YMCA children; Student Work Day, in support of an orphan in a foreign land.

In addition there are various social affairs to raise money for the United Way, to collect toys for the Salvation Army, and to donate books for students in foreign countries.

A full and varied program of social and recreational activities supplements the extracurricular program. At all these functions members of the faculty and their wives are invited guests.

PARENTS' DAY

After they have adjusted themselves to the academic life of the College, students invite their families to a weekend of social, cultural, and athletic events. Preparations for the annual Parents' Day program are entirely the responsibility of a Student Planning Committee. The agenda includes intercollegiate soccer and football games, luncheon with the faculty, and a concert.

HOMECOMING

To welcome returning alumni, students construct displays on campus and decorate dormitory and classroom buildings. For the outstanding displays an alumni committee presents awards during halftime ceremonies at the football game. A Homecoming Queen and her escorts are feted at a dinner-dance.

TDR TEAS

Throughout the year TDR sponsors afternoon teas and student receptions. The women of Theta Delta Rho entertain those high school seniors who plan to enter the College the following year.

IDC-CC CHRISTMAS PARTY

The Inter-Dormitory Council and the Commuter Council sponsor an annual Christmas party preceding the winter vacation. The student body, faculty, and administration are invited to a buffet and dance.

WILKES OPEN WRESTLING TOURNAMENT

Between Christmas and New Year's the College sponsors the Wilkes Open Wrestling Championships. Known as the "Rose Bowl of Wrestling," this annual tournament attracts athletes from over sixty colleges, athletic clubs, and YMCA's throughout the United States. Wilkes wrestlers join them in competing for individual and team awards. Tournaments and clinics are held over a three-day period in the Wilkes gymnasium. The tournament, the largest in the country, has the record for the greatest number of entries.

WINTER CARNIVAL

Student Government sponsors a Winter Carnival, held at one of the nearby resorts in the Poconos. A day of skiing, tobogganing, and ice skating climaxes the close of the mid-year examination period.

SPRING WEEKEND

Student Government also plans Spring Weekend. Clubs and organizations set up gala outdoor booths, and the campus takes on a Mardi Gras atmosphere.

THE MANUSCRIPT FILMS

During each semester the "Manuscript" Society brings to the campus distinguished motion pictures produced by American and foreign film companies.

CLUB ACTIVITIES

In addition to the regular social calendar, campus organizations plan their own special activities.

Athletics

Athletics are an integral part of the activity program and as such are subject to policies set by the faculty and administration and approved by the Board of Trustees.

VARSITY SPORTS

The College maintains intercollegiate schedules in nine varsity sports: football, baseball, basketball, soccer, golf, tennis, swimming, wrestling, cross-country, and lacrosse. Men and women who take part in intercollegiate sports satisfy the requirements for physical education for the duration of that sport. Intercollegiate sports are available for women in basketball, field hockey, and tennis.

INTRAMURAL SPORTS

A program of intramural sports and physical education stresses physical standards and cooperative team spirit and recreation. Every man has a chance to participate in basketball, touch football,

volleyball, softball, and bowling. The athletic program for women includes dancing (folk and modern), bowling, basketball, softball, swimming, and tennis.

ATHLETIC POLICY

Intercollegiate athletics are introduced for the benefit of the student body and in consequence athletes receive the same consideration in admissions and in the awarding of scholarships that is given to other students. Wilkes enters into intercollegiate competition with other colleges of the Middle Atlantic Conference adhering to similar policies of admission and maintaining comparable scholastic standards.

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, and the Susquehanna Field Hockey Association.

Student Responsibility

The students in a great measure determine the influences of the College. The faculty counts upon their cooperation in establishing the highest possible standards of intellect and morals. The College may request students to withdraw when their influence and behavior are deemed detrimental to the best interests of the student body and the College.

THE COLLEGE AND YOU

The college motto of "Unity Amidst Diversity" represents the attitude of the institution as a whole. It is recognized that education is the only way the divisive forces of ethnic origin, religion and social classes, could be minimized — the only way a unity of respect for the individual could be achieved.

Society's problems come from achievement and they are the problems that are the challenges of education and our entire society today. The college encourages the students to pick up the challenge of solving the problems of today.

The challenge to all of us at Wilkes is great. We must never forget that an academic community is a unique community. We have a responsibility to each other in all that we do. Any actions which discredit the institution or disrupt the ability of the institution to perform its function effectively cannot be tolerated. The freedom for us to perform our creative function is a precious thing that few societies enjoy. We must maintain the mutual respect that can bring unity to our efforts while sustaining the diversity that has made us great.

Students are encouraged immediately to assume the spirit of Wilkes as it exists at the college and share with other members of the "campus family" the responsibilities for maintaining high academic and social levels.

A college career is only as productive and enjoyable as the individual chooses to make it. Students are, therefore, encouraged to participate in campus and local activities, planning and utilizing their time effectively.



Franklin Hall — Graduate Office and I R A



McClintock Hall — Women's Residence



Catlin Hall — Women's Residence

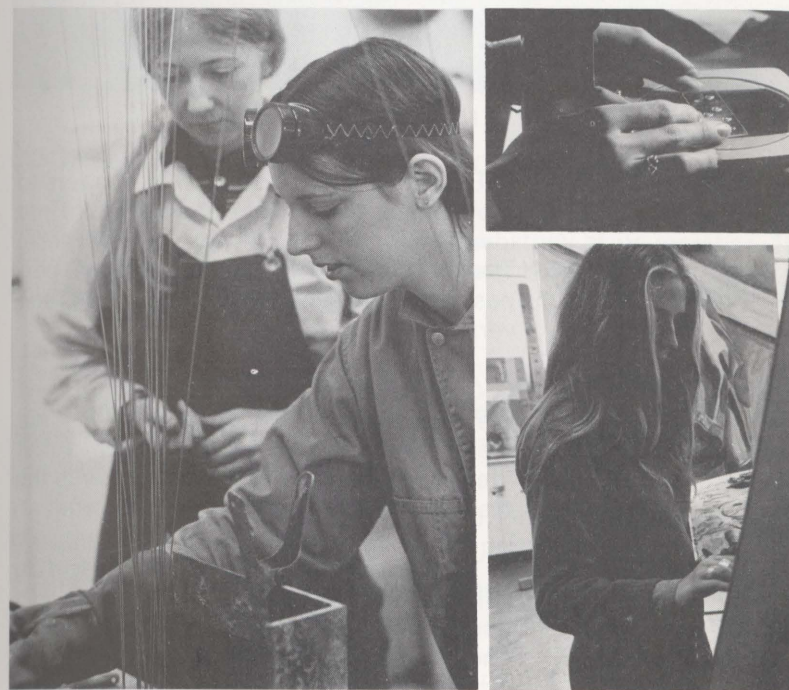


The Academic Program

Curricula

Academic Requirements

Graduation Requirements





Kirby Hall is one of three original campus buildings.

Learning at Wilkes

Education leads men to seek answers to problems of significance and to inquire into ideas and beliefs of eternal relevance. There is no better expression of man's purpose than his sense of belonging to a universe ruled by truth.

Creative thinkers set the standards and the high aims of education. One may not reach these standards in his lifetime; that they are recognized and sought after is the measure of one's intellectual concerns.

The faculty encourages the student to cultivate learning that he may grow in wisdom. In this way the mind in its journeyings finds constant surprise and delight at re-discovering itself.

Curricula

Graduate Programs

WILKES COLLEGE DEGREE PROGRAMS

To fulfill its objective of service to the community and the nation, Wilkes in 1961 introduced two new curricula leading to the degrees of Master of Science in Chemistry and in Physics. These curricula are designed to make practicable either full-time graduate study toward the degrees or part-time study by engineers and scientists with appropriate undergraduate training employed in the Wilkes-Barre area. A program leading to a Master of Science degree in Biology was introduced in September, 1967. In September, 1969 two programs were introduced: one leading to a Master's Degree in Business Administration, and a second leading to a Master of Science degree in Education providing for concentration in the academic disciplines of English, history, mathematics, biology, physics, chemistry, and elementary education. The degree of Master of Science in Mathematics was introduced in September, 1971.

Full details of these programs are published in the bulletin of the Graduate Division.

COOPERATIVE GRADUATE PROGRAMS

Wilkes College is a member of the Lehigh Regional Consortium, which provides opportunities for graduate study at its member institutions — Lehigh, Beaver, Moravian, Wilkes and Allentown College.

Undergraduate Programs

Wilkes is an independent, liberal arts college that offers the degree of Bachelor of Arts in the humanities, the social sciences, and the natural sciences.

All course work in education required for careers in teaching is available in combination with the degree programs mentioned.

The College confers the degree of Bachelor of Science in biology, chemistry, engineering, environmental sciences, mathematics, physics, medical technology, commerce and finance, and certain areas of education. The College also offers in selected engineering

fields a two-year program leading to transfer. In addition, special degree programs in medical education, international studies, and general studies are available.

A detailed description of these programs is provided in the section of the bulletin titled "Degree Programs."

AIR FORCE RESERVE OFFICER TRAINING CORPS

The program of instruction of the Department of Air Force Aerospace Studies is established under guidelines set up under AFROTC Regulation 53-3. Individual ROTC Departments are given considerable latitude in the preparation of instruction and the maintenance of curriculum standards.

High school students who feel they can meet the competitive standards and qualification criteria for Air Force ROTC Scholarships may apply.

Students competing for scholarships as first year applicants, who meet the basic eligibility criteria, will be evaluated on the basis of achievement on the CEEB Scholastic Aptitude Test (SAT) or American College Test (ACT). To meet the deadline, the applicant must take this test before or during the December test cycle of his/her senior year. Students will also be evaluated on the basis of high school academic record, high school record of extracurricular and athletic activities, personal recommendations by members of the community and high school teachers, and tentative medical eligibility as reported by personal physician.

Scholarship recipients who enter the program as first year students, although they are not initially considered on the basis of college grade point average, must by the end of their first academic year, achieve at least a 2.25 cumulative grade average based on all college work. Cadets who fail to attain this minimum level of performance will not be eligible to continue as recipients.

Scholarship applicants at the second or third year levels of Air Force ROTC, who are able to meet the eligibility requirements, may submit their applications for scholarships directly to the chairman of Aerospace Studies at Wilkes.

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 purposes of recommendation. Grade reports are sent to students and parents at the end of each term. Mid-term reports are sent if the work is unsatisfactory.

Five numerical grades are given for academic work.

Grade	Interpretation
4	Academic achievement of outstanding quality.
3	Academic achievement of high quality.
2	Academic achievement of acceptable quality in meeting requirements for graduation.
1	Academic achievement of quality below the average required for graduation.
0	Academic achievement below the minimum required for course credit.
P	Passing, 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 fifth 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.

POINT AVERAGES

The student is given a number grade for every course in which he is enrolled. To calculate the number of points earned in a course, multiply the grade in each course by the number of credit hours for the course. To compute the point average, total these points for all courses and divide by the total number of credit hours.

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

Course	Credit Hrs.		Points	Credit Hrs.	
	Carried	Grade		Passed	
Bio. 101	3	4	12	3	
Eng. 101	3	0	0	0	
Fr. 101	3	2	6	3	
Hist. 101	3	1	3	3	
Mus. 101	3	3	9	3	
Total credit hrs. carried	15				
Total credit hrs. passed				12	
Total points earned			30		
Average	$30 \div 15 = 2.0$				

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 his senior year at least a 1.85 average for all his courses and a 2.0 average in his major field.

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

CLASS STANDING

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

	General Average	Major Average
Freshman Year	1.4	1.6
Sophomore Year	1.7	1.9
Junior Year	1.85	2.0

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

PROBATION AND DISMISSAL

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

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

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

ATTENDANCE

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

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

STUDENT LOAD

No students shall be allowed to carry an overload without approval of the advisor and the appropriate dean. An overload will be permitted only for students with an average grade record of 3 or special need.

WITHDRAWALS

A student may drop any course after the first week through the tenth week of the semester. A mark of "W" will be recorded if the

student has properly notified the instructor, his faculty advisor, and the appropriate dean. A student who withdraws from a course after the tenth week of classes but who continues other courses will receive a zero unless the appropriate dean, faculty advisor, and instructor agree that the student be permitted to drop the course without prejudice, in which case a "W" will be recorded.

No student who has been advised to withdraw from the College's day school program for academic reasons will be permitted to register in the Evening Division without the approval of the Academic Standing Committee and then will be allowed to register only as a non-matriculated student.

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

CHANGE OF PROGRAM

Students who wish to transfer from one department to another shall obtain the approval of the advisor, the department chairmen and the appropriate dean. The student shall satisfy the curriculum requirements of the Bulletin in force at the time of transfer.

TRANSFER OF SUMMER CREDITS

Students desiring to study at another college during the summer must petition the Academic Standing Committee for approval. The student must earn a grade of 2 or higher in order 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.

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 less than the full credit load for their curriculum will not be eligible for the Dean's List.

HONORS

The granting of Honors at Commencement is based upon the academic record made by students carrying a normal load for their curriculum during their four years at the College. Requirements for Honors are as follows: for **cum laude**, a cumulative average of 3.25; **magna cum laude**, 3.50; **summa cum laude**, 3.80. Transfer students who wish consideration for honors should make application to the Academic Standing Committee.

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 appropriate dean for permission to take the degree or certificate **in absentia**.

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

1. He must complete all subjects required for the degree as stated in the Bulletin in force at the time of his admission to the program. All students must complete the last 30 credits in residence at the College.
2. He must earn a grade of 1 or better in each required subject.
3. He must obtain a minimum cumulative average of 1.85 for all courses.
4. He must obtain a minimum cumulative average of 2.0 for all subjects within his major.
5. He must satisfy all requirements pertaining to the orientation and physical education programs.
6. He must demonstrate competence in written and spoken English.

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

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 OUTSTANDING GRADUATE OF THE YEAR AWARD is given by the Wilkes College Alumni Association to the graduate considered by a special committee to have made the strongest contribution to the life of the College.

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

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

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

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

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

All College Awards

THE BEACON FEMALE AND MALE ATHLETE OF THE YEAR AWARD is presented annually to the male and female athlete considered by the Beacon staff as being the most outstanding in athletics during the year.

THE BIOLOGY DEPARTMENT BEAKER AWARD is presented annually to that student who has made the strongest contribution to the Biology Department.

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.

BLOOD DONOR AWARDS are presented annually to the women's dormitory, men's dormitory and club with the highest percentage of participating students.

THE CHEMISTRY AWARD is presented annually to the graduate who has maintained the highest scholastic average throughout the four years of the chemistry program.

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

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, Nicholas 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 the highest scholastic average in the field of electrical engineering.

THE ENGINEERING AWARD is presented annually to the graduate of the Engineering Department who has maintained the highest scholastic average throughout his or her college career.

THE FACULTY WOMEN'S ELEANOR COATES FARLEY SCHOLARSHIP AWARD is presented annually to the sophomore woman who has ranked first in her class during her freshman year.

THE INTER-DORMITORY COUNCIL'S OUTSTANDING FEMALE AND MALE DORMITORY STUDENT AWARD is presented annually to the female and male dormitory students who have contributed most to dormitory life.

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

THE LETTERWOMEN'S SCHOLARSHIP AWARD is presented annually to the woman who has been most outstanding in women's athletics.

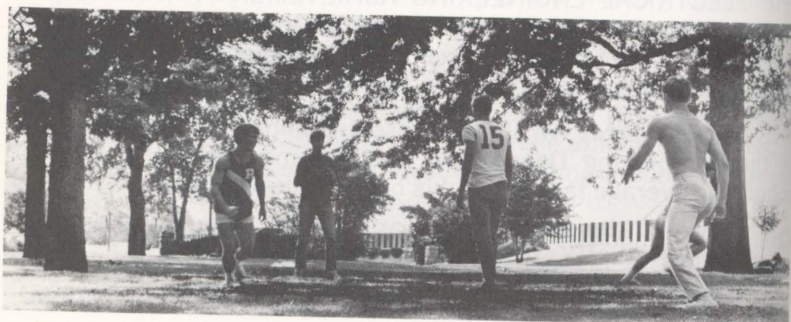
THE MATERIALS ENGINEERING ACHIEVEMENT AWARD is presented by the faculty of the Engineering Department to the graduate who has demonstrated exceptional ability and maintained the highest scholastic average in the field of materials engineering.

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.

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

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

THE WILKES COLLEGE CLUB OF THE SOCIETY OF SIGMA XI annually recognizes those seniors who have demonstrated research excellence. Notation of this award is made in the Commencement Program.



The College and The Community

Institute of Regional Affairs

Economic Development Council

Northeastern Pennsylvania Philharmonic

Fine Arts Fiesta

Center for the Performing Arts

Educational Development Center





Service at Wilkes

It is his own deficiency, and no degree of fate, that makes a man sink into the depths. To think there is no escape from preordained misery is to make the misery perpetual. To seek new paths in a constant renewal of strength — that has always been the secret of progress. When a man waits helplessly for the turning in the wheel of fortune, he has to be regarded as shorn of manhood.

If we could free even one village from the shackles of helplessness and ignorance, an ideal for the whole of India would be established. Let a few villages be rebuilt in this way, and I shall say they are my India. That is the way to discover the true India.

RABINDRANATH TAGORE
Towards Universal Man

The College and The Community

The College was founded to serve the community and has received a large measure of its ever-growing support from outstanding leaders in the community. It has recognized for many years that its growth was related to the economic and social redevelopment of the community and, therefore, it has sought to participate in every effort for community betterment. In consequence, a pattern of cooperation has developed in which the College and the Community work with one another for their mutual benefit.

Institute of Regional Affairs

The Institute of Regional Affairs is a multi-purpose college organization which views regional problems as belonging to no simple academic discipline, but rather as contemporary phenomena spilling into many disciplines. It is really the natural integration of prior activities in which members of the Wilkes College faculty have engaged for at least twenty years. The Institute of Regional Affairs was created to assure the coordination of these varied efforts and better understand and resolve complex and contemporary problems.

Its resources include not only the College faculty in the social sciences — economics, psychology, government, sociology — but also those experts in the region who can lend their talents to teaching, research, and consultation. Its four-fold purpose is: education and training, community information, research, and consultation.

1. Labor-Management Courses

To establish a climate for industrial progress, the College has pioneered a management training program under which special classes are organized for personnel in industry, commerce, and banking to meet the needs of business firms in this region. Such programs are arranged in consultation with officials, foremen, and other employees to meet the specific problems of a particular company.

A program designed for members of labor unions is also tailored to the needs of a particular group. All classes are conducted on the campus where the intellectual climate stimulates free intellectual inquiry.

Union and management personnel sometimes meet in an effort to develop that mutual understanding that is essential to constructive action.

2. Banking

Short courses have been co-sponsored with both the Institute of Banking and the Savings and Loan Institute. The instructional program offered to the personnel of these two groups is intended to assist them to meet changing needs and acquire a broad knowledge in their fields.

3. Municipal Government Program

The fundamental general purpose in assisting local governments has been to help make American democracy stronger by guaranteeing the semi-autonomous structure of American local government, so long as it can retain the capacity to solve its own problems. The program of training, information and consultation service, publications, and research in this field have been aimed at improving the world of local government officials, both elected and appointed. In the fall of 1964, the Glen Alden Coal Company made available an area in Hanover Township known as Concrete City — a 40 acre site — for training the police, firemen, and civil defense workers. The In-Service training program for local government officials has been offered in full cooperation with the Public Service Institute of the Department of Education, Commonwealth of Pennsylvania.

4. Other Activities

From time to time, the Psychology Department, the Sociology Department, the Education Department, the Department of Environmental Sciences, and the Guidance Center initiate and participate in seminars, conferences, and workshops, in the fields of social welfare, mental health, environmental sciences, and education.

Economic Development Council

As a result of the support and the success of the College's Area Research Center, an independent Economic Development Council has been established to serve Northeastern Pennsylvania. The College has supported a number of programs in their infancy and helped them become independent, community activities.

Northeastern Pennsylvania Philharmonic

The Wilkes-Barre Philharmonic, organized under the aegis of the College in 1951, and the Scranton Philharmonic have been combined to form the Northeastern Pennsylvania Philharmonic. The orchestra presents a series of four concerts annually in both Wilkes-Barre and Scranton. Among its members are students and faculty from the Department of Music of the College.

Fine Arts Fiesta

In 1954 several members of the Board of Trustees and the faculty assisted in the formation of the Wilkes-Barre Fine Arts Fiesta, as part of the City's Sesquicentennial celebration. The College participates with area-wide cultural groups in this four-day festival of music, drama, and the arts presented each spring.

Center for the Performing Arts

The Center for the Performing Arts provides a varied program of cultural and educational events for the Community as well as the College.

Completed in October, 1965, the gift of Mrs. Dorothy Dickson Darte, the Center has facilities for theater, dance, music, and films. Dramatic productions, recitals, lectures, choral and band concerts, ensemble programs, and other cultural events are offered throughout the year.

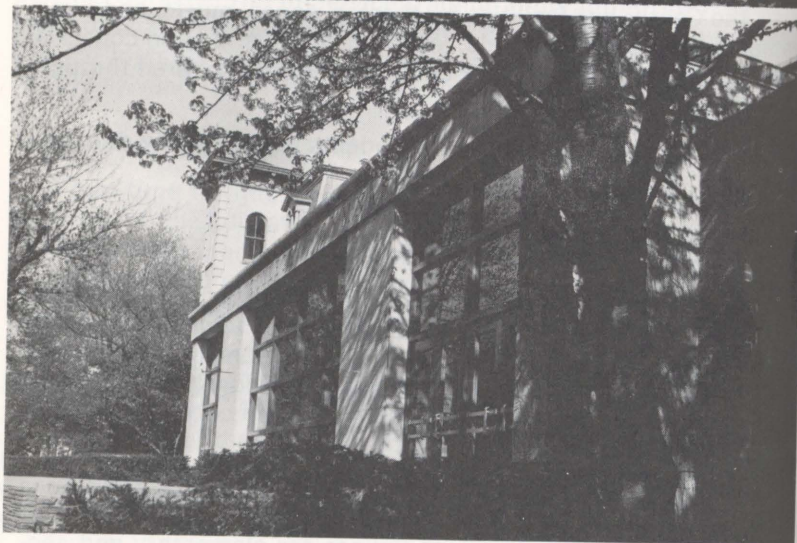
The Center is operated by the students under faculty direction and supervision.

Educational Development Center

The Educational Development Center is an arm of the Commonwealth of Pennsylvania Department of Education. It is housed on the Wilkes College campus by mutual agreement between the college and the Pennsylvania Department of Education. There are six such centers which have been established on college campuses across the state of Pennsylvania.

Each center has both a statewide and local mission. The center at Wilkes College has as its statewide mission the development of curriculum models in various disciplines for elementary and sec-

ondary education. The center's work has included surveying and developing curriculum models for elementary science education, career education, and the education of neglected and delinquent students. At the local level the center has helped to plan the functions of the local intermediate unit and continues to work closely with the unit to provide service to school districts in the area. The center has sponsored a number of seminar programs which have brought to the area prominent speakers from various fields of education.



Wilkes College Gymnasium

Undergraduate Programs

Divisions of Study (3 areas)

Bachelor of Arts Degree (Selection of Major)

Bachelor of Science Degree (Selection of Major)

Degree Requirements

B.A. and B.S. Degree Programs

General Requirements for B.A. and B.S. Degrees

Course Requirements in the Majors

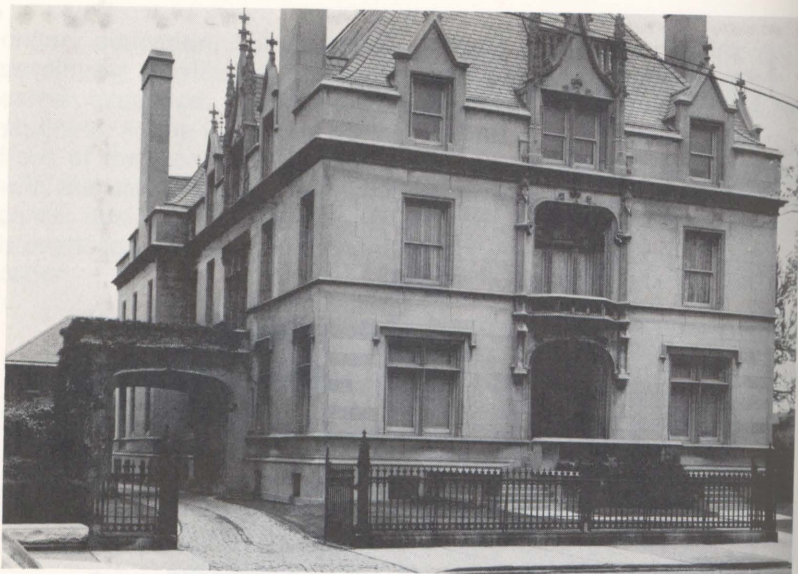
Special Degree Programs

Five-Year B.S.-M.S. Degree in Biology

General Studies

International Studies

**Wilkes-Hahnemann Cooperative Medical
Education Program in Family Medicine**



Weckesser Hall is the center for administrative offices.

Leadership at Wilkes

Those of us who are concerned with the education of young people and with the vitality of our society can never accept uncertainty and confusion as the inevitable condition of society.

We, therefore, are confronted with two choices. We can grasp and support a rigid ideology that offers final answers by ignoring uncongenial facts and truths, or we can make every effort to comprehend the significance of new facts, new truths, and new conditions.

We must endeavor to extend the vision of our students, enlarge their understanding, and prepare them to participate in strengthening and developing our social institutions.

DR. EUGENE S. FARLEY, President Emeritus
First President of Wilkes College

Undergraduate Programs

The program at Wilkes has 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 chairmen.

In its degree programs Wilkes College provides for a broad liberal education and for the concentration in special areas for which students are qualified and have interest. In the Bachelor of Arts and Bachelor of Science degree programs the faculty encourages students to achieve intellectual, social, and spiritual development.

Areas of Study

Mankind's knowledge has tended to be identified in three major areas or divisions of study. These areas and the departments identified with them are listed below. Students will be required to take a general program of courses distributed in these three areas to provide a sound liberal orientation to the fields of man's knowledge. Academic degrees will sometimes require a specific set of these courses to meet degree requirements. Individual departments will identify these requirements when students register.

AREAS

Humanities

English
Fine Arts
Foreign Languages
Music
Philosophy
Religious Studies
Theatre Arts

Social Sciences

Commerce & Finance
Economics
Education (Elementary and Secondary)
History
Political Science
Psychology
Social Science
Sociology

Sciences & Mathematics

Biology
Chemistry
Environmental Sciences
Engineering
Mathematics
Nursing
Physics

Students who, in the process of completing their program, also complete the requirements of a second major, may elect to graduate with a double major. The student must declare intent to graduate with a double major by filling out the appropriate form obtainable at the Registrar's Office. It is the student's responsibility to seek the approval of the chairman of the second major department to ensure that all requirements of the second major are fulfilled.

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 men who have created it and lived in it. Studies center around men 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 his explorations in the humanities, social sciences, and sciences.

SELECTION OF A MAJOR

To provide depth of knowledge, some concentration is required. It is desirable that a major be elected as early as possible, especially in the areas of biology, mathematics, and music. 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:

Biology	Foreign Language	Physics
Chemistry	History	Political Science
Economics	Mathematics	Psychology
Education ¹	Music	Social Science
English	Philosophy	Sociology
Fine Arts	Religious Studies	Theater Arts

¹ Students planning to fulfill requirements for teacher certification will usually take required education courses as electives in the fifth and sixth semesters.

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	Environmental Sciences
Chemistry	Mathematics
Commerce and Finance	Medical Technology
(a) Accounting	Music Education
(b) Business Administration	Nursing
(c) Business Education	Nursing Education
Engineering	Physics

Degree Requirements

B.A. AND B.S. DEGREE PROGRAMS

The following pages describe the specific course requirements for each B.A. degree major and for each B.S. degree major. The student is responsible for meeting the requirements of his major program. Complete course descriptions will be found in the back of the Bulletin.

GENERAL REQUIREMENTS

The following courses listed below are required of all candidates for the Bachelor of Arts degree. They will usually be taken in the semesters indicated. In a curriculum that requires a student to begin with courses at a more advanced level, the advanced course will be accepted as fulfilling the general requirements in that subject.

The general requirements for the Bachelor of Science degree are basically the same as those required for the Bachelor of Arts degree. The student with his faculty advisor will plan the proper sequence of his course requirements.

Required Courses	Credit Hours	Normally Taken in Semesters
Eng. 101, 102	6	1-2
Eng. 151, 152	6	3-4
Hist. 101, 102	6	1-2
Phil. 101; 102 ¹	6	3-4 or 5-6
For. Lang. ² 101, 102; For. Lang. ² 203, 204	6-12	1-2-3-4
Humanities Electives		
F.A. 101; or Mus. 101; or Th. Arts 101 ³	3	1 or 2
Mathematics, Science Electives		
Any two courses in Mathematics ⁴ or Phys. 101-102; or Bio. 101-102; or Env. Sci. 101 and Env. Sci. 282; ⁵ or Chem. 101-102	12	1-2-3-4
Social Science Electives		
Ec. 101, 102; or P.S. 101, 102; or Psy. 101, 102; or Soc. 101, 102	12	3-4-5-6
Physical Education		
Phys. Ed. 101, 102, 103, 104	0	1-2-3-4
Phys. Ed. 105, 106	2	1-2
	65	

¹Philosophy majors or students interested in earlier scheduling of philosophy may take Phil. 101 and 102 in the third and fourth semester by later scheduling of the social science requirement. Other Philosophy or Religious Studies courses may be substituted for Phil. 102 in any major with the approval of the student's advisor and the Philosophy Department chairman. No substitutions are permitted for Phil. 101.

²In all curricula requiring foreign language the level of the course will depend upon the achievement of the student. Except for foreign language majors, the language requirement is through the 204 course, or an equivalent course prescribed by the advisor.

³Courses in Speech, Argumentation and Debate, and Speech for the Stage (2 credits each) are not required for the Bachelor of Arts degree, but may be taken as an elective.

⁴The mathematics requirement will vary with individual programs. Students planning to major in Accounting, Biology, Business Administration, Chemistry, Economics, Engineering, Elementary Education, Mathematics, and Physics should check individual program requirements listed in the Bulletin. For those whose program does not require Math. 105-106 or 111-112, Math. 100 will be counted in this requirement only when followed by Math. 105 or 111.

⁵Env. Sci. 211, 232, 251 and 282 are also open to non-majors with permission of instructor.

Course Requirements in the Majors

BIOLOGY

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 can be used by those students in secondary education who are preparing to teach and must include the professional semester in the seventh or eighth semester.

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.

Students intending to major in biology 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 (Calculus) in the first term of the freshman year. Experience has shown that the student who does not have such a background will usually require additional pre-college mathematics courses. He may take, preferably in the summer preceding entrance, Math. 100 (algebra and trigonometry) offered at Wilkes, or with the approval of the mathematics department, take an equivalent course at another college or university. Credits in such remedial courses will not exempt the student from any required elective in his program.

FIRST SEMESTER		SECOND SEMESTER	
	B.A. & B.S.		B.A. & B.S.
Bio. 201M	2½	Bio. 203M	2½
Bio. 202M	2½	Bio. 204M	2½
Chem. 201	4	Chem. 202	4
Eng. 101	3	Eng. 102	3
Math. 105	4	Math. 106	4
P.E. 101	0	P.E. 102	0
P.E. 105	1	P.E. 106	1
	17		17

THIRD SEMESTER		
	B.A.	B.S.
Bio. 205M	2½	2½
Bio. 206M	2½	2½
Chem. 237	4	4
Eng. 151	3	3
Hist. 101	—	3
For. Lang. 101	3	3
P.E. 103	0	0
Ec., P.S., Psy., Soc. 101	3	—
	18	18

FIFTH SEMESTER		
	B.A.	B.S.
Bio. Electives ¹	3	6
For. Lang. 203	3	3
Phys. 105	4	4
Ec., P.S., Psy., Soc. 101	3	—
Electives	3-5	—
Chem. 221	—	4
	16-18	17

SEVENTH SEMESTER		
	B.A.	B.S.
Bio. 397	½	½
Phil. 101	3	3
Hist. 101	3	—
Electives	9-12	3-6
Bio. Elective ¹ or Research	—	0-3
Ec., P.S., Psy., Soc. 101	—	6
	15½-18½	15½-18½

FOURTH SEMESTER		
	B.A.	B.S.
Bio. 207M	2½	2½
Bio. 208M	2½	2½
Chem. 238	—	4
F.A.	3	—
Eng. 152	3	3
For. Lang. 102	3	3
Hist. 102	—	3
P.E. 104	0	—
Ec., P.S., Psy., Soc. 102	3	—
	17	18

SIXTH SEMESTER		
	B.A.	B.S.
Bio. Electives ²	3	6
For. Lang. 204	3	3
Phys. 106	4	4
Ec., P.S., Psy., Soc. 102	3	—
Electives	3-5	—
F.A.	—	3
	16-18	16

EIGHTH SEMESTER		
	B.A.	B.S.
Bio. 397	½	½
Phil. 102	3	3
Hist. 102	3	—
Electives	9-12	3-6
Bio. Elective ² or Research	—	3
Ec., P.S., Psy., Soc. 102	—	6
	15½-18½	15½-18½

Total minimum credits required for B.A. degree in Biology — 132.
Total minimum credits required for B.S. degree in Biology — 134.

CHEMISTRY

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 in chemistry 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, tech-

¹ Biology 301, 303, 305, 307.

² Biology 302, 304, 306, 308.

nical librarianship, technical translator, etc. The student will choose electives after consultation with his advisor.

Students intending to major in Chemistry 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. 111 (Calculus) in the first term of the freshman year. Experience has shown that the student who does not have such a background will usually require additional pre-college mathematics courses. He may take, preferably in the summer preceding entrance, Math. 100 (algebra and trigonometry) offered at Wilkes, or with the approval of the mathematics department, take an equivalent course at another college or university. Credits in such remedial courses will not exempt the student from any required elective in his program.

Wilkes is approved by the American Chemical Society for the professional training of chemists. Students who wish to be certified for membership in the American Chemical Society in the minimum period of two years following graduation must elect Chemistry 411 in the senior year of the B.S. course of study.

FIRST SEMESTER			SECOND SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Chem. 201	4	4	Chem. 202	4	4
Eng. 101	3	3	Eng. 102	3	3
Hist. 101	3	3	Hist. 102	3	3
Math. 111	4	4	Math. 112	4	4
P.E. 101	0	0	P.E. 102	0	0
P.E. 105	1	1	P.S. 106	1	1
	15	15		15	15

THIRD SEMESTER			FOURTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Chem. 237	4	4	Chem. 212	—	4
For. Lang. 101	—	3	Chem. 238	4	4
Math. 211	4	4	For. Lang. 102	—	3
Phys. 201	4	4	Math. 212	—	4
P.E. 103	0	0	Phys. 202	4	4
Electives	6	3	P.E. 104	0	0
	18	18	Electives	9	0
				17	19

FIFTH SEMESTER

	B.A.	B.S.
Chem. 221	4	4
Chem. 341	—	4
Eng. 151	—	3
For. Lang. 203	—	3
Phys. 203	3	3
Electives	9	—
	<u>16</u>	<u>17</u>

SIXTH SEMESTER

	B.A.	B.S.
Chem. 336	—	4
Chem. 342	—	4
Chem. 262	2	2
Eng. 152	—	3
For. Lang. 204	—	3
Electives	15	—
	<u>17</u>	<u>16</u>

SEVENTH SEMESTER

	B.A.	B.S.
Chem. 397	1	1
Chem. 261	1	1
Electives ¹	14-17	15-17
	<u>16-19</u>	<u>17-19</u>

EIGHTH SEMESTER

	B.A.	B.S.
Chem. 397	1	1
Chem. 376	—	4
Electives ¹	15-18	12
	<u>16-19</u>	<u>17</u>

Total minimum credits required for B.A. degree in Chemistry—130.

Total minimum credits required for B.S. degree in Chemistry—135.

COMMERCE AND FINANCE

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

MAJOR IN ACCOUNTING OR BUSINESS ADMINISTRATION

FIRST SEMESTER

Acct. 101	3
Eng. 101	3
Hist. 101	3
Ec. 111	3
Math. 100* or Math. 101 or Math. 105	3-4
P.E. 101	0
P.E. 105	1
	<u>16-17</u>

SECOND SEMESTER

Acct. 102	3
Eng. 102	3
Hist. 102	3
F.A. 101 or Mus. 101 or Th. Arts 101	3
B.A. 115* or Math. 102 or Math. 106	3-4
P.E. 102	0
P.E. 106	1
	<u>16-17</u>

¹ Electives must include two philosophy courses, Mus. 101 or F.A. 101 or Th. Arts 101, at least one advanced chemistry course in Semester 7 and/or Semester 8, and one of the following: P.S. 101-102, Psy. 101-102, or Soc. 101-102.

* Bus. Ad. Majors: Substitute Science elective for Math. 100. Substitute Eng. 131 for B.A. 115 in second semester. Total credits 16 and 18.

THIRD SEMESTER

Acct. 111	3
B.A. 231	3
Ec. 101	3
Eng. 151	3
Bio. 101* or Phys. 101 or Env. Sci. 101	3
Eng. 131*	2
P.E. 103	0
	<u>17</u>

FOURTH SEMESTER

Acct. 112*	3
B.A. 232	3
Ec. 102	3
Eng. 152	3
Bio. 102* or Phys. 102 or Env. Sci. 282	3
P.E. 104	0
	<u>15</u>

MAJOR IN ACCOUNTING

FIFTH SEMESTER

Acct. 201	3
Ec. 201	3
Ec. 231	3
Soc. 101 or P.S. 101	3
Phil. 101	3
Acct. 241	3
	<u>18</u>

SIXTH SEMESTER

Acct. 202	3
Acct. 242	3
B.A. 234	3
Ec. 232	3
Soc. 102 or P.S. 102	3
Elective ¹	3
	<u>18</u>

SEVENTH SEMESTER

Acct. 221	3
Acct. 231	3
B.A. 209	3
B.A. 225	3
B.A. 251	3
Elective ¹	3
	<u>18</u>

EIGHTH SEMESTER

Acct. 232	3
Acct. 252	3
Ec. 202 or Ec. 236	3
Ec. 228	3
Elective ¹	3
	<u>15</u>

MAJOR IN BUSINESS ADMINISTRATION

FIFTH SEMESTER

B.A. 251	3
Ec. 201	3
Ec. 231	3
Phil. 101	3
Elective ²	6
	<u>18</u>

SIXTH SEMESTER

B.A. 252	3
Ec. 202 or Ec. 228 or C and F elective	3
Ec. 232	3
Phil. 102	3
B.A. 222	3
Elective ³	3
	<u>18</u>

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

² Soc. 101, Pol. Sci. 101, or Psy. 101 may be taken.

³ Soc. 102, Pol. Sci. 102, or Psy. 102 may be taken in continuing sequence.

* Bus. Ad. Majors: Substitute Math. 100, B.A. 115, Math. 101-102, Math. 105-106 for Science elective. Substitute P.S. 101-102 for Eng. 131 and Acct. 112. Total credits 15-16 for both semesters.

SEVENTH SEMESTER

B.A. 209	3
B.A. and Ec. electives	12
Elective ¹	3
	<hr/> 18

EIGHTH SEMESTER

B.A. and Ec. electives	12
Elective ²	3
	<hr/> 15

Total minimum credits required for B.S. degree in Accounting—135.

Total minimum credits required for B.S. in Business Administration—135.

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

B.A. 220 — Real Estate
B.A. 225 — Corporation Finance
B.A. 226 — Investments
Ec. 202 — Theory of Money
Ec. 225 — International Trade
Ec. 236 — Public Finance
Ec. 241 — Economic Analysis

Ec. 252 — Introduction to Mathematical Economics
Math. 105 — Introductory Calculus I & Math. 106 — Introductory Calculus II
Math. 261 — Introduction to Computer Science
Math. 264 — Cobol Programming

ECONOMICS

Ec. 212 — Government & Business
Ec. 217 — Economics of Transportation
Ec. 222 — American Labor Movement
Ec. 223 — Collective Bargaining
Ec. 224 — Economic Development
Ec. 225 — International Trade
Ec. 227 — Economic Geography of North America, Europe and the Soviet Union
Ec. 228 — Economic Geography of Asia, Africa and Latin America
Ec. 229 — Comparative Economic Systems

Ec. 230 — Business Cycles
Ec. 236 — Public Finance
Ec. 241 — Economic Analysis
Ec. 245 — Consumer Economics
Ec. 252 — Introduction to Mathematical Economics
Ec. 395-396 — Research
Math. 105 — Introductory Calculus I & Math. 106 — Introductory Calculus II
Math. 261 — Introduction to Computer Science
Math. 264 — Cobol Programming

¹ Soc. 101, Pol. Sci. 101, or Psy. 101 may be taken.

² Soc. 102, Pol. Sci. 102, or Psy. 102 may be taken in continuing sequence.

MANAGEMENT AND INDUSTRIAL RELATIONS

Ec. 222 — American Labor Movement
Ec. 223 — Collective Bargaining
B.A. 240 — Property Insurance or B.A. 241 — Life Insurance
Psy. 242 — Psychological Tests or Psy. 243 — Industrial Psychology
Math. 105 — Introductory Calculus I & Math. 106 — Introductory Calculus II

Math. 261 — Introduction to Computer Science
Math. 264 — Cobol Programming
Soc. 265 — Sociology of Industry
P.S. 208 — Labor Legislation

MARKETING

B.A. 114 — Salesmanship
B.A. 216 — Advertising
B.A. 240 — Property Insurance
Ec. 217 — Economics of Transportation
Ec. 224 — Economic Development
Ec. 225 — International Trade
Ec. 245 — Consumer Economics
Math. 105 — Introductory Calculus I & Math. 106 — Introductory Calculus II

Math. 261 — Introduction to Computer Science
Math. 264 — Cobol Programming
Ret. 101 — Principles of Retailing
Ret. 214 — Retail Buying
Soc. 265 — Sociology of Industry
Psy. 243 — Industrial Psychology

MAJOR IN BUSINESS EDUCATION

The degree of Bachelor of Science in business education is designed to provide a background in general education while it prepares the student for teaching business subjects in secondary schools or for a career in business.

A student planning to enter as a freshman may find it advantageous, at first, to consider a two-year program leading to a certificate in general office or secretarial proficiency. This two-year program provides a foundation for general secretarial preparation, or prepares for later specialization in the four-year major in business education.

FIRST SEMESTER

Bus. Ed. 105 ¹ or Acct. 101	2-3
Bus. Ed. 107	2
Eng. 131	2
Bio. 101 or Phys. 101 or Env. Sci. 101	3
Eng. 101	3
Hist. 101	3
P.E. 101	0
P.E. 105	1
	<hr/> 16-17

SECOND SEMESTER

Bus. Ed. 106 ¹ or Acct. 102	2-3
Bus. Ed. 108	2
Eng. 102	3
B.A. 115	3
Bio. 102 or Phys. 102 or Env. Sci. 282	3
Hist. 102	3
P.E. 102	0
P.E. 106	1
	<hr/> 17-18

¹ It is required that any Business Education major, regardless of sequence, shall have at least two semesters in Accounting.

THIRD SEMESTER

Bus. Ed. 207 or Acct. 111	3
Bus. Ed. 201 ²	1
Acct. 101 or Ret. 101	3
B.A. 231	3
Psy. 101	3
Ec. 101 ³	3-4
P.E. 103	0
	<hr/> 15-17

FIFTH SEMESTER

Acct. 111 or Ret. 101 ¹	3
Soc. 101 or P.S. 101	3
Eng. 151	3
Ed. 201	3
B.A. 251	3
	<hr/> 15

SEVENTH SEMESTER

Bus. Ed. 243 ²	3
Bus. Ed. 205	4
Phil. 101	3
Mus. 101 or F.A. 101 or Th. Arts. 101	3
B.A. 209	3
	<hr/> 16

FOURTH SEMESTER

Bus. Ed. 208 or Acct. 112	3
Bus. Ed. 202 ²	1
Acct. 102 or Ret. Elective	3
Psy. 102	3
P.E. 104	0
Ec. 102 ³	3
B.A. 232	3
	<hr/> 15-16

SIXTH SEMESTER

Acct. 112 or Ret. Elective ¹	3
Soc. 102 or P.S. 102	3
Eng. 152	3
Ed. 202	3
B.A. 252	3
	<hr/> 15

EIGHTH SEMESTER

Ed. 330	12
Elective	3
	<hr/> 15

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

ECONOMICS

Students who major in Economics are required to complete twenty-four hours of work in economics beyond Ec. 101, 102 in addition to the general requirements for the B.A. degree. Selection and scheduling of these courses will be done in consultation with the student's advisor. The twenty-four hours in economics which the major must carry include Ec. 201, 202, 231, 232, and 241. Students who elect a program in Economics should take Math. 105, 106 and, if necessary, Math. 100.

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

¹ It is required that any Business Education major, regardless of sequence, shall have at least two semesters in Accounting.

² Students following accounting sequence need not take third and fourth semesters of typewriting.

³ Two-year program students take Bus. Ed. 205 in semester 3 and Ec. 101 in semester 4.

EDUCATION

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:

- may elect to major in Biology, Chemistry, Economics, English, Foreign Languages, History, Mathematics, Physics, Political Science, Psychology or Sociology. Students who major in Economics, History, Political Science, Psychology or Sociology must complete the Social Studies Certification Program. A description of the program may be obtained in the Education Department office.
- must elect Psy. 101-102.
- must elect Ed. 201, 202, and 330. (Note that Psy. 102 is prerequisite to Ed. 202.)

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.

B.A. DEGREE IN ELEMENTARY EDUCATION

FIRST SEMESTER

Eng. 101	3
For. Lang. 101	3
Hist. 101	3
Psy. 101	3
Math. 103	3
P.E. 105	1
P.E. 101	0
	<hr/> 16

SECOND SEMESTER

Eng. 102	3
For. Lang. 102	3
Hist. 102	3
Psy. 102	3
Math. 104	3
P.E. 106	1
P.E. 102	0
	<hr/> 16

THIRD SEMESTER

Eng. 151	3
For. Lang. 203	3
Math. 232	3
Ed. 201	3
Science	3-4
P.E. 103	0
	<hr/> 15-16

FOURTH SEMESTER

Phil. 101	3
Ed. 291	2
Math. 243	3
Psy. 221	3
Option	6-7
	<hr/> 17-18

FIFTH SEMESTER	
Phil. 101	3
Ed. 291	2
Psy. 221	3
Option	9-10
	<hr/> 17-18

SEVENTH SEMESTER	
Ed. 300 or 310	15
or Ed. 391	2
and Option	15
	<hr/> 15-17

SIXTH SEMESTER	
Phil. 102	3
Ed. 292	2
Option	12-13
	<hr/> 17-18

EIGHTH SEMESTER	
Ed. 300 or 310	15
or Ed. 391	2
and Option	15
	<hr/> 15-17

STUDENTS MUST SELECT AND FOLLOW ONE OPTION

OPTION I (36*) — 18 Sciences/Mathematics (min. 12 of 18 one Dept.); 6-12 Humanities**; 6-12 Social Science.

OPTION II (36*) — 6 Sciences/Mathematics; 18 Humanities** (min. 12 of 18 one Dept.); 12 Social Science.

OPTION III (36*) — 6 Sciences/Mathematics; 6 Humanities**; 24 Social Science (min. 12 of 24 one Dept.).

Total minimum credits required for a B.A. degree in Elementary Education—128.

ENGLISH

Students who major in English are required to take English 101 and 102 in the freshman year; 151, 153, 154 and 201 in the sophomore year; and 21 credit hours including 204, 213 and 221, as well as the core program for the B.A. degree. In addition to these requirements students seeking certification as public school teachers must include either English 381 or 382 among their required courses and elect one of the following speech courses: English 131 or 132, or Theater Arts 131. Selection and scheduling of these courses will be done in consultation with the student's advisor. The cumulative average in the major will be calculated from the grades received in all English courses except speech and those prescribed for the freshman year. The English Department strongly recommends that its majors choose either German or French as their foreign language.

Students who major in English may elect to concentrate in Theater Arts. They must take Theater Arts 131 and 241 in their

* Total hours in option.

** Must include F.A. 101 — 3 credits.

freshman year, and twenty-four additional credits in Theater Arts, including 210, 330, 343, 352 and 380. They must also take English 101 and 102 in their freshman year; English 151, 153 and 154 in their sophomore year; and twenty-one additional credits in English, including 381, or 382, 204, 221 and two of the following: 321, 341 or 374. Students who seek certification as secondary teachers, however, are required to take only fifteen hours in English beyond those specified for the sophomore year, including 381 or 382, 204, 221 and two of the following: 321, 341 or 374.

Total minimum credits required for a B.A. degree in English—121.

ENGINEERING

Wilkes College offers four-year programs in electrical engineering and in materials engineering leading to the Bachelor of Science degree. In addition the first two years of programs in civil engineering, chemical engineering, and mechanical engineering are offered, and upon completion of the second year, students in any of these programs may transfer to the junior year at other engineering schools.

The first year of all curricula in engineering is the same. The second year will vary depending upon the student's choice of major engineering interest.

Students intending to major in engineering 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. III (calculus) in the first term of the freshman year. Experience has shown that the student who does not have such a background will usually require additional pre-college mathematics courses. He may take, preferably in the summer preceding entrance, Math. 100 (algebra and trigonometry) offered at Wilkes, or with the approval of the mathematics department, take an equivalent course at another college or university. Credits in such remedial courses will not exempt the student from any required elective in this program.



FRESHMAN YEAR

COMMON TO ALL ENGINEERING PROGRAMS

FIRST SEMESTER		SECOND SEMESTER	
Math. 111	4	Math. 112	4
Chem. 201	4	Chem. 202	4
Eng. 101	3	Phys. 201	4
Engi. 111	3	Eng. 102	3
Liberal Arts Elective	3	Engi. 112	3
P.E. 105	1	P.E. 106	1
P.E. 101	0	P.E. 102	0
	<u>18</u>		<u>19</u>

ELECTRICAL ENGINEERING

Second, third, and fourth year requirements leading to a B.S. degree in electrical engineering.

THIRD SEMESTER		FOURTH SEMESTER	
Math. 211	4	Math. 212	4
Phys. 202	4	Phys. 203	3
E.E. 211	3	E.E. 212	4
Engi. 211	3	Engi. 212	3
Math. 263	3	Ma.E. 202	3
	<u>17</u>	Eng. 131	2
			<u>19</u>

FIFTH SEMESTER		SIXTH SEMESTER	
E.E. 331	4	E.E. 332	4
E.E. 251	4	E.E. 252	4
Math., Science or		Math., Science or	
Engi. Elective	3-4	Engi. Elective	3-4
Liberal Arts Elective ¹	3	Liberal Arts Elective ¹	3
E.E. 271	3	E.E. 272	3
	<u>17-18</u>		<u>17-18</u>

SEVENTH SEMESTER		EIGHTH SEMESTER	
E.E. 335	3	E.E. 320	4
E.E. 381	4	E.E. 382	4
Engi. 397	1	Engi. 397	1
Engi. or Sci. Elective	3-4	Engi. or Sci. Elective	3-4
Liberal Arts Elective ¹	6	Liberal Arts Elective ¹	6
	<u>17-18</u>		<u>18-19</u>

Total minimum credits required for B.S. degree in Electrical Engineering—142.

¹ Eng. 151, 152 (Western World Literature) is a required elective.

MATERIALS ENGINEERING

Second, third, fourth year requirements leading to a B.S. degree in materials engineering.¹

THIRD SEMESTER		FOURTH SEMESTER	
Math. 211	4	Math. 212	4
Phys. 202	4	Phys. 203	3
E.E. 211	3	Engi. 212	3
Engi. 211	3	Ma.E. 202	3
Ec. 101	3	Eng. 131	2
	<u>17</u>	Liberal Arts Elective	3
			<u>18</u>

FIFTH SEMESTER		SIXTH SEMESTER	
E.E. 331	4	Ma.E. 212	4
E.E. 251	4	Ma.E. 242	3
Ma.E. 211	3	Chem. 342	4
Chem. 341	4	Liberal Arts Elective	3
Math., Engi. or Sci. Elective	3	Math., Engi. or	
	<u>18</u>	Sci. Elective	3-4
			<u>17-18</u>

SEVENTH SEMESTER		EIGHTH SEMESTER	
Ma.E. 321	3	Ma.E. 322	4
Ma.E. 331	3	Ma.E. 382	3
Chem. 221	4	Liberal Arts Elective ²	6
Liberal Arts Elective ²	3-4	Engi. or Sci. Elective	6
Engi. or Sci. Elective	3		<u>19</u>
	<u>16-17</u>		

Total minimum credits required for B.S. degree in Materials Engineering—142.

CIVIL ENGINEERING

Second year requirements for the two-year civil engineering program.¹

THIRD SEMESTER		FOURTH SEMESTER	
Math. 211	4	Math. 212	4
Phys. 202	4	Phys. 203	3
Engi. 211	3	Engi. 212	3
C.E. 103	3	C.E. 104	4
Liberal Arts Elective	3	Ma.E. 202	3
	<u>17</u>		<u>17</u>

¹ For Freshman year see page 88.

² Eng. 151, 152 (Western World Literature) is a required elective.

CHEMICAL ENGINEERING

Second year requirements for the two-year chemical engineering program.¹

THIRD SEMESTER		FOURTH SEMESTER	
Math. 211	4	Math. 212	4
Phys. 202	4	Phys. 203	3
Engi. 211	3	Engi. 212	3
Chem. 221	4	Chem. 232	4
Liberal Arts Elective	3	Ma.E. 202	3
	<u>18</u>		<u>17</u>

MECHANICAL ENGINEERING

Second year requirements for the two-year mechanical engineering program.¹

THIRD SEMESTER		FOURTH SEMESTER	
Math. 211	4	Math. 212	4
Phys. 202	4	Phys. 203	3
Engi. 211	3	Engi. 212	3
E.E. 211	3	Liberal Arts Elective	3
Liberal Arts Elective	3	Ma.E. 202	3
	<u>17</u>		<u>16</u>

ENVIRONMENTAL SCIENCES

The B.S. program in Environmental Sciences is designed to provide a thorough grounding in the fundamentals of this broad interdisciplinary body of knowledge. Understanding of the relation between man and his environment is achieved through study and analysis of naturally occurring processes, their effects on human activity and the effect of human activity on natural processes.

Students entering the program will have the option of selecting an area of concentration related to the career they envision. This includes emphasis on the scientific and/or sociological aspects of the environment. Upon completion of the requirements for the degree, the graduate can be well prepared to enter graduate or professional schools, secondary education, business, industry or government.

Since the career options available to the graduate are numerous and diverse, technical electives in many disciplines are an integral part of the curriculum and are expected to serve a critical role in the student's preparation.

¹ For Freshman year see page 88.

E.S. 101 is the starting point for the Environmental Sciences Program and must be taken by all majors. It does not count, however, toward the 24-credit hours of E.S. required.

Experience has shown that students who have not had four years of mathematics study in secondary school will usually require some pre-college courses. In the summer session preceding entrance the student may take Math. 100, Pre-Calculus Mathematics (algebra and trigonometry), offered at Wilkes, or with the approval of the Mathematics Department take an equivalent course at another college or university. Credit in this remedial course does not exempt the student from any required elective in his program.

FIRST SEMESTER		SECOND SEMESTER	
E.S. 101	3	E.S. 211	3
Eng. 101	3	Eng. 102	3
Math. 105 or Math. 111	4	Math. 106 or Math. 112	4
Bio. 201-206	5	Bio. 207-208	5
P.E. 101	0	P.E. 102	0
P.E. 105	1	P.E. 106	1
	<u>16</u>		<u>16</u>
THIRD SEMESTER		FOURTH SEMESTER	
E.S. 232	3	E.S. 251	3
Eng. 151	3	Eng. 152	3
For. Lang. 101	3	For. Lang. 102	3
Chem. 201	4	Chem. 202	4
Ec., Psy., P.S., Soc. 101	3	Ec., Psy., P.S., Soc. 102	3
P.E. 103	0	P.E. 104	0
	<u>16</u>		<u>16</u>
FIFTH SEMESTER		SIXTH SEMESTER	
E.S. 282	3	E.S. 330	3
For. Lang. 203 ¹	3	For. Lang. 204 ¹	3
Hist. 101	3	Hist. 102	3
Ec., Psy., P.S., Soc. 101	3	Ec., Psy., P.S., Soc. 102	3
E.S. Elective ²	3	E.S. Elective ²	3
	<u>15</u>		<u>15</u>

¹ Math. 261 and Math. 263 may be substituted for intermediate For. Lang.

² (a) For students electing the science option will include: E.S. 395-6 (Ind. Research), E.S. 401-2 (Topics in Env. Sci. I-II), Phys. 201-2-3 (General Physics I-II-III), Phys. 230 (Optics and Lights), Phys. 231-2 (Electronic Networks, Measurements and Instrumentation), Chem. 212 (Systematic Inorganic Chem.), Chem. 221 (Inorganic Quantitative Analysis), Chem. 230 (Organic Chem.), Bio. 305 (Invertebrate Biology), Bio. 301 (Botany), Math. 211-12 (Intermediate Analysis I-II), Ma.E. 202 (Materials Science), Ma.E. 211 (Crystallography), Ma.E. 212 (X-Ray Diffraction).

(b) For students electing the social science option will include: Ec. 227-8 (Economic Geography), Soc. 215 (Soc. of Urban Life), Soc. 230 (Social Problems), P.S. 251 (Planning & Urban Development), P.S. 252 (Urban Design), P.S. 253 (Land Use Planning Law).

SEVENTH SEMESTER

E.S. 381	3
E.S. 397	3
E.S. Elective ¹	6
Other Elective ²	3
	<hr/> 15

EIGHTH SEMESTER

Independent Research	3
E.S. Elective ¹	6
Other Elective ²	6
	<hr/> 15

Total minimum credits required for B.S. degree in Environmental Sciences—124.

FINE ARTS

Students who major in Fine Arts are required to complete the following program of studies in addition to the general requirements for the B.A. degree. Students who desire certification for teaching Art in the public elementary and secondary schools elect the professional semester in Fine Arts Education during the seventh or eighth semesters.

FIRST SEMESTER

Eng. 101	3
Hist. 101	3
For. Lang. ³	3
F.A. 201	3
P.E. 101	0
P.E. 105	1
Math., Sci. Elective	3
	<hr/> 16

SECOND SEMESTER

Eng. 102	3
Hist. 102	3
For. Lang. 102 ³	3
F.A. 202	3
P.E. 102	0
P.E. 106	1
Math., Sci. Elective	3
	<hr/> 16

THIRD SEMESTER

Eng. 151	3
For. Lang. 203	3
F.A. 203	3
F.A. 223	3
P.E. 103	0
Math., Sci. Elective ⁴	3
	<hr/> 15

FOURTH SEMESTER

Eng. 152	3
For. Lang. 204	3
F.A. 204	3
F.A. 224	3
P.E. 104	0
Math., Sci. Elective ⁴	3
	<hr/> 15

¹(a) For students electing the science option will include: E.S. 395-6 (Ind. Research), E.S. 401-2 (Topics in Env. Sci. I-II), Phys. 201-2-3 (General Physics I-II-III), Phys. 230 (Optics and Lights), Phys. 231-2 (Electronic Networks, Measurements and Instrumentation), Chem. 212 (Systematic Inorganic Chem.), Chem. 221 (Inorganic Quantitative Analysis), Chem. 230 (Organic Chem.), Bio. 305 (Invertebrate Biology), Bio. 301 (Botany), Math. 211-12 (Intermediate Analysis I-II), Ma.E. 202 (Materials Science), Ma.E. 211 (Crystallography), Ma.E. 212 (X-Ray Diffraction).

(b) For students electing the social science option will include: Ec. 227-8 (Economic Geography), Soc. 215 (Soc. of Urban Life), Soc. 230 (Social Problems), P.S. 251 (Planning & Urban Development), P.S. 252 (Urban Design), P.S. 252 (Land Use Planning Law).

²Students wishing to prepare for secondary school teaching must elect Ed. 201, 202 and 330 (Note that Psy. 101 and 102 are prerequisites).

³French or German is recommended for students who plan to continue with graduate programs in Art.

⁴Students working for a degree in Fine Arts Education should elect Psy. 101-102 for semesters three and four and take Science requirements in semesters five and six.

FIFTH SEMESTER

Phil. 101	3
F.A. 211 ¹	3
F.A. 213 ¹	3
Soc. Sci. Elective	6
Elective	3
	<hr/> 18

SIXTH SEMESTER

F.A. 206 ¹	3
Soc. Sci. Elective	6
F.A. 226	3
Phil. 230	3
Elective (optional)	3
	<hr/> 15-18

SEVENTH SEMESTER

F.A. 231	2
F.A. 311 ²	2
F.A. 212 ¹	3
Electives	8-9
	<hr/> 15-16

EIGHTH SEMESTER

F.A. 311 ²	2
F.A. 332	2
Electives	11-12
	<hr/> 15-16

Total minimum credits required for a B.A. degree in Fine Arts—123.

FOREIGN LANGUAGES (Modern)

A major in any of the modern foreign languages consists of twenty-four additional credit hours in advanced language courses beyond the 102 course.

Total minimum credits required for a B.A. degree in Foreign Languages—121.

HISTORY

Students who major in history are required to take History 101 and 102 in the freshman year, History 207 and 208 in the sophomore year, and 18 additional credit hours in advanced history courses. Advanced courses taken must include a minimum of six hours each in American and non-American topics. Individuals planning graduate study in history are urged to take History 371.

Total minimum credits required for a B.A. degree in History—121.

MATHEMATICS

The Department of Mathematics offers courses of study leading to the B.A., B.S., M.S. in Mathematics, and the M.S. in Mathematics Education degrees. Descriptions of the graduate programs are contained in a separate graduate bulletin.

The baccalaureate programs are designed to provide a firm background for graduate studies in pure and applied mathematics, for careers in industry, the computer field, governmental service, and secondary or elementary school teaching.

¹F.A. 211 (Modeling and 3-D Design), F.A. 206 (Printmaking I), F.A. 213 (Metalwork and Jewelry), and F.A. 212 (Ceramics) are offered Fall and Spring semesters.

²Senior Exhibit will be scheduled in either the seventh or eighth semester.

In recent years, the mathematical sciences have played an ever-expanding role not only in the physical sciences, but also in the social and natural sciences as well. The study of mathematics is often not an end in itself. The mathematics degree requirements at Wilkes are sufficiently flexible to allow a student to have at least 30 credits of electives in any area of his choice. This is often enough to enable him to take all courses required of another major. By combining the study of mathematics with properly chosen courses in other fields, a student in either the B.A. or the B.S. program will be able to obtain more than adequate preparation for graduate or professional study leading to careers in actuarial science, economics, business and management, law, medicine physical and engineering sciences, and many interdisciplinary fields. Many professional schools particularly welcome applicants with a strong undergraduate mathematics background.

Students intending to major in Mathematics 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. 111 (Calculus) in the first term of his freshman year. Experience has shown that the student who does not have such a background will usually require additional pre-college mathematics courses. He may take, preferably in the summer preceding entrance, Math. 100 (algebra and trigonometry), offered at Wilkes, or with the approval of the mathematics department, take an equivalent course at another college or university. Credits in such remedial courses will not exempt the student from any required elective in his program.

It is highly recommended that prospective mathematics majors elect French, German, or Russian in secondary school. As a rule, three years of one of these languages is more desirable than two years or less of each of two different languages. Spanish is not acceptable toward fulfillment of the language requirement in the B.S. degree program.

The B.A. degree is intended for those who wish to elect more liberal arts and social science courses while the B.S. degree allows for greater concentration of physical and natural science electives. Students may satisfy the certification requirements for secondary or elementary school teaching in either program.

The core requirements for the major in both the B.S. and the B.A. degrees are Math. 211, 212, 222, 311, 312, 331, and 334. In addition, B.A. majors must have at least two other mathematics courses numbered above 260. B.S. majors must have four addi-

tional mathematics courses numbered above 260 and also must elect two additional courses specified below.¹

FIRST SEMESTER

	B.A.	B.S.
Eng. 101	3	3
For. Lang. 101	3	3
F.A. 101, Mus. 101 or Th. Arts 101	3	3
Soc. Sci. Elective ²	3	3
Math. 111	4	4
P.E. 101	0	0
P.E. 105	1	1
	17	17

SECOND SEMESTER

	B.A.	B.S.
Eng. 102	3	3
For. Lang. 102	3	3
Sci. Elective	3-4	—
Soc. Sci. Elective ²	3	3
Math. 112	4	4
P.E. 102	0	0
P.E. 106	1	1
Phys. 201	—	4
	17-18	18

THIRD SEMESTER

	B.A.	B.S.
Eng. 151	3	3
For. Lang. 203	3	3
Elective ³	3	3
Science Elective	3-4	3-4
Math. 211	4	4
P.E. 103	0	0
	16-17	16-17

FOURTH SEMESTER

	B.A.	B.S.
Eng. 152	3	3
For. Lang. 204	3	3
Math. 222	3	3
Sci. Elective	3-4	3-4
Math. 212	4	4
P.E. 104	0	0
	16-17	16-17

FIFTH SEMESTER

	B.A.	B.S.
Hist. 101	3	3
Soc. Sci. Elective ²	3	—
Electives	9-12	12-15
	15-18	15-18

SIXTH SEMESTER

	B.A.	B.S.
Hist. 102	3	3
Soc. Sci. Elective ²	3	—
Electives	9-12	12-15
	15-18	15-18

SEVENTH SEMESTER

Electives	15-18
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EIGHTH SEMESTER

Electives	15-18
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Total minimum credits required for the B.A. degree in Mathematics—126.

Total minimum credits required for the B.S. degree in Mathematics—127.

¹ Any Biology course numbered above 200. Any Chemistry course numbered above 200. Any Physics course numbered above 200. Any course in Electrical or Materials Engineering. Any Mathematics course numbered above 260. Mechanical Engineering 211, 212. Philosophy 320, 360.

² Must elect one of these sequences: Ec., Psy.; Soc., P.S. 101-102. Students intending to prepare themselves for secondary or elementary school teaching must elect Psy. 101-102.

³ Prospective elementary or secondary school teachers must elect Ed. 201 (Introduction). Others should elect Phil. 101 (Introduction).

MEDICAL TECHNOLOGY

The American Society of Clinical Pathologists and the American Society of Medical Technologists recommend certain requirements for a program of training leading to a B.S. degree in medical technology. The curriculum offered at Wilkes College follows these recommendations and is presented below. The final year in this program is taken in hospitals approved for such training by the American Society of Clinical Pathologists.

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

FIRST SEMESTER		SECOND SEMESTER	
Bio. 201M	2½	Bio. 203M	2½
Bio. 202M	2½	Bio. 204M	2½
Chem. 201	4	Chem. 202	4
Math. 105 ¹	4	Math. 106 ¹	4
Eng. 101	3	Eng. 102	3
Phys. Ed. 101	0	Phys. Ed. 102	0
Phys. Ed. 105	1	Phys. Ed. 106	1
	17		17
THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205M	2½	Bio. 207M	2½
Bio. 206M	2½	Bio. 208M	2½
Chem. 221	4	Chem. 230	4
Eng. 151	3	Eng. 152	3
Soc. Sci. Elective	3	Soc. Sci. Elective	3
Lang. 101	3	Lang. 102	3
Phys. Ed. 103	0	Phys. Ed. 104	0
	18		18
FIFTH SEMESTER		SIXTH SEMESTER	
Bio. 303	3	Bio. 304	3
Bio. 307	3	Elective	3
Phys. 105	4	Phys. 106	4
Lang. 203	3	Lang. 204	3
Hist. 101	3	Hist. 102	3
	16		16
SEVENTH SEMESTER ²		EIGHTH SEMESTER ²	

¹Students with mathematical deficiencies may register for a lower mathematics course for credit.

²The Professional Year is taken at an affiliated school of medical technology. See the section of the Bulletin regarding tuition charges.

MUSIC AND MUSIC EDUCATION¹

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

FIRST SEMESTER			SECOND SEMESTER		
	B.A.	B.S.		B.A.	B.S.
For. Lang. 101	3	—	For. Lang. 102	3	—
Eng. 101	3	3	Eng. 102	3	3
Math., Sci. Elective	3	3	Math., Sci. Elective	3	3
Mus. 105	5	5	Mus. 106	5	5
Mus. Ed. 101 or 103	—	2	Mus. Ed. 102 or 104	—	2
Hist. 101	—	3	Hist. 102	—	3
Applied Mus. ²	1	1	Applied Mus. ²	1	1
Band, Orchestra, Chorus	½	½	Band, Orchestra, Chorus	½	½
P.E. 101	0	0	P.E. 102	0	0
P.E. 105	1	1	P.E. 106	1	1
	16½	18½		16½	18½
THIRD SEMESTER			FOURTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Eng. 151	—	3	Eng. 152	—	3
Mus. Ed. 101 or 103	—	2	Mus. Ed. 102 or 104	—	2
Mus. 107	5	5	Mus. 108	5	5
Mus. 109	—	3	Mus. 110	—	3
Applied Mus. ²	1	1	Applied Mus. ²	1	1
Psy. 101	3	3	Psy. 102	3	3
Band, Orchestra, Chorus	½	½	Band, Orchestra, Chorus	½	½
P.E. 103	0	0	P.E. 104	0	0
For. Lang. 203	3	—	For. Lang. 204	3	—
Hist. 101	3	—	Hist. 102	3	—
	15½	17½		15½	17½
FIFTH SEMESTER			SIXTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Math. Sci. Elective 3	3	—	Math. Sci. Elective 3	3	—
Ed. 201	—	3	Ed. 202	—	3
Soc. Sci. Elective	3	3	Soc. Sci. Elective	3	3
Mus. Ed. 105	—	2	Mus. Ed. 106	—	2
Mus. Ed. 209	—	2	Mus. Ed. 210	—	2
Mus. Ed. 121	—	2	Mus. Ed. 123	—	2
Mus. Ed. 201	—	2	Mus. Ed. 202	—	2
Applied Mus. ²	2	1	Applied Mus. ²	2	1
Band, Orchestra, Chorus	½	½	Band, Orchestra, Chorus	½	½
Mus. 111	—	2	Mus. 112	—	2
Eng. 151	3	—	Eng. 152	3	—
Phil. 101	3	—	Phil. 230	3	—
Mus. 109	3	—	Mus. 110	3	—
	17½	17½		17½	17½

¹There is a music fee of \$10 per semester for all music and music education majors.

²Private instruction. The fee for this instruction is in addition to the regular tuition charge.

SEVENTH SEMESTER			EIGHTH SEMESTER		
	B.A.	B.S.		B.A.	B.S.
Applied Mus. ¹	2	1	Applied Mus. ¹	2	1
Mus. 215	2	2	Mus. 216	2	2
Mus. 217	2	—	Mus. 218	3	—
Band, Orchestra, Chorus	1/2	1/2	Band, Orchestra, Chorus	1/2	1/2
Electives	9	—	Electives	9	—
Mus. Ed. 127	—	2	Mus. 128	—	2
Mus. Ed. 122 or 125	—	2	Mus. Ed. 122 or 125	—	2
Mus. Ed. 340 or Elective	—	8-6	Mus. Ed. 340 or Elective	—	8-6
Mus. 113 or Elective	—	2-3	Mus. 114 or Elective	—	2-3
	15 1/2	15 1/2-18 1/2		16 1/2	15 1/2-18 1/2

Total minimum credits required for a B.A. degree in Music—131.

Total minimum credits required for a B.S. degree in Music Education—138.

BACHELOR OF SCIENCE IN NURSING

Professional nursing offers a variety of careers for men and women. The nursing program at Wilkes College leads to a Bachelor of Science Degree with a major in Nursing, and reflects a curriculum design that is responsive to the changing needs of society for health care. Emphasis is placed on the client and his family in the prevention of disease and the delivery of health services in both the hospital and community settings. Opportunity is provided for students to focus on nursing practice in complex situations, and experiences will be planned with students in other health programs in the delivery of health care.

The purposes of the program are:

1. to prepare the professional nurse practitioner for the emerging role in today's society through instruction, experience and guidance.
2. to provide a foundation for graduate study in nursing.
3. to assist the currently practicing nurse to maintain and expand her professional knowledge and skill.
4. to provide for continual personal and professional development through continuing education programs.

The proposed curriculum design covers a four-academic-year period totaling 126 credits. The courses in science, humanities, and social science total 56 credits; nursing 46 credits, and electives, 24 credits. These courses are to be taken in the sequence as published

¹ Private instruction. The fee for this instruction is in addition to the regular tuition charge.

in the following curriculum outline; exceptions may be made only with the permission of the chairman of the Nursing Department. Nursing will be introduced in the freshman year and experiences from the simple to the complex will progress throughout the program. The student will have the option to select an area of concentration in his particular area of practice in the senior year. Opportunities for individualized learning experiences are provided and guidance will be offered to help the student develop:

1. the ability to practice professional nursing as an initial practitioner in the episodic and distributive patient care settings.
2. the ability for self-direction and critical judgment.
3. a desire for continued personal and professional development as a contributing member of society.

Local hospitals and many community resources will be utilized for clinical practice.

FIRST SEMESTER		SECOND SEMESTER	
Eng. 101	3	Eng. 102	3
Psy. 101	3	Bio. 113	4
Chem. 105	4	Chem. 230	4
Soc. 101	3	Nsg. 102	4
Nsg. 101	2	P.E. 102	0
P.E. 101	0		
	15		15
THIRD SEMESTER		FOURTH SEMESTER	
Bio. 115	4	Bio. 116	4
Nsg. 200	3	Psy. 221	3
Nsg. 201	7	Nsg. 202	7
Soc. 200	3	P.E. 104	0
P.E. 103	0	Elective	3
	17		17
FIFTH SEMESTER		SIXTH SEMESTER	
Hist. 101 or 102 or Eng. 151	3	Hist. 101 or 102 or Eng. 151 or 152	3
Phil. 101 or 102	3	Nsg. 204	7
Nsg. 203	7	Elective	6
Elective	3		
	16		16
SEVENTH SEMESTER		EIGHTH SEMESTER	
Hist. 101 or 102 or Eng. 151 or 152	3	Hist. 101 or 102 or Eng. 152	3
Nsg. 295	4	Nsg. 296	6
Nsg. 297	2	Elective	6
Elective	6		
	15		15

PHILOSOPHY — RELIGIOUS STUDIES

A major in the combined fields of philosophy and religious studies consists of twenty-four hours in philosophy and religious studies courses beyond Philosophy 101 and 102. At least eighteen of the twenty-four hours must be taken in philosophy. Philosophy-Religious Studies majors must schedule courses in philosophy and religious studies no later than their sophomore year.

Total minimum credits required for a B.A. degree in Philosophy—121.

PHYSICS

This 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 advisor.

Experience has shown that students who have not had four years of mathematics in secondary school will usually require some pre-college courses. In the summer session preceding entrance the student may take Math. 100, Pre-Calculus Mathematics (algebra and trigonometry), offered at Wilkes, or with the approval of the mathematics department take an equivalent course at another college or university. Credit in this remedial course does not exempt the student from any required elective in his program.

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 230 (4)	Physics 332 (4)
Physics 231 (3)	Physics 361 (4)
Physics 240 (3)	Physics 380 (4)
Physics 312 (3)	Physics 391-392 (1-2)

A student electing the minimum of 24 credits in physics must elect an additional four credits in chemistry.

The student must choose 12 credits from the following course combinations: Economics 101 and 102 or Psychology 101 and 102; Political Science 101 and 102 or Sociology 101 and 102.

Students who are prospective secondary school teachers should consult the information on education course requirements listed in the section on Education Degree Requirements.

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 the current frontiers of knowledge and research. Upon completion of the requirements for the degree, the student will be well prepared to proceed to graduate study leading to an advanced degree or to undertake an industrial position.

FIRST SEMESTER

	B.A.	B.S.
Math. 111	4	4
Eng. 101	3	3
Hist. 101	3	3
Phys. 201	4	4
P.E. 105	1	1
P.E. 101	0	0
	15	15

SECOND SEMESTER

	B.A.	B.S.
Math. 112	4	4
Eng. 102	3	3
Hist. 102	3	3
Phys. 202	4	4
P.E. 106	1	1
P.E. 102	0	0
Eng. 131	—	2
	15	17

THIRD SEMESTER

	B.A.	B.S.
Math. 211	4	4
Phys. 203	3	3
For. Lang. 101 ¹	3	3
P.E. 103	0	0
Chem. 201	4	4
F.A. 101 or Mus. 101 or Th. Arts 101	3	—
Phys. 231	—	3
	17	17

FOURTH SEMESTER

	B.A.	B.S.
Math. 212	4	4
For. Lang. 102 ¹	3	3
Chem. 202	4	4
P.E. 104	0	0
Elective	6-7	—
Phys. 230	—	4
Phys. 240	—	3
	17-18	18

FIFTH SEMESTER

	B.A.	B.S.
Phys. 331	4	4
For. Lang. 203 ¹	3	3
Phys. 311	3	3
Eng. 151	3	3
Elective	3	—
Math. 361	—	3
	16	16

SIXTH SEMESTER

	B.A.	B.S.
For. Lang. 204 ¹	3	3
Eng. 152	3	3
Elective	9-10	—
Math. 362	—	3
Phys. 332	—	4
Phys. 312	—	3
	15-16	16

SEVENTH SEMESTER

	B.A.	B.S.
Phil. 101	3	—
Elective ²	13	8-10
Phys. 361	—	4
Adv. Math. Elective	—	3
	16	15-17

EIGHTH SEMESTER

	B.A.	B.S.
Phil. 102	3	—
Elective	13	8-10
Phys. 380	—	4
Adv. Math. Elective	—	3
	16	15-17

Total minimum credits required for B.A. degree in Physics—127.
Total minimum credits required for B.S. degree in Physics—129.

¹ German or Russian is required for B.S. majors. Math. 261 and 263 may be substituted for the language requirement with the approval of the students advisor.

² Students contemplating graduate study in Physics should elect Phys. 351 (Quantum Mechanics).

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POLITICAL SCIENCE

A major in political science consists of twenty-four hours. Political Science 101 and 102 are not accepted toward a major.

Total minimum credits required for a B.A. degree in Political Science—121.

PSYCHOLOGY

Psychology 101 and 102 is the starting point for the psychology program and must be taken by all psychology majors. These two courses do not count toward the 24-credit hours of psychology required of majors. In addition to the general requirements for the B.A. degree, the department requires that two-semester courses in mathematics, general biology, physics (or environmental science) be taken. English 131 or 132 or Theater Arts 131 is also required. It is recommended that psychology majors defer beginning their mathematics and science courses until the sophomore year and that they take Psychology 101 and 102 in the freshman year.

To allow the greatest possible flexibility in the psychology program, there is only one additional psychology course required of all psychology majors once the Psychology 101 and 102 sequence has been taken, that being Psychology 215, Research Design and Analysis. The student is then free to tailor his program of study to fit his own needs and interests. It is strongly recommended, however, that the student take Psychology 211 and 212, Experimental Psychology, especially if he has any intention of pursuing graduate training. Students are reminded that professional psychological work presumes advanced graduate study. Psychology 206, History of Psychology, would be useful to the student so that he might appreciate the breadth and nature of psychological thought and effort.

It would be highly desirable for the student to take at least one course from each of the interest areas listed below to achieve a reasonably balanced exposure. Because some courses have prerequisites and all courses are not offered each semester, it is advised that the individual program be started early and be well planned. Research Design and Analysis would then be taken in the sophomore year along with History of Psychology and/or Contemporary Psychological Theories. Experimental Psychology and interest area courses would then be reserved for the junior year, saving Seminars and Independent Research for the final semesters.

Required Courses: Psy. 101-102 General Psychology
Psy. 215 Research Design and Analysis
Strongly Advised: Psy. 211-212 Experimental Psychology
Psy. 206 History of Psychology

Interest Areas: I: Psy. 203 Contemporary Psychological Theories
Psy. 213 Physiological Psychology
Psy. 214 Sensation and Perception
II: Psy. 242 Psychological Tests
Psy. 243 Industrial Psychology
Ed. 202 Educational Psychology*
Soc. 255 Social Psychology*
III: Psy. 221 Child Psychology
Psy. 232 Human Behavior
Psy. 245 Clinical Psychology
Psy. 331 Abnormal Psychology

Total minimum credits required for a B.A. degree in Psychology—121.

SOCIOLOGY — ANTHROPOLOGY

A major in sociology consists of twenty-four hours. Although Sociology 101, 102 are prerequisites to all the courses in sociology, they are not accepted toward a major in sociology. Political Science 204 and Philosophy 240 will be accepted toward the major in sociology. Students who intend to major in sociology are requested to plan their work in the department in consultation with the chairman. A major in sociology shall include the following courses: Sociology 255, 280, and 393. With the approval of the department chairman, however, other courses may in some instances be substituted.

Total minimum credits required for a B.A. degree in Sociology—121.

SOCIAL SCIENCE — URBAN AFFAIRS

The Social Science degree with a major in urban affairs is designed to provide an interdisciplinary training for those students who wish to enter careers in governmental or non-governmental agencies concerned with the general phenomenon of urbanization at the national, state, or local level. Students who complete aca-

* While not given within the Department of Psychology, these courses may still be counted toward the 24-credit hours required of the psychology major.

demic work in this program can continue graduate study either in the traditional academic disciplines or in interdepartmental programs.

The Social Science major in urban affairs consists of 39 semester hours in political science, economics, and sociology, with a minimum of 12 semester hours in each. Economics 236, Political Science 251, and Sociology 215 are required. Political Science 101 and 102, Economics 101 and 102, and Sociology 101 and 102 are not accepted toward the major.

Students who intend to pursue this program should consult with the director of the Institute of Regional Affairs.

Total minimum credits required for a B.A. degree in Social Science—121.

Special Degree Programs

FIVE-YEAR B.S.-M.S. DEGREE IN BIOLOGY

During the first six semesters in the combined five-year program leading to a bachelor and master's degree there would be no change in the current bachelor of science requirements.

At the end of the sixth semester (junior year) individuals may elect the 5-year program. The summer between the junior and senior year would be devoted to the initiation of thesis research with a maximum 3 thesis credits given, or the student may take undergraduate courses required for the B.S. degree (i.e., graduation requirements). The program is constructed so that if a student changes his mind during the 4th year, he may still graduate with the B.S. degree at the end of 4 years.

SEVENTH SEMESTER

Chem. 352	3
Undergraduate Bio.	4
Graduate Bio.	3
Phil. 101	3
Econ., Psy., P.S., Soc. 101	3
Seminar	1/2
	<hr/> 16 1/2

NINTH SEMESTER

Graduate Bio.	9
Seminar	0
	<hr/> 9

EIGHTH SEMESTER

Undergraduate Bio.	4
Graduate Bio.	3
Phil. 102	3
Econ., Psy., P.S., Soc. 102	3
Seminar	1/2
Non-Bio. Elective	3
	<hr/> 16 1/2

TENTH SEMESTER

Graduate Bio.	9
Seminar	0
	<hr/> 9

* Maximum 6 graduate credits for thesis research.

GENERAL STUDIES PROGRAM

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 approved by an advisor, selected by the student, and then by the General 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 General Studies Committee.

Requirements

The basic requirements for the degree in General 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.

B.A. PROGRAM IN INTERNATIONAL STUDIES

This interdisciplinary program, organized around four of the social science departments at Wilkes College, provides a wider and more comprehensive background in world affairs than is available in any one of the individual departments. The program is designed to open up career opportunities in such diverse fields as the foreign service, other governmental or intergovernmental work, international business, international finance and law. The major requirements of this program are listed below.

MAJOR REQUIREMENTS	Hours	CORE REQUIREMENTS	Hours
Econ. 101 & 102	6	English	12
Hist. 101 & 102	6	Foreign Language	12
Pol. Sci. 101 & 102	6	Mathematics/Science	12
Soc. 101 & 102	6	Fine Arts	6
Seminar I & II	6	Phil. 101	3
	<hr/> 30	Rel. Studies 200	3
		Hygiene	2
		Electives	6
			<hr/> 56
MAJOR ELECTIVES	Hours		
Econ. 224, 225, 227, 228, 229	9		
Hist. 236, 242, 327, 328, 356, 378, 382	9		
Pol. Sci. 221, 222, 223, 224, 225, 226	9		
Soc. 252, 270, 275, 372	9		
	<hr/> 45		

WILKES-HAHNEMANN COOPERATIVE MEDICAL EDUCATION PROGRAM IN FAMILY MEDICINE

In an effort to increase the number of family physicians in northeastern Pennsylvania, Wilkes College and Hahnemann Medical College and Hospital initiated an innovative six-year program in family medicine in September of 1972. Successful completion of the program will enable a student to earn both the Baccalaureate degree and the Doctor of Medicine degree concurrently six years after entering the freshman year at Wilkes College.

In this program a class of approximately 100 students will spend the first two years at Wilkes in a preprofessional health sciences curriculum which will meet the minimum natural science, social science, and communicative skills for potential entry into the medical component of the program. The curriculum is designed with a high degree of flexibility so that a highly motivated student may select a major from a variety of health related disciplines such as biology, chemistry, physics, medical technology, psychology and sociology, as well as such non-related areas as English, history, mathematics, political science and philosophy.

After completion of the two year Wilkes sequence, the Joint Selection Committee will supervise the selection of approximately twenty-five (25) qualified candidates for entrance into the medical components at Hahnemann. Students who are not selected or do not elect to enter Hahnemann may still pursue one of a variety of degree options offered by Wilkes including the traditional pre-medical and pre-dental programs, the baccalaureate nursing program, medical technology, natural sciences, social sciences and humanities.

The next two and one-half years at Hahnemann Medical College will be spent studying the basic and clinical sciences and advanced basic clinical sciences. The final year and a half will be spent in Wilkes-Barre at Wilkes College and the Wilkes-Barre area hospitals (Mercy Hospital, Wilkes-Barre; Nesbitt Memorial Hospital, Kingston; Veterans Administration Hospital, Wilkes-Barre; Wilkes-Barre General Hospital; Wyoming Valley Hospital, Wilkes-Barre), where students will enter the family medicine track of study and complete the Baccalaureate degree requirements.

Students interested in this accelerated program can make application by obtaining a Wilkes College admission form from the Dean of Admissions, Wilkes College, Wilkes-Barre, Pa. 18703.

Admission to Wilkes College does not imply automatic admission into the Hahnemann Medical Components.

PRE-PROFESSIONAL PROGRAMS IN HEALTH SCIENCES — FAMILY MEDICINE¹

FIRST YEAR

Wilkes College

FIRST SEMESTER		SECOND SEMESTER	
Bio. 201M	2½	Electives ⁴	5-6
Bio. 202M	2½	Chem. 202	4
Chem. 201	4	Math. 106 or 112	4
Math. 105 or 111	4	Eng. 102	3
Eng. 101 ²	3	P.E. 102	0
P.E. 101	0	P.E. 106 ³ (optional)	1
P.E. 105 ³ (optional)	1	Orientation — Medicine & Health Professions	0
	17		17-18

SUMMER I

Psych 101-102	6
Eng. 151-152	6

SECOND YEAR

THIRD SEMESTER		FOURTH SEMESTER	
Bio. 205M	2½	Electives ⁴	5-7
Bio. 206M	2½	Chem. 238	4
Chem. 237	4	Phys. 106 or 202	4
Phys. 105 or 201	4	Soc. 102	3
Soc. 101	3	P.E. 104	0
P.E. 103	0		
	16		16-18

SUMMER II

Soc. 200	3
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MEDICAL COMPONENT¹

THIRD YEAR

Hahnemann Medical College, Philadelphia, Pa.

Biochemistry	Pathology
Developmental Biology (Gross Anatomy, Histology, Neuroanatomy, Genetics)	Medical Problems
Physiology	Human Behavior
Microbiology	Clinical Science
Pharmacology	Summer Vacation

FOURTH YEAR

Clinical Clerkship Rotations:

Medicine (12 weeks)	Obstetrics/Gynecology (6 weeks)
Surgery (12 weeks)	Psychiatry (6 weeks)
Family Medicine (6 weeks)	Vacation (4 weeks)
Pediatrics (6 weeks)	

FIFTH YEAR

Hahnemann Medical College, Philadelphia, Pa.

Advanced Basic Science and Clinical Electives

Wilkes College and Wilkes-Barre Area Hospitals

Vacation and/or Free Elective Periods
Family Medicine Track Rotations

SIXTH YEAR

Wilkes College and Wilkes-Barre Area Hospitals

Family Medicine Track Rotations
Graduate Level Courses at Wilkes

¹ Subject to change without prior notice. Because of the rapid changes in the area of medical education, the changes in this program occur more often and are more extensive than in other Wilkes College programs.

² Students may obtain advanced placement in English Composition.

³ Optional. Students who are not selected to enter Hahnemann after two years or who elect not to participate in the program will be required to take P.E. 105-106 (Hygiene) before graduation from Wilkes.

⁴ Electives should include a one semester course in Eng. 131 (Speech). Remaining electives should be selected from the Sciences, Social Sciences, and Humanities to meet personal needs and/or degree requirements at Wilkes College.



Courses of Instruction

Description of Courses

Key To Course Numbering

100 Series – Service Courses

200 Series – Advanced Courses Applied
Toward Majors

300 Series – Advanced Undergraduate Courses

400 Series – Introductory Graduate Courses

500 Series – Exclusively Graduate Courses





Conscience at Wilkes

Mama:

Child, when do you think is the time to love somebody the most; when they done good and made things easy for everybody? Well, then, you ain't through learning—because that ain't the time at all. It's when he's at his lowest and can't believe in hisself 'cause the world done whipped him so. When you starts measuring somebody, measure him right, child, measure him right. Make sure you done taken into account what hills and valleys he come through before he got to wherever he is.

LORRAINE HANSBERRY
A Raisin In The Sun (Act III)



Description of Courses Accounting

Professor R. Werner, chairman; Professor R. Capin; Associate Professor P. Werner; Assistant Professors Curtis, Hall, Zavada.

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, two hours a week; laboratory, four hours a week.

ACCT. 102. ELEMENTARY ACCOUNTING II Three credits

A continuation of Accounting 101. Principles of partnership and corporation accounting; introduction to departmental, manufacturing, and branch accounting; financial analyses of statements. Class, two hours a week; laboratory, four hours a week.

Prerequisite: Acct. 101.

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, two hours a week; laboratory, four hours a week.

Prerequisite: Acct. 102.

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, two hours a week; laboratory, four hours a week.

Prerequisite: Acct. 111.

ACCT. 201. COST ACCOUNTING I Three credits

Accounting for material, labor, and overhead expenses; methods of apportionment of manufacturing costs; detailed study of job-cost and process-cost methods. Class, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 112, or approval of instructor.

ACCT. 202. COST ACCOUNTING II Three credits

Establishing the practical use of cost systems through analytical and comparative statements; detailed study of various cost systems; standard costs; budgets; interpretation of data. Class, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 201, or approval of instructor.

ACCT. 221. TAXES I**Three credits**

The preparation of Federal Income Tax Returns for individuals based on current law, regulations and court decisions; problems of inclusion and exclusion from income; gains and losses from sales and exchanges; allowable deductions. Class, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 112, 202, 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, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 221.

ACCT. 231. AUDITING I**Three credits**

An analysis of modern auditing concepts involving staff organization, professional ethics and legal responsibility, internal control, audit programs, and working papers, and original record examination. Class, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 202.

ACCT. 232. AUDITING II**Three credits**

Advanced application of auditing principles to actual practice; problems of classification and interpretation of accounts; study of methods of internal control; preparation of reports to clients. Class, two hours a week; laboratory, two hours a week.

Prerequisite: Acct. 231.

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

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

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

Prerequisite: Acct. 112 and permission of instructor.

ACCT. 252. ACCOUNTING INTERNSHIP**Three credits**

This course provides a minimum of 240 hours of accounting in the office of a Certified Public Accountant or the equivalent.

Aerospace Studies

Professor Wing, chairman; Assistant Professor Carpenter.
(COURSES SUBJECT TO CHANGE)

AF 101. FRESHMAN AIR FORCE AEROSPACE STUDIES**One credit**

A study of the objectives and organization of the U. S. Air Force; a study of U. S. strategic offensive and defensive forces and their mission; function and employment of nuclear weapons, and a study of civil defense.

AF 102. FRESHMAN AIR FORCE AEROSPACE STUDIES**One credit**

A study of aerospace defense, missile defense, U. S. general purpose and aerospace support forces, the mission resources, and operations of tactical air forces with special attention to limited war, review of Army, Navy and Marine general purpose forces.

AF 103. SOPHOMORE AIR FORCE AEROSPACE STUDIES**One credit**

A study of defense policies; theories of general war; the nature and context of limited war; the policies and strategies of the Soviet Union and China; and the role of alliances in U. S. defense policies.

AF 104. SOPHOMORE AIR FORCE AEROSPACE STUDIES**One credit**

A study of defense organization and decision making; the organization and function of the Department of Defense; the role of the military in the United States' national policies; the elements and process of defense decision-making.

**AF 301. AIR FORCE AEROSPACE STUDIES —
AIR FORCE OFFICER DEVELOPMENT****Three credits**

Development of the knowledge and skills required of the junior officer in the Air Force. This will include the nature of war, history of air power, and the mission, doctrine, and employment of the United States Air Force.

**AF 302. AIR FORCE AEROSPACE STUDIES
AIR FORCE OFFICER DEVELOPMENT****Three credits**

Continuation of the development of knowledge and skills required of a junior Air Force Officer. This will include the history and importance of national space effort, orbits and trajectories, space vehicle systems, manned space flight, and operations in space.

**AF 303. AIR FORCE AEROSPACE STUDIES —
THE PROFESSIONAL OFFICER****Three credits**

Introduction to military professionalism. A study of the meaning of professional responsibilities of the professional officer, the foundations of the military profession, the military justice system, theories of leadership, discipline and human relations.

**AF 304. AIR FORCE AEROSPACE STUDIES —
THE PROFESSIONAL OFFICER****Three credits**

A military explanation of leadership and management. Includes principles and functions of management; Air Force personnel policies, channels of communication, problem solving, the command-staff team, the subordinate, performance standards, data processing, and Air Force controls.

Biology

Professor Reif, chairman; Professor Michellini; Associate Professors Acheson, Ogren, Kimball, Tappa, Hayes; Assistant Professors Houseknecht, Richkus, Turoczi; Adjunct Professor Fleetwood.

BIO. 101-102. BIOLOGICAL SCIENCE Three credits each semester

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. 111. GENERAL BOTANY Three credits

General Botany presents a broad consideration of the plant world. It includes the study of the fundamental principles of biology, emphasizing the structure, physiology, genetics, and ecology of plants. Lecture, two hours a week; laboratory, three hours a week. Fee: \$20.

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: \$20.

BIO. 115-116. HUMAN ANATOMY AND PHYSIOLOGY Four credits each semester

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: \$20 each course.

BIO. 201M. PRINCIPLES OF MODERN BIOLOGY Two and one-half credits

Introduction to the basic physical and biochemical properties of life, and the survey of representative plant and animal types. Fee: \$15.

BIO. 202M. CHORDATE ANATOMY Two and one-half credits

A study of the principle organ systems of representative Chordates. Evolution and taxonomy of the phylum Chordata will be emphasized. Fee: \$15.

BIO. 203M. 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 frog, chick, and man. Fee: \$15.

BIO. 204. MICROTÉCHNIQUE Three credits

Microtechnique embraces all methods of studying specimens with the microscope. The course also includes the study of normal tissues and organs. The laboratory work covers the technique of preparing microscopic slides. Lecture, one hour a week; laboratory, six hours a week. Fee: \$20.

Prerequisite: Bio. 116, or permission of instructor.

BIO. 204M. HISTOLOGY Two and one-half credits

Histology is the study of tissues and of the arrangement of tissues to form organs and organ systems. The material included in this course is restricted to vertebrate structures. Fee: \$15.

BIO. 205M. 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: \$15.

BIO. 206M. GENERAL PHYSIOLOGY Two and one-half credits

Physiology is the study of the physical and chemical activities of all living organisms. Fee: \$15.

BIO. 207M. COMPARATIVE PHYSIOLOGY Two and one-half credits

Comparative physiology is the study of organ function in comparative animal forms. Fee: \$15.

BIO. 208M. ECOLOGY Two and one-half credits

Ecology is the study of the interrelationships between organisms, singly and collectively, and their environment. Fee: \$15.

BIO. 224. BIOLOGICAL TECHNIQUES One credit

A laboratory course in the preparation of materials for use in the study of organisms. Included will be such procedures as are needed to prepare photographs, make microscope slides, accomplish field collecting and telemetry, and the production of drawings for publication. Three-hour practicum.

BIO. 302. ENDOCRINOLOGY Three credits

A study of the endocrine system and the mechanism of action of hormones on the life processes and functions. Emphasis will be placed on the mammalian system with reference to comparative forms. Fee: \$20.

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

BIO. 305. INVERTEBRATE BIOLOGY Three credits

A study of the major invertebrate phyla with respect to their taxonomy, evolution, morphology, physiology and ecology. Fee: \$20.

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

BIO. 306. NEUROBIOLOGY Three credits

A study of the functional aspects of excitable cells and nervous systems of living animals. Laboratory includes techniques in the stimulation and recording of excitable cells and organs. Fee: \$20.

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

BIO. 307. ANALYTICAL CYTOLOGY Three credits

Experimental analysis of cell structure, organelles, chemistry and activities by means of microscopic techniques and instrumentation. Fee: \$20.

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

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

A study of plant and animal genetic systems with respect to contemporary literature, techniques and modes of analysis. Fee: \$20.

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

BIO. 311-312. BACTERIOLOGY**Four credits**

Bio. 311 is a general introduction, covering the morphology and growth of bacteria, sterilization, and applied uses of bacteria. It also includes a brief survey of other groups of microorganisms. The laboratory work covers techniques of staining, culturing, and biochemical testing for the identification of bacteria. Lecture, two hours a week; laboratory, six hours a week. Fee: \$20.

Prerequisite: Bio. 104.

Four credits

Bio. 312 covers the relationship of bacteria to disease, immunity, serology, and pathology. Laboratory work continues with special stains, identification of unknowns, isolation of bacteria from natural sources, and techniques used in applied bacteriology. Lecture, two hours a week; laboratory, six hours a week. Fee: \$20.

Prerequisite: Bio. 311.

BIO. 321. GENETICS**Four credits**

Genetics is the study of the inheritance of normal characters and the variation of these characters in plants and animals. Laboratory work includes the study of genetic mechanisms in various botanical, animal, and microbial species. Lecture, three hours a week; laboratory, three hours a week. Fee: \$20.

Prerequisite: through Bio. 202, or permission of instructor.

BIO. 322. ECOLOGY**Four credits**

Ecology is the study of the relationship between organisms, singly and collectively, and their environments, including the biotic and physical factors of the environments. Lecture, three hours a week; laboratory and field trips, three hours a week. Fee: \$20.

Prerequisite: through Bio. 321, or permission of instructor.

BIO. 331. PHYSIOLOGY**Four credits**

Physiology is the study of the physical and chemical activities characteristic of all living organisms. Laboratory work includes experiments involving living forms. Lecture, two hours a week; laboratory, six hours a week. Fee: \$20.

Prerequisite: through Bio. 322, Chem. 230, and Phys. 112, or permission of instructor.

BIO. 332. EVOLUTIONARY MECHANISMS**Three credits**

Evolutionary Mechanisms is a study of how new species of organisms are derived from previously existing species. Emphasis is placed upon the processes of organic evolution and the development of the evolutionary ideas. Lecture, three hours a week.

Prerequisite: Bio. 322, or permission of instructor.

BIO. 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 the departmental chairman is required.

BIO. 397. SEMINAR**One-half credit each semester**

Presentations and discussions of selected topics.

Prerequisite: Approval of the department chairman is required.

Business Administration

Professor R. Werner, chairman; Associate Professors Elliot, Farrar; Assistant Professors Dwivedi, Gera, Engel, Gurdin.

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.

Prerequisite: approval of instructor.

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.

Prerequisite: Eng. 102.

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, trade-marks, and media. Analysis of current advertisements. Advertising as a social force.

B.A. 220. REAL ESTATE**Three credits**

The fundamentals of the real estate business, including consideration of titles, mortgages, leases, advertising, sale, purchase, development, and management of real property.

Prerequisite: Ec. 102.

B.A. 222. MARKETING**Three credits**

The fundamentals of the marketing system, its functions, 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.

Prerequisite: Ec. 102.

B.A. 225. CORPORATION 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.

Prerequisite: Ec. 102.

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.

Prerequisite: B.A. 225.

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.

Prerequisite: B.A. 225.

B.A. 232. BUSINESS LAW — AGENCY, PARTNERSHIPS, CORPORATIONS, AND REAL PROBLEMS**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.

Prerequisite: B.A. 231.

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.

Prerequisite: B.A. 231, 232, Acct. 102.

B.A. 240. PROPERTY INSURANCE**Three credits**

This course is a study of the fundamentals of fire, casualty, and marine insurance.

Prerequisite: B.A. 232, or approval of instructor.

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.

Prerequisite: approval of instructor.

B.A. 244. TIME AND MOTION STUDY**Three credits**

The principles and techniques of time and motion study. Class, three hours a week; laboratory, two hours a week.

B.A. 251. PRINCIPLES OF MANAGEMENT I**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 a process of integrating knowledge developed by many disciplines. Social and ethical dimensions of the management process summarized.

B.A. 252. PRINCIPLES OF MANAGEMENT II**Three credits**

Application of universal concepts of management. Emphasis on problems of production, sales, personnel, office, finance, organization. Viewpoint on relationship to overall operation of enterprise. Develops analytical abilities and decision-making skills. Case study method emphasized.

Prerequisite: B.A. 251.

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.

Prerequisite: Approval of the department chairman is required.

B.A. 397. SEMINAR**One to three credits
(Maximum of three credits per student)**

Presentations and discussions of selected topics.

Prerequisite: Approval of the department chairman is required.

Business Education

Professor R. Werner, chairman; Assistant Professor Gera; Adjunct Professor Raspen.

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

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

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

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

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

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

Mastery of the techniques of touch typewriting. Emphasis is placed on skill building practices with proper techniques through motivating drills and timed writings. Learning to type simple problems on a production basis such as: Memorandums, personal communications, tabulations, business letters, outlines, manuscripts, and composing. Four hours each week. One hour lecture, three hours laboratory. Fee: \$10.

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

Building typewriting competence by strengthening basic and problem skills. Developing higher degree of proficiency through speed and accuracy timed writings, and production typing problems, such as: business letters with special features; special communication forms; technical papers and business reports; tables; business forms; and executive communications. Four hours each week. One hour lecture, three hours laboratory. Fee: \$10.

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

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

Increased emphasis is placed on higher speed and accuracy. Measuring of production skill competencies. A series of simulated on-the-job experiences in which a minimum of direction and a maximum of realism are provided.

Advanced skills applied to typing in General, Accounting, and Executive offices. Three hours laboratory. Fee: \$10.

Prerequisite: Bus. Ed. 108.

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

Continuation of speed and accuracy development and reinforcement. Independent specialized production typing, with high degree of speed and accuracy on simulated on-the-job experience: Technical, Professional (Medical, Legal, Scientific) and Government offices. Three hours laboratory. Fee: \$10.

Prerequisite: Bus. Ed. 201.

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

A study of technical procedures and problems in typical business and professional offices; analysis of personal and professional requirements for office personnel; a general survey and comparison of major office machines classifications; administrative machine procurement problems and procedures; operation and use of office machines and equipment. Eight hours a week. Two hours lecture, six hours laboratory. Fee: \$10.

Prerequisite: Approval of instructor.

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

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

Prerequisite: Bus. Ed. 106.

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

Development of shorthand facility and transcription competency when working with highly specialized material. The specialized areas of dictation and transcription are: Medical, Legal, Technical and Scientific, International Trade, and Congressional. Emphasis is placed on specialized terminology. Five hours each week. Two hours lecture, three hours laboratory.

Prerequisite: Bus. Ed. 207.

BUS. ED. 243. PRINCIPLES AND METHODS OF BUSINESS EDUCATION**Three credits**

Principles of business education; business curricula in secondary schools; psychology of skill-building; objectives, standards, content; tests and measurements, and techniques of instruction in business education courses; observation; student teaching demonstrations. Offered every other year.

Prerequisite: Approval of instructor.

Chemistry

Professor Bohning, chairman; Professors Rozelle, Swain; Associate Professors Salley, Faut, Stine, Labows; Adjunct Professor Stockham.

CHEM. 101-102. CHEMICAL SCIENCE**Three credits each semester**

Chemical Science is a course which will consider a variety of applications of chemistry in everyday life. This course is primarily intended for students who take no other chemistry courses. It does not provide prerequisite background for any advanced chemistry courses. Class, three hours a week.

Prerequisite for Chem. 102, Chem. 101, or permission of instructor.

CHEM. 105. 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 3 hours a week. Breakage deposit required. Fee: \$20.

CHEM. 201. 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. Breakage deposit required. Fee: \$20.

CHEM. 202. THE CHEMICAL REACTION Four credits
A detailed study of chemical equilibria in aqueous solution. Class, three hours a week; laboratory, three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 201.

CHEM. 212. 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. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 202, or permission of instructor.

CHEM. 221. INORGANIC QUANTITATIVE ANALYSIS Four credits
An introduction to the theory and practice of typical analyses: volumetric, gravimetric, and instrumental. Class, two hours a week; laboratory, six hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 202, or permission of instructor.

CHEM. 230. 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. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 105, Chem. 201, or equivalent.

CHEM. 237. ORGANIC CHEMISTRY I Four credits
An introduction to the chemistry of carbon compounds through the reactions of common functional groups in aliphatic, alicyclic, aromatic and heterocyclic systems. Reaction pathways will be considered. Emphasis in laboratory will be placed on the development of fundamental techniques. Class, three hours a week; laboratory, three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 202, or permission of instructor.

CHEM. 238. ORGANIC CHEMISTRY II Four credits
A continuation of Chem. 237. Class, three hours a week; laboratory, three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 237.

CHEM. 261. HISTORY OF CHEMISTRY One credit
A study of chemistry in terms of the personalities responsible for its development. Class, one hour a week.

Prerequisite: Completion of twenty chemistry credits.

CHEM. 262. CHEMICAL LITERATURE Two credits
Discussion of the nature and use of the important sources of chemical information. Laboratory problems emphasizes techniques of information retrieval from journals, abstracts, and other source material. Literature preparation for independent research (Chem. 395-396) is included. Class, one hour a week; library laboratory, three hours a week.

Prerequisite: Completion of twenty chemistry credits, or permission of instructor.

CHEM. 336. CHEMICAL STRUCTURE DETERMINATION Four credits
A study of structure determination techniques used by the chemist with emphasis on the areas of organic, inorganic and biochemistry. Techniques studied include nuclear magnetic resonance, infrared, ultraviolet-visible and electron spin resonance spectroscopy. Electrophoresis, ion exchange chromatography, gel permeation chromatography and vapor pressure osmometry are also covered. Class, two hours a week; laboratory, six hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 212, Chem. 238, or equivalent.

CHEM. 341. ELEMENTARY PHYSICAL CHEMISTRY Four credits
The first, second, and third laws of thermodynamics are emphasized. The topics of electrochemistry, chemical kinetics, the phase rule, and the states of matter are introduced. Class, three hours a week; laboratory, three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 202, Math. 211, Phys. 203, or permission of instructor.

CHEM. 342. INTERMEDIATE PHYSICAL CHEMISTRY Four credits
Electrochemistry, electrokinetic phenomena, kinetic molecular theory, Maxwell Boltzman distribution, chemical kinetics, and the states of matter are studied in detail. Quantum mechanics and radiochemistry are introduced. Class, three hours a week; laboratory, three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 341, or permission of instructor.

CHEM. 376. 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. Breakage deposit required. Fee: \$20.

Prerequisite: Chem. 342.

CHEM. 395-396. INDEPENDENT RESEARCH One to three credits each semester
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: \$20.

Prerequisite: Approval of department chairman is required.

CHEM. 397. SEMINAR**One credit**

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

Prerequisite: Approval of department chairman is required.

CHEM. 411. SYSTEMATIC INORGANIC CHEMISTRY**Three credits**

Oxidation-Reduction, atomic structure, theory and application of the principles of chemical bonding, systematic study of properties related to extra-nuclear structure of atoms, coordination chemistry, acid-base phenomena, non-aqueous solvents, descriptive chemistry. Class, three hours a week.

Prerequisite: Chem. 342, or permission of instructor.

CHEM. 431-432. ADVANCED ORGANIC CHEMISTRY**Three credits each semester**

A detailed study of modern theories of mechanism and structure. Topics include nucleophilic and electrophilic substitution, elimination reactions, molecular rearrangements, carbonyl reactions, stereochemistry, kinetics. Class, three hours.

CHEM. 440. QUANTUM CHEMISTRY**Three credits**

The experimental foundations and the mathematical formulation of the quantum theory, including the quantum mechanics of simple systems, the hydrogen atom, and approximate methods. Group theory is introduced and the use of symmetry properties is applied to molecular orbital theory. Class, three hours.

Prerequisite: Chem. 342.

CHEM. 451. BIOCHEMISTRY I**Three credits**

A study of the physical and chemical properties of biological molecules with emphasis on enzyme kinetics, coenzymes and various metabolic pathways. Class, three hours a week.

Prerequisite: Chem. 238, or equivalent.

CHEM. 452. BIOCHEMISTRY II**Three credits**

A study of metabolism with emphasis on metabolic regulation and regulated enzymes. Certain special topics such as photosynthesis may also be covered. Class, three hours a week.

Prerequisite: Chem. 451, or equivalent.

Economics

Professor R. Werner, chairman; Professor Rosenberg; Associate Professors Elliot, Farrar, Taylor, Williams; Assistant Professors DeYoung, Engel; Adjunct Professor Kelly.

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 Economics 101. It is based upon a broad micro-economic foundation concentrated on such units as the firm, the industry, and the consumer.

Prerequisite: Ec. 101.

EC. 111. ECONOMIC HISTORY**Three credits**

A study of the development of economic institutions with emphasis on the historical roots and evolutionary development of our modern economy. Analysis of causes of development. Major stress is on institutions.

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.

Prerequisite: Ec. 102.

EC. 202. THEORY OF MONEY**Three credits**

Development of monetary theory. Liquidity preference and loanable funds theories of interest. Saving, investment, and income determination. Keynesian and neo-Keynesian analysis. The inflationary process. Exchange rates and international monetary mechanism.

Prerequisite: Ec. 201.

EC. 204. CONSUMER CREDIT**Two credits**

This course includes consumer credit in its various aspects. It includes retail credit, sales finance, credit unions, and credit bureau activities.

Prerequisite: Approval of instructor.

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.

Prerequisite: P.S. 101, Ec. 102.

EC. 217. ECONOMICS OF TRANSPORTATION**Three credits**

Problems and policies of railroads, buses, trucks, inland waterways, and air and ocean transportation; economic aspects of transportation and traffic management; use of rates and tariff; significance of transportation to society.

Prerequisite: Ec. 102.

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.

Prerequisite: Ec. 102.

EC. 223. COLLECTIVE BARGAINING**Three credits**

An introduction to labor problems and an analyses 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.

Prerequisite: Ec. 102.

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.

Prerequisites: Ec. 101 and Ec. 102, or approval of instructor.

EC. 225. INTERNATIONAL TRADE**Three credits**

Theory and practice of international trade with special reference to contemporary problems and policies. The topics covered include tariffs, quotas, foreign exchange, equilibrium in international payments. A study will be made of geographic, economic, social, and political influences on international trade. Review of current policies and developments in the United States.

Prerequisite: Ec. 102.

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.

Prerequisite: Ec. 102.

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 and areas of the world.

Economics 227 is not a prerequisite.

EC. 229. COMPARATIVE ECONOMIC SYSTEMS**Three credits**

The institutions of planned economy of the U.S.S.R. and those of the contemporary experiment in evolutionary socialism in Great Britain are studied. Constant objective comparisons are made with institutions which are characteristic of a capitalistic economy.

Prerequisite: Ec. 102, or approval of instructor.

EC. 230. BUSINESS CYCLES**Three credits**

A historical analysis of major business cycles. Contemporary theories and a critical examination of public policy toward business cycles.

Prerequisite: Approval of instructor.

EC. 231. APPLIED GENERAL STATISTICS**Three credits**

A course in statistical methods and their application. A collection and interpretation of statistical data, frequency distribution and measures of central tendency, fitting the normal curve, analysis of variance. Lecture, three hours; laboratory, two hours. Fee: \$10.

Prerequisite: Approval of instructor.

EC. 232. ECONOMICS STATISTICS**Three credits**

A continuation of Economics 231. This course will include time-series analysis, construction of index numbers, methods of correlation analysis, multiple and partial correlation, and test of significance for samples; Chi-square test. Lecture, three hours; laboratory, two hours. Fee: \$10.

Prerequisite: Ec. 231.

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.

Prerequisite: Ec. 102, P.S. 101.

EC. 241. ECONOMIC ANALYSIS**Three credits**

This course is designed to give coverage to the theory of value and distribution. The determinants of consumer demand and the principles governing costs and outputs of procedures are analyzed with some stress on recent theoretical investigations. The method is abstract and deductive.

Prerequisite: Ec. 102.

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.

Prerequisite: Ec. 102.

EC. 252. INTRODUCTION TO MATHEMATICAL ECONOMICS**Three credits**

The application of mathematical methods to economic analysis. The goal is to develop a fundamental understanding of the role of mathematics in economics. Emphasis is on the use of mathematical tools in macro and micro economics.

Prerequisites: Ec. 101, Ec. 102, Math. 105, Math. 106.

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.

Prerequisite: Approval of department chairman is required.

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

Prerequisite: Approval of department chairman is required.

Education

Professor Hammer, chairman; Professor Darte; Associate Professors Barone, Bellucci, Caldwell, Fahmy; Assistant Professors Siles, Johnson, Rees, Watters; Instructor Bynon, Thompson.

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. 291. COMMUNICATIONS SKILLS IN ELEMENTARY EDUCATION **Two credits**
An introductory course in development of rationale, curriculum and materials for instruction of communications skills in the elementary school.

Prerequisite: Ed. 201, 202.

ED. 292. THE SCIENCES IN THE ELEMENTARY SCHOOL **Two credits**
An introductory course in development of rationale, curriculum and materials for instruction of sciences in the elementary school.

Prerequisite: Ed. 201, 202.

ED. 298. PRINCIPLES OF NURSERY-KINDERGARTEN EDUCATION **Three credits**
A study of the historical development, organization, and rationale of early childhood education, including observation of programs for young children.

Prerequisites: Ed. 201, 202 and Psy. 221.

ED. 300. PROFESSIONAL SEMESTER IN ELEMENTARY EDUCATION **Fifteen credits**
Provides classwork and practical experience to prepare students for elementary school teaching. Fee: \$25.

To qualify for admission into the Professional Semester, students must secure the recommendation of the department chairman in their major and the approval by the Education Department Chairman.

Prerequisites: Ed. 291, 292 and Math. 232, 243.

FOR TRANSFER AND CERTIFICATION PURPOSES, CREDIT WILL BE ASSIGNED AS FOLLOWS:

ED. 301. THE TEACHING OF READING **Two credits**
An introduction to the teaching of reading in the elementary grades.

ED. 302. METHODS AND MATERIALS IN ELEMENTARY SCHOOL ARITHMETIC **Two credits**
A study of curriculum content and teaching procedures in elementary school arithmetic.

ED. 303. METHODS AND MATERIALS IN ELEMENTARY SCHOOL SCIENCE **Two credits**
A study of curriculum content and teaching procedures in elementary school science.

ED. 304. METHODS AND MATERIALS IN ELEMENTARY SCHOOL SOCIAL STUDIES **Two credits**
A study of curriculum content and teaching procedures in elementary school history, geography, and government.

ED. 305. MULTI-SENSORY TECHNIQUES IN ELEMENTARY SCHOOL TEACHING **One credit**
A study of the use of multi-sensory teaching aids in the elementary school classroom.

ED. 306. STUDENT TEACHING IN ELEMENTARY SCHOOL **Six credits**
Students are assigned to work with experienced classroom teachers. They assume classroom responsibility and teach under supervision. Conferences are arranged with cooperating teachers and college supervisors.

ED. 310. PROFESSIONAL SEMESTER IN NURSERY-KINDERGARTEN EDUCATION **Fifteen credits**
Provides classwork and practical experience to prepare students for Nursery-Kindergrarten teaching. Fee: \$25.

To qualify for admission into the Professional Semester, students must secure the recommendation of the department chairman in their major and the approval by the Education Department Chairman.

Prerequisite: Ed. 298, Psych. 221.

FOR TRANSFER AND CERTIFICATION PURPOSES, CREDIT WILL BE
ASSIGNED AS FOLLOWS:

ED. 311. FAMILY AND COMMUNITY-LIFE EDUCATION Two credits
A study of the early childhood teacher's role in family and community life education.

ED. 312. NUTRITION, HYGIENE, GENERAL HEALTH Two credits
A study of the teacher's role in nutrition, hygiene, and health of young children.

ED. 313. CURRICULUM STUDY Two credits
A study of the content and organization of early childhood curriculum.

ED. 314. METHODOLOGY Two credits
A study of methods and materials of early childhood instruction.

ED. 315. USE OF MULTI-SENSORY DEVICES One credit
A study of the use of multi-sensory teaching aids in the early childhood center.

ED. 316. PRACTICUM Six credits
Students are assigned to work with early-childhood teachers. They assume classroom responsibility and work under supervision. Conferences are arranged with cooperative teachers and college supervisors.

ED. 320. PROFESSIONAL SEMESTER IN FINE ARTS EDUCATION Fourteen credits
Provides classwork and practical experience to prepare students for the teaching of art in elementary and secondary schools. Fee: \$25.

To qualify for admission into the Professional Semester, students must secure the recommendation of the department chairman in their major and the approval by the Education Department chairman.

Students may schedule late afternoon or evening classes during the professional semester.

Prerequisite: Ed. 201, 202.

FOR TRANSFER AND CERTIFICATION PURPOSES, CREDIT WILL BE
ASSIGNED AS FOLLOWS:

ED. 321. ART CURRICULUM Three credits
A study of the organization of teaching materials for most effective use in the art curriculum.

ED. 322. THE TEACHING OF ART Three credits
A study of materials, techniques, and experiences in the public school art program; evaluation of past and present philosophies.

ED. 323. GENERAL CLASSROOM METHODS One credit
A study of various instructional procedures used in public school classrooms.

ED. 324. MULTI-SENSORY TECHNIQUES IN THE TEACHING OF ART One credit
A study of the use of multi-sensory aids in the teaching of art in elementary and secondary schools.

ED. 326. STUDENT TEACHING IN ART Six credits
Students are assigned to work with experienced classroom teachers and art specialists. They observe and teach in elementary and secondary school classrooms. Opportunities are provided for them to participate in school-wide activities. Conferences are arranged with co-operating teachers and college supervisors.

ED. 330. PROFESSIONAL SEMESTER IN SECONDARY EDUCATION Twelve credits
Provides classwork and practical experience to prepare students for secondary school teaching. Fee: \$25.

To qualify for admission into the Professional Semester, students must secure the recommendation of the department chairman in their major and the approval by the Education Department chairman.

Students may schedule late afternoon or evening classes during the professional semester.

Prerequisite: Ed. 201, 202.

FOR TRANSFER AND CERTIFICATION PURPOSES, CREDIT WILL BE
ASSIGNED AS FOLLOWS:

ED. 331. PRINCIPLES OF SECONDARY EDUCATION One and one-half credits
A study of the historical development and organization of the American secondary school.

ED. 332. SECONDARY SCHOOL CURRICULUM One and one-half credits
A study of the content and organization of the secondary school curriculum.

ED. 333. SECONDARY SCHOOL TEACHING METHODS One credit
A study of various teaching procedures employed in the secondary school classroom.

ED. 334. MULTI-SENSORY TECHNIQUES IN SECONDARY SCHOOL TEACHING One credit
A study of the use of multi-sensory teaching aids in the secondary school classroom.

ED. 335. THE TEACHING OF READING IN SECONDARY SCHOOL SUBJECTS**One credit**

Instruction in reading methods in secondary school subjects.

ED. 336. STUDENT TEACHING IN THE SECONDARY SCHOOL**Six credits**

Students are assigned to work with experienced classroom teachers. They assume classroom responsibility and teach under supervision. Conferences are arranged with co-operating teachers and college supervisors.

ED. 351. EDUCATIONAL MEASUREMENTS**Two credits**

A study of the characteristics, construction, and use of various educational measuring instruments commonly available in schools.

ED. 352. GUIDANCE**Three credits**

An introduction to general principles and the techniques employed in guidance programs in public schools.

Prerequisite: Ed. 202.

ED. 391. INSTRUCTIONAL STRATEGY AND EVALUATION**Two credits**

An introductory course in development of effective elementary school teacher behavior.

Prerequisite: Ed. 202, Psy. 221.

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**One to three credits. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

Engineering

Associate Professor Toole, chairman; Associate Professors Thomas, Nejib; Assistant Professors Kaby, Graff, Orehtsky.

ENGI. 111. INTRODUCTION TO ENGINEERING**Three credits**

Methods of solving engineering problems. Instruction in the use of the slide rule and mathematical tables. The use of drawing instruments, systems of representation such as orthographic, isometric, and oblique projections. Vector quantities and vector diagrams. Graphical mathematics. Nomographs. Two hours lecture and four hours practicum per week. Fee: \$20.

ENGI. 112. ENGINEERING GRAPHICS**Three credits**

A continuation of spatial relationships as represented by points, lines, planes, other surfaces and solids. Sections and conventions. The intersection of surfaces and solids. Transformation of coordinates. Two hours lecture and four hours practicum per week. Fee: \$20.

ENGI. 211. MECHANICS I. STATICS**Three credits**

Study of force systems in equilibrium: catenary; friction; first and second moments of areas, volumes masses; centroids. Three hours class a week.

Prerequisites: Phys. 201 and Math. 111.

ENGI. 212. MECHANICS II. DYNAMICS**Three credits**

Laws of motion, rectilinear and curvilinear, for a particle and a rigid body. Work-energy; impulse-momentum. Three hours class a week.

Prerequisite: Engi. 211.

Civil Engineering**C.E. 103. PLANE SURVEYING****Three credits**

Lectures, recitations and problems on the theory and practice of plane and topographic surveying. Field exercises, including the adjustment and use of surveying equipment including transit, levels, compass and tape for surveys of area, topography, profile, grading, excavating and the location of details. Interpretation of and mapping from field notes with attendant computations and the balancing of surveys. Emphasis on the application of surveying to engineering work in general. Practicum, seven hours a week. Fee: \$20.

Prerequisite: Engi. 107.

C.E. 104. ROUTE SURVEYING**Four credits**

A study of the engineering and economic problems affecting the location of routes of communication. Lectures, recitations, field work and problems on the theory and use of simple horizontal, compound, reverse, spiral and vertical alignment curves; grades, cross sections, mass diagrams and earth work computations, grade crossing, right-of-way, and drainage problems. Solar observation to determine true bearing and azimuth. Class, two hours a week; practicum, six hours a week. Fee: \$20.

Prerequisite: C.E. 103.

Electrical Engineering**E.E. 211. CIRCUIT THEORY I****Three credits**

Analysis of simple circuit models. Kirchoff's Law; v-i characteristics of network elements. Forced and natural components of response; natural frequencies, the complex frequency plane, resonance. Transfer functions and the roles of their poles and zeroes. The use of digital computer in solutions. Three hours lecture a week.

Prerequisite: Math. 112.

E.E. 212. CIRCUIT THEORY II**Four credits**

Fourier series and its application. The Laplace transformation and evaluation of the inverse. Terminal behavior of linear networks. Impulse response; its calculation and its use in obtaining response to other excitations; the convolution integral. The sinusoidal steady state: plots, charts and loci that exhibit frequency dependence, impedance matching and transformers (Smith Charts). Feedback systems and stability. Introduction to random signal and noise; correlation functions and spectra. Two hours class and one three-hour discussion-laboratory a week.

Prerequisite: Phys. 202 and E.E. 211.

E.E. 251. ELECTRONICS CIRCUITS I**Four credits**

The development of the operating principles and terminal characteristics of electronic devices, particularly semiconductor diodes and transistors. Amplifiers, oscillators and rectifiers at audio and radio frequencies. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: E.E. 211, or by special permission.

E.E. 252. ELECTRONIC CIRCUITS II**Four credits**

Application of electronic devices in detection, modulation, wave-shaping and switching circuits. Design consideration for small and large signals at audio and radio frequencies. The design of complete systems using such sub-systems. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: E.E. 251.

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: 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: E.E. 271, or by special permission.

E.E. 311. LOGIC AND SWITCHING CIRCUITS**Three credits**

Application of Boolean algebra to the design of combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits; clocked and asynchronous operation. Effects of microelectronic technology on logic design optimization. Fault masking by redundancy techniques. Three hours class a week.

Prerequisite: E.E. 252.

E.E. 312. PULSE AND TIMING CIRCUITS**Three credits**

Tube, transistor circuit techniques and design for diversity of waveforms. Functions needed in pulse systems. Instrumentation and computers. Three hours class a week.

Prerequisite: E.E. 252.

E.E. 320. ELECTROMECHANICAL ENERGY CONVERSION**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 class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: E.E. 211 and Phys. 202.

E.E. 331. ELECTROMAGNETIC FIELDS I**Four credits**

Vector analysis. The concept of fields. Electrostatic forces images, potential and Gauss's law. Magnetostatic forces and Ampere's law. Dielectric and Magnetic media. Fields in conductors. Electric and magnetic circuit elements. Plane electromagnetic waves. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: Phys. 202, Math. 212.

E.E. 332. ELECTROMAGNETIC FIELDS II**Four credits**

Differential form of Maxwell's equations. Electrostatics, magnetostatics and boundary condition problems in one- two- and three-space dimensions. Transverse electromagnetic waves; energy and power flow. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: E.E. 331.

E.E. 342. MICROWAVE CIRCUITS AND DEVICES**Three credits**

Matrix algebra techniques, reduction of waveguides and discontinuity problems to equivalent transmission line and network problems, obstacles as matching elements. Multiple waveguide junctions and small aperture coupling. Periodic structures. Electron ballistics and space-charge waves in electron beams. Properties and characteristics of TWT, BOW and cross-field devices. Three hours lecture a week.

Prerequisite: Senior standing.

E.E. 362. CONTROL SYSTEMS**Three credits**

Laplace and transformation theory. Introduction to the analysis and design of linear feedback control systems by means of locus and frequency response methods. Discussion of stability, transient and steady-state errors. Models and response analysis for automatic control purposes. Two hours class and one three-hour demonstration-laboratory a week. Fee: \$20.

Prerequisite: Senior standing.

E.E. 381-382. ADVANCED ENGINEERING LABORATORY I, II**Four credits each semester**

The following areas of study and application are included in this laboratory: The fabrication and testing of semiconductor devices and integrated circuits; thin and thick film circuits; characteristic measurements of VHF and Microwave devices and circuits; antenna characteristics and pattern measurements; coherent optical waves generation and modulation. One hour lecture-discussion and six-hour laboratory a week each semester. Fee: \$20.

Prerequisite: Senior standing.

E.E. 390. TOPICS IN ELECTRICAL ENGINEERING**Three credits**

Selected topics in the field of electrical engineering. These may include one or more of the following: information theory, signals and noise, network synthesis, magnetic and non-linear circuits, direct energy conversion systems, cryogenics, electrodynamics, plasma physics, digital circuits and systems. Three hours class a week.

Prerequisite: Senior standing and special permission.

E.E. 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.

E.E. 397. SEMINAR**One to three credits. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Senior standing, or by special permission.

Materials Engineering**MA.E. 202. MATERIALS SCIENCE****Three credits**

Introduction to the structure, properties and behavior of solid materials — metals, polymers and ceramics. The ionic, covalent and metallic bond, atomic packing, structure and imperfections. The thermodynamics and mechanical behavior of structures. Three hours class a week.

Prerequisite: Chem. 201.

MA.E. 211. CRYSTALLOGRAPHY**Three credits**

Repetition theory and translational and rotational symmetry. Derivation of the crystal classes. Combination of symmetry operations involving reflections and inversions. The symmetrical plane and space lattices. The coordinate systems of crystallography and crystal forms. Practical determination of point-group symmetry. The algebra of operations. Space groups. Equivalent positions in space groups. The determination of space groups. Group theory and its application to point symmetries. Three hours class a week.

MA.E. 212. X-RAY DIFFRACTION**Four credits**

X-rays and their properties. Directions and intensities of diffracted beams. Laue, Debye-Scherrer, Diffractometer, Rotating, Oscillating, Weissenberg and Precession Methods. Outline of crystal structure analysis. Three hours class and one three-hour laboratory a week. Fee: \$20.

MA.E. 242. PHYSICAL METALLURGY**Three credits**

Structure and properties of pure metals, constitution, structure, and properties of alloys, mechanical and thermal treatments of metals and alloys. Three hours class a week.

Prerequisite: Ma.E. 202.

MA.E. 321. PHASE EQUILIBRIA**Three credits**

Thermodynamics approach to phase equilibria, the phase rule, and polymorphism. Theory of alloy phases. Order-disorder phenomena. Binary and ternary phase diagrams and their application to Materials Science. Three hours class a week.

Prerequisite: Chem. 341.

MA.E. 322. CRYSTAL GROWTH AND DEFECTS**Four credits**

A broad look at the important phenomena involved in the growth and perfection of crystalline solids. Vapor, melt, solution and gel growth methods, as well as defect thermodynamics will be studied. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: Ma.E. 321.

MA.E. 331. 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 class a week.

MA.E. 382. MATERIALS ENGINEERING INSTRUMENTATION LABORATORY**Three credits**

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 lecture-laboratories per week. Fee: \$20.

Prerequisite: Chem. 221.

MA.E. 390. SPECIAL TOPICS IN MATERIALS ENGINEERING**One to three credits**

Selected topics in the field of materials engineering. These may include one or more of the following: x-ray diffraction, crystal structure analysis, phase equilibria, crystal growth, metallurgy, ceramics, etc. Three hours lecture-discussion a week.

Prerequisite: Senior standing and special permission.

MA.E. 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.

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

Prerequisite: Senior standing, or by special permission.

English

Associate Professor Kaska, chairman; Professors Rizzo, Fiester; Associate Professors Gutin, Groh, Lord, Terry; Assistant Professors Mistichelli, Heaman, Boyle, Greenwald, Holm, Kish, Molley; Instructors Tyburski, Pasquarelli, Kerr, Kinney, Fields; Adjunct Professor Moran.

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

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

ENG. 102. COMPOSITION **Three credits**
Principles of exposition continued; collateral reading; writing of themes; research paper.
Prerequisite: Eng. 101.

ENG. 131. FUNDAMENTALS OF SPEECH¹ **Two credits**
A basic course in the preparation and delivery of short speeches.

ENG. 132. ARGUMENTATION AND DEBATE¹ **Two credits**
Training in the fundamentals of argumentation and debate. Practice in gathering and organizing evidence and supporting materials.

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

¹ Credit for only one of the three courses, Eng. 131, Eng. 132, and Th. Arts 131, will be accepted toward graduation requirements in any degree program.

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

ENG. 153. SURVEY OF ENGLISH LITERATURE **Three credits**
A study of the works and movements in English literature from the Anglo Saxon period through the eighteenth century.
Prerequisite: Eng. 102.

ENG. 154. 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. 153.

ENG. 201. LITERARY ANALYSIS AND CRITICAL WRITING **Three credits**
Study and practice in the techniques of literary analysis and critical writing.
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. 204. 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. 154.

ENG. 213. CHAUCER **Three credits**
Study of Chaucer's life and major works, including "The Canterbury Tales" and "Troilus and Criseyde".
Prerequisite: Eng. 154.

ENG. 221. SHAKESPEARE **Three credits**
A study of selected plays; written reports on others not studied in class.
Prerequisite: Eng. 154.

ENG. 305. THE TEACHING OF ENGLISH **Three credits**
A study of the problems of teaching English in the secondary schools.

ENG. 310. MEDIEVAL ENGLISH LITERATURE **Three credits**
A study of English literature to 1500, exclusive of Chaucer and the drama.
Prerequisite: Eng. 154.

ENG. 320. TUDOR PROSE AND POETRY **Three credits**
Study of English non-dramatic literature from 1485 to 1603.
Prerequisite: Eng. 154.

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. 154.

ENG. 330. SEVENTEENTH CENTURY PROSE AND POETRY**Three credits**

A study of the non-dramatic literature of the period.

Prerequisite: Eng. 154.

ENG. 335. MILTON**Three credits**

A study of Milton's poetry and major prose.

Prerequisite: Eng. 154.

ENG. 341. RESTORATION & EIGHTEENTH CENTURY DRAMA**Three credits**

Study of the drama from 1600 to 1780.

Prerequisite: Eng. 154.

ENG. 343. THE EIGHTEENTH CENTURY**Three credits**

The chief poets and essayists of the eighteenth century. Includes Swift, Pope, and Johnson.

Prerequisite: Eng. 154.

ENG. 345. EARLY ENGLISH NOVEL**Three credits**

English prose fiction of the sixteenth and seventeenth centuries; rise of the novel to the close of the eighteenth century.

Prerequisite: Eng. 154.

ENG. 354. ROMANTIC PROSE AND POETRY**Three credits**

Study of Wordsworth, Coleridge, Shelley, Keats, and Byron, with related prose writers of the Romantic Period.

Prerequisite: Eng. 154.

ENG. 360. VICTORIAN PROSE AND POETRY**Three credits**

Readings in Tennyson, Browning, Arnold, and other significant writers of the Victorian Age.

Prerequisite: Eng. 154.

ENG. 366. LATER ENGLISH NOVEL**Three credits**

The major novelists of the nineteenth and early twentieth centuries.

Prerequisite: Eng. 154.

ENG. 370. MODERN POETRY**Three credits**

Study of the major English and American poetry of the twentieth century.

Prerequisite: Eng. 154.

ENG. 372. MODERN NOVEL**Three credits**

Study of the major English and American novels of the twentieth century.

Prerequisite: Eng. 154.

ENG. 374. MODERN DRAMA**Three credits**

Study of important dramatists, European and American, from the time of Ibsen.

Prerequisite: Eng. 154.

ENG. 381. AMERICAN LITERATURE I**Three credits**

A study of American literature to the Civil War.

Prerequisite: Eng. 154.

ENG. 382. AMERICAN LITERATURE II**Three credits**

A study of American literature from the Civil War to the present time.

Prerequisite: Eng. 154.

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**One to three credits. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

Journalism**JOUR. 101. BASIC NEWS WRITING****Three credits**

A beginner's course in gathering and writing news. Topics include: definition of news, writing leads and building the story, law of libel, and news sources. Students make comparative study of and report on representative papers of the United States, both dailies and weeklies. There is constant practice in writing, with weekly news assignments. Fee: \$10.

JOUR. 102. ADVANCED NEWS WRITING**Three credits**

A course in advanced news writing designed as a follow-up to those who have had Journalism 101 (Basic News Writing) or its equivalent. Topics include: writing the human interest and feature-type article; specialized reporting and introductory copyreading. There is constant practice in writing, with weekly news assignments. Fee: \$10.

Prerequisite: Jour. 101, or approval of instructor.

Theater Arts

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. Emphasis will be on forms of the play, structure of the playhouse, type of audience, and influence of society on theater of various ages, from pre-Shakespearean to the present. Lecture, discussion, demonstration.

TH. ARTS 131. SPEECH FOR THE STAGE

Two credits

Students will receive instruction and experience in diction, delivery, interpretation. Classroom exercises will be assigned. This course is designed for those students especially interested in the theater and may be substituted for Eng. 131 or 132. Credit toward graduation requirements in any degree program may be granted for one speech course only.

TH. ARTS 210. ACTING

Three credits

Students will study the art of creating a variety of characters for the stage through the use of vocal interpretation and physical movement. Each student will extend his acting range and experience by performing various roles in selected dramatic scenes for classroom evaluation.

TH. ARTS 241. PRODUCTION

Three credits

The student will study the influences of social changes upon methods of staging and will explore the many facets of theatrical production. He will learn to translate the concept of the playwright into physical actuality and will learn to adapt a production to the requirements of a stage. Class and workshop.

TH. ARTS 250. THEATER: PRINCIPLES AND PRACTICE

Three credits

The student will study creative concepts and theories in the evolution of dramatic writing, staging of plays, and methods of acting that affect the modern theater. Special attention will be given to Theater of Alienation, Theater of Cruelty, and Theater of the Absurd.

TH. ARTS 260. DOCUMENTARY DRAMA

Three credits

The student will study scripts dramatizing issues and problems relating to man's opinion of himself, of his society, and his world. He will analyze and evaluate material presented on stage, on film, and on television.

TH. ARTS 330. THEATER HISTORY

Three credits

The student will study the historical development and background of theatrical art from ancient times to the present. Emphasis will be on structure of the playhouse and influence of society on theater of various ages.

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, with special reference to stage designers Robert Edmond Jones, Jo Mielziner, Donald Oenslager, Oliver Smith.

TH. ARTS 352. DIRECTING: FUNDAMENTALS

Three credits

The course deals with play selection; the practical use of the stage; blocking; interpretation of a role; relation of performer and audience. There will be presentation by individual class members of exercises and scenes from plays, to demonstrate stage picturization, dialogue, and movement. Each student must attend rehearsals, assist in the production, and write an analysis of a play or musical performed at the college. Class and workshop.

TH. ARTS 380-381. THEATER WORKSHOP

Three credits each semester

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, he will plan and supervise the lighting, he will design the setting and supervise its 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 each semester

Independent study and research under professional supervision for students interested in educational theater.

TH. ARTS 397. SEMINAR

One to three credits. (Maximum of three credits per student.)

Presentations and discussions of selected topics.

Environmental Sciences

Associate Professor El Ashry, chairman; Assistant Professor Berryman; Instructors Gregory, Mattei.

ENV. SCI. 101. INTRODUCTORY EARTH SCIENCE

Three credits

A survey of contemporary research in the earth sciences, dealing with the topics: the earth as a planet; the atmosphere and oceans; the solid earth; landscape and soil. A correlated laboratory program is designed to familiarize the student with natural phenomena and the underlying physical processes. Two hours lecture and two hours laboratory. Fee: \$20.

ENV. SCI. 102. MAN AND ENVIRONMENT

Three credits

A survey course dealing with natural and man-made environments and their effects on living organisms with special emphasis on the disrupting effects of human activity on the ecosystem. It includes examples and historical background of important environmental problems with reappraisal of past failures,

prediction of the effects of present trends, and the precautionary measures to be taken against future mistakes. Two hours lecture and two hours laboratory. Fee: \$20.

ENV. SCI. 211. GEOLOGY**Three credits**

A course in physical and environmental geology dealing with materials and surface features of the earth with special emphasis on the interactions of man and his physical environment. Regional problems of geologic interest are considered and field trips to nearby geologic features are included. Two hours lecture and two hours laboratory. Fee: \$20.

Prerequisite: Env. Sci. 101.

ENV. SCI. 232. HYDROLOGY**Three credits**

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

Prerequisite: Env. Sci. 101.

ENV. SCI. 251. METEOROLOGY**Three credits**

The physical elements and processes which comprise weather and climate are examined along with their distribution in space and time and the specific relationships between weather, climate, and human activity. The fundamentals of weather observations, weather map analysis, and the statistical approach to climatic records for plans and design specifications are developed in a correlated laboratory program. Two hours lecture and two hours laboratory. Fee: \$20.

Prerequisite: Env. Sci. 101.

ENV. SCI. 282. SPACE SCIENCE**Three credits**

A survey of contemporary knowledge of astronomy from the fringe of the earth's atmosphere to the farthest galaxies. A correlated laboratory program is designed to familiarize the student with celestial coordinates and the physical processes underlying the interpretation of astronomical observations. Two hours lecture and two hours laboratory. Fee: \$20.

Prerequisite: Env. Sci. 101.

ENV. SCI. 330. ENVIRONMENTAL QUALITY MEASUREMENTS**Three credits**

A thorough grounding in the instrumentation and techniques employed in field sampling and in measuring environmental quality parameters in the field and in the laboratory. Two three-hour laboratory periods. Fee: \$20.

Prerequisite: Chem. 202.

ENV. SCI. 381. POPULATION ECOLOGY**Three credits**

Comparative ecology of biological populations; energy flow and chemical cycling; dispersal, colonization and survival of organisms. Environmental constraints on growth of populations, with special reference to mankind. Two hours lecture and one three-hour laboratory. Fee: \$20.

Prerequisite: Bio. 208.

ENV. SCI. 395-396. INDEPENDENT RESEARCH**One to three credits**

Independent study and research in the field of environmental science or on the environmental aspects of a problem in the field of the major. A research paper at a level significantly beyond a term paper is required.

Prerequisite: Approval of department chairman.

ENV. SCI. 397. SEMINAR**One to three credits**

Weekly seminars and discussion on specific problems resulting from the interaction of man and his environment. The extended program includes two lectures establishing necessary background.

Prerequisite: For three credits, three courses in the environmental science program or senior status. For one credit, none.

ENV. SCI. 401-402. TOPICS IN ENVIRONMENTAL SCIENCE I AND II**Three credits each**

A variety of geophysical processes are studied with special attention given the relevant mathematics and physics used in their analysis and description. Topics may include motion in a gravitational field, kinetic theory, hydrostatic stability, geochronology, radiative transfer processes, frictional boundary layer, and condensation and precipitation processes.

Prerequisite: Senior standing and 12 credits in Env. Sci.

Fine Arts

Assistant Professor Casilli, chairman; Professor Colson; Assistant Professors Richards, D'Vorzon, Fuller, Guyler, Simon; Instructor Peyser.

F.A. 101. EXPERIENCING ART I**Three credits**

Two and three dimensional studio work is planned for exploration of the creative process in a variety of media. Part of the general education program, this course is open to all students; no art experience is necessary. Lecture, three hours.

F.A. 102. EXPERIENCING ART II**Three credits**

A continuation of F.A. 101.

Prerequisite: F.A. 101.

F.A. 201. COLOR AND DESIGN**Three credits**

A study of color systems which includes their physical, psychological, and sociological properties. Lecture, two hours; studio, two hours.

Prerequisite: F.A. 102, or equivalent.

F.A. 202. DRAWING AND COMPOSITION**Three credits**

An introductory course which explores the potential of line, form, space, and texture with a variety of media. Studio problems include figure drawing, landscape, still life, and non-objective organization. Lecture, two hours; studio, two hours.

Prerequisite: F.A. 201.

F.A. 203. OIL PAINTING**Three credits**

An introductory course; no art experience is necessary. Lecture, two hours; studio, two hours.

F.A. 204. WATER COLOR PAINTING**Three credits**

A basic course in transparent water color painting. Lecture, two hours; studio, two hours.

Prerequisite: F.A. 202.

F.A. 205. ADVANCED PAINTING**Three credits**

Increased emphasis on development of style and experimentation in contemporary art techniques. Lecture, two hours; studio, two hours.

Prerequisite: F.A. 203.

F.A. 206. PRINT MAKING**Three credits**

An introduction of relief, intaglio, and planographic techniques including block printing, etching, lithography, and silk screen. Lecture, two hours; studio, two hours.

Prerequisite: F.A. 202.

F.A. 207. ADVANCED PRINT MAKING**Three credits**

Individual experimentation using plastics, photographic techniques in silk screen and lithography. Increased emphasis for the development of a personal style. Lecture, two hours; studio, two hours.

Prerequisite: F.A. 206.

F.A. 210. SCULPTURE**Three credits**

The study of traditional and contemporary approach to sculpture.

Prerequisite: F.A. 211.

F.A. 211. MODELING AND THREE DIMENSIONAL CONSTRUCTION**Three credits**

An introductory course in three-dimensional expression; various materials are employed for experimentation with realistic and non-realistic forms. Lecture, two hours; studio, two hours.

F.A. 212. CERAMICS**Three credits**

Students explore the making of pottery by solid, coil, slab, casting, wheel, and primitive techniques; they experiment with a variety of methods for surface decoration including slip, engobe, graffito, and underglaze. Lecture, two hours; studio, two hours.

Prerequisite: Permission of instructor.

F.A. 213. METALWORK AND JEWELRY**Three credits**

A course in basic metalwork and jewelry techniques and design. Lecture, two hours; studio, two hours.

Prerequisite: Permission of instructor.

F.A. 214. PHOTOGRAPHY I**Three credits**

An introduction to the fundamentals of photography; a study of tone, texture, viewpoint, depth of field, and simple subject consideration. The student will gain experience in basic darkroom techniques and also in several aspects of preparing photographs for exhibition, such as: lighting, exposure meter, and camera usage. Two lecture hours and two laboratory periods.

F.A. 223. HISTORY OF ART I**Three credits**

History of art from the prehistoric period through the Gothic era.

F.A. 224. HISTORY OF ART II**Three credits**

History of art from the Renaissance through the nineteenth century.

F.A. 226. HISTORY OF CONTEMPORARY ART**Three credits**

A study of twentieth century art forms.

F.A. 231. CONTEMPORARY DESIGN**Two credits**

A study of man's visual expression as conditioned by materials, technology, form, and function.

F.A. 311. SENIOR EXHIBIT**Two credits**

A study of exhibition techniques climaxed by a showing of the student's work. Required of all Fine Arts majors in either the fall or spring semester of their senior year.

Prerequisite: Permission of instructor.

F.A. 332. STUDIO PROBLEMS**Two credits**

Provides advanced study and research for Fine Arts students. Lecture, two hours.

Prerequisite: Permission of instructor.

F.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.

Prerequisite: Approval of department chairman is required.

F.A. 397. SEMINAR**One to three credits. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

Foreign Languages (Modern)

Associate Professor Seitz, chairman; Associate Professors Disque, A. Belic; Assistant Professors Ribas, Marban, Miller, Serzan; Instructors Arden, Eaton, Lovette, L. Belic, Lekstrom.

French

FR. 101. ELEMENTARY FRENCH

Three credits

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

FR. 102. ELEMENTARY FRENCH

Three credits

Continuation of Fr. 101. Students presenting two or more units from high school in French will not be granted credit for this course.

Prerequisite: Fr. 101, or the equivalent.

FR. 203. INTERMEDIATE FRENCH

Three credits

Review of grammar; practice in oral and written French; selected readings of modern French prose.

Prerequisite: Fr. 102, or the equivalent.

FR. 204. INTERMEDIATE FRENCH

Three credits

Introduction to French civilization; practice in oral and written French.

Prerequisite: Fr. 203, or the equivalent.

FR. 205. TECHNICAL FRENCH

Three credits

Intensive practice in translating. A course designed for students who wish to be able to read material in French in their particular fields of interest.

Prerequisite: Fr. 203, or the equivalent.

FR. 206. FRENCH CONVERSATION

Three credits

Intensive practice in the spoken language, with emphasis on idiomatic usage. Use of records and language laboratory to acquire fluency in speaking French.

Prerequisite: Fr. 204, or the equivalent.

FR. 251. MASTERPIECES OF FRENCH LITERATURE IN TRANSLATION

Three credits

Problems of dramatic and novelistic form. Comparative analysis of plays by Corneille, Anouilh, Racine, Sartre, Moliere, Ionesco. The idea of the novel in France as seen in such writers as Mme. de Lafayette, de Laclos, Balzac, Stendhal, Gide, Proust, Robbe Grillet.

May not be taken concurrently with or after completion of Fr. 301-302.

FR. 252. MASTERPIECES OF FRENCH LITERATURE IN TRANSLATION

Three credits

French thought from Renaissance Humanism to Twentieth Century Existentialism: analysis of such writers as Montaigne, Pascal, Voltaire, Rousseau, Camus.

May not be taken concurrently with or after completion of Fr. 301-302.

FR. 301-302. SURVEY OF FRENCH LITERATURE

Three credits each semester

A survey of the evolution of French literature from the Middle Ages to the present, with stress on general ideas, literary genres, and outstanding writers of each century. Reading of representative selections from different periods of French literature.

Prerequisite: Fr. 204, or the equivalent.

FR. 303. FRENCH LITERATURE OF THE SEVENTEENTH CENTURY

Three credits

Study of classicism and the outstanding writers of the seventeenth century.

Prerequisite: Fr. 301-302, or the equivalent.

FR. 305. FRENCH LITERATURE OF THE EIGHTEENTH CENTURY

Three credits

Study of the literature and thought in the eighteenth century, with special emphasis on Montesquieu, Diderot, Voltaire, and Rousseau.

Prerequisite: Fr. 30-302, or the equivalent.

FR. 306. NINETEENTH CENTURY FRENCH LITERATURE

Three credits

The Romantic Movement: a study of the revolt against the classic tradition leading to the triumph of the Romantic School, with emphasis on Chateaubriand, Constant, Lamartine, Hugo, Vigny, Musset, Balzac and Stendhal.

Prerequisite: Fr. 301-302, or approval of department chairman.

FR. 307. NINETEENTH CENTURY FRENCH LITERATURE

Three credits

Naturalism and Symbolism: a study of the rise of naturalism and symbolism in the second half of the century with emphasis on Baudelaire, Bola, Flaubert, Leconte de Lisle, Verlaine and Rimbaud.

Prerequisite: Fr. 301-302, or approval of department chairman.

FR. 308. CONTEMPORARY FRENCH DRAMA

Three credits

The development of modern drama from the latter part of the nineteenth century to the present.

Prerequisite: Fr. 301-302, or the equivalent.

FR. 350. ADVANCED FRENCH GRAMMAR

Three credits

Intensive, in-depth review of grammar with emphasis on intricacies tending to cause persistent difficulties. Reading, writing and oral exercises significantly above Fr. 204 with goal of superior accuracy and proficiency. For majors and others with sufficient preparation.

Prerequisite: Fr. 204, or the equivalent.

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

Prerequisite: Senior standing, permission of department chairman.

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

Prerequisite: Approval of department chairman is required.

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

Prerequisite: Approval of department chairman is required.

German

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

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

Prerequisite: Ger. 101, or equivalent.

GER. 203. INTERMEDIATE GERMAN **Three credits**
Emphasis on difficult grammatical construction and idioms. Reading of prose; practice in speaking and writing German.

Prerequisite: Ger. 102, or equivalent.

GER. 204. INTERMEDIATE GERMAN **Three credits**
Continuation of Ger. 203. Rapid reading of German works representative of German life and history; practice in writing and speaking German.

Prerequisite: Ger. 203, or equivalent.

GER. 205. SCIENTIFIC GERMAN **Three credits**
Reading of selections from scientific German.

Prerequisite: Ger. 203, or equivalent.

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

Prerequisite: Ger. 204, or equivalent.

GER. 251. MASTERPIECES OF GERMAN LITERATURE IN TRANSLATION: NOVEL, DRAMA **Three credits**
The development of the novel and novelle in German Literature as seen through representative writers such as Grimmelshausen, Goethe, Holderlin, Fontana, Storm, Mann, Hesse and Kafka.

Dramatic form in analysis. Representative plays from Gryphius to Weiss including plays by Lessing, Schiller, Kleist, Buchner, Hofmannstal, Harystmann, Kaiser, Brecht, Hochhuth and Weiss.

GER. 252. MASTERPIECES OF GERMAN LITERATURE IN TRANSLATION: THOUGHT AND CRITICISM **Three credits**
The change in man's view of his world from Humanism to the present, reflected in drama, critical essays, short philosophical writings and satire.

Analysis of social criticism through satire, dramas and essays of writers such as Saaz, Luther, Sachs, Lessing, Schiller, Heine, Buchner and Brecht. Short philosophical essays from Kant to Nietzsche.

GER. 301-302. SURVEY OF GERMAN LITERATURE **Three credits each semester**
A survey of the literature of the important periods from the beginning to 1932.

Prerequisite: Ger. 204, or equivalent.

GER. 303. GOETHE **Three credits**
Reading and interpretation of selected works of Goethe. Lectures and individual reports.

Prerequisite: Ger. 301-302, or equivalent.

GER. 304. SCHILLER **Three credits**
Poet of German idealism.

Prerequisite: Ger. 301-302, or equivalent.

GER. 305. NINETEENTH CENTURY GERMAN DRAMA **Three credits**
The German drama of the nineteenth century from Ludwig Tieck to Gerhart Hauptmann. Lectures and reports on the literary and cultural history of the times.

Prerequisite: Ger. 301-302, or equivalent.

GER. 306. MODERN GERMAN SHORT STORY **Three credits**
The modern German short story from naturalism to the present. Individual reports; lectures on the cultural and literary history of the period.

Prerequisite: Ger. 301-302, or equivalent.

GER. 307. THE AGE OF ENLIGHTENMENT **Three credits**
The development of German Literature in the eighteenth century with emphasis on the works and theories of Lessing.

Prerequisite: Ger. 301-302, or approval of department chairman.

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

GER. 350. ADVANCED GERMAN GRAMMAR **Three credits**
Intensive, in-depth review of grammar with emphasis on intricacies tending to cause persistent difficulties. Reading, writing and oral exercises significantly above Ger. 204 with goal of superior accuracy and proficiency. For majors and others with sufficient preparation.
Prerequisite: Ger. 204, or the equivalent.

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

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

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

Spanish

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

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

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

SP. 204. INTERMEDIATE SPANISH **Three credits**
Introduction to Spanish civilization; practice in oral and written Spanish.
Prerequisite: Sp. 203, or equivalent.

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

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

SP. 208. SPANISH-AMERICAN CULTURE **Three credits**
The culture, economic, and political development of the Spanish-American countries.
Prerequisite: Sp. 203, or equivalent.

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

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

SP. 304. NINETEENTH CENTURY SPANISH DRAMA **Three credits**
Study of representative works of nineteenth century Spanish drama.
Prerequisite: Sp. 301-302, or equivalent.

SP. 305. NINETEENTH CENTURY SPANISH NOVEL **Three credits**
The development of the Spanish novel in the nineteenth century.
Prerequisite: Sp. 301-302, or equivalent.

SP. 306. THE GENERATION OF 1898 **Three credits**
A study of the literary renaissance that took place in Spain during the turn of the century.
Prerequisite: Sp. 301-302, or equivalent.

SP. 307. CERVANTES AND DON QUIXOTE **Three credits**
A study of the life and works of Cervantes with special emphasis on "Don Quixote". Text analysis and interpretation. Later treatments of the Don Quixote theme in European culture. Open to non-majors for whom suitable translators will be suggested.

Prerequisite: Sp. 301-302 for majors, Eng. 151 for non-majors, or permission of instructor.

SP. 308. SURVEY OF SPANISH-AMERICAN LITERATURE **Three credits**
A survey of the evolution of Spanish-American literature from the discovery to the present. Reading of representative selections from outstanding writers of different periods and countries.

Prerequisite: Sp. 204, or equivalent.

SP. 350. ADVANCED SPANISH GRAMMAR **Three credits**
General grammatical review; systematic, in-depth study of points of grammar that generally tend to cause persistent difficulties for the student; intensive reading, writing and oral exercises significantly above intermediate college level language courses.

Prerequisite: Sp. 204, or equivalent.

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

Prerequisite: Senior standing, permission of department chairman.

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

Prerequisite: Approval of department chairman is required.

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

Russian

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

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

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

Prerequisite: Rus. 102, or equivalent.

RUS. 204. INTERMEDIATE RUSSIAN **Three credits**
Continuation of Rus. 203. Stress on conversational and written Russian to provide the student with confidence for self-expression and a basic active vocabulary. Practice in topical readings.

Prerequisite: Rus. 203, or equivalent.

History

Professor Leach, chairman; Professors Kaslas, Cox; Associate Professor Rodchko, Shao; Assistant Professors Berg, Meyers, Berlatsky, Furlow.

HIST. 101-102. HISTORY OF WORLD CIVILIZATION **Three credits each semester**

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. AMERICAN HISTORY TO 1865 **Three credits**
A general survey extending from the period of discovery and exploration to the end of the Civil War.

HIST. 208. AMERICAN HISTORY SINCE 1865 **Three credits**
A general survey covering the period from 1865 to the present.

HIST. 209. ANCIENT HISTORY: NEAR EAST **Three credits**
The birth of civilization in Mesopotamia and Egypt. Babylonian, Persian and Judaic backgrounds of western civilization. Attention will also be paid to certain lesser civilizations, with emphasis on the role of archeology.

HIST. 210. 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. 211. MEDIEVAL AGES **Three credits**
Consideration will be given to political, economic, cultural institutions and activities, and intellectual development in Medieval Europe to the early Renaissance.

HIST. 212. THE RENAISSANCE AND REFORMATION**Three credits**

Within the political and economic framework of the period, study will be made of the culture of the Renaissance, the religious reform and conflicts resulting from the crisis in the sixteenth century.

HIST. 223. AMERICAN CONSTITUTIONAL HISTORY**Three credits**

A study of the origins of the American Constitution and the growth of the American constitutional system with special attention to the role of the Supreme Court.

Prerequisite: Hist. 207, 208. Restricted to juniors and seniors.

HIST. 226. 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. 235-236. HISTORY OF THE FAR EAST**Three credits each semester**

A study of the history of the civilizations developed in India, China, and Japan with emphasis on their inter-relations and distinctive characteristics and on their transformation in response to the penetration of western civilization from the sixteenth century onward. Some attention will be given to similar developments and changes among the countries of Southeast Asia.

Fall semester: to c. 1760. Spring semester: 1760 to the present.

HIST. 241-242. HISTORY OF GREAT BRITAIN & THE BRITISH EMPIRE AND COMMONWEALTH**Three credits each semester**

A study of British history from the Neolithic period to present times. The first semester will cover social, economics, 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. 321-322. AMERICAN SOCIAL AND INTELLECTUAL HISTORY**Three credits each semester**

A study of social and intellectual developments in the United States from the colonial period to the present time. During the first semester emphasis will be placed on the influence of the American environment during the colonial period and of expansion and sectional disputes in the federal period upon society and upon religious, economic, and political thought. During the second semester the influences of industrialization, the rise of nationalism and the emergence of the United States as a World Power will be emphasized.

Prerequisite: Hist. 207 and 208.

HIST. 327-328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES**Three credits each semester**

A study of the evolution of the several policies that give direction to the relations of the United States with other nations.

Prerequisite: Hist. 207 and 208.

HIST. 331. COLONIAL AMERICA**Three credits**

Discovery, exploration and settlement; development of social, political, religious and intellectual institutions; independence and political reorganization.

Prerequisite: Hist. 207.

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.

Prerequisite: Hist. 207.

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.

Prerequisite: Hist. 208.

HIST. 334. TWENTIETH CENTURY AMERICA**Three credits**

The emergence of the United States as an industrial, urban world power and the corresponding development of its political, economic, social, religious, and intellectual institutions.

Prerequisite: Hist. 208.

HIST. 353-354. EARLY MODERN EUROPE, 1648-1815**Three credits each semester**

Topics include the absolutism of Louis XIV, the growth of Brandenburg-Prussia, the French Revolution and French Empire, the economic forces of mercantilism and the early Industrial Revolution. The growth of science and the Enlightenment will receive careful attention.

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. 357. HISTORY OF RUSSIA TO 1815**Three credits**

A brief review of demographic factors will be used as background for a study of the political, social, and intellectual history of Russia from early times to 1815.

HIST. 358. HISTORY OF MODERN RUSSIA**Three credits**

A thorough examination of nineteenth century Imperial Russia will serve as a basis for a detailed study of the development of Russia in the twentieth century. Emphasis will be on the origins and political, social, and cultural evolution of the Soviet State from its inception to the present.

HIST. 371. HISTORIOGRAPHY AND RESEARCH**Three credits**

An introduction to historical research and writing. The writings and ideas of major historians of 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. 381. HISTORY OF LATIN AMERICA**Three credits**

Colonial Latin America to 1820. A survey of Latin American History from ancient times to 1820. Problems discussed include Spanish and Portuguese Colonial Government, the social and economic development of Latin America with consideration of Church and State relations, treatment of the Indian, and the Independence Movement.

HIST. 382. HISTORY OF LATIN AMERICA**Three credits**

Latin America since 1820. A survey of Latin American History since 1820. Problems discussed include the evolution of independent national governments, the development of the modern states of Argentina, Brazil, Chile, and Mexico, and international relations, particularly with the United States.

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 is required.

HIST. 497. SEMINAR**One to three credits. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Approval of instructor is required.

Mathematics

Professor Wong, chairman; Associate Professors T. Richards, Earl, Merrill; Assistant Professors DeCosmo, Salsburg, Sours, Jahr, Wasileski, Tillman; Instructor Como.

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.

MATH. 101-102. FUNDAMENTALS OF MATHEMATICS I AND II**Three credits each semester**

A mathematics appreciation course designed to give students a general background in mathematical concepts. It is intended for those who will not take other courses in mathematics. Not open to students with credits in Math. 103-104.

MATH. 103-104. MATHEMATICS FOR ELEMENTARY SCHOOL TEACHERS I AND II**Three credits each semester**

A study of the theory of arithmetic, structure of the number systems, geometry, and other topics relevant to the teaching of mathematics in elementary schools. Not open to students with credits in Math. 101-102.

MATH. 105-106. INTRODUCTORY CALCULUS I AND II**Four credits each semester**

Intended primarily for students of social and natural sciences. Review of algebra, limits, differentiation, integration, sequences, and series, partial differentiation, differential equation, probability.

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

MATH. 111-112. CALCULUS I AND II**Four credits each semester**

Calculus of functions of a real variable. Topics include: functions, limits and continuity, differentiation, integration and their applications, infinite sequences and series. Not open to students with credits in Math. 105-106.

Prerequisite: Math. 100 or at least three years of secondary school mathematics including geometry, algebra II, and topics in trigonometry.

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 the management, social and natural sciences will be stressed. Major topics include probability, random variables, sampling, point estimation, interval estimation, tests of hypotheses, regression, and correlation.

Prerequisite: Two years of high school algebra.

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.

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. 211.

MATH. 222. SET THEORY AND LOGIC**Three credits**

Designed to provide the logical and set theoretical prerequisites for the upper level courses in analysis, algebra, 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. 211, or consent of department chairman.

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 students with credit in Math. 331.

Prerequisite: Math. 104, or consent of instructor.

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 students with credit in Math. 343.

Prerequisite: Math. 104, or consent of instructor.

MATH. 261. INTRODUCTION TO COMPUTER SCIENCE**Three credits**

Introduction to basic concepts of computing equipment and its operations, algorithmic approach to problem solving, and basic concepts and technique of programming. Fee: \$20.

MATH. 263. FORTRAN PROGRAMMING**Three credits**

Fortran IV programming, including advanced techniques with problems geared to the individual interests of students. Fee: \$20.

Prerequisite: Math. 261, or consent of instructor.

MATH. 264. COBOL PROGRAMMING**Three credits**

Common Business Oriented Language programming, including advanced techniques with problems geared to the individual interests of students. Primarily intended for students majoring in business administration and accounting. Fee: \$20.

Prerequisite: Math. 261, or consent of instructor.

MATH. 311-312. FUNCTIONS OF A REAL VARIABLE I AND II**Three credits each semester**

Topological preliminaries for analysis, sequences and series of functions, Riemann-Stieltjes integral, introduction to Lebesgue integral, Fourier series.

Prerequisite: Math. 222.

MATH. 314. FUNCTIONS OF A COMPLEX VARIABLE**Three credits**

Complex functions, limit and continuity, analytic functions, Cauchy's integral theorem and formula, power series, Laurent expansion, residues.

Prerequisite: Math. 212, or consent of instructor.

MATH. 331. INTRODUCTION TO ABSTRACT ALGEBRA I**Three credits**

A study of elementary number theory, groups, rings, and fields.

Prerequisite: Math. 222.

MATH. 334. LINEAR ALGEBRA**Three credits**

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

Prerequisite: Math. 222, or consent of instructor.

MATH. 343. INTRODUCTION TO GEOMETRY**Three credits**

A study of selected topics from Euclidean geometry, affine geometry, projective geometry, and convexity.

Prerequisite: Math. 222.

MATH. 351-352. PROBABILITY AND MATHEMATICAL STATISTICS I AND II**Three credits each semester**

Random variables, probability distributions, expectation and limit theorems, estimation, testing statistical hypotheses, confidence intervals.

Prerequisite: Math. 222, or consent of instructor.

MATH. 361-362. INTRODUCTION TO APPLIED MATHEMATICS I AND II**Three credits each semester**

Intended for physical science and engineering students. Topics to be selected from: vector integral and differential calculus, power series, Fourier series, matrices, determinants, and eigenvalue problems.

Prerequisite: Math. 212.

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 on computers. Knowledge of Fortran programming is required.

Prerequisite: Math. 212 and Math. 263, or permission of instructor.

MATH. 365. PARTIAL DIFFERENTIAL EQUATIONS**Three credits**

Linear, second order partial differential equations and boundary value problems, Fourier series and orthogonality, method of separation of variables.

Prerequisite: Math. 212.

MATH. 380. TOPICS IN MATHEMATICS**Two to four credits**

Study of one or more special topics in pure or applied mathematics. May be repeated for credit.

Prerequisite: Varies with topics studied.

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

Presentation and discussion 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.

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.

MATH. 441. INTRODUCTION TO TOPOLOGY I **Three credits**

Metric spaces, topological spaces, countability and separation axioms, compactness and connectedness, product spaces.

Prerequisite: Math. 311.

MATH. 442. INTRODUCTION TO TOPOLOGY II **Three credits**

A continuation of Math. 341. Hilbert spaces, Banach spaces, and Banach algebras.

Prerequisite: Math. 441.

MATH. 470. READING COURSE **One to three credits**

Individual study of an outstanding text under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics. May be repeated for credit.

Prerequisite: Senior standing and consent of department chairman.

MATH. 480. TOPICS IN MATHEMATICS **Three 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: Consent of instructor.

Music¹

Professor Gasbarro, chairman; Associate Professors Chapline, A. Liva; Assistant Professors Garber, Santos, Fall, Nutaitis; Instructors Weber, Haberkorn, Veremeychick; Adjunct Professor Balshaw.

APPLIED MUSIC

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

¹ There is a music fee of \$10 per semester for all music and music education majors.

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

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

Fees for private instruction are in addition to the regular tuition charge.

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

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

MUS. 102. INTRODUCTION TO THE MATERIALS AND LITERATURE OF MUSIC II**Three credits**

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

Prerequisite: Mus. 101.

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

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

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

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

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

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

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

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

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

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

Class instruction in piano. The classes will be divided into suitable groups according to proficiency. This course is required for all music education majors who cannot play piano grade 4 or better.

No prerequisite.

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

Advanced class instruction in piano. This course is a continuation of the required course for all music education majors who cannot play piano grade 4 or better.

Prerequisite: Mus. 112.

MUS. 121-122-123-124. BAND **One-half credit each semester**

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

All instrumental music education majors are required to participate in the band for four years.

MUS. 125-126-127-128. CHORUS **One-half credit each semester**

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

All music education majors studying voice or piano are required to participate in the chorus for four years.

MUS. 131-132-133-134. ORCHESTRA **One-half credit each semester**

Participation in the Northeastern Pennsylvania Philharmonic gives the student experience in the complete range of symphonic literature. Students desiring to participate in the orchestra should consult with the director.

MUS. 215. INSTRUMENTATION **Two credits**

The instruments of the modern symphonic orchestra, their capabilities and limitations. The technique of scoring for small instrumental combinations; transposition and clef manipulation.

Prerequisite: Mus. 108, or approval of department chairman.

MUS. 216. ORCHESTRA AND BAND ARRANGING **Two credits**

Scoring for the large orchestra or the modern symphonic band. The student may select his field of concentration.

Prerequisite: Mus. 215.

MUS. 217. ANALYSIS **Two credits**

The technique of composition as disclosed by melodic, harmonic, and structural analysis of music in varied styles and from diverse periods.

Prerequisite: Mus. 108, or equivalent as demonstrated by an examination.

MUS. 218. COUNTERPOINT **Three credits**

A study of the sixteenth century art of contrapuntal writing as found in the styles of Palestrina, di Lasso, and Ingegneri.

Prerequisite: Mus. 108.

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

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

Prerequisite: Approval of department chairman is required.

MUS. 397. SEMINAR **One to three credits. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

Music Education¹

MUS. ED. 101-102. CLARINET CLASS AND METHODS **Two credits each semester**

Methods of teaching and instruction in the clarinet.

No prerequisite.

MUS. ED. 103-104. BRASS CLASS AND METHODS **Two credits each semester**

Methods of teaching and instruction in the brass field.

No prerequisite.

MUS. ED. 105. WOODWIND CLASS METHODS **Two credits**

A class conducted as an introduction to the teaching of such woodwinds as clarinet, oboe, flute, and bassoon, with demonstrations of the class teaching of these instruments.

No prerequisite.

MUS. ED. 106. BRASS CLASS METHODS **Two credits**

A class in brass is conducted as an introduction to the teaching of such brass instruments as trumpet, horn, trombone, baritone, and tuba, with demonstration of the class teaching of these instruments.

No prerequisite.

MUS. ED. 121. VIOLIN CLASS AND STRING METHODS **Two credits**

A class in violin playing and in the teaching of string instruments.

No prerequisite.

MUS. ED. 122. VIOLA CLASS AND STRING METHODS **Two credits**

A class in viola playing and in the teaching of string instruments.

No prerequisite.

¹There is a music fee of \$10 per semester for all music and music education majors.

MUS. ED. 123. VIOLONCELLO AND BASS CLASS AND STRING METHODS**Two credits**

A class in the playing of the violoncello and the brass and in the teaching of string instruments.

No prerequisite.

MUS. ED. 125. PERCUSSION CLASS METHODS**Two credits**

A class in the fundamentals of percussion performance and demonstrations of class teaching.

No prerequisite.

MUS. ED. 127-128. VOICE CLASS AND METHODS**Two credits each semester**

A course in the fundamentals of voice production: breathing, breath control, elementary study of vowel forms, and consonants. Elementary songs are used to develop the student's own voice as well as to train him in voice pedagogy.

No prerequisite.

MUS. ED. 201. ELEMENTARY SCHOOL MUSIC METHODS**Two credits**

The course involves a general preparation for the teachers of music in the elementary grades. It entails a study of the principles, procedures, and objectives in school music.

Prerequisite: Junior class standing.

MUS. ED. 202. SECONDARY SCHOOL MUSIC METHODS**Two credits**

The course is planned to provide a preparation for teaching the various aspects of music in the secondary school.

Prerequisite: Junior class standing.

MUS. ED. 209-210. CONDUCTING AND SCHOOL MUSIC MATERIALS**Two credits each semester**

The development of an adequate baton technique and the presentation of various kinds of school music material, stressing particularly elementary and high school instrumental materials the first semester and high school choral materials the second semester.

No prerequisite.

MUS. ED. 340. PROFESSIONAL SEMESTER IN MUSIC EDUCATION**Eight credits**

Provides classwork and practical experience to prepare for the teaching of music in elementary and secondary schools. Fee: \$20.

To qualify for admission into the Professional Semester, students must secure the recommendation of the department chairman in their major and the approval of the Education Department chairman.

Students may schedule late afternoon or evening classes during the professional semester.

Prerequisite: Ed. 201.

FOR TRANSFER AND CERTIFICATION PURPOSES, CREDIT WILL BE ASSIGNED AS FOLLOWS:

MUS. ED. 343. GENERAL CLASSROOM METHODS**One credit**

A study of various instructional procedures used in public school classrooms.

MUS. ED. 344. MULTI-SENSORY TECHNIQUES IN THE TEACHING OF MUSIC**One credit**

A study of the use of multi-sensory aids in the teaching of music in elementary and secondary schools.

MUS. ED. 346. STUDENT TEACHING IN MUSIC**Six credits**

A course in the observation and student teaching of vocal or instrumental music in elementary and secondary schools.

Nursing

Associate Professor McHenry, chairman; Associate Professor Garrett; Assistant Professors Alexander, Bourcier, Rarig; Instructors Russin, Turner.

NSG. 101. INTRODUCTION TO NURSING**Two credits**

Theory and field observations provide a broad overview of nursing as a profession, its philosophy, perspectives and goals. An orientation to health concepts and the dimensions of the urban health care systems are explored.

NSG. 102. NURSING AS A PROCESS**Four credits**

Focus is on the student's understanding of himself as an individual, a member of a family, and a member of a profession. The basic care of the family members through the acquisition of fundamental principles, concepts and technical skills, as well as skills in communication and observation will be developed. Concepts of mental health and public health will be integrated.

Prerequisite: Nsg. 101.

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

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

Prerequisite: Chem. 230 and Nsg. 102.

NSG. 201. NURSING CARE OF THE GROWING FAMILY I**Seven credits**

Focus is on the nursing needs of the growing family during the childbearing and child rearing years. Theory includes normal reproduction and complications, the well child and common health hazards. The psychosocial, psychiatric and community health concepts will be integrated.

Prerequisite: Nsg. 102.

NSG. 202. NURSING CARE OF THE GROWING FAMILY II **Seven credits**

Focus is on the health needs of the older child through adolescence, and young adult. Theory and learning experiences are designed to help the student develop the nursing knowledge and skills necessary to assist in the promotion of comfort, health and security. Mental health and community health concepts are integrated.

Prerequisite: Nsg. 201.

NSG. 203. NURSING OF THE ADULT FAMILY MEMBER I **Seven credits**

Focus is primarily on the adult family member's medical-surgical health problems. Theory is correlated with clinical experience in the episodic and distributive settings. Rehabilitation, mental health, psychiatric and community nursing concepts are integrated as a part of total nursing care.

Prerequisite: Nsg. 202.

NSG. 204. NURSING OF THE ADULT FAMILY MEMBER II **Seven credits**

Theory and selected clinical experiences in applying concepts and techniques in increasingly complex problems of mobility due to accident, injury, disease or old age. This involves the acute and chronic problems; also the aging patient facing the culmination of life in old age, and to the inevitable issues of death and bereavement.

Prerequisite: Nsg. 203.

NSG. 295. INDEPENDENT STUDY **Four credits**

This course will offer a theory and clinical experience in the student's specific area of interest. These interests may be chosen from a variety of practice settings such as neurological nursing, cardiovascular nursing, cancer nursing, coronary care nursing, intensive care nursing, community health nursing, and pediatric nursing.

Prerequisite: Phil. 101 or 102 and Nsg. 204.

NSG. 296. INDEPENDENT STUDY **Six credits**

This is a continuation of Nsg. 295, directed toward advanced knowledge and clinical experience in the area of interest. A project will be required demonstrating advanced knowledge in the area of interest. There will be individual conferences, lecture-discussions, and senior seminars to broaden the scope of the student's area of interest and to prepare for the immediate role of the professional nurse.

Prerequisite: Nsg. 295 and 297.

NSG. 297. CONTEMPORARY PROBLEMS IN NURSING **Two credits**

Exploration of contemporary problems and issues relating to the practice of nursing and the profession, and the role of the professional nurse as a future leader.

Prerequisite: Nsg. 295 (may be taken concurrently).

Nursing Education

Enrollment in all of the following courses is limited to registered nurses.

N.E. 103. HISTORY AND TRENDS IN NURSING**Three credits**

A general survey of the history of nursing with emphasis upon the religious, social, and educational factors that have stimulated its development. Discussion of present problems in nursing and trends or patterns that emerge in the efforts to solve these problems.

N.E. 104. COMMUNITY RESOURCES**Two credits**

A survey of the functions and activities of agencies and organizations contributing to the health and social welfare of the citizens of the community.

N.E. 106. SUPERVISION AND ADMINISTRATION**Two credits**

A discussion of the basic principles of supervision and administration with emphasis upon democratic leadership and the development of constructive interpersonal and interdepartmental relationships.

N.E. 107. PRINCIPLES AND METHODS IN NURSING EDUCATION**Two credits**

This course deals with the selection and organization of teaching materials and learning experiences. It includes the appraisal of effective methods of teaching and the evaluation of student progress and achievement.

Prerequisite: Psych. 102, or permission of instructor.

N.E. 108. MULTI-SENSORY TECHNIQUES IN NURSING EDUCATION**One credit**

A study of the use of multi-sensory teaching aids in nursing education.

Prerequisite: N.E. 107 (may be taken concurrently).

N.E. 112. FIELD EXPERIENCE IN SUPERVISION OR TEACHING **Four credits**

Supervised observation and practice in a hospital.

Prerequisite: N.E. 106, 107, 108, Ed. 351.



Philosophy – Religious Studies

Professor Vujica, chairman; Associate Professors Kay, Williams; Assistant Professors Henson, Jardine; Adjunct Professor Barras.

Philosophy

PHIL. 101. INTRODUCTION TO PHILOSOPHY

Three credits

An introduction to the nature and function of philosophy, and its relations to some of the other fields of human interest. The approach is through such typical problems as: the nature and origin of life, the relation of mind and body, freedom of the will, the theories of right and wrong, arguments for theism. This course is a prerequisite to all advanced philosophy courses.

PHIL. 102. LOGIC AND SCIENTIFIC METHOD

Three credits

Elementary principles and techniques of clear and sound thinking. General rules of inductive and deductive reasoning; recognition of fallacies; the nature of scientific knowledge, its methods, its aims, its presuppositions.

PHIL. 210. ETHICS

Three credits

A critical study of standards for judging the rightness or wrongness of conduct. An inquiry into what men ought to do. A survey of representative ethical theories with the emphasis on their application to currently controversial issues in the social, economic, and political fields.

PHIL. 220. PHILOSOPHY OF RELIGION

Three credits

An examination of various problems that arise when religion is made the object of philosophic reflection. The nature and forms of religious experience; the relation of faith and reason; arguments for God's existence; the problem of evil; the argument for immortality.

PHIL. 230. AESTHETICS

Three credits

A critical examination of contemporary problems in the philosophy of art: defining the nature of art and the artistic process, methods and standards in evaluating works of art, the role of aesthetic theory, perception and the aesthetic attitude, and the nature and role of aesthetic judgments.

PHIL. 240. SOCIAL AND POLITICAL PHILOSOPHIES

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.

PHIL. 250. ANCIENT AND MEDIEVAL PHILOSOPHY

Three credits

A study of the development of Western thought from Thales to Occam with special attention to such key thinkers as Plato, Aristotle, Democritus, Plotinus, Thomas Aquinas and Duns Scotus.

PHIL. 260. HISTORY OF MODERN PHILOSOPHY

Three credits

The major trends in philosophic thought from the Renaissance to the end of the nineteenth century, with special emphasis on: Descartes, Spinoza, Leibnitz, Locke, Berkeley, Hume, Kant, Hegel, Schopenhauer, Comte, Bentham, and Mill.

PHIL. 270. CONTEMPORARY PHILOSOPHY

Three credits

A critical examination of current trends in philosophy, with special emphasis on: British and American realism; pragmatism; positivism; contemporary Marxism; existentialism; and linguistic analysis. Major philosophers to be studied: James, Dewey, Moore, Husserl, Russell, Carnap, Santayana, Whitehead, Heidegger, Sartre, and Wittgenstein.

PHIL. 280. PHILOSOPHIES 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.

PHIL. 290. 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 casual determinism, fatalism, the relationship between mind and body, and the nature of universals.

PHIL. 297. PHILOSOPHICAL EXPLORATIONS

Three credits

An introductory treatment of some specific contemporary issue of a philosophical nature. The course content is variable and may include borderline problems between philosophy and the sciences, arts, and humanities, such as technology and value, philosophy of biology, futurology, medical ethics, philosophy and literature, etc.

This course may be repeated for credit.

PHIL. 320. THE 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.

PHIL. 330. 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.

PHIL. 340. STUDIES IN PLATO**Three credits**

A critical inquiry into some central issues of Plato's philosophy, such as the foundations of ethics, politics and scientific knowledge; the theory of forms; the nature of man and of the cosmos; and the nature of the philosophic enterprise.

Prerequisite: Phil. 101 and 250, or consent of the instructor.

PHIL. 360. 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. 102, or permission of instructor.

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. (Maximum of three credits per student.)**

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

Religious Studies**R.S. 200. MAN'S RELIGIONS****Three credits**

Nature and origin of religion. Sacred literatures, beliefs, and rituals of the great historical and living faiths. A comparison of the more important features of the great religions. The contributions of religion to the development and preservation of cultural values.

R.S. 201. THE LITERATURE OF THE OLD TESTAMENT**Three credits**

The course aims at giving the 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.

R.S. 202. THE 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.

R.S. 212. CONTEMPORARY TRENDS IN RELIGIOUS THOUGHT **Three credits**

A study of the development of religious thought from "Neo-Orthodoxy" 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.

Physical Education and Hygiene

Professor Reese, chairman; Associate Professor Schmidt; Assistant Professor Saracino; Instructors Domzalski, Foster, Bloomberg, Bearde, Skvarla.

Because of the importance of health and the possession of a sound body, attention is given to the physical well-being of students as a regular part of the curriculum; mass athletics and some form of sport or exercise for each student are included in the program of physical education. Physical education is required of both men and women, except by statement of a physician, during the freshman and sophomore years.

The College men at the beginning of each year are given a medical and a physical examination. The work in physical education includes soccer, football, basketball, baseball, volley ball, and other competitive games.

The College women also are given a thorough medical and physical examination before entering upon the program of physical education. The work for women consists of such activities as dancing, basketball, and natural gymnastics.

P.E. 101-102-103-104. PHYSICAL EDUCATION

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.

P.E. 105-106. HYGIENE¹**One credit each semester**

A study of present day health problems. The course undertakes to help students enjoy maximum health and happiness through better understanding of nutrition, infection, disease, nervous and mental disorders, and problems of parenthood. One hour each week.

¹Class instruction in personal hygiene is required of all students, even those excused by physicians from taking physical education.

Physics

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

PHYS. 101-102. PHYSICAL SCIENCE Three credits each semester

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 Math. not necessary.

PHYS. 105-106. INTRODUCTORY PHYSICS Four credits each semester

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. Three class hours and one three-hour laboratory each week. Fee: \$20 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: \$20.

PHYS. 202. GENERAL PHYSICS II Four credits

Continuation of Phys. 201. Electricity and magnetism, and optics and light. Demonstration-lecture two hours a week, recitation one hour a week, and laboratory three hours a week. Fee: \$20.

Prerequisite: Phys. 201.

PHYS. 203. GENERAL PHYSICS III Three credits

Continuation of Phys. 201 and 202. Modern physics. Including the experimental basis, concepts, and foundational principles of modern atomic and nuclear physics. Demonstration lecture three hours a week.

Prerequisite: Phys. 202.

PHYS. 230. OPTICS AND LIGHT Four credits

The principles of geometrical and physical optics are considered in considerably greater detail than in the introductory course. Image formation, refraction, diffraction, origin of spectra, polarized light, optical activity, etc. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: Phys. 202.

PHYS. 231-232. ELECTRONIC NETWORKS, MEASUREMENTS, AND INSTRUMENTATION Three credits each semester

A study of basic passive and active electronic networks and their components. Application of electronic devices in physical measurements. Laboratory calibration and use of electronic instruments. Two hours class and one three-hour laboratory a week. Fee: \$20 each semester.

Prerequisite: Phys. 202.

PHYS. 240. 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. 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. 311-312. MECHANICS Three credits each semester

Intermediate level courses designed to develop a thorough understanding of the principles of mechanics and the application of mathematical methods to the solution of its problems. Topics include Newtonian motions of particle systems (such as a harmonic oscillator, central force problems, etc.), 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. 331-332. ELECTRICITY AND MAGNETISM Four credits each semester

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 each semester. Fee: \$20 each semester.

Prerequisite: Phys. 202 and Math. 212.

PHYS. 351. QUANTUM MECHANICS Three credits

An introduction to the theoretical and mathematical aspects of quantum mechanics. Topics include Schrodinger's equation and its application to the harmonic oscillator, the potential-well, and the hydrogen atom problems; steady-state nondegenerate, degenerate, and time-dependent perturbation theory; angular momentum; identical particles and Pauli's exclusion principle; relativistic wave equation and the origin of electron spin. Three hours lecture-discussion a week.

Prerequisite: Phys. 312, Math. 362.

PHYS. 361. ATOMIC PHYSICS**Four credits**

The structure of the atom, the photo-electric effect, crystal structure, X-rays, spectra, introduction to quantum theory. Class, three hours and one three-hour laboratory a week. Fee: \$20.

Prerequisite: Phys. 203, 311, 331.

PHYS. 370. SOLID STATE PHYSICS**Three credits**

Selected topics, depending upon the interests of the instructor and students. Topics might include the theory of electrical and thermal conductivity, semiconductors, bonding in solids, point defects, dislocation, magnetic properties, etc. Three hours class a week.

Prerequisite: Phys. 361, Math. 362, or approval of instructor.

PHYS. 380. NUCLEAR PHYSICS**Four credits**

Special relativity, natural and induced radioactivity, nuclear structure, nuclear reactions, reactors, etc. Three hours class and one three-hour laboratory a week. Fee: \$20.

Prerequisite: Phys. 361.

PHYS. 391-392. ADVANCED LABORATORY**One or two credits — Hours to be arranged**

Students desiring to undertake laboratory work in topics of their own choosing should consult the department chairman. Lab fee: \$7 per credit hour.

Prerequisite: Phys. 203, Math. 212.

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

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

Prerequisite: Approval of department chairman is required.

PHYS. 397. SEMINAR**One to three credits. (Maximum of three credits per student.)**

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 THE INSTRUCTOR AND THE DEPARTMENT CHAIRMAN.

PHYS. 401-402. METHODS OF MATHEMATICAL PHYSICS**Three credits each semester**

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.

Graduate courses available to undergraduate seniors by permission of the instructor and the department chairman.

PHYS. 471. CRYSTALLOGRAPHY**Three credits**

Symmetry properties of crystalline solids and symmetry axes, planes, and crystallographic groups. Cohesive energies of crystals. The electron theory of crystals, and electrical and magnetic properties. The formation and growth kinetics of crystallization. The specific heats, thermal conductivities and expansions of crystals. Diffusion mechanisms in crystals. Some mechanical properties of crystals.

PHYS. 472. X-RAY DIFFRACTION**Three credits**

Modern developments in x-ray diffraction. Generation, detection, and measurement of x-rays. Elastic and inelastic scattering. The geometry of crystals and diffraction by polycrystalline and amorphous materials. The kinematical theory and pair distribution functions. The dynamical theory for perfect and imperfect crystals as derived from Maxwell's equations. Total cross-sections, line shape functions, one-electron factors, and determination of crystal structure. Experimental x-ray methods and applications. Laboratory, one period per week. Fee: \$20.

Prerequisite: Phys. 471.

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.

Prerequisite: Phys. 471.

Political Science

Professor Driscoll, chairman; Assistant Professors Tuhy, Niehoff. Adjunct Professors McDonald, Shaw.

P.S. 101. POLITICAL SCIENCE I**Three credits**

A broad, comprehensive introduction to the great topics which constitute political science, covering the nature and main elements of the modern states, their politics, their institutions, and their relations with one another.

P.S. 102. POLITICAL SCIENCE II**Three credits**

A descriptive and analytical study of the theory and practice of American National Government including its constitutional basis, organization, powers, and functions and services.

P.S. 201. CONSTITUTIONAL LAW I**Three credits**

A course intended to show the growth of the American Constitution particularly United States governmental structure and relationships with special emphasis on change in the Constitution, the three branches of government, the Federal System, and the powers of the National Government.

Prerequisite: P.S. 101 and 102.

P.S. 202. CONSTITUTIONAL LAW II**Three credits**

A course intended to show the growth of the American Constitution particularly the relations between the individual and his government with special emphasis on liberty against government, protection of civil rights, citizenship and its privileges.

Prerequisite: P.S. 101 and 102.

P.S. 203. POLITICS AND POLITICAL PARTIES**Three credits**

A course intended to analyze the movements of political parties, elections, and the various methods used to gain control.

Prerequisite: P.S. 101 and 102.

P.S. 204. PUBLIC OPINION AND PROPAGANDA**Three credits**

A study in the behavior of governance, including the factors which determine attitude, the formation and expression of public opinion, and propaganda as used by pressure groups.

Prerequisite: P.S. 101 and 102 and Soc. 101 and 102.

P.S. 205. STATE GOVERNMENT**Three credits**

A broad, general course covering the structure, powers, and function of state governments in the United States. Special emphasis is placed on the Pennsylvania State Government.

Prerequisite: P.S. 101 and 102.

P.S. 206. MUNICIPAL GOVERNMENT**Three credits**

A course undertaking the study of the organization, work, and administration of local government. Since the national government has assumed a new significance today, special attention is given to the relationship between local and national government.

Prerequisite: P.S. 101 and 102.

P.S. 207. PUBLIC ADMINISTRATION**Three credits**

A study of the organization, activity, problems, and the recruitment policy of the public service.

Prerequisite: P.S. 101 and 102.

P.S. 208. LABOR LEGISLATION**Three credits**

A course dealing with the role of government in the field of labor relations and with the laws affecting the conditions of employment and employee-employer relations. The course stresses the increasing importance of government in a field heretofore free of any regulation.

Prerequisite: P.S. 101 and 102.

P.S. 210. GOVERNMENT OF METROPOLITAN AREAS**Three credits**

An examination of the politics and the processes of contemporary urban government, with special emphasis upon the complex problems presented by the rapidly expanding population in standard metropolitan areas.

Prerequisite: P.S. 101 and 102.

P.S. 211. INTERGOVERNMENTAL RELATIONS**Three credits**

An analysis of the evolution, growth, present status and characteristics, including problems, posed by the Federal system of grants-in-aid.

Prerequisite: P.S. 101 and 102.

P.S. 212. MANAGEMENT OF MUNICIPALITIES**Three credits**

A study of the underlying issues, problems, and concepts encountered in local government administration affecting urban change.

Prerequisite: P.S. 101 and 102.

P.S. 221. INTERNATIONAL LAW**Three credits**

A study of the development of the body of customs and rules which states have developed to govern their relations with particular consideration for the responsibility of states for their enforcement.

Prerequisite: P.S. 101 and 102.

Desideratum: United States and European History.

P.S. 222. INTERNATIONAL RELATIONS**Three credits**

An analysis of the major concepts, principles and factors involved in an understanding of international relations and foreign policies of nations.

Prerequisite: P.S. 101 and 102.

Desideratum: Some knowledge of history, governments, and geography.

P.S. 223. COMPARATIVE GOVERNMENT**Three credits**

A comparative study of the various forms and kinds of governments that have developed in the modern world with primary attention directed toward Europe.

Prerequisite: P.S. 101 and 102.

P.S. 224. SOVIET SYSTEM OF GOVERNMENT**Three credits**

A course dealing with the structure and functions of the Soviet Government emphasizing the contrasts and similarities in form with governments of the West.

Prerequisite: P.S. 101 and 102.

P.S. 225. INTERNATIONAL ORGANIZATION**Three credits**

A study of the growth of cooperative efforts toward international organization; the nature, functions, and problems relating to international organization.

Prerequisite: P.S. 101 and 102.

P.S. 226. GOVERNMENT AND POLITICS OF ASIA **Three credits**

An analysis of the distinctive institutions, processes, and problems of political development and contemporary government in Asia, with emphasis on the post-independence era, and on Japan and China.

Prerequisite: P.S. 101 and 102.

P.S. 251. THE ROLE OF 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. 101 and 102.

P.S. 252. FUNDAMENTALS OF URBAN DESIGN **Three credits**

A study of the principles of urban design and the use of space to achieve efficiency with maximum visual amenity.

Prerequisite: P.S. 251.

P.S. 253. LAND USE PLANNING LAW **Three credits**

A course dealing in the law of city planning, nuisance, subdivision controls, eminent domain, urban renewal, and public aspects of real estate financing, with special emphasis on the relationship between implementing planning goals and the basis principles of constitutional law.

Prerequisite: P.S. 251.

P.S. 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.

P.S. 397. SEMINAR

One to three credits. (Maximum of three credits per student.)

Presentations and discussions of selected topics.

Prerequisite: Approval of department chairman is required.

Psychology

Professor Riley, chairman; Associate Professor Stetten; Assistant Professors Hobrock, Turner; Instructors Pisaneschi, Roke; Adjunct Professor Kanner.

PSY. 101-102. GENERAL PSYCHOLOGY **Three credits each semester**

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 semester**

A lecture and laboratory course designed to familiarize the student with the methods and the results of modern psychological research. The course includes a study of several of the famous experiments in the field of psychology. Also included is practice with the older as well as the more recent methods of experimental research. Lecture and laboratory. Fee: \$20 each semester.

Prerequisite: Psy. 215.

PSY. 213. PHYSIOLOGICAL PSYCHOLOGY **Three credits**

A systematic study of the physiological mechanisms mediating behavior. Emphasis is on the neuro-physiological bases of sensation, perception, adaptation, motivation, emotion, learning, and memory. Methods and techniques used in the study of the nervous system and sensory and muscular systems will be investigated and demonstrated.

Prerequisite: Psy. 101-102.

PSY. 214. SENSATION AND PERCEPTION **Three credits**

Various principles and phenomena of sensation and perception are studied within the visual, auditory, olfactory-gustatory, haptic, and bodily-orientation systems. An introduction to major perceptual theories is also given.

Prerequisite: Psy. 101-102 and 213.

PSY. 215. RESEARCH DESIGN AND ANALYSIS **Three credits**

An introduction to the use of scientific methods as a means of studying behavior. This course is required of all majors.

PSY. 221. CHILD PSYCHOLOGY **Three credits**

The course is designed to present a general view of the development and growth of the child. It is concerned primarily with the heredity and native equipment of the child and the manner in which this equipment is modified during childhood. Emotional development, language development, and social relations are considered.

Prerequisite: Psy. 101-102.

PSY. 232. HUMAN BEHAVIOR**Three credits**

Human adjustment and maladjustment to life situations with emphasis on motivation, emotional control, personality formation, and the treatment of the lesser personality disorders.

Prerequisite: Psy. 101-102.

PSY. 242. PSYCHOLOGICAL TESTS**Three credits**

A survey of the functions measured by psychological tests with emphasis on intelligence and personality. A variety of the group and individual tests which measure these functions are studied. This course is a prerequisite for Psy. 245.

Prerequisite: Psy. 101-102.

PSY. 243. INDUSTRIAL PSYCHOLOGY**Three credits**

An introduction to the industrial application of psychology in the selection, classification, and training of employees; reduction of monotony and fatigue; the maladjusted worker; accident prevention; work conditions; and employee motivation and morale.

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.

PSY. 331. ABNORMAL PSYCHOLOGY**Three credits**

A general survey of the principal forms of mental abnormalities, with emphasis on causes, symptoms, course, and treatment.

Prerequisite: Psy. 221 and 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**One to three credits. (Maximum of three credits per student.)**

Presentations and discussion of selected topics.

Prerequisite: Approval of department chairman is required.

Retailing

Professor R. Werner, chairman.

RET. 101. PRINCIPLES OF RETAILING**Three credits**

A basic course that discusses the opportunities in retailing; types of retail institutions; problems of store policy, store location; study of the organizational structure of department stores; organization and functions of all store divisions.

RET. 210. ELEMENTS OF MERCHANDISE: TEXTILES**Three credits**

Merchandise information; fibers and fabrics; history, production, manufacturing process from fiber to finished fabric; textile terminology, trade names. Identification, testing of fibers; care of fabrics; new developments. Study of natural, industrial and synthetic materials.

RET. 211. MERCHANDISE INFORMATION: NON-TEXTILES**Three credits**

Materials, other than textiles, used in the creation of merchandise are covered through the study of raw materials. Categories of merchandise covered include: leather goods, such as shoes, gloves, handbags, and luggage; floor coverings; glass, pottery, and china; and furniture.

RET. 212. PURCHASES AND MERCHANDISING CONTROL**Three credits**

The principles, techniques, and problems encountered in merchandising; purchase planning, markup, markdown, inventories and their control, turnover, retail method of inventory, and the types and limitation of stock control systems.

Prerequisite: B.A. 115, or approval of instructor.

RET. 214. RETAIL BUYING**Three credits**

A study of the scientific 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, stockturns, and other factors that are necessary to keep lines complete.

Prerequisite: Approval of instructor.

RET. 224. RECENT TRENDS AND DEVELOPMENTS IN RETAILING**Three credits**

Review of fundamentals; trends in retailing; study of developments in cooperation with retail store executives. Laboratory work; reports on trends and developments.

RET. 225. RETAIL PRACTICE**Three credits**

In cooperation with local stores, students interested in Retailing must be employed for an average of 12 to 15 hours a week during one term of the junior or senior year. During the period of employment, students will be required to submit reports concerning their work to the instructor; the store

manager or personnel director is required to evaluate the students' ability and aptitude for retailing. Credit for the course given upon certification by the manager or personnel director of the co-operating store that students have satisfactorily completed their terms of employment.

Students who wish to seek their own place of employment may be permitted to do so, provided the place of employment has been approved by the instructor. In general, this approval will be given to employment in department stores, independent stores, variety stores, chain stores, and specialty stores where students will receive a variety of experience, and the stores are of a sufficient size to provide adequate and diversified experience.

Prerequisite: Permission of instructor.

Sociology and Anthropology

Professor Moravec, chairman; Assistant Professors Anwar, Kemrer, Martin, Natzke, Weinstein.

SOC. 101. INTRODUCTION TO SOCIOLOGY AND ANTHROPOLOGY I

Three credits

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

SOC. 102. INTRODUCTION TO SOCIOLOGY AND ANTHROPOLOGY II

Three credits

Man and Culture; a general survey of the field of anthropology stressing its cultural aspects; study of contemporary non-literate societies and their institutions.

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 instability and disorganization.

Prerequisite: Soc. 101 and 102, or permission 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 and 102.

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 and 102.

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. 230, or permission 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 and 102, or permission of instructor.

SOC. 251. FIELDS OF SOCIAL WORK

Three credits

A survey of the main problems of social work and of agencies and methods that have developed to cope with them. The nature and requirements of the different fields of social work.

Prerequisite: Soc. 101 and 102 and Psy. 101 and 102.

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.

Prerequisites: Soc. 101 and 102 and Psy. 101 and 102.

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.

Prerequisites: Soc. 101 and 102 and Psy. 101 and 102.

SOC. 260. PERSONALITY AND SOCIAL STRUCTURE

Three credits

Examination of current theories and research bearing upon the relationship between personality and social structure; contributions and convergent development in psychology, anthropology, and sociology.

Prerequisite: Soc. 101 and 102 and Soc. 255.

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 and 102 and Ec. 101 and 102, or permission of instructor.

SOC. 270. PEOPLES AND CULTURES OF THE WORLD

Three credits

A survey of the non-Western cultures of the world with an emphasis on one of the following areas: The Middle East, The Far East, South-East Asia, Africa, Australasia, Latin America.

Prerequisite: Soc. 101 and 102.

SOC. 273. INTRODUCTION TO 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 specific findings. The course will include several field trips.

Prerequisite: Soc. 101 and 102, 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 and 102 and Psy. 101 and 102.

SOC. 280. 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 and 102 and two other courses in sociology, or permission of instructor.

SOC. 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. 102 and 102, or approval of instructor.

SOC. 393. 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: 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: 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: Approval of department chairman.

SOC. 397. SEMINAR**One to three credits. (Maximum of three credits per student.)**

Presentation and discussion of selected topics.

Prerequisite: Approval of department chairman.

Personnel of the College

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Commitment at Wilkes

The political world is metamorphosed; new remedies must henceforth be sought for new disorders. To lay down extensive but distinct and settled limits to the action of the government; to confer certain rights on private persons, and to secure to them the undisputed enjoyment of those rights; to enable individual man to maintain whatever independence, strength, and original power he still possesses; to raise him by the side of society at large, and uphold him in that position; these appear to me the main objects of legislators in the ages upon which we are now entering.

One set of men can perceive nothing in the principle of equality but the anarchical tendencies that it engenders; they dread their own free agency, they fear themselves. Other thinkers, less numerous but more enlightened, take a different view: beside that track which starts from the principle of equality to terminate in anarchy, they have at last discovered the road that seems to lead men to inevitable servitude. They shape their souls beforehand to this necessary condition; and, despairing of remaining free, they already do obeisance in their hearts to the master who is soon to appear. The former abandon freedom because they think it dangerous; the latter, because they hold it to be impossible.

If I had entertained the latter conviction, I should not have written this book, but I should have confined myself to deploring in secret the destiny of mankind.

Alexis De Tocqueville

Democracy in America (1840)

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FRANCIS J. MICHELINI



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FRANCIS J. MICHELINI (1955) President
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 M.S. (Delaware)
 Ph.D. (Pennsylvania)

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ROBERT C. RILEY	Chairman, Psychology Department
JAROSLAV G. MORAVEC	Chairman, Sociology and Anthropology Dept.
RICHARD L. WING	Chairman, Aerospace Studies Department

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JANE KATHLEEN LAMPE (1969) B.A. (Rosary) M.A. (Michigan) M.Ed. (Virginia)	Dean of Women
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ALEX PAWLENOK (1967) B.S. (Wilkes)	Comptroller
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B. HOPKINS MOSES (1967) B.A., M.A. (Syracuse) LL.D. (Parsons)	Registrar
THOMAS J. MORAN (1970) B.S. (Wilkes) M.S. (Columbia)	Director of Public Relations
THOMAS F. KELLY (1969) B.A. (Wilkes) M.A. (Lehigh)	Director of Development
ARTHUR J. HOOVER (1955) B.S. (Wilkes) M.Ed. (Pennsylvania State)	Director of Alumni Relations
RICHARD G. RASPEN (1972) B.S. (Wilkes) M.Ed. (Bloomsburg)	Director of Financial Aid
ANDREW SHAW, JR. (1972) B.S. (Wilkes) M.G.A. (Pennsylvania)	Director of Institute of Regional Affairs
DAVID WILLIAMS (1970) B.S. (Wilkes)	Director of Computer Center
BERNARD J. VINOVRSKI (1971) B.S. (Wilkes)	Assistant Dean Admissions and Freshman Financial Aid

Date following name is the year of appointment.

JOSEPH J. CHISARICK (1970) B.S. (Wilkes) C.P.A. (State of Pennsylvania)	Assistant Comptroller
LINDA HOBROCK (1969) B.S. (Bowling Green) M.Ed. (Lehigh)	Assistant Dean of Women
EDWARD R. BALTRUCHITIS (1972) B.S. (Mansfield) M.A. (George Washington)	Assistant Dean of Men
JOHN F. MEYERS (1967) B.A. (Minnesota) M.A. (Clark)	Director of Summer and Evening College
GEORGE G. PAWLUSH (1969) B.S. (Wilkes)	Director of Sports Information
STEPHEN J. PLACKO (1973) B.S. (Duquesne) M.S. (Hofstra)	Assistant Dean of Resident Life
LINDA M. JANSKY (1973) B.S. (Frostburg State) M.A. (Ball State)	Assistant Dean of Resident Life

WILKES-HAHNEMANN COOPERATIVE MEDICAL EDUCATION PROGRAM IN FAMILY MEDICINE

EDWARD B. STOCKHAM (1970) A.B., Ph.D. (Pennsylvania)	Project Director
ANTHONY J. TURCHETTI (1973) B.S., M.S. (Pennsylvania State) LL.B. (George Washington) M.D. (Hahnemann)	Clinical Coordinator

COLLEGE SERVICES

ROBERT M. KERR B.S. (Bucknell) M.D. (Jefferson)	College Physician
JOSEPH H. KANNER B.A. (Bucknell) M.A. (New School for Social Research)	Director of Testing Service
MILDRED GITTINS	Manager of the Bookstore
NELSON F. CARLE	Superintendent of Buildings and Grounds
BETTY SOBESKI, R.N.	College Nurse
JEANNE CONWAY	Housing Coordinator

Date following name is the year of appointment.

Faculty

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

FRANCIS J. MICHELINI (1955) B.S. (Seton Hall) M.S. (Delaware) Ph.D. (Pennsylvania)	Administration	President
FREDERIC E. BELLAS (1961) B.S., M.S., Ph.D. (Pennsylvania State)	Physics	Professor
JAMES J. BOHNING (1959) B.S. (Valparaiso) M.S. (New York) Ph.D. (Northeastern)	Chemistry	Professor
ROBERT S. CAPIN (1959) B.S. (Wilkes) C.P.A. (State of Pennsylvania) M.B.A. (Lehigh)	Accounting	Professor
CHESTER E. COLSON (1958) B.S. (Massachusetts School of Art) M.S. (Columbia)	Fine Arts	Professor
HAROLD E. COX (1963) B.A. (William and Mary) M.A., Ph.D. (Virginia)	History	Professor
FRANCK G. DARTE, II (1968) B.A. (Yale) M.S., Ed.D. (Pennsylvania)	Education	Professor
FRANCIS J. DONAHOE (1964) B.A. (LaSalle) Ph.D. (Pennsylvania)	Physics	Professor
JEAN M. DRISCOLL (1973) B.S., M.A. (Michigan) Ph.D. (Northwestern)	Political Science	Professor
BENJAMIN F. FIESTER, JR. (1956) B.A. (Wilkes) M.A. (Bucknell) Ph.D. (Pennsylvania State)	English	Professor
WILLIAM R. GASBARRO (1958) B.S. (Juilliard) M.A. (Columbia)	Music Education	Professor

Date following name is the year of appointment.

EUGENE L. HAMMER (1953) B.S. (Wheaton) M.A. (Northwestern) Ed.D. (Columbia)	Education	Professor
STANLEY J. HOLDEN (1963) B.A. (Brooklyn) Ph.D. (Alfred)	Physics	Professor
BRONIS KASLAS (1949) L.L.B. (Kaunas, Lithuania) M.A., Ph.D. (Strasbourg)	History	Professor
DAVID M. LEACH (1969) B.A. (Whitman) Ph.D. (Rochester)	History	Professor
JAROSLAV G. MORAVEC (1963) L.L.D. (Prague, Czechoslovakia) Ph.D. (Boston)	Sociology	Professor
JOHN G. REESE (1955) B.S., M.Ed. (Pennsylvania State)	Physical Education	Professor
CHARLES B. REIF (1942) B.A., M.A., Ph.D. (Minnesota)	Biology	Professor
ROBERT C. RILEY (1949) B.A. (Bucknell) Ph.D. (Pennsylvania State)	Psychology	Professor
PHILIP L. RIZZO (1957) B.A., M.A., Ph.D. (Pennsylvania)	English	Professor
SAMUEL A. ROSENBERG (1948) B.A., M.B.A. (Boston) Ph.D. (North Carolina)	Economics	Professor
RALPH B. ROZELLE (1962) B.S. (Wilkes) Ph.D. (Alfred)	Chemistry	Professor
HOWARD A. SWAIN, JR. (1960) B.S. (Grove City) Ph.D. (Pennsylvania)	Chemistry	Professor
STANKO M. VUJICA (1947) B.A. (Zagreb) M.A. (Innsbruck) Ph.D. (Zagreb)	Philosophy and Religious Studies	Professor
ROBERT E. WERNER (1955) B.A. (Roosevelt) M.S., Ph.D. (Wisconsin)	Economics	Professor

Date following name is the year of appointment.

RICHARD L. WING (1973) B.S. (Cornell) M.S. (Southern California)	Aerospace Studies	Professor
BING K. WONG (1968) B.A. (Kansas State at Pittsburgh) M.A., Ph.D. (Illinois)	Mathematics	Professor
REED D. ACHESON (1969) B.A. (Monmouth) Ph.D. (Cincinnati)	Biology	Associate Professor
MICHAEL J. BARONE (1964) B.S. (Wilkes) M.S. (Bucknell)	Education	Associate Professor
ANGEL BELIC (1968) LL.D. (Zagreb) Ph.D. (Rome, Italy)	Foreign Languages	Associate Professor
JOSEPH T. BELLUCCI (1967) B.S. (Scranton) M.Ed., Ed.D. (Lehigh)	Education	Associate Professor
DALE A. BUEHLER (1962) B.A. (Franklin & Marshall) M.S. in L.S. (Drexel Institute of Tech.)	Library	Associate Professor
HARRIE E. CALDWELL (1970) B.S. (Edinboro State) M.S., Ph.D. (Syracuse)	Education	Associate Professor
RICHARD B. CHAPLINE (1959) B.S., M.S. (Juilliard)	Music	Associate Professor
ELWOOD DISQUE (1935) B.A. (Dickinson)	Foreign Languages	Associate Professor
BOYD L. EARL (1963) B.S. (Wilkes) M.S. (Bucknell)	Mathematics	Associate Professor
MOHAMED T. EL-ASHRY (1969) B.S. (Cairo, Egypt) M.S., Ph.D. (Illinois)	Environmental Science	Associate Professor
GEORGE F. ELLIOT (1950) B.A. (Montclair State) M.A. (Clark)	Economics	Associate Professor
MAHMOUD H. FAHMY (1968) B.A. (Alexandria, Egypt) M.A. (Columbia) Ph.D. (Syracuse)	Education	Associate Professor

Date following name is the year of appointment.

WELTON FARRAR (1948) B.S., M.S. (Pennsylvania)	Economics	Associate Professor
OWEN D. FAUT (1967) B.S. (Muhlenberg) Ph.D. (Massachusetts Institute of Technology)	Chemistry	Associate Professor
ROSELLEN M. GARRETT (1973) B.S.N. (Misericordia) M.S. (Maryland)	Nursing	Associate Professor
ALFRED S. GROH (1947) B.A. (Syracuse) M.A. (Columbia)	Theater Arts	Associate Professor
STANLEY S. GUTIN (1959) B.A., M.A. (Maryland) Ph.D. (Pennsylvania)	English	Associate Professor
WILBUR F. HAYES (1967) B.A. (Colby) M.S., Ph.D. (Lehigh)	Biology	Associate Professor
LEVERE C. HOSTLER (1967) B.S. (Massachusetts Institute of Technology) M.S., Ph.D. (Stanford)	Physics	Associate Professor
THOMAS KASKA (1966) B.A. (Wilkes) M.A., Ph.D. (Duquesne)	English	Associate Professor
STANLEY B. KAY (1964) B.A. (Case Western Reserve) M.A. (Michigan) Ph.D. (Ohio State)	Philosophy	Associate Professor
GRACE C. KIMBALL (1963) B.A. (Rochester) Ph.D. (Cornell)	Biology	Associate Professor
JOHN N. LABOWS (1967) B.S. (Lafayette) Ph.D. (Cornell)	Chemistry	Associate Professor
ANNE VANKO LIVA (1970) (Juilliard)	Music	Associate Professor
CHARLOTTE V. LORD (1962) B.S. (New York) M.A. English (Bucknell) M.A. Italian (Middlebury) Ph.D. (Pennsylvania)	English	Associate Professor

Date following name is the year of appointment.

RUTH W. McHENRY (1971) B.S., M.A. (Columbia)	Nursing	Associate Professor
SAMUEL MERRILL, III (1973) B.S. (Tulane) M.A., Ph.D. (Yale)	Mathematics	Associate Professor
UMID R. NEJIB (1965) B.S. (Baghdad) M.S., Ph.D. (Carnegie-Mellon)	Engineering	Associate Professor
ROBERT E. OGREN (1963) B.A. (Wheaton) M.S. (Northwestern) Ph.D. (Illinois)	Biology	Associate Professor
THOMAS R. RICHARDS (1943) B.S. (Pennsylvania State) M.S. (Bucknell)	Mathematics	Associate Professor
JAMES P. RODECHKO (1971) B.A. (Hofstra) M.A., Ph.D. (Connecticut)	History	Associate Professor
FRANCIS J. SALLEY (1950) B.S. (St. Joseph's) M.S. (Pennsylvania)	Chemistry	Associate Professor
ROLAND C. SCHMIDT, JR. (1962) B.S. (Bloomsburg) M.S. (Scranton)	Physical Education	Associate Professor
MICHAEL H. SEITZ (1971) A.B. (Dartmouth) A.M. (Harvard) Ph.D. (Michigan)	Foreign Languages	Associate Professor
KUO-KANG SHAO (1966) B.A. (Taiwan) M.A., Ph.D. (Pennsylvania)	History	Associate Professor
ROBERT D. STETTEN (1968) B.A., Ph.D. (Lehigh) M.S. Psychology (Iowa) M.A. Political Science (Iowa)	Psychology	Associate Professor
WILLIAM R. STINE (1965) B.S. (Union) Ph.D. (Syracuse)	Chemistry	Associate Professor
DONALD W. TAPPA (1965) B.S. (Brooklyn) M.A. (Williams) Ph.D. (Yale)	Biology	Associate Professor

Date following name is the year of appointment.

WAGIHA ABDEL-GAWAD TAYLOR (1969) B.A. (Alexandria) M.A. (Brown) Ph.D. (Clark)	Economics	Associate Professor
LEE C. TERRY (1968) B.A. (Southern Methodist) Ph.D. (Texas)	English	Associate Professor
CROMWELL E. THOMAS (1946) B.S. (Washington & Lee)	Engineering	Associate Professor
JAMES M. TOOLE (1968) B.S. (Pennsylvania State) M.S. (Wilkes) Ph.D. (Pennsylvania State)	Engineering	Associate Professor
PAUL R. WERNER (1946) B.S. (Susquehanna) M.A. (New York)	Accounting	Associate Professor
HOWARD WILLIAMS (1973) B.S. (Wilkes) M.A., Ph.D. (Pennsylvania State)	Economics	Associate Professor
ROY E. WILLIAMS (1967) B.A. (Eastern Nazarene) S.T.B. (Temple) Ph.D. (Drew)	Philosophy and Religious Studies	Associate Professor
MARIAN E. ALEXANDER (1972) B.S. (New York) M.S. (Simmons)	Nursing	Assistant Professor
REBECCA A. HOOVER ANWAR (1973) B.S. (Southwest Missouri State) M.A. (Maine) Ph.D. (London School of Economics)	Sociology	Assistant Professor
FRANK G. BAILEY (1968) B.S. (Pennsylvania) M.S. (Stevens) M.A. (Columbia) Ph.D. (Polytechnic Institute of Brooklyn)	Physics	Assistant Professor
JAMES P. BERG (1965) B.A. (Harvard) B.D., M.Div. (Lutheran Seminary) M.A. (Pennsylvania)	History	Assistant Professor
JOEL BERLATSKY (1970) B.A. (Carleton) M.A. (Brown) Ph.D. (Northwestern)	History	Assistant Professor

Date following name is the year of appointment.

BRUCE F. BERRYMAN (1973) B.S., M.S., Ph.D. (Wisconsin)	Environmental Science	Assistant Professor
FLORENCE R. BOURCIER (1973) B.S.N., M.S. (Boston)	Nursing	Assistant Professor
MARIE BYCZKOWSKI (1968) B.A. (Douglass) M.A. in L.S. (Rutgers)	Library	Assistant Professor (on leave)
RICHARD J. CARPENTER, JR. (1972) B.A. (Western State, Colorado) M.B.A. (Utah)	Aerospace Studies	Assistant Professor
HENRY R. CASILLI (1971) B.S. (Edinboro) M.A. (Pennsylvania State)	Fine Arts	Assistant Professor
E. SHELDON CURTIS (1952) B.S.C. (Washington & Lee)	Accounting	Assistant Professor
LORNA C. DARTE (1969) B.A. (George Washington) M.S. in L.S. (Drexel Institute of Technology)	Library	Assistant Professor
JAMES G. DeCOSMO (1962) B.S. (West Chester) M.S. (Adelphi)	Mathematics	Assistant Professor
ROBERT DeYOUNG (1960) B.S. (Rhode Island) M.A. (Columbia)	Economics	Assistant Professor
BERENICE D'VORZON (1968) B.F.A. (Cranbrook Academy of Art) M.A. (Columbia)	Fine Arts	Assistant Professor
PREM K. DWIVEDI (1971) B. Com., M. Com. (Allahabad, India)	Business Administration	Assistant Professor
THEODORE J. ENGEL (1966) B.B.A., M.A. (Miami)	Business Administration	Assistant Professor
H. CUTLER FALL (1969) B.A. (Brown) M.A. (Yale) Ph.D. (California, Santa Barbara)	Music	Assistant Professor
RICHARD A. FULLER (1969) B.S. (New York) M.A. (Columbia)	Fine Arts	Assistant Professor (on leave)
JOHN W. FURLOW, JR. (1970) A.B. (Middlebury) M.A. (Michigan) Ph.D. (North Carolina)	History	Assistant Professor

Date following name is the year of appointment.

HERBERT GARBER (1965) B.A. (New York) M.A., Ed.D. (Columbia)	Music	Assistant Professor
GEORGE GERA (1958) B.S. (Bloomsburg) M.A. (Columbia)	Business Education	Assistant Professor
R. WILLIAM GRAFF (1972) B.S., M.S., Ph.D. (Purdue)	Engineering	Assistant Professor
A. MICHAEL GREENWALD (1970) A.B. (Princeton) A.M., LL.B. (Harvard)	English	Assistant Professor
CHARLES S. GURDIN, JR. (1969) B.A. (Michigan) J.D. (Toledo)	Business Administration	Assistant Professor
VIVIAN V. GUYLER (1973) B.A. (Bates) M.A. (New York)	Fine Arts	Assistant Professor
ROBERT W. HALL (1973) B.S., M.B.A. (Pennsylvania State)	Commerce & Finance	Assistant Professor
PATRICIA M. HEAMAN (1966) B.A. (Wilkes) M.A., Ph.D. (Pennsylvania)	English	Assistant Professor (on leave)
ROBERT J. HEAMAN (1969) B.A. (Detroit) M.A., Ph.D. (Michigan)	English	Assistant Professor
DONALD A. HENSON (1970) B.A., M.A., Ph.D. (Purdue)	Philosophy	Assistant Professor
JON R. C. HOBROCK (1967) B.A. (Kenyon) M.S. (Lehigh)	Psychology	Assistant Professor
KLAUS HOLM (1970) B.S. (New York) M.F.A. (Yale)	Theater Arts	Assistant Professor
CLYDE R. HOUSEKNECHT (1972) B.A. (Lycoming) M.S. (Pennsylvania State) Ph.D. (Minnesota)	Biology	Assistant Professor
BETTY L. JAHR (1968) B.A. (St. Xavier) M.S. (Ohio)	Mathematics	Assistant Professor

Date following name is the year of appointment.

JOHN G. JARDINE (1970) B.A. (Santa Clara) M.A. (Marquette)	Philosophy	Assistant Professor
EDWIN L. JOHNSON (1966) B.A. (Wilkes) M.A. (Bucknell)	Education	Assistant Professor
WALTER KABY (1968) B.S., M.S. (Kharkov Institute of Technology)	Engineering	Assistant Professor
MEADE KEMRER (1972) B.A. (Lycoming) M.A. (Temple) Ph.D. (Arizona)	Sociology	Assistant Professor
ANNE V. KISH (1960) B.A. (Wilkes) M.A. (Scranton)	English	Assistant Professor
FREDERICK J. KROHLE (1965) B.A. (Wilkes) M.S. in L.S. (Drexel Institute of Technology)	Library	Assistant Professor
HILDA A. MARBAN (1969) M.A. (Trinity) Ph.D. (Virginia)	Foreign Languages	Assistant Professor
ROY N. MARTIN (1971) B.A. (Cincinnati) M. Div. (Lexington Seminary)	Sociology	Assistant Professor
JOHN F. MEYERS (1967) B.A. (Minnesota) M.A. (Clark)	History	Assistant Professor
INGER MILLER (1968) Baccalaureate, Aarhus Cathedral School, Denmark B.A. (Wilkes) M.A. (Pennsylvania State)	Foreign Languages	Assistant Professor
WILLIAM J. MISTICHELLI (1963) B.A. (LaSalle) M.A. (Pennsylvania)	English	Assistant Professor
CHESTER N. MOLLEY (1964) B.A. (Wilkes) M.A. (Bucknell) Ph.D. (Pennsylvania State)	English	Assistant Professor
JOHN H. NATZKE (1973) B.A. (Wisconsin State) M.A., Ph.D. (Western Michigan)	Sociology	Assistant Professor

Date following name is the year of appointment.

WALTER H. NIEHOFF (1968) B.A. (Lafayette) M.A. (Pennsylvania State)	Political Science	Assistant Professor
RAYMOND J. NUTAITIS (1969) B.S. (Wilkes) M.M. (Eastman School of Music)	Music	Assistant Professor
JOHN L. OREHOTSKY (1971) B.S. (Massachusetts Institute of Technology) M.S. (Polytechnic Institute of Brooklyn) Ph.D. (Syracuse)	Engineering	Assistant Professor
WALTER A. PLACEK, JR. (1969) B.S. (Wilkes) M.Ed. (Pennsylvania State)	Physics	Assistant Professor
MARY ELIZABETH RARIG (1973) B.S.N. (Western, Ontario) M.Ed. (Columbia)	Nursing	Assistant Professor
RICHARD T. REES (1972) B.S. (Wilkes) M.Ed., Ed.D. (Rutgers)	Education	Assistant Professor
JOSE M. RIBAS (1961) B.A., LL.B. (Barcelona) Ph.D. (Madrid)	Foreign Languages	Assistant Professor
J. PHILIP RICHARDS (1962) B.F.A. (Syracuse)	Fine Arts	Assistant Professor
WILLIAM A. RICHKUS (1973) B.S. (Rhode Island) M.S. (California, San Diego) Ph.D. (Rhode Island)	Biology	Assistant Professor
JOSEPH H. SALSBERG (1959) B.A. (Bucknell) A.M. (Columbia)	Mathematics	Assistant Professor
ROSENDO E. SANTOS, JR. (1968) B.M. (Philippines) M.M. (Catholic Univ. of America)	Music	Assistant Professor
DORIS B. SARACINO (1960) B.S., M.S. (East Stroudsburg)	Physical Education	Assistant Professor
ALBERT C. SERZAN (1967) B.A. (Yale) M.A.T. (Chicago)	Foreign Languages	Assistant Professor

Date following name is the year of appointment.

J. GEORGE SILES (1963) B.A. (Wilkes) M.S. (Scranton)	Education	Assistant Professor
HERBERT B. SIMON (1969) B.A., M.A. (New York)	Fine Arts	Assistant Professor
RICHARD E. SOURS (1965) B.S. (Towson) M.S. (Michigan State) Ph.D. (Virginia)	Mathematics	Assistant Professor
STEPHEN J. TILLMAN (1970) Sc.B., Ph.D. (Brown)	Mathematics	Assistant Professor
PHILIP R. TUHY (1960) B.A. (Valparaiso) M.G.A. (Pennsylvania)	Political Science	Assistant Professor
WINSTON TURNER (1971) B.A. (Lake Forest) M.A. (DePaul)	Psychology	Assistant Professor
LESTER J. TUROCZI (1972) B.A., M.S., Ph.D. (Rutgers)	Biology	Assistant Professor
JOHN S. WASILESKI (1970) B.A. (Wilkes) M.A., Ph.D. (Pennsylvania State)	Mathematics	Assistant Professor
EDMOND A. WATTERS, III (1971) B.A., M.A. (Lehigh)	Education	Assistant Professor
RAYMOND M. WEINSTEIN (1969) B.B.A. (City College of New York) M.A., Ph.D. (UCLA)	Sociology	Assistant Professor (on leave)
PAUL P. ZAVADA (1966) B.S. (Wilkes) C.P.A. (State of Pennsylvania)	Accounting	Assistant Professor
HEATHER M. ARDEN (1973) B.A. (Michigan State) M.A. (New York)	Foreign Languages	Instructor
RODGER BEARDE (1971) B.S., M.Ed. (West Chester)	Physical Education	Instructor
LIZA BELIC (1969) B.A., M.A. (Zagreb)	Foreign Languages	Instructor
SANDRA L. BLOOMBERG (1971) B.A. (Wilkes)	Physical Education	Instructor

Date following name is the year of appointment.

LILY DAVIS BYNON (1968) B.S. (Millersville) M.Ed. (Temple)	Education	Instructor
PHYLLIS S. CHENG (1971) B.S. (Wilkes)	Library	Instructor
LEWIS M. CHERE (1971) B.A. (Wilkes) M.A. (North Carolina)	Library	Instructor
NEIL M. COMO (1970) B.S.E.E., M.S.E.E. (Rensselaer Polytechnic) M.S. (Columbia)	Mathematics	Instructor
SALLY C. CONNOR (1971) B.A. (Pennsylvania)	Library	Instructor
EUGENE S. DOMZALSKI (1969) B.S. (Wyoming) M.S. (Wilkes)	Physical Education	Instructor
SHIRLEY EATON (1973) B.S. (Boston) M.A. (Middlebury)	Foreign Languages	Instructor
JAY E. FIELDS (1973) B.A. (West Liberty State) M.E. Education (West Virginia) M.A. Speech-Theater (Central Michigan)	English	Instructor
KATHRYN GREGORY (1970) B.S., M.Ed. (Pennsylvania State)	Environmental Science	Instructor
MICHAEL HABERKORN (1972) B.Mus., M.Mus. (Illinois)	Music	Instructor
MARY Z. KERR (1969) B.A. (Wellesley) M.A. (Rochester)	English	Instructor
BRADFORD L. KINNEY (1973) B.A. (Florida Southern) M.A. (Indiana)	English	Instructor
ARVID W. LEKSTROM (1969) B.M., M.A. (Boston)	Foreign Languages	Instructor
MARY LOU LOVETTE (1968) B.S. (SUNY, Cortland) M.A. (SUNY, Binghamton)	Foreign Languages	Instructor
CHARLES M. MATTEI (1970) B.S., M.S. (Notre Dame)	Environmental Science	Instructor

Date following name is the year of appointment.

GAY F. MEYERS (1970) B.S. (Lock Haven)	Physical Education	Instructor
LEOTA NEVIL (1968) B.S. in Ed. (Bloomsburg)	Library	Instructor
ROBERT F. PASQUARELLI (1970) A.B. (Syracuse)	English	Instructor (on leave)
RANDELL K. PEYSER (1973) B.F.A. (Pratt Institute) M.F.A. (Boston)	Fine Arts	Instructor
PATRICIA Y. PISANESCHI (1969) B.A. (Wilkes) M.S. (Pennsylvania State)	Psychology	Instructor (on leave)
EDWARD J. ROKE (1972) B.A. (Wilkes) M.A. (Bucknell)	Psychology	Instructor
ANN W. RUSSIN (1973) B.S.N. (Cornell)	Nursing	Instructor
JOSEPH SKVARLA (1971) B.A. (Wilkes)	Physical Education	Instructor
MARGARET A. THOMPSON (1972) B.S. (Indiana State Teachers) M.Ed. (Pittsburgh)	Education	Instructor
MARILYN L. TURNER (1973) B.S.N. (Loma Linda)	Nursing	Instructor
CASIMIR TYBURSKI (1970) B.A. (Delaware)	English	Instructor
THEODORE M. VEREMEYCHIK (1971) B.S. (Indiana University of Pa.) M.M. (Miami)	Music	Instructor
WILLIAM J. WEBER (1970) B.S. (Maryland) M.M. (Catholic)	Music	Instructor
CLIFFORD E. BALSHAW (1971) F.A.G.O. (Quilmant Organ School)	Music	Adjunct Professor
ABRAHAM D. BARRAS (1971) B.A. (Columbia) B. Rel. Ed., MHL., DHL. (Jewish Theological Seminary)	Religion	Adjunct Professor

Date following name is the year of appointment.

BARBARA CRAIG, R.S.M. (1973) B.A. (Misericordia) M.A. (Middlebury) Ph.D. (Georgetown)	Education Upward Bound	Adjunct Professor
MILDRED K. FLEETWOOD (1973) B.S. (Westhampton) M.S., Ph.D. (Medical College of Va.)	Biology	Adjunct Professor
ALAN HUSBAND (1970) B.S. (Millersville) M.S. (Temple)	Education	Adjunct Professor
JOSEPH H. KANNER (1949) B.A. (Bucknell) M.A. (New School for Social Research)	Psychology	Adjunct Professor
THOMAS F. KELLY (1969) B.A. (Wilkes) M.A. (Lehigh)	Economics	Adjunct Professor
TERESA B. McDONALD (1972) B.S. (Bloomsburg) M.P.A. (Pennsylvania State)	Political Science	Adjunct Professor
THOMAS J. MORAN (1970) B.S. (Wilkes) M.S. (Columbia)	Journalism	Adjunct Professor
RICHARD G. RASPEN (1972) B.S. (Wilkes) M.Ed. (Bloomsburg)	Business Administration	Adjunct Professor
ANDREW SHAW, JR. (1972) B.S. (Wilkes) M.G.A. (Pennsylvania)	Political Science	Adjunct Professor
JOSEPH A. SKOK (1969) B.S. (Lock Haven) M.Ed. (Pennsylvania State)	Education	Adjunct Professor
EDWARD B. STOCKHAM (1970) A.B., Ph.D. (Pennsylvania)	Chemistry — Wilkes- Hahnemann Program	Adjunct Professor
ANTHONY J. TURCHETTI (1973) B.S., M.S. (Pennsylvania State) LL.B. (George Washington) M.D. (Hahnemann)	Wilkes-Hahnemann Program	Adjunct Professor
STANLEY C. USHINSKI (1971) B.S. (King's) M.D. (Jefferson)	Biological Research	Adjunct Professor

Date following name is the year of appointment.

Standing Committees of the Faculty

The following are the Faculty Committee assignments made for the academic year 1973-74. The President is ex-officio on all Committees except Committees on Academic Freedom.

Academic Standing

Robert S. Capin, Chairman (1974)
Herbert Garber (1974)
David M. Leach (1974)
Mary Lou Lovette (1974)
Robert H. DeYoung (1975)
Benjamin F. Fiester (1975)
Charles B. Reif (1975)
Joseph H. Salsburg (1975)
Eugene L. Hammer (1976)
Stanley B. Kay (1976)
Mary Z. Kerr (1976)
John N. Labows (1976)
Jane K. Lampe
George F. Ralston
Donald W. Tappa
John P. Whitby

Admissions

Stanley S. Gutin, Chairman (1974)
William R. Gasbarro (1974)
Richard T. Rees (1974)
Frederic E. Bellas (1975)
Herbert B. Simon (1975)
Richard E. Sours (1975)
Reed D. Acheson (1976)
Angel Belic (1976)
Roy E. Williams (1976)
John J. Chwalek
John P. Whitby

Athletic

Cromwell E. Thomas, Chairman ('74)
Klaus Holm (1974)
Betty L. Jahr (1974)
Welton G. Farrar (1975)
Kathryn Gregory (1975)
Raymond J. Nutaitis (1975)
Boyd L. Earl (1976)
George F. Elliot (1976)
Roland C. Schmidt (1976)
Arthur J. Hoover
John G. Reese

Curriculum

Robert C. Riley, Chairman (1976)
Thomas N. Kaska (1974)
Ruth W. McHenry (1974)
Michael H. Seitz (1974)
Robert E. Werner (1974)
Joel Berlatsky (1975)
Donald A. Henson (1975)
Robert E. Ogren (1975)
James P. Rodechko (1975)
Mahmoud H. Fahmy (1976)
Umid R. Nejib (1976)
George Siles (1976)
Donald W. Tappa
Bernard J. Vinovrski

Faculty Policy

Ralph B. Rozelle, Chairman (1975)
James DeCosmo (1974)
Thomas N. Kaska (1974)
David M. Leach (1975)
James P. Rodechko (1976)
Francis J. Salley (1976)

Financial Aid

Wilbur F. Hayes, Chairman (1974)
John F. Meyers (1974)
John S. Wasileski (1974)
Michael J. Barone (1975)
Betty L. Jahr (1975)
Walter A. Placek (1975)
Anne V. Kish (1976)
Inger K. Miller (1976)
George Siles (1976)
Richard G. Raspen
Bernard J. Vinovrski

Standing Committees of the Faculty

The President if ex-officio on all Committees except
Committees on Academic Freedom.

Graduate Studies

Franck G. Darte, Chairman (1974)
Francis J. Donahoe (1974)
Bronis J. Kaslas (1974)
Bing K. Wong (1974)
James J. Bohning (1975)
Harrie E. Caldwell (1975)
Philip L. Rizzo (1975)
Robert E. Werner (1975)
Dale A. Buehler (1976)
Mahmoud H. Fahmy (1976)
James M. Toole (1976)
Stanko M. Vujica (1976)
Harold E. Cox
Clyde R. Houseknecht

Library

Edmond A. Watters, Chairman ('76)
Frederick J. Krohle (1974)
Waghiha Taylor (1974)
Winston M. Turner (1974)
John W. Furlow (1975)
Levere C. Hostler (1975)
Charlotte V. Lord (1975)
Dale A. Buehler (1976)
Lorna C. Darte (1976)
Stanley J. Holden
Andrew Shaw

Student Life

Theodore J. Engel, Chairman (1975)
Kuo-Kang Shao (1974)
James M. Toole (1974)
John N. Labows (1975)
William J. Mistichelli (1975)
Joseph T. Bellucci (1976)
Lorna C. Darte (1976)
Albert C. Serzan (1976)
Edward R. Baltruchitis
Linda R. Hobrock
Linda M. Jansky
Jane K. Lampe
Stephen J. Placko
George F. Ralston

Student Publications

Gay M. Meyers, Chairman (1976)
Frank G. Bailey (1974)
James P. Berg (1974)
Chester Colson (1974)
Angel Belic (1975)
Joseph T. Bellucci (1975)
Stanley B. Kay (1975)
Alfred S. Groh (1976)
Mary Lou Lovette (1976)
David S. DeCosmo
Thomas J. Moran

Teacher Recognition and Effectiveness

William R. Stine, Chairman (1974)
Charlotte V. Lord (1974)
Rosendo E. Santos (1974)
Michael J. Barone (1975)
John G. Jardine (1975)
John L. Orehotsky (1975)
Boyd L. Earl (1976)
Mary Z. Kerr (1976)
Winston M. Turner (1976)
Edward R. Baltruchitis
Linda R. Hobrock

Academic Freedom

- a. MEDIATION
Robert E. Werner (1974)
Robert C. Riley (1975)
Eugene L. Hammer (1976)
James J. Bohning, alternate ('76)
- b. FACULTY-TRUSTEE
Welton G. Farrar (1974)
Robert S. Capin (1976)
George F. Elliot, alternate (1974)

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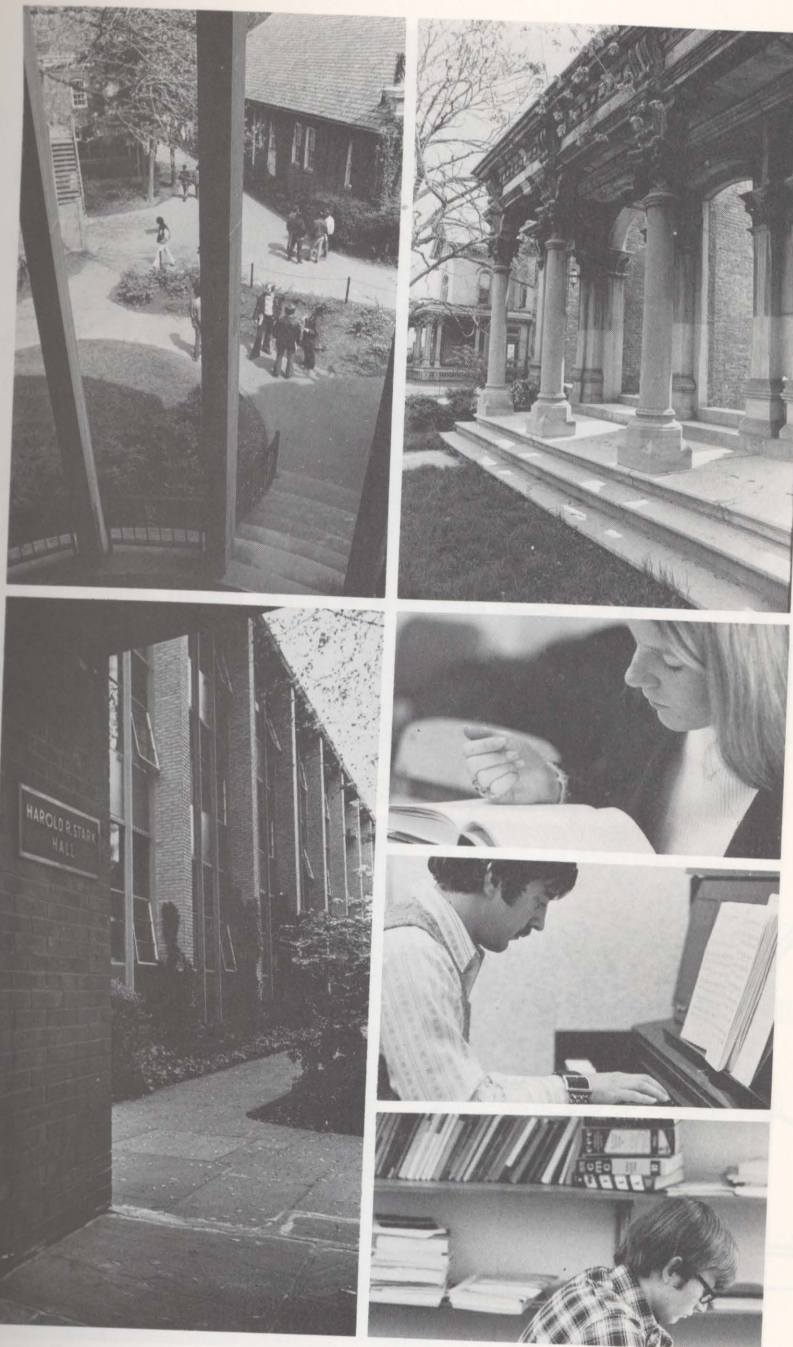
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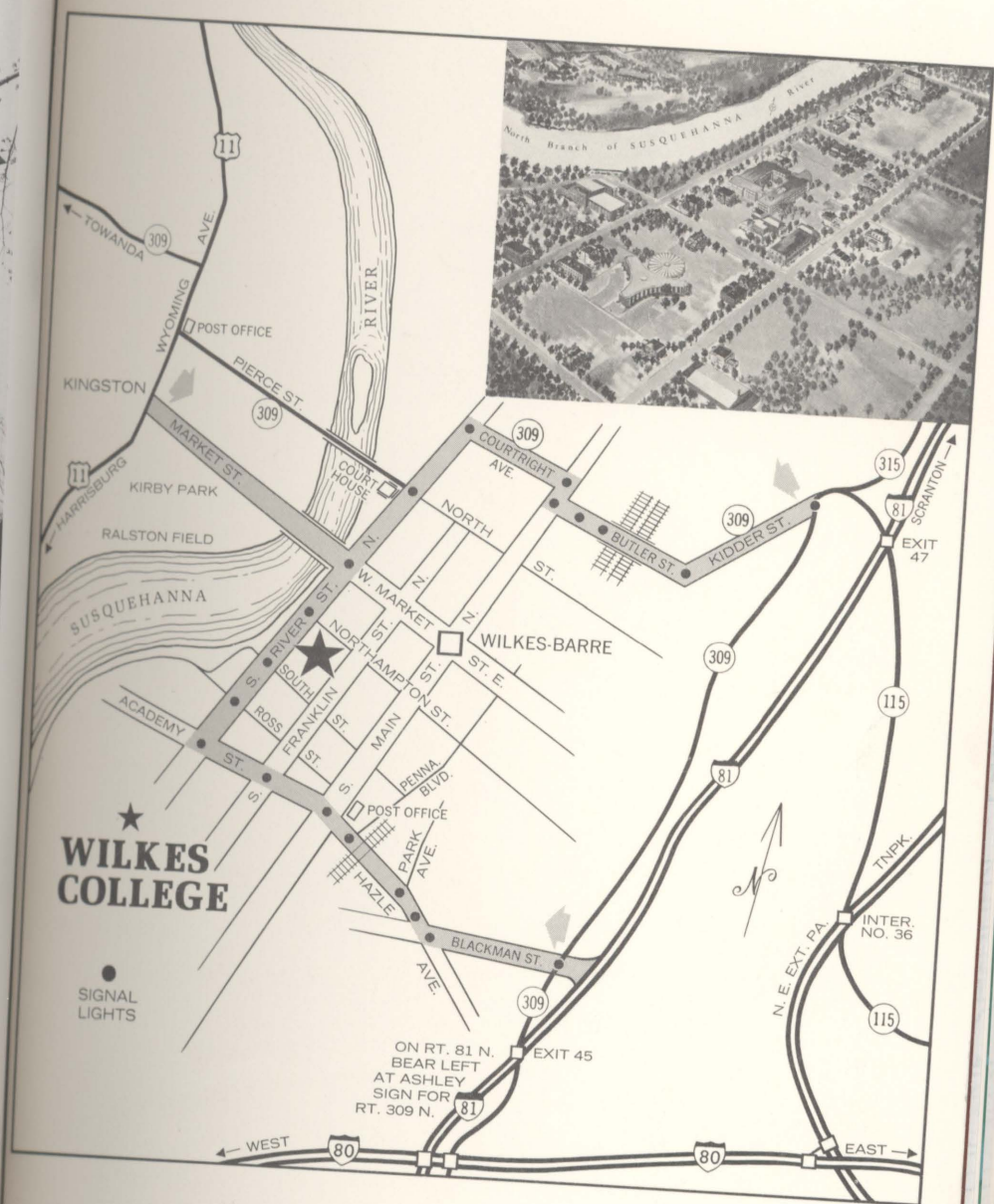
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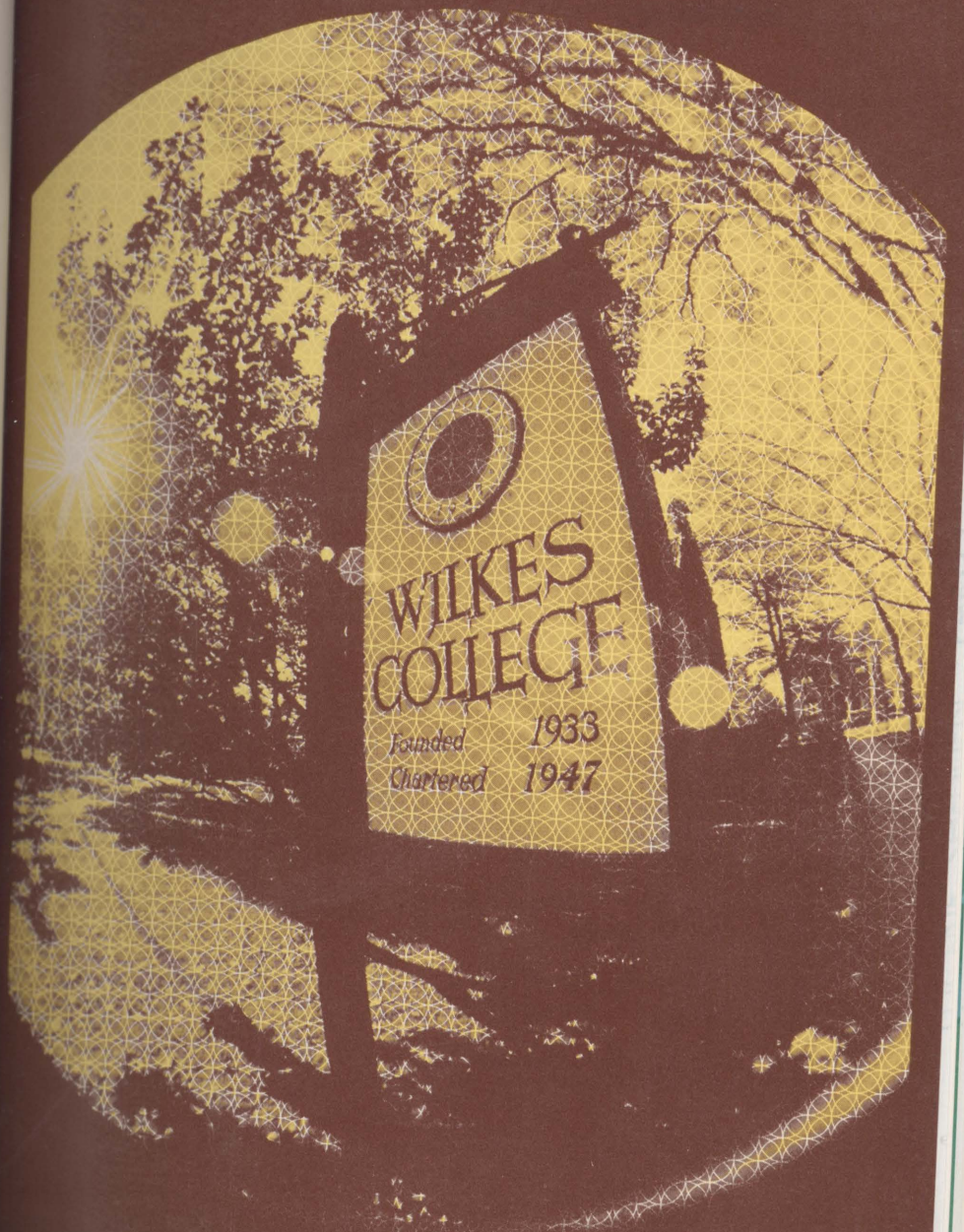


Center for the Performing Arts and Dorothy Darte Music Center.



Wilkes Evening College
1973 BULLETIN
Fall Semester

WILKES-BARRE
PENNSYLVANIA



Calendar

Registration for the Evening College is as follows:

Tuesday, September 4 8:30 a.m. to 8:00 p.m.
Wednesday, September 5 8:30 a.m. to 8:00 p.m.
Thursday, September 6 Classes begin at 6:00 p.m.
Wednesday, November 21 Thanksgiving recess begins at 10:00 p.m.
Monday, November 26 Classes begin at 6:00 p.m.
Thursday, December 13 Classes end at 6:00 p.m.
Monday, December 17, through
Saturday, December 22 Final Exams
Saturday, December 22 End First Semester

For further information write to:

Director, Evening and Summer College
Wilkes College
Wilkes-Barre, Pa. 18703
Phone 824-4651, Ext. 303. After 5 p.m., 824-4656

WILKES COLLEGE

Bulletin



EVENING SESSION

Fall Semester
1973

WILKES-BARRE, PENNSYLVANIA

An Educated Man

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

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

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

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

*knows that man's progress requires intellec-
tual vigor, moral courage, and physi-
cal 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, eco-
nomic, and political life of the com-
munity;*

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

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

Wilkes College

Wilkes College had its beginnings 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 liberal arts college. The College has grown steadily to its current enrollment of approximately 2,600 full-time day students and 1,000 evening students engaged in undergraduate, graduate, and continuing education programs.

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.

AN INDEPENDENT COLLEGE

It was inevitable that the new college should be non-sectarian, 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.

FREEDOM OF INQUIRY

Years have passed since Bucknell gave the control of the Junior College to a local Board of Trustees, guided by the late Gilbert S. McClintock, and events of these years demonstrate the wisdom of their decision. With responsibility came a pressing desire to strengthen the work of the faculty, united in their faith that the intellectual and spiritual resources of the student are vigorous where the creative mind is free.

UNITY AMIDST DIVERSITY

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 encourages them to create friendships based upon respect for differences, and to adhere to those ideals that create unity and good will amidst diversity.

While academic work is the basis of the College program, the faculty recognizes that academic training will be of little importance unless students emerge as men and women of strong faith and fine character. In the words of John Stuart Mill, "Before you can make men doctors and lawyers, you must first make them men."

Wilkes College is committed to education as a way of life.

A COOPERATIVE EFFORT

The original concept of community effort has been strengthened with the passing of the years and with growing experience. It has been clearly demonstrated that the students, the College, and the community all benefit from cooperative effort. This cooperative relationship, with its emphasis on trained intelligence and extended planning, has resulted in cooperative action.

DECADES OF GROWTH

Because of their interest and faith, friends have multiplied their support during the past decades and the campus has expanded steadily so that it now includes most of the properties facing the River Common. Fortunately, a growing endowment has kept pace with the expansion of the campus.

ACCREDITATION

Wilkes is accredited by the Department of Public Instruction of the State of Pennsylvania and the Middle States Association of Colleges and Secondary Schools. The Accounting curriculum has been accredited by the Certified Public Accounting Examiners of the State of New York.

Evening College

INFORMATION

CURRICULA

UNDERGRADUATE PROGRAM

To meet the needs of ambitious men and women who desire the help which may come from college instruction, Wilkes College offers a wide program of Evening courses from which selections may be made according to individual tastes and requirements.

The courses offered by the Evening College are designed for their special value to the following groups:

1. Those employed in business or governmental organizations who desire and need training to fit them for advancement.
2. Men and women who wish to prepare themselves by study and training for work in a new field.
3. Teachers, nurses and those in other professions who desire additional training in one or more subjects in order to meet the professional requirements demanded of them.
4. Business executives who are interested in the study of problems relating to business administration and the economy of the nation and the world.
5. Those who wish to prepare for the profession of accounting and aspire to qualify for a certification by the Commonwealth of Pennsylvania as Certified Public Accountants.
6. Individuals wishing to broaden their knowledge or to increase their skill in certain fields for their personal satisfaction and improvement.
7. Men and women seeking a college degree through attendance in the Evening College.

Except where designated in the course schedule, classes for courses offered in the evening will be scheduled on Monday through Thursday between the hours of 6:00 p.m. and 10:00 p.m.

ADMISSIONS

Evening College students who wish to work toward a degree shall make application for admission as a degree candidate when they first register. Students who enrolled without any plan to earn a degree, but who conclude in consequence of their experience in the evening school

that they wish to earn a degree, must apply for admission to the degree program when they complete thirty hours of work in the Evening Division. When this application is made, the student's record will be examined to determine his eligibility and his prospects of successful achievement. This will be followed by a personal interview with the Director of the Evening Division and a recommendation will then be submitted to the Office of Admissions.

If the student is accepted as a degree candidate, he will be notified by the Office of Admissions. If the student is not accepted as a degree candidate, he may petition to continue as a special student. This will offer him a further opportunity to demonstrate his ability to benefit from continued study.

Students who have been refused admission to the regular day school are not encouraged to seek admission to the Evening Division. However, if written permission is granted by the Dean of Admissions, a student may apply for admission to the Evening Division as a special student.

No student listed as an academic failure at this or any other college may be permitted to register in the Evening Division within a year following his failure. After the lapse of a year the student from another college may submit an application for admission. The Wilkes student who has been denied the privilege of continuing his studies must apply to the Academic Standing Committee for re-admission.

Students who wish to transfer from another institution must provide a transcript of all previous college work.

Students who do not satisfy the usual educational requirements for admission to degree programs may qualify by demonstrating their competence. This can be done by passing the qualifying examinations for a secondary school diploma and by demonstrating their proficiency in evening classes. The Director of the Evening Division will inform the student of the steps that are needed to qualify him for admission.

Under the regulations of the Veterans Administration, a student who does not qualify as a degree candidate may follow one of two programs. He may pursue college work from a planned list of courses approved by the Veterans Administration; or, he may earn the high school equivalent diploma by passing the United States Armed Forces Institute (USAFI) and/or the General Equivalency Diploma (GED) tests in order to apply for admission as a degree candidate.

The Director of the Evening Division will act as advisor to all students enrolled on a part-time basis (Day or Evening Division) and to all students enrolled in the Evening Division on a full-time basis.

If a regular day student enrolls for an Evening Division course, he will retain his day school faculty advisor. If an Evening Division student enrolls in a day school course, he will be classified as a Special Student for the semester in which he is registered for a day school course. During this period he will retain his Evening Division advisor. Should he transfer to the day school, he will be assigned a regular faculty advisor.

RESEARCH AND GRADUATE CENTER

The Research and Graduate Center is an excellently equipped and staffed installation that is an integral part of the College complex. During the school term the Center will continue the various public and private research projects now in progress.

LABOR-MANAGEMENT TRAINING COURSES

To establish a climate for industrial redevelopment the College has pioneered a Labor-Management Training Program in which the needs of the individual and the company are analyzed.

Plans are arranged in consultation with officials, foremen, and other employees and are designed to meet the general and specific requirements of the particular group. Where several firms are confronted with common problems, special classes are organized to include representation of several companies.

INSTITUTE OF REGIONAL AFFAIRS

The Institute of Regional Affairs is a multi-purpose college organization which views regional problems as belonging to no simple academic discipline, but rather as a contemporary phenomenon spilling into many disciplines. The Institute was created to assure coordination of varied efforts in order to better understand and resolve complex and contemporary problems.

Its four-fold purpose is: education and training, community information, research, and consultation.

The underlying philosophy of the Institute of Regional Affairs is cooperation, rather than reform of partisanship.

FACILITIES

The College is located in Wilkes-Barre, Pennsylvania, in the heart of the picturesque and historic Wyoming Valley. This ideal location in the foothills of the Poconos offers abundant cultural and recreational facilities and affords close proximity and convenient transportation to the metropolitan areas of New York and Philadelphia.

THE LIBRARY

The Library posts its Fall schedule at the beginning of the semester.

Evening College students may borrow books from the Library by presenting their I.D. card.

THE BOOKSTORE

The Bookstore offers a complete stock of necessary textbooks and supplies. It will be open as follows:

Monday through Friday 8:30 a.m. to 4:30 p.m.

Saturday 9:00 a.m. to 12:00 noon

EXPENSES

Tuition — \$60 per semester hour credit.

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

Books and supplies may be purchased at the bookstore and must be paid for at the time of purchase.

WITHDRAWAL

A student who withdraws from the evening session or drops courses after the first week must receive approval from the instructor and should give prompt written or verbal notice to the Director of the Evening and Summer College in order that their records may not unjustly show failure in courses.

Students in good standing who withdraw from the College will receive a refund of tuition under the following conditions: during the first six weeks of the evening session one-half of the tuition will be refunded upon request to the Director of Evening and Summer College, if the withdrawal is made for adequate and satisfactory reasons. After the first six weeks no refunds are allowed and the student is obligated for the full costs of the term. No student who is suspended or expelled shall be entitled to any refunds.

CHANGE OF SCHEDULE

Occasionally changes in the Evening College Schedule become necessary. Such a change may include the cancellation of one course or the addition of another. Therefore, the College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. Wherever possible, any change will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.



Certificate of Achievement Program

IN

ACCOUNTING
MANAGEMENT

BANKING
MARKETING

Students of Business Administration, who hold full-time jobs while studying in the evening and summer college, are required to devote many years to their quest for a bachelor's degree. To encourage these business men and women, Wilkes College will award a "Certificate of Achievement" to those who earn 42 hours of credit in evening and summer school programs with at least 24 hours in Business Administration and 18 hours in General Education.

The Certificate of Achievement does not designate the completion of any recognized program. It gives recognition of achievement and notes that the recipient has completed a sequence of courses which may be credited toward the bachelor's degree should the student elect to continue his studies for the degree.

It is important to note that the courses in these programs are presently offered at the College and are now required for the Bachelor's degree in Commerce and Finance.

A student taking six credit hours of work in the Fall, Spring, and Summer sessions can complete the requirements for the certificate in two and one-half years. A student who elects not to attend the summer sessions will require three and one half years to complete the program.

Call or write for brochure and further information.

Evening College

UNDERGRADUATE DIVISION

Fall Semester — 1973

Course	Description	Day & Hour	Room No.	Credit Hrs.
ACCOUNTING:				
Acct. 101E	Elementary Accounting I	T 6:30-9:30	Par. 35	3
Acct. 101E2	Elementary Accounting 1	Th 6:30-9:30	Par. 35	3
Acct. 102E	Elementary Accounting II (Pre: Acct. 101)	W 6:30-9:30	Par. 35	3
Acct. 111E	Intermediate Accounting I (Pre: Acct. 102)	M 6:30-9:30	Par. 35	3
Acct. 201E	Cost Accounting I (Pre: Acct. 112 or approval of instructor)	T 6:30-9:30	Par. 45	3
Acct. 221E	Taxes I (Pre: Acct. 112, 202 or approval of instructor)	W 6:30-9:30	Par. 45	3
Acct. 231E	Auditing I (Pre: Acct. 202)	Th 6:30-9:30	Par. 45	3
Acct. 241E	Advanced Accounting I (Pre: Acct. 112)	M 6:30-9:30	Par. 45	3
BIOLOGY:				
Bio. 101E	Biological Science I	T 6:30-9:30	Stark 306	3
BUSINESS ADMINISTRATION:				
B.A. 209E	Business Correspondence and Reports (Pre: Eng. 102)	M 6:30-9:30	Par. 34	3
B.A. 225E	Corporation Finance (Pre: Econ. 102)	Th 6:30-9:30	Par. 34	3
B.A. 231E	Business Law-Introduction, Contracts, and Sales	W 6:30-9:30	Par. 34	3
B.A. 241E	Life Insurance (Pre: Approval of instructor)	M 6:30-9:30	Par. 23	3
B.A. 251E	Principles of Management I	T 6:30-9:30	Par. 25	3
BUSINESS EDUCATION:				
B.E. 105E	Elementary Shorthand	TTh 6:00-8:00	Par. 33	2
B.E. 107E	Elementary Typewriting (Fee \$10)	TTh 8:00-10:00	Par. 33	2

Course	Description	Day & Hour	Room No.	Credit Hrs.
ECONOMICS:				
Econ. 101E	Principles of Economics I	W 6:30-9:30	Par. 23	3
Econ. 101E2	Principles of Economics I	Th 6:30-9:30	Par. 25	3
Econ. 102E	Principles of Economics II (Pre: Econ. 101)	M 6:30-9:30	Par. 25	3
Econ. 111E	Economic History	T 6:30-9:30	Par. 34	3
Econ. 201E	Money & Banking (Pre: Econ. 102)	W 6:30-9:30	Par. 25	3
Econ. 217E	Economics of Transportation (Pre: Econ. 102)	Th 6:30-9:30	Par. 43	3
Econ. 223E	Collective Bargaining (Pre: Econ. 102)	T 6:30-9:30	Par. 43	3
Econ. 225E	International Trade (Pre: Econ. 102)	W 6:30-9:30	Par. 43	3
Econ. 229E	Comparative Economic Systems (Pre: Econ. 102 or approval of instructor)	T 6:30-9:30	Kirby 108	3
Econ. 231E	Applied General Statistics (Pre: Approval of instructor)	Th 6:30-9:30	Weck.An.	3
Econ. 241E	Economic Analysis (Pre: Econ. 102)	M 6:30-9:30	Par. 43	3
EDUCATION:				
Ed. 351E	Educational Measurements	Th 4:00-6:00	Kirby 107	2
ENGLISH:				
Eng. 101E	Composition I	Th 6:30-9:30	Bdf. 12	3
Eng. 102E	Composition II (Pre: Eng. 101)	M 6:30-9:30	Bdf. 12	3
Eng. 131E	Fundamentals of Speech	T 6:00-8:00	Bdf. 12	2
Eng. 151E	Western World Literature I	W 6:30-9:30	Bdf. 12	3
Eng. 420E	Studies in Renaissance Literature (Shakespeare: The Tragedies)	M 6:30-9:30	Bdf. Sem.	3
ENVIRONMENTAL SCIENCE:				
Env.Sci. 101E	Introductory Earth Science Lab Lab Fee \$20	W 6:30-9:30	Stark 109 Stark 100	3

Course	Description	Day & Hour	Room No.	Credit Hrs.
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FINE ARTS:

F.A. 101E	Experiencing Art I	T 6:30-9:30	SLC 7	3
F.A. 397E	Survey of American Art	MW 6:30-8:00	SLC 7	3
F.A. 397E	Teaching of Elementary Art	T 5:30-8:30	SLC 217	3

Note: This course may be substituted for F.A. 101 for those students in the B.A. program in Elementary Education.

HISTORY:

Hist. 101E	History of World Civilization I	Th 6:30-9:30	Franklin 14	3
Hist. 102E	History of World Civilization II	M 6:30-9:30	Weck.An.	3
Hist. 333E	The Age of Big Business, 1865-1914 (Pre: Hist. 208)	T 6:00-9:00	Franklin 14	3
Hist. 381E	History of Latin America	W 6:30-9:30	Kirby 102	3
Hist. 497E	Seminar: Modern Nationalism (Pre: Approval of instructor)	M 6:30-9:30	Kirby 107	3

JOURNALISM:

Jour. 101E	Basic News Writing I Fee \$10	M 6:30-9:30	Par. 33	3
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MATHEMATICS:

Math. 100E	Pre-Calculus Mathematics (Pre: Two years of secondary school math, in algebra)	MW 6:00-8:00	Miner 11	4
Math. 101E	Fundamentals of Mathematics	M 6:30-9:30	Miner 20	3
Math. 105E	Introductory Calculus I For social and natural science students (Pre: Two years of secondary school math, in algebra and geometry.)	TTh 6:00-8:00	Miner 11	4
Math. 150E	Elementary Statistics	MW 6:30-8:00	Miner 12	3
Math. 261E	Introduction to Computer Science Fee \$20	T 6:30-9:30	Stark 204	3
Math. 263E	Fortran Programming (Pre: Math. 261 or consent of instructor)	Th 6:30-9:30	Stark 204	3

In addition to the above courses, a number of senior-graduate courses will be offered. Generally, these courses will be scheduled twice per week in the late afternoon (4:00-5:30) or evening.

Please consult the Graduate Office or the Department of Mathematics for this course listing.

Course	Description	Day & Hour	Room No.	Credit Hrs.
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MUSIC:

Mus. 101E	Introduction to the Materials and Literature of Music I	T 6:30-9:30	DDD 202	3
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Applied Music Room and Hours to be arranged

Note: It is important that all students who register for applied music through the evening college be advised to consult with Mr. Gasbarro, Department chairman, before completing their registration.

NURSING EDUCATION:

N.E. 106E	Supervision and Administration	W 4:00-6:00	Kirby 109	2
N.E. 107E	Principles and Methods in Nursing Education (Pre: Psy. 102 or permission of instructor)	T 4:00-6:00	Kirby 109	2
N.E. 108E	Multi-Sensory Techniques in Nursing Education (Pre: N.E. 107 may be taken concurrently)	T 6:30-7:30	Kirby 109	1
N.E. 112E	Field Experience in Supervision or Teaching	Time and place to be arranged		4

PHILOSOPHY:

Phil. 101E	Introduction to Philosophy	Th 6:30-9:30	Kirby 102	3
Phil. 102E	Logic and Scientific Method	M 6:30-9:30	Kirby 102	3
Phil. 297E	Philosophical Explorations	T 6:30-9:30	Kirby 102	3

PHYSICAL EDUCATION:

P.E. 105E	Hygiene	T 7:00-8:00	Miner 12	1
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PHYSICS:

Phys. 101E	Physical Science I	Th 6:30-9:30	Stark 114	3
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POLITICAL SCIENCE:

P.S. 101E	Political Science I	M 6:30-9:30	Franklin 14	3
P.S. 221E	International Law (Pre: P.S. 101 and 102)	T 6:30-9:30	Kirby 107	3
P.S. 251E	The Role of Planning in Urban Development	W 6:30-9:30	Franklin 14	3

Course	Description	Day & Hour	Room No.	Credit Hrs.
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PSYCHOLOGY:

Psy. 101E	General Psychology I	M 6:30-9:30	Kirby 103	3
Psy. 102E	General Psychology II (Pre: Psy. 101)	T 6:30-9:30	Kirby 103	3
Psy. 221E	Child Psychology (Pre: Psy. 101-102)	M 6:30-9:30	Stark 306	3
Psy. 232E	Human Behavior (Pre: Psy. 101-102)	W 6:30-9:30	Stark 306	3

RETAILING:

Ret. 101E	Principles of Retailing	W 6:30-9:30	Kirby 108	3
Ret. 214E	Retail Buying (Pre: Approval of instructor)	T 6:30-9:30	Kirby 108	3

SOCIOLOGY:

Soc. 101E	Introduction to Sociology and Anthropology I	W 6:30-9:30	Par. 53	3
Soc. 251E	Fields of Social Work (Pre: Soc. 101-102, Psy. 101-102)	M 6:30-9:30	Par. 53	3

Evening College

GRADUATE DIVISION

Fall Semester — 1973

Course	Description	Day & Hour	Room No.	Credit Hrs.
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BIOLOGY:

Bio. 311	Bacteriology			
Bio. 321	Genetics			
Bio. 331	Physiology			
Bio. 441	Immunology and Immunochemistry			
Bio. 451	Invertebrate Biology			

BUSINESS ADMINISTRATION:

Econ. 506	Labor-Management Economics			
Acct. 503	Managerial Accounting			
B.A. 502	Management Science			
Econ. 473	Pre-Seminar			
Econ. 532	Wage Determination and Administration			
B.A. 551	Investment Portfolio Management			
B.A. 522	Quantitative Aspects of Management			
B.A. 511	Modern International Commerce			
B.A. 513	Human Behavior and the Marketing Process			

CHEMISTRY:

Chem. 341	Elementary Physical Chemistry			
Chem. 352	Biochemistry			
Chem. 411	Advanced Analytical Chemistry			
Chem. 440	Quantum Chemistry			
Chem. 531	Stereo Chemistry			

EDUCATION:

Ed. 430	Developmental Reading			
Ed. 510	Psychological Foundations of Education			
Ed. 514	Historical Foundations of Education			
Ed. 520	Tests and Measurements			
Ed. 532A	Problems in Elementary Education Mathematics			
Ed. 534	Elementary School Curriculum			

Course	Description	Day & Hour	Room No.	Credit Hrs.
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ENGLISH:

Eng. 374	Modern Drama			
Eng. 420	Studies in Renaissance Literature (Shakespeare)			

ENVIRONMENTAL SCIENCE:

E.S. 402	Environmental Geomorphology			
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HISTORY:

Hist. 331	Colonial America			
Hist. 333E	Age of Big Business			
Hist. 353	Early Medieval Europe			
Hist. 357	History of Russia to 1815			
Hist. 381E	Colonial Latin America			
Hist. 497	Modern Nationalism			

MATHEMATICS:

Math. 311	Functions of A Real Variable			
Math. 331	Introduction to Abstract Algebra I			
Math. 343	Introduction to Geometry			
Math. 351	Probability and Mathematical Statistics			
Math. 380	Topics in Mathematics			
Math. 441	Introduction to Topology I			
Math. 531	Modern Algebra I			
Math. 480	Topics in Mathematics			

PHYSICS:

To be announced

WILKES EVENING COLLEGE
1974 BULLETIN
Spring Semester

WILKES-BARRE
PENNSYLVANIA



WILKES EVENING COLLEGE
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Calendar

Registration for Evening College:

Wednesday, January 16.....	8:30 a.m. to 8:00 p.m.
Thursday, January 17	8:30 a.m. to 8:00 p.m.
Friday, January 18	8:30 a.m. to 8:00 p.m.
Monday, January 21	Classes begin at 6:00 p.m.
Thursday, April 4.....	Spring Recess begins at 10:00 p.m.
Monday, April 22.....	Classes begin at 6:00 p.m.
Thursday, May 9.....	Classes end at 10:00 p.m.
Monday, May 13, through	
Saturday, May 18.....	Final Examination Period
Sunday, May 26.....	Baccalaureate Service and Commencement Exercises

For further information, write or call:

Division of Continuing Education and Graduate Studies
Wilkes College
170 South Franklin Street
Wilkes-Barre, Pennsylvania 18703
Phone: 824-4651
(After 4:30 p.m. — 824-4656)

WILKES COLLEGE

Bulletin



EVENING SESSION

Spring Semester
1974

WILKES-BARRE, PENNSYLVANIA

An Educated Man

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

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

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

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

*knows that man's progress requires intellec-
tual vigor, moral courage, and physi-
cal 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, eco-
nomic, and political life of the com-
munity;*

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

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

Wilkes College

Wilkes College had its beginnings 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 liberal arts college. The College has grown steadily to its current enrollment of approximately 2,300 full-time day students and 1,000 evening students engaged in undergraduate, graduate, and continuing education programs.

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.

AN INDEPENDENT COLLEGE

It was inevitable that the new college should be non-sectarian, 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.

FREEDOM OF INQUIRY

Years have passed since Bucknell gave the control of the Junior College to a local Board of Trustees, guided by the late Gilbert S. McClintock, and events of these years demonstrate the wisdom of their decision. With responsibility came a pressing desire to strengthen the work of the faculty, united in their faith that the intellectual and spiritual resources of the student are vigorous where the creative mind is free.

UNITY AMIDST DIVERSITY

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 encourages them to create friendships based upon respect for differences, and to adhere to those ideals that create unity and good will amidst diversity.

While academic work is the basis of the College program, the faculty recognizes that academic training will be of little importance unless students emerge as men and women of strong faith and fine character. In the words of John Stuart Mill, "Before you can make men doctors and lawyers, you must first make them men."

Wilkes College is committed to education as a way of life.

A COOPERATIVE EFFORT

The original concept of community effort has been strengthened with the passing of the years and with growing experience. It has been clearly demonstrated that the students, the College, and the community all benefit from cooperative effort. This cooperative relationship, with its emphasis on trained intelligence and extended planning, has resulted in cooperative action.

DECADES OF GROWTH

Because of their interest and faith, friends have multiplied their support during the past decades and the campus has expanded steadily so that it now includes most of the properties facing the River Common. Fortunately, a growing endowment has kept pace with the expansion of the campus.

ACCREDITATION

Wilkes is accredited by the Department of Public Instruction of the State of Pennsylvania and the Middle States Association of Colleges and Secondary Schools. The Accounting curriculum has been accredited by the Certified Public Accounting Examiners of the State of New York.

Evening College

INFORMATION

CURRICULA

UNDERGRADUATE PROGRAM

To meet the needs of ambitious men and women who desire the help which may come from college instruction, Wilkes College offers a wide program of Evening courses from which selections may be made according to individual tastes and requirements.

The courses offered by the Evening College are designed for their special value to the following groups:

1. Those employed in business or governmental organizations who desire and need training to fit them for advancement.
2. Men and women who wish to prepare themselves by study and training for work in a new field.
3. Teachers, nurses and those in other professions who desire additional training in one or more subjects in order to meet the professional requirements demanded of them.
4. Business executives who are interested in the study of problems relating to business administration and the economy of the nation and the world.
5. Those who wish to prepare for the profession of accounting and aspire to qualify for a certification by the Commonwealth of Pennsylvania as Certified Public Accountants.
6. Individuals wishing to broaden their knowledge or to increase their skill in certain fields for their personal satisfaction and improvement.
7. Men and women seeking a college degree through attendance in the Evening College.

Except where designated in the course schedule, classes for courses offered in the evening will be scheduled on Monday through Thursday between the hours of 6:00 p.m. and 10:00 p.m.

ADMISSIONS

Evening College students who wish to work toward a degree shall make application for admission as a degree candidate when they first register. Students who enrolled without any plan to earn a degree, but who conclude in consequence of their experience in the evening school

that they wish to earn a degree, must apply for admission to the degree program when they complete thirty hours of work in the Evening Division. When this application is made, the student's record will be examined to determine his eligibility and his prospects of successful achievement. This will be followed by a personal interview with the Director of the Evening Division and a recommendation will then be submitted to the Office of Admissions.

If the student is accepted as a degree candidate, he will be notified by the Office of Admissions. If the student is not accepted as a degree candidate, he may petition to continue as a special student. This will offer him a further opportunity to demonstrate his ability to benefit from continued study.

Students who have been refused admission to the regular day school are not encouraged to seek admission to the Evening Division. However, if written permission is granted by the Dean of Admissions, a student may apply for admission to the Evening Division as a special student.

No student listed as an academic failure at this or any other college shall be permitted to register in the Evening Division for one full calendar year after his failure. After the lapse of a year a student from another college may submit an application for admission. A Wilkes student who has been denied the privilege of continuing his studies must apply to the Academic Standing Committee for re-admission.

Students who wish to transfer from another institution must provide a transcript of all previous college work.

Students who do not satisfy the usual educational requirements for admission to degree programs may qualify by demonstrating their competence. This can be done by passing the qualifying examinations for a secondary school diploma and by demonstrating their proficiency in evening classes. The Director of the Evening Division will inform the student of the steps that are needed to qualify him for admission.

Under the regulations of the Veterans Administration, a student who does not qualify as a degree candidate may follow one of two programs. He may pursue college work from a planned list of courses approved by the Veterans Administration; or, he may earn the high school equivalent diploma by passing the United States Armed Forces Institute (USAFI) and/or the General Equivalency Diploma (GED) tests in order to apply for admission as a degree candidate.

The Director of the Evening Division will act as advisor to all students enrolled on a part-time basis (Day or Evening Division) and to all students enrolled in the Evening Division on a full-time basis.

If a regular day student enrolls for an Evening Division course, he will retain his day school faculty advisor. If an Evening Division student enrolls in a day school course, he will be classified as a Special Student for the semester in which he is registered for a day school course. During this period he will retain his Evening Division advisor. Should he transfer to the day school, he will be assigned a regular faculty advisor.

RESEARCH AND GRADUATE CENTER

The Research and Graduate Center is an excellently equipped and staffed installation that is an integral part of the College complex. During the school term the Center will continue the various public and private research projects now in progress.

LABOR-MANAGEMENT TRAINING COURSES

To establish a climate for industrial redevelopment the College has pioneered a Labor-Management Training Program in which the needs of the individual and the company are analyzed.

Plans are arranged in consultation with officials, foremen, and other employees and are designed to meet the general and specific requirements of the particular group. Where several firms are confronted with common problems, special classes are organized to include representation of several companies.

INSTITUTE OF REGIONAL AFFAIRS

The Institute of Regional Affairs is a multi-purpose college organization which views regional problems as belonging to no simple academic discipline, but rather as a contemporary phenomenon spilling into many disciplines. The Institute was created to assure coordination of varied efforts in order to better understand and resolve complex and contemporary problems.

Its four-fold purpose is: education and training, community information, research, and consultation.

FACILITIES

The College is located in Wilkes-Barre, Pennsylvania, in the heart of the picturesque and historic Wyoming Valley. This ideal location in the foothills of the Poconos offers abundant cultural and recreational facilities and affords close proximity and convenient transportation to the metropolitan areas of New York and Philadelphia.

THE LIBRARY

The Library posts its Fall schedule at the beginning of the semester. Evening College students may borrow books from the Library by presenting their I.D. card.

THE BOOKSTORE

The Bookstore offers a complete stock of necessary textbooks and supplies. It will be open as follows:

Monday through Friday 8:30 a.m. to 4:30 p.m.

EXPENSES

Tuition — \$60 per semester hour credit.

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

Books and supplies may be purchased at the bookstore and must be paid for at the time of purchase.

WITHDRAWAL

A student may withdraw from the evening session or drop courses without prejudice at any time during the first ten weeks of the semester, providing that he gives verbal or written notice to this effect to his instructor and to the Director of the Evening and Summer College within this ten-week period.

Students in good standing who withdraw from the College will receive a refund of tuition under the following conditions: during the first six weeks of the evening session one-half of the tuition will be refunded upon request to the Director of Evening and Summer College, if the withdrawal is made for adequate and satisfactory reasons. After the first six weeks no refunds are allowed and the student is obligated for the full costs of the term. No student who is suspended or expelled shall be entitled to any refunds.

CHANGE OF SCHEDULE

Occasionally changes in the Evening College Schedule become necessary. Such a change may include the cancellation of one course or the addition of another. Therefore, the College reserves the right to cancel or reschedule any course due to insufficient enrollment or any other reason. Wherever possible, any change will be posted during registration. Students who have registered for courses that are subsequently cancelled or rescheduled will be notified as promptly as possible.



Certificate of Achievement Program

IN

ACCOUNTING
MANAGEMENT

BANKING
MARKETING

Students in the field of Business Administration, who hold full-time jobs while studying in the evening and summer college, are required to devote many years to their quest for a bachelor's degree. To encourage these business men and women, Wilkes College will award a "Certificate of Achievement" to those who earn 42 hours of credit in evening and summer school programs with at least 24 hours in Business Administration and 18 hours in General Education.

The Certificate of Achievement does not designate the completion of any recognized program. It gives recognition of achievement and notes that the recipient has completed a sequence of courses which may be credited toward the bachelor's degree should the student elect to continue his studies for the degree.

It is important to note that the courses in these programs are presently offered at the College and are now required for the Bachelor's degree in Commerce and Finance.

A student taking six credit hours of work in the Fall, Spring, and Summer sessions can complete the requirements for the certificate in two and one-half years. A student who elects not to attend the summer sessions will require three and one half years to complete the program.

Call or write for brochure and further information.

Evening College

UNDERGRADUATE DIVISION

Spring Semester — 1974

Course	Description	Day & Hour	Room No.	Credit Hrs.
ACCOUNTING:				
Acct. 101E	Elementary Accounting I	T 6:30-9:30	Par. 35	3
Acct. 102E	Elementary Accounting II (Pre: Acct. 101)	M 6:30-9:30	Par. 45	3
Acct. 102E-2	Elementary Accounting II (Pre: Acct. 101)	W 6:30-9:30	Par. 45	3
Acct. 112E	Intermediate Accounting II (Pre: Acct. 111)	Th 6:30-9:30	Par. 45	3
Acct. 202E	Cost Accounting II (Pre: Acct. 201 or approval of instructor)	Th 6:30-9:30	Par. 35	3
Acct. 232E	Auditing II (Pre: Acct. 231)	M 6:30-9:30	Par. 35	3
Acct. 242E	Advanced Accounting II (Pre: Acct. 112 and approval of instructor)	W 6:30-9:30	Par. 35	3
BIOLOGY:				
Bio. 102E	Biological Science II (Pre: Bio. 101)	Th 6:30-9:30	Stark 306	3
BUSINESS ADMINISTRATION:				
B.A. 115E	Mathematics of business and Finance	W 6:30-9:30	Par. 25	3
B.A. 216E	Advertising	Th 6:30-9:30	Par. 25	3
B.A. 220E	Real Estate (Pre: Econ. 102)	Th 6:30-9:30	Par. 43	3
B.A. 222E	Marketing (Pre: Econ. 102)	M 6:30-9:30	SLC 225	3
B.A. 232E	Business Law — Agency, Partnerships, Corporation, and Real Property (Pre: B.A. 231)	M 6:30-9:30	Par. 53	3
B.A. 234E	Business Law — Property (Pre: B.A. 231, 232, Acct. 102)	W 6:30-9:30	Par. 34	3

Course	Description	Day & Hour	Room No.	Credit Hrs.
B.A. 240E	Property Insurance (Pre: B.A. 232 or approval of instructor)	M 6:30-9:30	Par. 23	3
B.A. 244E	Time and Motion Study	T 6:30-9:30	Par. 43	3
B.A. 252E	Principles of Management II (Pre: B.A. 251)	W 6:30-9:30	Par. 43	3
BUSINESS EDUCATION:				
Bus. Ed. 106E	Intermediate Shorthand (Pre: Bus. Ed. 105 or approval of instructor)	TTh 6:00-8:00	Par. 33	2
Bus. Ed. 108E	Intermediate Typing (Pre: Bus. Ed. 107 or approval of instructor) Fee \$10	TTh 8:00-10:00	Par. 33	2
ECONOMICS:				
Econ. 101E	Principles of Economics I	W 6:30-9:30	Par. 23	3
Econ. 102E	Principles of Economics II (Pre: Econ. 101)	M 6:30-9:30	Par. 43	3
Econ. 202E	Theory of Money (Pre: Econ. 201)	M 6:30-9:30	Kirby 203	3
Econ. 228E	Economic Geography of Asia, Africa, and Latin America (Pre: Econ. 227 is not a prerequisite)	Th 6:30-9:30	Par. 23	3
Econ. 232E	Economic Statistics (Pre: Econ. 231)	Th 6:30-9:30	Weck.An.	3
Econ. 236E	Public Finance (Pre: Econ. 102, Pol. Sci. 101)	T 6:30-9:30	Par. 45	3
EDUCATION:				
Ed. 397A	Seminar — People and Culture in World Education	TW 4:00-5:30	Kirby 107	3
ENGLISH:				
Eng. 101E	Composition I	M 6:30-9:30	Bdf. 12	3
Eng. 102E	Composition II (Pre: Eng. 101)	Th 6:30-9:30	Bdf. 12	3
Eng. 131E	Fundamentals of Speech	Th 6:00-8:00	Chase Th.	2
Eng. 152E	Western World Literature II (Pre: Eng. 151)	T 6:30-9:30	Bdf. 12	3
Eng. 450E	Studies in Romantic and Victorian Literature	T 6:30-9:30	Bdf. Sem.	3

Course	Description	Day & Hour	Room No.	Credit Hrs.
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ENVIRONMENTAL SCIENCE:

Env. S. 102E	Man & Environment	W 6:30-9:30	Stark 109	3
Env. S. 102E	Laboratory	W 6:30-9:30	Stark 100	
Env. S. 402E	Topics in Environmental Science II	Hours to be arranged		3

(Pre: Senior standing with 9 credits in Env. S., including Geology and Hydrology)

FINE ARTS:

F.A. 214E	Photography	Th 6:30-9:30	SLC 127	3
F.A. 397E	Seminar: Teaching of Art	T 5:30-8:30	SLC 217	3
F.A. 397E-2	Seminar: Surrealism in Art and Literature	W 6:00-9:00	SLC 7	3

FOREIGN LANGUAGES:

Fr. 397E	Surrealism in Art and Literature	W 6:00-9:00	SLC 7	3
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HISTORY:

Hist. 101E	History of World Civilization I	Th 6:30-9:30	Kirby 108	3
Hist. 102E	History of World Civilization II	M 6:30-9:30	Weck.An.	3
Hist. 334E	Twentieth Century America	T 6:30-9:30	Weck.An.	3
Hist. 382E	History of Latin America	W 6:30-9:30	Weck.An.	3
Hist. 497E	Crisis and Conflict in American Constitutional Development	M 6:30-9:30	SLC 224	3

JOURNALISM:

Jour. 102E	Basic News Writing II (Pre: Jour. 101) Fee \$10	M 6:30-9:30	Par. 33	3
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MATHEMATICS:

Math. 102E	Fundamentals of Mathematics II	M 6:30-9:30	Kirby 107	3
Math. 263E	Fortran Programming	T 6:30-9:30	Stark 204	3
Math. 312A	Functions of a Real Variable II	MW 4:00-5:30	SLC 226	3
Math. 314E	Functions of a Complex Variable	MW 6:00-7:30	SLC 223	3
Math. 380A*	Topics in Mathematics	TTh 4:00-5:30	SLC 226	3
Math. 442A	Introduction to Topology II	MW 4:00-5:30	SLC 224	3
Math. 532E	Modern Algebra II	TTh 6:00-7:30	SLC 223	3

* Operations Research

Course	Description	Day & Hour	Room No.	Credit Hrs.
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MUSIC:

Mus. 101E	Introduction to the Materials and Literature of Music I	T 6:30-9:30	DDD 202	3
Applied Music		Room and hours to be arranged		

Note: It is important that all students who register for applied music through the Evening College be advised to consult with Mr. William Gasbarro, Department Chairman, before completing their registration.

NURSING EDUCATION:

N.E. 103	History and Trends in Nursing	MTh 4:00-5:30	Kirby 108	3
N.E. 104	Community Resources	W 2:00-4:00	DDD 202	2
N.E. 106	Supervision and Administration	T 4:00-6:00	DDD 202	2
N.E. 107E	Principles and Methods in Nursing Education (Pre: Psych. 102 or permission of instructor)	W 4:00-6:00	DDD 202	2
N.E. 108E	Multi-Sensory Techniques in Nursing Education (Pre: N.E. 107, which may be taken concurrently)	M 6:00-7:00	DDD 202	1
N.E. 112E	Field Experience in Supervision or Teaching (Pre: Approval of adviser)	Hours to be arranged		4
Ed. 351E	Educational Measurements	W 4:00-6:00	Kirby 102	2

PHILOSOPHY:

Phil. 101E	Introduction to Philosophy	M 6:30-9:30	Kirby 102	3
Phil. 297E	Philosophy of Medicine	T 6:30-9:30	Kirby 108	3

RELIGION:

Rel. 212E	Contemporary Trends in Religious Thought	W 6:30-9:30	Kirby 108	3
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PHYSICAL EDUCATION:

P.E. 106E	Hygiene	T 7:00-8:00	Kirby 102	1
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Course	Description	Day & Hour	Room No.	Credit Hrs.
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PHYSICS:

Phys. 102E	Physical Science II (Pre: Phys. 101)	Th 6:30-9:30	Stark 114	3
Phys. 370E	Solid State Physics (Pre: Phys. 361, Math. 362, or approval of instructor)	Room and hours to be arranged		
Phys. 392E	Advanced Laboratory in Astronomy	T 6:00-10:00	Stark 114	2
Phys. 402E	Methods of Mathematical Physics II	Room and hours to be arranged		3
Phys. 530E	Electricity and Magnetism	Room and hours to be arranged		3

POLITICAL SCIENCE:

P.S. 102E	Political Science II	M 6:30-9:30	Kirby 108	3
P.S. 226E	Government and Politics of Asia (Pre: P.S. 101 and 102)	T 6:30-9:30	SLC 222	3
P.S. 252E	Fundamentals of Urban Design (Pre: P.S. 251)	W 6:30-9:30	SLC 222	3

PSYCHOLOGY:

Psy. 101E	General Psychology I	T 6:30-9:30	SLC 226-227	3
Psy. 102E	General Psychology II (Pre: Psy. 101)	Th 6:30-9:30	SLC 226-227	3
Psy. 242E	Psychological Tests (Pre: Psy. 101 and 102)	M 6:30-9:30	SLC 226-227	3
Psy. 331E	Abnormal Psychology (Pre: Psy. 221, 232, and permission of Dept. Chairman)	W 6:30-9:30	SLC 226-227	3

RETAILING:

Ret. 224E	Recent Trends and Developments in Retailing	T 6:30-9:30	Par. 23	3
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SOCIOLOGY:

Soc. 102E	Introduction to Sociology and Anthropology	W 6:30-9:30	Kirby 102	3
Soc. 240E	Medical and Psychiatric Sociology	T 6:30-9:30	Kirby 107	3
Soc. 275E	Sociology of Minorities (Pre: Soc. 101 and 102 and Psy. 101 and 102)	M 6:30-9:30	Kirby 208	3
Soc. 397E	Law and Social Problems	Th 6:30-9:30	Kirby 203	3

Evening College

GRADUATE DIVISION

Spring Semester — 1974

Course	Description	Day & Hour	Room No.	Instructor
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BIOLOGY:

Bio. 302	Endocrinology Laboratory	MWF 12:00 M 2:00-5:00	Stark 343 Stark 307	Acheson
Bio. 310	Animal Behavior Laboratory	WF 1:00 Th 2:00-5:00	Stark 204 Stark 307	Richkus
Bio. 312	Bacteriology Laboratory	MW 1:00 TF 2:00-5:00	Stark 306 Stark 315	Kimball
Bio. 322	Ecology Laboratory	TThF 10:00 W 2:00-5:00	Stark 204 Stark 307	Houseknecht
Bio. 332	Evolution	MWF 9:00	Stark 343	
Bio. 421	Advanced Genetics	To be arranged		Turoczi
Bio. 432	Advanced Physiology	To be arranged		Hayes

BUSINESS ADMINISTRATION:

Acct. 542	Financial and Tax Planning	M 6:30-9:30	Par. 25	Capin
Acct. 544	Controllership	T 6:30-9:30	Par. 25	Hall
B.A. 512	Price Policy and Procedure	T 6:30-9:30	Par. 8	Taylor
B.A. 522	Quantitative Aspects of Management	W 6:30-9:30	Par. 53	Williams
Econ. 501	Managerial Economics	W 6:30-9:30	Par. 8	Werner
Econ. 505	Managerial Statistics	M 6:30-9:30	Par. 8	Rosenberg
Econ. 507	Business and Society	Th 6:30-9:30	Par. 8	

CHEMISTRY:

Chem. 342	Intermediate Physical Chemistry Laboratory	MWF 9:00 T 8:00-11:00	Stark 204 Stark 237	Swain
Chem. 376	Advanced Analytical Chemistry Laboratory	TTh 1:00 MW 2:00-5:00	Stark 204 SLC 214	Salley
Chem. 452	Biochemistry II	To be arranged		Stine
Chem. 542	Spectroscopy			

EDUCATION:

Ed. 466	Supervision of Instruction (Lehigh)	W 7:00-10:00	Chase 209	Darte
Ed. 510	Psychological Foundation of Education	Th 6:00-9:00	Chase 202	Hammer
Ed. 511	Philosophical Foundations of Education	M 6:00-9:00	Chase 202	Fahmy
Ed. 513	Comparative Foundations of Education	W 6:00-9:00	Chase 202	Watters

Course	Description	Day & Hour	Room No.	Instructor
Ed. 520	Tests and Measurements	M 6:00-9:00	Chase 209	Belluci
Ed. 521	Statistics in Education	T 6:00-9:00	Chase 209	Belluci
Ed. 530	Diagnosis and Correction of Reading Difficulties	W 6:00-9:00	Butler Hall	Siles
Ed. 532B	PEE: Science	Th 6:00-9:00	Chase 209	Caldwell
Ed. 532C	PEE: Language	T 6:00-9:00	Butler Hall	Siles
Ed. 541	Secondary School Curriculum	W 4:30-7:00	Chase 209	Darte

ENGLISH:

Eng. 372	Modern Novel	TTh 4:00-5:30	Darte 101	Rizzo
Eng. 450	Studies in Romantic and Victorian Literature	T 6:30-9:30	Bdf. Sem.	Heaman

ENVIRONMENTAL SCIENCE:

E.S. 402	Environmental Geomorphology	To be arranged		El-Ashry
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HISTORY:

Hist. 322	American Social and Intellectual History	MWF 12:00	Stark 139	Rodechko
Hist. 328	U.S. Foreign Policy	MWF 11:00	Kirby 102	Leach
Hist. 332	The National Period	MWF 11:00	Darte 220	Meyers
Hist. 334E	20th Century America	T 6:30-9:30	Weck. Annex	Rodechko
Hist. 354	Early Modern Europe, 1648-1815	TThF 9:00	Stark 306	Berlatsky
Hist. 382E	Latin America	W 6:30-9:30	Weck. Annex	Furlow
Hist. 497E	Crisis & Conflict in American Constitutional Development	M 6:30-9:30	SLC 224	Furlow

MATHEMATICS:

Math. 312	Functions of a Real Variable II	MW 4:00-5:30	SLC 226	Sours
Math. 314	Functions of a Complex Variable	MW 6:00-7:30	SLC 223	DeCosmo
Math. 334	Linear Algebra	MWF 9:00	SLC 270	Wong
Math. 352	Probability & Mathematical Statistics II	MWF 1:00	Stark 139	Richards
Math. 364	Numerical Analysis	MWF 3:00	SLC 218	Merrill
Math. 380/480	Topics — Operations Research	TTh 4:00-5:30	SLC 226	Tillman
Math. 442	Introduction to Topology II	MW 4:00-5:30	SLC 224	Wasileski
Math. 470	Readings in Mathematics	To be arranged		Staff
Math. 532	Modern Algebra II	TTh 6:00-7:30	SLC 223	Tillman

PHYSICS:

Physics 402	Topics in Mathematical Physics II	To be arranged		Hostler
Physics 530	Electricity and Magnetism	To be arranged		Hostler

For further information write or call:

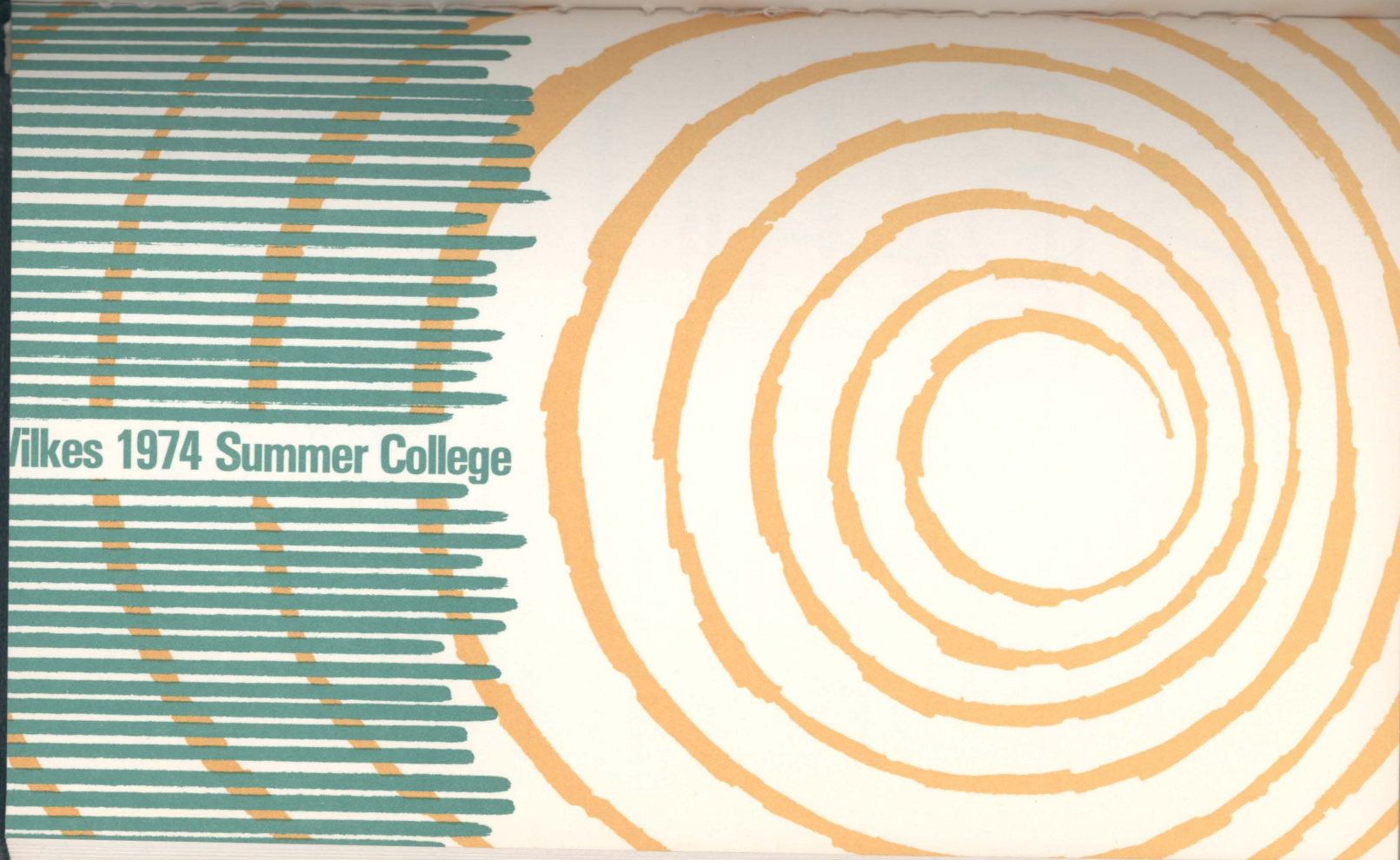
Division of Continuing Education and Graduate Studies
Wilkes College
170 South Franklin Street
Wilkes-Barre, Pennsylvania 18703

Phone: 824-4651
(After 4:30 p.m. — 824-4656)

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1

Wilkes 1974 Summer College



CALENDAR

DAY SESSIONS—1974

FIRST SESSION

Registration — Thursday, June 13, and Friday, June 14
Weckesser Hall — 8:30 a.m. to 8:00 p.m.

Session Begins — Monday, June 17

Session Ends — Friday, July 19 (Including Final Examination)

SECOND SESSION

Registration — Thursday, July 18, and Friday, July 19
Weckesser Hall — 8:30 a.m. to 8:00 p.m.

Session Begins — Monday, July 22

Session Ends — Friday, August 23 (Including Final Examination)

EIGHT - WEEK EVENING SESSION

Registration — Thursday, June 13, and Friday, June 14
Weckesser Hall — 8:30 a.m. to 8:00 p.m.

Session Begins — Monday, June 17

Session Ends — Friday, August 9 (Including Final Examination)

For further information, write or call:

Director of Continuing Education
and

Graduate Studies

170 South Franklin Street

Wilkes-Barre, Pennsylvania 18703

Phone: 824-4651, Ext. 303 or 304 (After 4:30 p.m., 824-4656)

To minimize the possibility of cancelling courses, the preliminary registration form on the back cover should be completed and forwarded to the Director of Continuing Education and Graduate Studies as soon as possible. The preliminary registration does not obligate the registrant to take the course.

WILKES COLLEGE *Bulletin*

SUMMER SESSIONS
1974



Wilkes-Barre • Pennsylvania

An
Educated
Man

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

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

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

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

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

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

has ethical standards by which he lives;

respects the religious convictions of all men;

participates constructively in the social, economic, 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
faculty as a guide to learning.*

Wilkes College

Wilkes College had its beginnings 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 liberal arts college. The College has grown steadily to its current enrollment of approximately 2,300 full-time day students and 1,000 adults in the Evening College and special classes.

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.

AN INDEPENDENT COLLEGE

It was inevitable that the new College should be non-sectarian, 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.

FREEDOM OF INQUIRY

Years have passed since Bucknell gave the control of the Junior College to a local Board of Trustees, guided by the late Gilbert S. McClintock, and events of these years demonstrate the wisdom of their decision. With responsibility came a pressing desire to strengthen the work of the faculty, united in their faith that the intellectual and spiritual resources of the student are vigorous where the creative mind is free.

UNITY AMIDST DIVERSITY

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 encourages them to create friendships based upon respect for differences, and to adhere to those ideals that create unity and good will amidst diversity.

While academic work is the basis of the College program, the faculty recognizes that academic training will be of little importance unless students emerge as men and women of strong faith and fine character. In the words of John Stuart Mill, "Before you can make men doctors and lawyers, you must first make them men."

A COOPERATIVE EFFORT

The original concept of community services has been strengthened with the passing of the years and with growing experience. It has been clearly demonstrated that the students, the College, and the community all benefit from cooperative effort. This cooperative relationship, with its emphasis on trained intelligence and extended planning, has resulted in cooperative action.

DECADES OF GROWTH

Because of their interest and faith, friends have multiplied their support during the past decades and the campus has expanded steadily so that it now includes most of the properties facing the River Common. Fortunately, a growing endowment has kept pace with the expansion of the campus.

ACCREDITATION

Wilkes is accredited by the Department of Public Instruction of the State of Pennsylvania, the Middle States Association of Colleges and Secondary Schools, Certified Public Accounting Examiners of the State of New York, and the American Chemical Society.

SUMMER COLLEGE

Information

Curricula

UNDERGRADUATE PROGRAM

The summer program is designed for men and women interested in accelerating degree work, and for recent high school graduates interested in beginning their college careers. Courses are open to Wilkes College students, students of other colleges, and non-matriculated students.

Course load is limited to six semester hours of credit for each day session. Students are cautioned to exercise judgment and care in scheduling both day and evening courses.

Most classes for courses offered during the day sessions will meet five days per week during the morning hours as follows:

First Period — 8:00 A.M. to 9:50 A.M.

Second Period — 10:10 A.M. to 12:00 Noon

Except where designated in the course schedule, classes for courses offered during the eight-week evening session will be scheduled on Monday, Tuesday, and Thursday evenings between the hours of 6:00 P.M. and 10:00 P.M.

The College reserves the right to cancel any course due to insufficient enrollment or any other reason. Students who have registered for courses that are subsequently cancelled because of insufficient enrollment will be notified as promptly as possible.

ADMISSION

Admission to the summer program is granted to:

- all Wilkes College students currently in good standing;
- high school graduates who have been admitted to Wilkes College as degree candidates;
- high school graduates who have been admitted as full-time students in the regular program of an accredited college other than Wilkes;

- d) all students in good standing at their respective colleges who furnish official confirmation of that status sent by the dean of their college to the Director of Continuing Education at Wilkes College;
- e) students who enroll in the summer session upon special invitation of the Committee on Admission at Wilkes College.

Non-Wilkes summer session students who desire to become degree candidates here will have to qualify for admission or transfer into the College's regular program via the procedures outlined by the Committee on Admissions. Such procedures must be initiated through the office of John Whitby, Dean of Admissions.

TRANSFER OF CREDITS

Credits earned in the Wilkes College summer session may be transferred to other institutions. Students may, at the conclusion of the course, request this service by filling out a card indicating to which institution credits earned shall be transferred.

WITHDRAWAL

Withdrawal from classes after the first week is inadvisable except in extenuating circumstances.

A student who withdraws from the summer session or drops courses after the first week *must* receive permission from the instructor and the Director of Continuing Education in order that his records may not unjustly show failure in courses.

Students in good standing who withdraw from the College will receive a refund of tuition under the following conditions: during the first week of the day sessions and during the first two weeks of the evening session, one-half of the tuition will be refunded upon written request to the Director of Continuing Education, if the withdrawal is made for adequate and satisfactory reasons. After these designated periods no refunds are allowed and the student is obligated for the full costs of the term. No student who is suspended or expelled shall be entitled to any refunds.

Facilities

The College is located in Wilkes-Barre, Pennsylvania, in the heart of the picturesque and historic Wyoming Valley. This location in the foothills of the Poconos offers abundant cultural and recreational facilities and affords close proximity and convenient transportation to the metropolitan areas of New York and Philadelphia.

DORMITORY AND DINING FACILITIES

Dormitory and dining facilities will be available for both male and female students. The cost of these services may be found under expenses. Arrangements for dormitory accommodations may be made by contacting: The Housing Office, Wilkes College, Wilkes-Barre, Pennsylvania 18702.

THE LIBRARY

The Library will post its Summer schedule at the beginning of the first day session.

THE BOOKSTORE

The Bookstore offers a complete stock of necessary textbooks and supplies. It will be open as follows:

Monday through Friday 8:30 a.m. to 4:30 p.m.

Expenses

The student may expect to incur the following expenses for the summer session:

Tuition — \$60 per credit hour.

Dormitory — \$16 per week.
(Weekly linen exchange included)
(Exclusive of meals)

Dining Hall — Open Monday thru Friday; meals may be taken on a pay-as-you-go basis or a "Board package" can be arranged through the housing office.

All charges must be paid at the time registration forms are processed. Charges for the second session must be paid no later than July 22, 1974. Books and supplies may be purchased at the bookstore and must be paid for at the time of purchase.

SUMMER SESSION SCHEDULE OF COURSES

FIRST SESSION SCHEDULE

June 17 - July 19, 1974 — Monday through Friday

COURSE	DESCRIPTION	ROOM	HOUR	CR.
ACCOUNTING:				
Acct. 101S	Elementary Accounting I	Par. 35	8:00-9:50	3
Acct. 201S	Cost Accounting I (Pre: Acct. 112, or approval of instructor)	Par. 35	10:10-12:00	3
BIOLOGY:				
Bio. 101S	Biological Science I	St. 306	10:10-12:00	3
Bio. 113S	Microbiology Laboratory. Fee: \$20	St. 306 St. 315	1:00-4:00 TBA	4
Bio. 302S	Endocrinology Laboratory. Fee: \$20 (Pre: Bio. 201-208M, or permission of instructor)	St. 343 St. 307	8:00-9:50 TBA	3
Bio. 315S	Introduction to Marine Biology (Pre: 1 yr. Biology or permission of instructor)	St. 304	8:00-9:50	3
BUSINESS ADMINISTRATION:				
B.A. 222S	Marketing (Pre: Ec. 102)	Par. 8	10:10-12:00	3
B.A. 240S	Property Insurance (Pre: B.A. 232, or approval of instructor)	Par. 23	8:00-9:50	3
B.A. 241S	Life Insurance (Pre: Approval of instructor)	Par. 23	10:10-12:00	3
B.A. 251S	Principles of Management I	Par. 25	8:00-9:50	3
CHEMISTRY: (Special Session: June 10 - July 19)				
Chem. 105S	General Chemistry Laboratory (M-W-Th). Fee: \$20	St. 114 St. 203	8:30-10:00 11:00-2:00	4
Chem. 201S	Introduction to the Principles of Chemistry Laboratory (M-W-Th). Fee: \$20	St. 204 St. 231	8:30-10:00 11:00-2:00	4

COURSE	DESCRIPTION	ROOM	HOUR	CR.
Chem. 237S	Organic Chemistry I Laboratory (T-Th). Fee: \$20 (Pre: Chem. 202 or permission of instructor)	St. 204 St. 202	10:00-11:30 1:00-5:00	4

ECONOMICS:

Econ. 101S	Principles of Economics I	Par. 34	10:10-12:00	3
Econ. 231S	Applied General Statistics (Pre: Approval of instructor)	Par. 43	10:10-12:00	3

EDUCATION:

Ed. 201S	Introduction to Education (Pre: Sophomore standing)	Kby. 103	8:00-9:50	3
Ed. 202S	Educational Psychology (Pre: Psych. 102)	Kby. 103	10:10-12:00	3
Ed. 291a	Communications Skills in Elementary Education (Pre: Ed. 201-202) Ed. 291a given June 17 thru June 25	Ch. Th.	12:00-2:00	2
Ed. 291b	Communications Skills in Elementary Education (Pre: Ed. 201-202) Ed. 291b given June 27-July 8	Ch. Th.	12:00-2:00	2
Ed. 292a	The Sciences in the Elem. School (Pre: Ed. 201-202) Ed. 292a given July 10-July 18	Ch. Th.	12:00-2:00	2
Ed. 351S	Educational Measurements		TBA	2
Ed. 352S	Guidance (Pre: Ed. 202)	Kby. 108	10:10-12:00	3

Ed. 396 and/or 397 *Special Course:* Travel Seminar to Germany (June 3 - July 5)

Students will live with families, and visit German schools, universities, and political headquarters. Briefings will be in language, political, economic, and social, as well as educational topics. Seminars will be conducted in both West and East Germany. The course may be taken for 6 cr. hrs. Enrollment is limited and registration is by permission of the instructor. The deadline for applications is May 1. For further information, contact Dr. Edmond A. Watters (Education Department) or Professor Inger Miller (Language Department).

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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ENGINEERING:

E.E. 211S	Circuit Theory I (Pre: Math. 112)	St. 132	8:00-9:50	3
E.E. 331S	Electromagnetic Fields I		TBA	4

ENGLISH:

Eng. 100S	Writing Workshop	Bdf. 12	8:00-9:50	3
Eng. 100S-2	Writing Workshop	Bdf. 12	10:10-12:00	3
Eng. 101S	Composition I	Bdf. 13	8:00-9:50	3
Eng. 131S	Fundamentals of Speech	Ch. Th.	10:10-12:00	2
Eng. 151S	Western World Literature I (Pre: Eng. 102)	Bdf. 14	8:00-9:50	3
Eng. 151S-2	Western World Literature I (Pre: Eng. 102)	Bdf. 13	10:10-12:00	3
Eng. 151S-3	Western World Literature I (Pre: Eng. 102)	Kby. 102	8:00-9:50	3
Eng. 221S	Shakespeare (Pre: Eng. 154)	Bdf. Sem.	8:00-9:50	3
Eng. 381S	American Literature I (Pre: Eng. 154)	Bdf. Sem.	10:10-12:00	3
Eng. 405S	Study in Linguistics	Bdf. 14	10:10-12:00	3

ENVIRONMENTAL SCIENCE:

E.S. 101S	Introductory Earth Science Lab. Fee: \$20	St. 109	10:10-12:00 TBA	3
E.S. 251S	Meteorology Lab. Fee: \$20 (Pre: E.S. 101)	St. 139 St. 132	10:10-12:00 TBA	3

FINE ARTS:

F.A. 101S	Experiencing Art I	SLC 7	8:00-9:50	3
F.A. 397S	Teaching of Art in the Elementary Classroom Fee: \$5	SLC 217	10:10-12:00	3

FOREIGN LANGUAGES:

FRENCH:

Fr. 101S	Elementary French I	Kby. 203	8:00-9:50	3
Fr. 203S	Intermediate French I (Pre: French 102 or equivalent)	Kby. 203	10:10-12:00	3

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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GERMAN:

Ger. 101S	Elementary German I	Kby. 303	8:00-9:50	3
Ger. 203S	Intermediate German I (Pre: Ger. 102 or equivalent)	Kby. 303	10:10-12:00	3

RUSSIAN:

Russ. 101S	Elementary Russian I	Kby. 107	8:00-9:50	3
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SPANISH:

Span. 101S	Elementary Spanish I	Kby. 208	8:00-9:50	3
Span. 203S	Intermediate Spanish I (Pre: Span. 102 or equivalent)	Kby. 208	10:10-12:00	3

HISTORY:

Hist. 101S	History of World Civilization I	W.A.	8:00-9:50	3
Hist. 101S-2	History of World Civilization I	W.A.	10:10-12:00	3
Hist. 496S	Seminar: American Intellectual History since the Civil War	Kby. 107	10:10-12:00	3

MATHEMATICS:

Math. 100S	Pre-Calculus Mathematics (Algebra and Trigonometry)	DDD 201	10:10-12:00	4
Math. 101S	Fundamentals of Mathematics I	DDD 202	10:10-12:00	3
Math. 103S	Mathematics for Elementary School Teachers I (Not open to students with credits in Math. 101-102)	DDD 201	8:00-9:50	3
Math. 232S	Abstract Algebra for Elementary School Teachers (Pre: Math. 104, permission of instructor)	DDD 202	8:00-9:50	3

MUSIC:

Mus. 101S	Introduction to the Materials and Literature of Music I	DDD 101	8:00-9:50	3
		DDD 101	10:10-12:00	3
Mus. 102S	Introduction to the Materials and Literature of Music II	DDD 101	8:00-9:50	3
		DDD 101	10:10-12:00	3
Applied Mus.	Please arrange this course with Mr. William Gasbarro, Department of Music, prior to registration.			

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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NURSING EDUCATION:

Ed. 351S	Educational Measurements		TBA	2
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PHILOSOPHY - RELIGIOUS STUDIES:

Phil. 102S	Logic and Scientific Method	Par. 8	8:00-9:50	3
Rel. St. 202S	The Literature of the New Testament	Par. 25	10:10-12:00	3

PHYSICS:

Phys. 101S	Physical Science I	St. 306	8:00-9:50	3
Phys. 105S	Introductory Physics I	St. 109	8:00-9:50	4
	Lab. Fee: \$20	St. 103	TBA	
	(Phys. 105 given June 10-July 19)			

POLITICAL SCIENCE:

P.S. 101S	Political Science I	DDD 218	10:10-12:00	3
P.S. 206S	Municipal Government (Pre: P.S. 101-102)	Kby. 108	8:00-9:50	3

PSYCHOLOGY:

Psych. 101S	General Psychology I	Par. 56	8:00-9:50	3
Psych. 221S	Child Psychology (Pre: Psych. 101-102)	Par. 56	10:10-12:00	3
Psych. 232S	Human Behavior (Pre: Psych. 101-102)	Par. 45	10:10-12:00	3
Psych. 331S	Abnormal Psychology (Pre: Psych. 221 and 232)	Par. 45	8:00-9:50	3

READING:

	Reading Improvement and Study Skills for Post-Secondary Students	Butler Hall	9:30-12:00 M-T-W-Th	0
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SOCIOLOGY:

Soc. 101S	Introduction to Sociology and Anthropology I	Par. 34	8:00-9:50	3
Soc. 200S	The Family (Pre: Soc. 101-102, or permission of instructor) (Soc. 200 given May 28 - June 25)	Par. 43	9:00	3
Soc. 397S	Seminar in Field Archaeology	TBA	8:00	3

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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THEATER ARTS:

T.A. 381S	Theater Workshop (June 30-August 3)	TBA		3
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Note: It is important that all students who register for theater workshop thru the Office of Continuing Education consult with Mr. Alfred Groh, Director of the Workshop, before completing their registration.

SECOND SESSION SCHEDULE

July 22 - August 23 — Monday through Friday

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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ACCOUNTING:

Acct. 102S	Elementary Accounting II (Pre: Acct. 101)	Par. 35	8:00-9:50	3
Acct. 202S	Cost Accounting II (Pre: Acct. 201, or approval of instructor)	Par. 35	10:10-12:00	3

BIOLOGY:

Bio. 102S	Biological Science II (Pre: Bio. 101)	St. 306	10:10-12:00	3
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BUSINESS ADMINISTRATION:

B.A. 216S	Advertising	Par. 8	10:10-12:00	3
B.A. 225S	Corporation Finance (Pre: Econ. 102)	Par. 23	10:10-12:00	3
B.A. 252S	Principles of Management II (Pre: B.A. 251)	Par. 25	8:00-9:50	3

COURSE	DESCRIPTION	ROOM	HOURL	CR.
CHEMISTRY: (<i>Special Session July 22 - August 29</i>)				
Chem. 202S	The Chemical Reaction Lab. (M-W-Th) Fee: \$20 (Pre: Chem. 201)	St. 204 St. 231	8:30-10:00 11:00-2:00	4
Chem. 230S	Organic and Biological Chemistry Lab. (M-W-Th) Fee: \$20	St. 114 St. 203	8:30-10:00 11:00-2:00	4
Chem. 238S	Organic Chemistry II Lab. (T-Th) Fee: \$20 (Pre: Chem. 237)	St. 204 St. 202	10:00-11:30 1:00-5:00	4
ECONOMICS:				
Econ. 102S	Principles of Economics II (Pre: Econ. 101)	Par. 34	10:10-12:00	3
Econ. 201S	Money and Banking (Pre: Econ. 102)	Par. 34	8:00-9:50	3
Econ. 217S	Economics of Transportation (Pre: Econ. 102)	Par. 23	8:00-9:50	3
Econ. 232S	Economics Statistics (Pre: Econ. 231)	Par. 43	10:10-12:00	3
EDUCATION:				
Ed. 292b	The Sciences in the Elementary School (Pre: Ed. 201-202) <i>Ed. 292b given July 22-July 30</i>	Ch. Th.	12:00-2:00	2
Ed. 391S	Instructional Strategy & Evaluation (Pre: Ed. 202, Psych. 221) <i>Ed. 391S given August 1-August 20</i>	Ch. Th.	12:00-2:00	2
ENGINEERING:				
E.E. 332S	Electromagnetic Fields II	TBA		4
ENGLISH:				
Eng. 102S	Composition II (Pre: Eng. 101)	Bdf. 12	8:00-9:50	3
Eng. 131S	Fundamentals of Speech	Ch. Th.	10:10-12:00	2
Eng. 152S	Western World Literature II (Pre: Eng. 151)	Bdf. 13	10:10-12:00	3
Eng. 152S-2	Western World Literature II (Pre: Eng. 151)	Bdf. 14	8:00-9:50	3
Eng. 152S-3	Western World Literature II (Pre: Eng. 151)	Bdf. 12	10:10-12:00	3
Eng. 382S	American Literature II (Pre: Eng. 154)	Bdf. 13	8:00-9:50	3
Eng. 410S	Studies in Medieval Literature	Bdf. 14	10:10-12:00	3

COURSE	DESCRIPTION	ROOM	HOURL	CR.
ENVIRONMENTAL SCIENCE:				
E.S. 102S	Man and Environment Lab. Fee: \$20	St. 109	10:10-12:00 TBA	3
E.S. 211S	Geology Lab. Fee: \$20	St. 139 St. 132	10:10-12:00 TBA	3
FOREIGN LANGUAGES:				
FRENCH:				
Fr. 102S	Elementary French II (Pre: Fr. 101, or equivalent)	Kby. 203	8:00-9:50	3
Fr. 204S	Intermediate French II (Pre: Fr. 102, or equivalent)	Kby. 203	10:10-12:00	3
GERMAN:				
Ger. 102S	Elementary German II (Pre: Ger. 101, or equivalent)	Kby. 303	8:00-9:50	3
Ger. 204S	Intermediate German II (Pre: Ger. 102, or equivalent)	Kby. 303	10:00-12:00	3
RUSSIAN:				
Russ. 102S	Elementary Russian II (Pre: Russ. 101, or equivalent)	Kby. 107	8:00-9:50	3
SPANISH:				
Span. 102S	Elementary Spanish II (Pre: Span. 101, or equivalent)	Kby. 208	8:00-9:50	3
Span. 204S	Intermediate Spanish II (Pre: Span. 203, or equivalent)	Kby. 208	10:10-12:00	3
HISTORY:				
Hist. 102S	History of World Civilization II	W.A.	8:00-9:50	3
Hist. 102S-2	History of World Civilization II	Kby. 107	10:10-12:00	3
Hist. 497S	Seminar: Britain and the Empire in the Age of the American Revolution	W.A.	10:10-12:00	3

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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MATHEMATICS:

Math. 102S	Fundamentals of Mathematics II (Pre: Math. 101)	DDD 202	10:10-12:00	3
Math. 104S	Mathematics for Elementary School Teachers II (Pre: Math. 103)	DDD 201	8:00-9:50	3
Math. 243S	Geometry for Elementary School Teachers (Pre: Math. 104, or consent of instructor)	DDD 202	8:00-9:50	3

MUSIC:

Mus. 101S	Introduction to the Materials and Literature of Music I	DDD 223	8:00-9:50	3
Mus. 102S	Introduction to the Materials and Literature of Music II	DDD 223	10:10-12:00	3
Applied Mus.	Please arrange this course with Mr. William Gasbarro, Department of Music, prior to registration.	DDD 223	8:00-9:50	3

PHILOSOPHY - RELIGIOUS STUDIES:

Phil. 101S	Introduction to Philosophy	Par. 8	8:00-9:50	3
Phil. 330S	Existentialism	Par. 56	10:10-12:00	3

PHYSICS:

Phys. 102S	Physical Science II	St. 306	8:00-9:50	3
Phys. 106S	Introductory Physics Lab. Fee: \$20 <i>Phys. 106S given July 22-August 30</i>	St. 109 St. 103	8:00-9:50 TBA	4

POLITICAL SCIENCE:

P.S. 102S	Political Science II	DDD 220	8:00-9:50	3
P.S. 222S	International Relations (Pre: P.S. 101-102)	DDD 218	10:10-12:00	3
P.S. 253S	Land Use Planning Law (Pre: P.S. 251)	DDD 218	8:00-9:50	3

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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PSYCHOLOGY:

Psych. 102S	General Psychology II (Pre: Psych. 101)	Par. 56	8:00-9:50	3
Psych. 201S	Advanced General Psychology (Pre: Psych. 101-102)	Par. 45	10:10-12:00	3
Psych. 206S	History of Psychology (Pre: Psych. 101-102)	Par. 45	8:00-9:50	3

READING:

Reading Improvement and Study Skills for Post-Secondary Students	Butler Hall M-T-W-Th	9:30-12:00	0
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SOCIOLOGY:

Soc. 102S	Introduction to Sociology and Anthropology II	Par. 43	8:00-9:50	3
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EVENING SESSION SCHEDULE

June 17 - August 9, 1974 — Monday, Tuesday, and Thursday

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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ACCOUNTING:

Acct. 221E	Taxes I (Pre: Acct. 112, 202, or approval of instructor)	SLC 237	6:00-7:45	3
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BUSINESS ADMINISTRATION:

B.A. 115E	Mathematics of Business and Finance	Par. 23	6:00-7:45	3
B.A. 209E	Business Correspondence and Reports (Pre: Eng. 102)	Par. 43	6:00-7:45	3
B.A. 251E	Principles of Management I	Par. 43	8:00-9:45	3

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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BUSINESS EDUCATION:

B.E. 105E	Elementary Shorthand I	Par. 25	6:00-7:45	2
B.E. 107E	Elementary Typewriting I Fee: \$10	Par. 33	8:00-9:45	2

ECONOMICS:

Econ. 101E	Principles of Economics I	Par. 34	8:00-9:45	3
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ENGLISH:

Eng. 101E	Composition I	DDD 201	8:00-9:45	3
Eng. 131E	Fundamentals of Speech	Ch. Th.	6:00-7:30	2
Eng. 151E	Western World Literature I (Pre: Eng. 102, or equivalent)	DDD 201	6:00-7:45	3

ENVIRONMENTAL SCIENCE:

E.S. 101E	Introductory Earth Science Laboratory. Fee: \$20	St. 109	6:00-7:45 TBA	3
E.S. 282E	Space Science Laboratory. Fee: \$20 (Pre: E.S. 101)	St. 139 St. 100	8:00-9:45 TBA	3

HISTORY:

Hist. 102E	History of World Civilization II	W.A.	6:00-7:45	3
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JOURNALISM:

Jour. 101E	Basic News Writing Fee: \$10	Par. 33	6:00-7:45	3
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MATHEMATICS:

Math. 100E	Pre-Calculus Mathematics (Pre: Algebra and Trigonometry)	Kby. 102	6:00-7:45 (MTWTh)	4
Math. 105E	Introductory Calculus I (Pre: Geometry, Algebra II, and some knowledge of Trigonometry)	Kby. 103	6:00-7:45 (MTWTh)	4
Math. 106E	Introductory Calculus II (Pre: Math. 105)	Kby. 103	8:00-9:45 (MTWTh)	4

COURSE	DESCRIPTION	ROOM	HOUR	CR.
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Math. 111E	Analysis I (Pre: Math. 100 or at least 3 years of secondary school Math, includ- ing Geometry, Algebra II, and Topics in Trigonometry.)	Kby. 107	6:00-7:45 (MTWTh)	4
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Math. 112E	Analysis II (Pre: Math. 111)	Kby. 107	8:00-9:45 (MTWTh)	4
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Math. 150E	Elementary Statistics	Kby. 102	8:00-9:45	3
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Math. 263E	Fortran Programming (Pre: Math. 261, or consent of instructor) Fee: \$20	St. 204	6:00-7:45	3
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Math. 314E	Functions of a Complex Variable (Pre: Math. 212, or consent of instructor)	Kby. 302	6:00-7:45	3
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Math. 334E	Linear Algebra (Pre: Math. 222)	Kby. 203	6:00-7:45	3
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Math. 343E	Introduction to Geometry (Pre: Math. 222)	Kby. 208	8:00-9:45	3
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Math. 380E	Topics: Linear Programming	St. 204	8:00-9:45 (MTWTh)	4
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MUSIC:

Mus. 101E	Introduction to the Materials and Literature of Music I	DDD 101 DDD 101	6:00-7:45 8:00-9:45	3
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Mus. 102E	Introduction to the Materials and Literature of Music II	DDD 101 DDD 101	6:00-7:45 8:00-9:45	3
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Applied Mus. Please arrange this course with Mr.
William Gasbarro, Department of
Music, prior to registration.

PHILOSOPHY - RELIGIOUS STUDIES:

Phil. 101E	Introduction to Philosophy	SLC 218	6:00-7:45	3
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Phil. 102E	Logic and Scientific Method	Par. 35	6:00-7:45	3
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Phil. 297E	Death and Immortality	Par. 23	8:00-9:45	3
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Phil. 297E-2	Contemporary Moral Issues	Par. 35	8:00-9:45	3
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PHYSICAL EDUCATION:

P.E. 105E	Hygiene	W.A.	6:00-8:00 Wed. only	1
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P.E. 106E	Hygiene	W.A.	6:00-8:00 Wed. only	1
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P.E. 105-106E	Hygiene	W.A.	6:00-8:00 Wed. only	2
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COURSE	DESCRIPTION	ROOM	HOUR	CR.
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POLITICAL SCIENCE:

P.S. 101E	Political Science I	DDD 202	6:00-7:45	3
P.S. 395E	Independent Research in Local Government	TBA		

PSYCHOLOGY:

Psych. 242E	Psychological Tests (Pre: Psych. 101-102)	Par. 56	8:00-9:45	3
Psych. 245E	Clinical Psychology (Pre: Psych. 242)	Par. 56	6:00-7:45	3

SOCIOLOGY:

Soc. 101E	Introduction to Sociology and Anthropology I	Par. 34	6:00-7:45	3
Soc. 102E	Introduction to Sociology and Anthropology II	Par. 25	8:00-9:45	3

GRADUATE COURSE OFFERINGS, SUMMER 1974

Registration:	June 13 and 14	8:30 a.m. to 8:00 p.m.
First Session:	June 17 to July 19	
Registration:	July 18 and 19	8:30 a.m. to 8:00 p.m.
Second Session:	July 22 to August 23	
Registration:	June 13 and 14	8:30 a.m. to 8:00 p.m.
Evening Session:	June 17 to August 9	

BIOLOGY: (First Session: June 17-July 19)

Bio. 302	Endocrinology Lab. Fee: \$20	St. 343 St. 307	8:00-9:45	3
Bio. 315	Introduction to Marine Biology	St. 304	8:00-9:50	3

Special Session: July 22-August 9

Bio. 404	Floristic and Faunistic Biology To be offered only to M.S. in Bio. Ed. people.	TBA		3
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CHEMISTRY: Evening (June 17 - August 9)

Chem. 541	Chemical Thermodynamics and Statistical Thermodynamics	TBA		3
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COURSE	DESCRIPTION	ROOM	HOUR	CR.
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BUSINESS ADMINISTRATION: (All Evening Courses, June 17 - August 9)

Econ. 473E (MW)	Pre-Seminar	Par. 8	6:00-9:00	0
B.A. 502E (TTh)	Management Science	Par. 45	6:00-9:00	3
B.A. 521E (TTh)	Organizational Theory	Par. 45	6:00-9:00	3

EDUCATION:

Pre-Session (May 28-June 14):

Ed. 535	Nongraded Instruction in the Elementary School	St. 204	6-9 p.m. daily	3
Ed. 595	Workshop: Negotiations in Education	St. 306	6-9 p.m. daily	3
Ed. 595	Workshop: Educating the Exceptional Child	TBA	4:30-7:00 daily	3

First Session (June 17-July 19):

Ed. 510	Psychological Foundations of Education	Kby. 102	10:10-12:00	3
Ed. 513	Comparative Foundations of Education	Ch. 209	8:00-9:50	3
Ed. 520	Tests and Measurements	St. 139	8:00-9:50	3
Ed. 531	Practicum in Reading Instruction	Butler Hall	10:10-12:00	3
Ed. 532c	PEE — Language Arts	Butler Hall	8:00-9:50	3
Ed. 532d	PEE — Social Studies	Ch. 209	10:10-12:00	3
Ed. 534	Elementary School Curriculum	Ch. 202	8:00-9:50	3
Ed. 542	Extra-Curricular Activities	SLC 218	8:00-9:50	3
Ed. 595	Workshop: Introduction to Graduate Study (Open only to new students; this course may be used for Area I credit)	Ch. 202	10:10-12:00	3

Second Session (July 22-August 23)

Ed. 510	Psychological Foundations of Education	SLC 219	10:10-12:00	3
Ed. 511	Philosophical Foundations of Education	Ch. 202	8:00-9:50	3
Ed. 512	Social Foundations of Education	Ch. 202	10:10-12:00	3
Ed. 514	Historical Foundations of Education	Ch. 209	8:00-9:50	3
Ed. 515	Educational Planning in Developing Nations	Ch. 209	10:10-12:00	3

COURSE	DESCRIPTION	ROOM	HOUR	CR.
Ed. 532A	PEE — Mathematics	SLC 218	8:00-9:45	3
Ed. 532B	PEE — Science	SLC 218	10:10-12:00	3
Ed. 596	Workshop: School Law	SLC 219	8:00-9:50	3

ENGLISH:

First Session (June 17-July 19):

Eng. 381S	American Literature I	Bdf. Sem.	10:10-12:00	3
Eng. 405S	Studies in Linguistics	Bdf. 14	10:10-12:00	3

Second Session (July 22-August 23):

Eng. 382S	American Literature II	Bdf. 13	8:00-9:50	3
Eng. 410S	Studies in Medieval Literature	Bdf. 14	10:10-12:00	3

ENVIRONMENTAL SCIENCE: *Special Session (July 22 - Aug. 9)*

E.S. 401	Environmental Management			3
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HISTORY:

First Session (June 17-July 19):

Hist. 496S	Seminar: American Intellectual History Since the Civil War	Kby. 107	10:10-12:00	3
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Second Session (July 22-August 23):

Hist. 497S	Seminar: Britain and the Empire in the Age of the American Revolution	W.A.	10:10-12:00	3
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MATHEMATICS: *(All Evening Courses, June 17-August 9):*

Math. 314E	Functions of a Complex Variable	Kby. 302	6:00-7:45	3
Math. 334E	Linear Algebra	Kby. 203	6:00-7:45	3
Math. 343E	Introduction to Geometry	Kby. 208	8:00-9:45	3
Math. 380E	Topics: Linear Programming	St. 204	8:00-9:45	3
Math. 470	Reading in Mathematics	TBA		
Math. 541	Functional Analysis	Kby. 208	6:00-7:45	3

PRELIMINARY
REGISTRATION
FORM

Completion and filing of this form with the Director of Continuing Education and Graduate Studies, Wilkes College, Wilkes-Barre, Pennsylvania 18703, will enable the Director to determine course demand. If advance demand does not warrant giving a particular course, the prospective student filing this form will be promptly notified. The completion and filing of this form does not, in any way, obligate the prospective student.

PRE - REGISTRATION

A statement of your academic standing must be submitted by your dean or registrar prior to registration.

Name

Address

City..... State..... Zip.....

College or University
now attending

.....

1st Semester Course No.	2nd Semester Course No.	Evening Course No.
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Will you require dormitory accommodations? Yes ☐ No ☐

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WILKES COLLEGE Bulletin 1973-1974

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Wilkes College

Summer Sessions

Wilkes-Barre, Penna. 18703

Graduate
Division



WILKES-BARRE
PENNSYLVANIA

Academic Calendar

Fall Semester 1973

Graduate Registration	Tuesday, 4 September 1973 8 A.M. to 8 P.M. Wednesday, 5 September 1973 8 A.M. to 8 P.M.
Classes Begin	Thursday, 6 September 1973, 8 A.M.
Thanksgiving Recess	Wednesday, 21 November 1973, 10 P.M. to Monday, 26, November 1973, 8 A.M.
Classes End	Friday, 14 December 1973, 10 P.M.
Examinations	17 December to 22 December 1973

Spring Semester 1974

Graduate Registration	Thursday, 17 January 1974 8 A.M. to 8 P.M. Friday, 18 January 1974 8 A.M. to 8 P.M.
Classes Begin	Monday, 21 January 1974, 8 A.M.
Incomplete grade for Fall Semester Due	Saturday, 26 January 1974
Spring Vacation	Friday, 5 April 1974, 10 P.M. to Monday, 22 April 1974, 8 A.M.
Classes End	Friday, 10 May 1974, 10 P.M.
Last day to file applications for assistantships	Friday, 10 May 1974
Examination Period	13 May through 18 May 1974
Commencement	Sunday, 26 May 1974
Incomplete grade for Spring Semester Due	Monday, 22 June 1974

The Graduate Division

GENERAL INFORMATION

The Graduate Division of Wilkes College was established in 1959 when the College Board of Trustees authorized Graduate Study in the Departments of Chemistry and Physics. The first Master of Science degrees were conferred in 1965.

The graduate programs are designed to provide the opportunity for completion of a Master's Degree in one or two years of full-time study. Cycling of graduate courses allows a full-time student to plan for continuous progress in his program.

The programs also allow businessmen, engineers, scientists, and teachers employed in the region to continue their studies without interrupting their employment. To permit a combination of work and study, many classes are scheduled to meet during late afternoon and early evening hours.

GRADUATE DEGREE PROGRAMS

Graduate degree programs are currently offered as follows:

DEGREE	CONCENTRATION
Master of Business Administration	Business Administration
Master of Science	Biology
	Chemistry
	Mathematics
	Physics
Master of Science in Education	Education
	Elementary Education
	English
	History
	Mathematics
	Biology
	Chemistry
	Physics

The programs are approved by the Pennsylvania State Department of Education.

Admission

APPLICATION PROCEDURE

A person interested in doing graduate work at Wilkes College should contact the Director of Graduate Studies and obtain from him the forms and information needed to proceed with his application. He must fill out the "Application for Graduate Admission" form and arrange for the submission of an official transcript of all previous college work. Some departments also require letters of recommendation and Graduate Record Examination scores or the scores of other advanced tests used in their fields.

Students, other than international students, who are unable to complete the application process prior to the beginning of the semester in which entrance is desired will be allowed special admission to the program pending processing of their application. This policy does not imply acceptance of the special student into the degree program. Students failing to complete the application process by the beginning of the second semester after their initial application will not be permitted to register for courses.

GENERAL REMARKS CONCERNING ADMISSION

As a general rule only well-qualified men and women who have completed a bachelor's degree will be considered for admission to the graduate division. It is expected that candidates for admission shall have above average performance during their undergraduate years and shall show evidence of intellectual and temperamental fitness for graduate study.

The Graduate Record Examination is required of all applicants for admission to the graduate departments of biology and chemistry. Applicants for the M.B.A. degree must take the Admission Test for Graduate Study in Business.

Specific departmental requirements established for each area of study are to be found herein. Each applicant should consult these requirements prior to filing an application.

A student whose background is judged to be deficient in any specific area of his field of study or whose undergraduate grades are below average may be asked to remedy the deficiency by taking one or more courses at the undergraduate level, without graduate credit.

CATEGORIES OF ADMISSION

Regular admission is granted to students who have demonstrated an acceptable level of academic work in their undergraduate program and are prepared for work at the graduate level in their field of specialization.

Provisional admission is granted to students who satisfy general admission requirements but who have undergraduate deficiencies or a marginal undergraduate record. The Director of the Graduate School and the Chairman of the appropriate department will review provisional admissions annually in order to re-evaluate their status in the graduate program. A student accepted as a provisional student because of marginal undergraduate grades will be permitted to take a maximum of 12 credits as a provisional student.

Special admission is granted to students who do not desire to pursue a regular course of study leading to a graduate degree but who wish to take graduate courses for specific purposes, such as teacher accreditation.

Students will be assigned academic advisors immediately upon their acceptance to the graduate division.

Seniors at Wilkes College may be permitted to enroll in certain graduate courses with the approval of the chairman of their undergraduate department and the Director of Graduate Studies. Credit for such courses will ordinarily be at the undergraduate level. Under certain conditions an undergraduate student may be permitted to register for graduate credit. In no case will a student be given both undergraduate and graduate credit for any course.

General Academic Information

DEGREE REQUIREMENTS

Students may be awarded the Master of Science degree upon satisfaction of all general college requirements for graduation and the following specific requirements.

1. Admission to graduate study as a regular student
2. Satisfactory completion of a total of thirty credit hours, said hours to be completed within six calendar years preceding the date of the granting of the degree

3. Maintenance of a minimum average of 3.0 for all graduate work. A student who is given regular admission and who receives more than eleven credits with the grade of 2 or below, or more than three credits with the grade of 0 will be ineligible to receive the master's degree

4. Completion of specific departmental requirements

5. Completion of specific thesis requirements of the individual departments to include the following, where applicable:

- a. Acceptance by an advisor and an Advisory Committee before completion of nine hours of graduate study
- b. Submission and acceptance of an outline of the student's program and his tentative thesis title before the beginning of the third semester
- c. Submission of an acceptable thesis in the required format and quantity of copies not later than May 15 preceding the commencement at which the degree is to be conferred
- d. Completion of arrangements for publication of the thesis, if so directed, satisfactory to the Advisory Committee

Specific departmental requirements for graduate degrees will be found under the listings of the individual departments.

TRANSFER CREDITS

A maximum of six semester hours of graduate credit in a different but recognized institution may be transferred for credit towards the master's degree. Extension work is not normally accepted for transfer. Courses taken before admission to the Wilkes program will be evaluated at the time of admission. Degree students desiring to take courses for transfer at another institution must secure prior approval from the Director of Graduate Studies, the Chairman of the appropriate department and the student's advisor. Application forms for transfer credit requests are available at the graduate office.

GRADE REGULATIONS

Numerical grades are given for graduate work:

- 4 — Academic achievement of outstanding quality
- 3 — Academic achievement of acceptable quality in meeting requirements for graduation

2 — Academic achievement of quality below the average required for graduation

0 — Academic achievement below the minimum required for course credit

A grade of "X" indicates assigned work yet to be completed in a given course. Except in thesis work, grades of "X" will be given only in exceptional circumstances, beyond the student's control, such as illness. In these cases, it is the responsibility of the student to notify the faculty member. Grades of "X" must be removed through satisfactory completion of all course work within four weeks of the end of the examination period. Failure to complete required work within this time period will result in the conversion of the grade to 0. Further extensions of the time allowed for completion of the work will be granted only by the Director of Graduate Studies.

REGULATIONS FOR WITHDRAWAL

A grade of W indicates an authorized withdrawal from a course. A graduate student wishing to withdraw from a course must secure a withdrawal form from the Graduate Studies Office, and have it approved by the instructor, the faculty advisor and the Director of Graduate Studies. Failure to secure authorized withdrawal for a course not completed will result in a grade of 0.

REGULATIONS ON THESIS RESEARCH

All graduate students shall select a major advisor under whose direction he wishes to pursue his thesis research before completing nine hours of graduate study if a thesis is required. Following acceptance of the candidate, the advisor shall appoint two other members of the Graduate Faculty to serve with him as the student's Advisory Committee.

When a thesis is required, the student, in consultation with his Advisory Committee, shall submit to the Committee on Graduate Studies an outline and a tentative thesis title before completing more than twelve hours of graduate study.

Part-time students employed in laboratories on a full-time basis may be permitted to conduct their thesis research in these laboratories if a mutually satisfactory agreement can be reached by the student, the laboratory staff, and the college. In such cases, a qualified member of the staff of the employer shall be

named by the Director of Graduate Studies to serve as a member of the student's Advisory Committee. He shall also be appointed an adjunct professor of the college and shall supervise the day-to-day progress of the student's research.

Students engaged in active thesis research but not formally registered for thesis or other credit courses during a semester will be required to pay a \$10 fee to cover advisory functions. This fee does not include any which may be assessed by the individual departments for materials and/or use of equipment.

The original and two Xerox copies of the thesis must be submitted to the Director of Graduate Studies after the thesis has been approved by the Advisory Committee. One copy will be provided for the Library, one for the Graduate Office and one for the appropriate Department. If the student desires a personal copy bound, an additional copy should be furnished. For thesis binding fees, see under fees and expenses.

TRANSCRIPTS

Transcripts are provided by the Office of Graduate Studies. They are issued only upon written request of the student, and should be requested at least three weeks prior to the date needed. The student requesting a transcript in person must present valid identification.

Transcripts given directly or mailed to students do not carry the university seal and are not official. The seal is attached only when the transcript is mailed directly from the university to another college or authorized agency.

A transcript of work completed at any college or high school other than Wilkes College must be obtained directly from that institution.

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

When requests for more than one transcript are given on the same order, the charge will be:

- a. One dollar for the first copy.
- b. Seventy-five cents for the second copy.
- c. Fifty cents for the third copy.
- d. Twenty-five cents for each copy thereafter.

FEES AND EXPENSES

All payments for tuition, room and board, fees, etc., are due prior to final registration.

Payment of all charges for tuition, fees, room and board is to be made at the Finance Office, Parrish Hall, before registration. Several plans have been developed to assist students who do not have the cash in hand, and it is suggested these plans be considered when special assistance is needed. Students may consult with the Director of Financial Aid for information regarding scholarship and loan programs.

Subject to the regulations concerning refunds, the total tuition is considered fully earned by the college upon completion of registration of the student.

Tuition Cost per Semester: \$70 per credit hour.

A \$10 per credit hour scholarship will be granted to those engaged in teaching or who intend to become active in education.

Thesis Research Fee: \$10 per semester.

(See under regulations on thesis research for information.)

Graduation Fee: \$25.

(Charged to all graduating students in their last semester.)

Thesis Binding Fee: \$7 per copy.

Individual departments have the right to charge laboratory and breakage fees as appropriate.

FINANCIAL AID AND ASSISTANTSHIPS

The college has available a number of teaching and research assistantships for selected graduate students. Recipients of these assistantships will take two or three graduate courses per semester and will assist either in instructional or research work in their major departments. Applications for assistantships for the fall term must be made to the graduate school before the preceding May 10. Generally, research assistants will be able to write theses based on work done under their assistantships.

A number of counselorships in undergraduate college dormitories are available each year to graduate students. These counselorships provide free room and board for the academic year.

Students applying for assistantships must apply through the

Graduate and Professional School Financial Aid Service (GAPS-FAS). The necessary forms are available from the Wilkes College Graduate Office.

REFUNDS

Students in good standing who withdraw from the College for adequate and satisfactory reasons during the time limits indicated below will receive upon request a refund of one-half of the tuition. Refund of dormitory charges will not be allowed except under conditions beyond the control of the student.

Regular session: During the first six weeks of the term.

5-week summer session: During the first week of the term.

Summer evening session: During the first two weeks of the term.

No student who is suspended or expelled shall be entitled to any refunds.

International Students

DATES OF APPLICATION

All credentials must be received by the dates listed below if an applicant is to be considered for admission:

Fall semester — By July 15

Spring semester — By November 30

Summer session — By April 30

LANGUAGE PROFICIENCY

All applicants who are not native speakers of English must submit scores on the Test of English as a Foreign Language (TOEFL) before they may be considered for admission. Normally, a combined score of 550 or above will be evidence of sufficient facility in the English language.

IMMIGRATION REGULATIONS

The Immigration and Naturalization Service of the United States Department of Justice requires a certificate of eligibility (Form I-20A) to be initiated by the university and completed by the student prior to his application for a student visa to study in this country. Any extension of stay or employment while in the United States must have prior approval of the regional office of the Immigration and Naturalization Service.

ECONOMIC CONSIDERATIONS

Total expenses for one academic year at Wilkes College will be approximately \$3,000. All graduate programs take longer than one academic year. The minimum would be a year and a summer session. In most cases three full semesters would be required as a minimum and in many cases two full years would be devoted to working for a master's degree. The student should therefore be prepared to spend as much as \$6,000, in addition to transportation, on his graduate education at Wilkes College.

CONFIRMATION OF ACCEPTANCE

All entering international students must inform the Dean of Graduate Studies by the following deadlines of their intention to accept or decline admission to Wilkes College:

Fall semester — By August 15

Spring semester — By December 31

Summer session — By May 31

ARRIVAL DATES

The required dates of arrival for 1973-1974 are given below. Immediately upon his arrival the student should contact both his Graduate Studies Director and the Foreign Students' Advisor.

Fall semester, 1973 — 4 September 1973

Spring semester, 1974 — 16 January 1974

ADDITIONAL COURSES

Students may be required to take certain courses for undergraduate credit not applicable to the master's degree. In some cases these courses will be specified in the admissions letter but a Graduate Program Director may make additional requirements if a student is found to be deficient in the English language or in background knowledge in his field.

FOREIGN STUDENTS' ADVISOR

The Dean of Student Affairs, 2nd floor, Weckesser Hall, serves as advisor on nonacademic matters to all international students. Services provided include counseling on housing, visa problems and other difficulties in adjusting to life in the United States. All international students should register with the Foreign Students' Advisor as soon as they arrive.

Accounting

See under Business Administration, page 15

Biology

Master of Science

Master of Science in Education

ADMISSION

An applicant for the M.S. degree in biology must present at least twenty-four undergraduate credits in biology, regardless of the major in which his Baccalaureate Degree was granted.

The candidate must have credits for at least one year of physics, one year of statistics, and two years of chemistry. A working knowledge of calculus is also required. Applicants deficient in any of the above requirements must take the courses for no credit in the undergraduate school.

An applicant for the M.S. in Education must present at least forty undergraduate credits in biology and related sciences.

All applicants must take the Graduate Record Examination and forward scores in support of their application.

Students deficient in any of the above may at the discretion of the Biology Department and the Director of Graduate Studies be granted provisional admission.

DEGREE REQUIREMENTS

Two graduate programs are offered in biology leading to the degree of Master of Science, or Master of Science in Education with major in biology. Information on requirements for the Master of Science degree is given below. Requirements for the Master of Science in Education with major in biology are listed under Education on page 24.

The program leading to the Master of Science Degree in Biology includes three distinct requirements: course work, independent laboratory research, and a reading knowledge of one foreign language.

A candidate for the Master of Science Degree in Biology must have a minimum of eighteen 400-level credits for graduation. These 400-level credits will include six for thesis. A maximum of nine 300-level credits will be allowed. A candidate must have completed three credits in biochemistry or must take them at the college for credit.

The candidate must demonstrate a reading knowledge of a foreign language, either through examination or by successful completion of two years of language in undergraduate school.

Following completion of eighteen of the twenty-four required credit hours of course work, a graduate student may make a written request of his advisor to take the comprehensive examination on the fundamental principles of biology.

A graduate student in the Department of Biology is considered to be a candidate for the degree, Master of Science, after he has completed twenty-four credit hours of course work, fulfilled the language requirements, has passed the comprehensive written examination, and submitted the outline of his thesis.

To qualify for the degree a candidate must present an acceptable thesis and must pass an oral examination in the subject area of his research.

COURSES OF INSTRUCTION

BIOLOGY 302. ENDOCRINOLOGY

Three credits

A study of the endocrine system and the mechanism of action of hormones on the life processes and functions. Emphasis will be placed on the mammalian system with reference to comparative forms.

BIOLOGY 311. BACTERIOLOGY

Three credits

Biology 311 covers generally the morphology and identification of bacteria. Laboratory work includes microscopy, techniques of making media, methods of sterilization, and the culturing of bacteria. Fee: \$20.

BIOLOGY 312. BACTERIOLOGY

Three credits

Biology 312 covers the relationship of bacteria to disease, immunity, serology, and the pathogenic organisms. Laboratory work continues with special stains, identification of unknowns, isolation of bacteria from natural sources, and techniques used in applied bacteriology. Class, two hours a week; laboratory, six hours a week. Fee: \$20.

Prerequisite: Biology 311.

BIOLOGY 321. GENETICS

Three credits

Genetics is the study of the inheritance of normal characters and the vari-

ation of those characters in plants and animals. The laboratory work concerns primarily studies of inheritance in the fruit fly. Class, two hours a week; laboratory, three hours a week. Fee: \$20.

BIOLOGY 322. ECOLOGY

Three credits

Ecology is the study of the relationship between organisms, singly and collectively, and their environments, including the biotic and physical factors of the environments. Class, two hours a week; laboratory and field trips, three hours a week. Fee: \$20.

BIOLOGY 331. PHYSIOLOGY

Three credits

Physiology is the study of the physical and chemical activities characteristic of all living organisms. Laboratory work includes experiments involving living forms. Class, two hours a week; laboratory, six hours a week. Fee: \$20.

BIOLOGY 332. EVOLUTIONARY MECHANISMS

Three credits

Evolutionary Mechanisms is a study of how new species of organisms are derived from previously existing species. Emphasis is placed upon the processes of organic evolution and the development of the evolutionary ideas. Lecture, three hours a week.

Prerequisite: Biology 321 or permission of instructor.

BIOLOGY 402. CELL BIOLOGY AND DIFFERENTIATION

Three credits

The study of cells and their organelles as the fundamental units of structure, function and development in higher animals and plants.

BIOLOGY 411. PHYSIOLOGY OF BACTERIA

Three credits

This course includes such topics in advanced bacteriology as: cell structure, nutrition, metabolism, and factors which influence the rates of growth, fermentation, and death.

Prerequisites: one semester of bacteriology, bio-chemistry.

BIOLOGY 421. CURRENT CONCEPTS IN GENETICS

Three credits

Recent advances and developments in genetics are examined and analyzed by means of a review of the current literature. Emphasis will be placed upon molecular and biochemical aspects of gene structure and function.

Prerequisite: undergraduate genetics.

BIOLOGY 422. TOPICS IN ECOLOGY

Three credits

A review of selected ecological topics such as population dynamics, predator-prey interactions, competition, the niche concept and human ecology.

Prerequisite: undergraduate ecology.

BIOLOGY 430. REPRODUCTIVE PHYSIOLOGY

Three credits

A study of the hormonal interactions in reproduction. Discussions and analyses of the contemporary literature with regard to mammalian systems and reference to comparative non-mammalian forms.

Prerequisite: Biology 302 or its equivalent.

BIOLOGY 432. ADVANCED PHYSIOLOGY

Three credits

An analysis of life processes in invertebrate and vertebrate animals with

readings, discussions and demonstrations. Topics will be drawn from current problems in general and comparative physiology.

Prerequisite: undergraduate physiology.

BIOLOGY 441. IMMUNOLOGY AND IMMUNOCHEMISTRY

Three credits

This course is concerned with the biologic mechanisms and chemistry of reactants and mediators associated with natural and acquired states of immunity, tissue and blood serum responses to infection and immunization, and related patho-physiologic alterations of hypersensitivity phenomena in vertebrate animals and man. A background in microbiology, physiology, and biochemistry is advisable. Students lacking formal prerequisite courses but who are otherwise qualified in biology or chemistry may register through special arrangement with the instructor.

BIOLOGY 451. INVERTEBRATE BIOLOGY

Three credits

Classification, functional adaptations and development of selected non-chordate animals.

BIOLOGY 460. SELECTED TOPICS IN BIOLOGY

One to three credits each semester

Selected topics in biology which are of special interest to the Staff and are designed to complement research.

BIOLOGY 590. THESIS

Six credits

Business Administration

Master of Business Administration

The curriculum leading to the Master of Business Administration Degree provides an opportunity for specialization in a selected field but is concerned mainly with advanced study of broad business concepts and relationships. The purposes are:

1. to develop professional managers with emphasis on the foundation, organization, operation, and control of business enterprises;
2. to develop individuals trained in research and constructive business leadership;
3. to enable individuals to create and evaluate alternative courses of action as a procedure for making decisions.

ADMISSION

A candidate for the M.B.A. degree who is a graduate of an approved college or university and who has had basic courses in accounting, business law, corporation finance, economics, marketing, money and banking, and statistics will probably have an adequate background to complete requirements for a degree in two years.

Background Undergraduate Course Requirements for Candidates in Master of Business Administration Program:

Accounting	1 year
Business Law	1 semester
Economics	1 year Principles
	1 semester Micro Theory
Statistics	1 year of Math or 1 year of Statistics
Corporation Finance	1 semester
Money and Banking	1 semester
Marketing	1 semester

The program is designed to provide business education at the master's level not only for those who have had undergraduate training in business and economics, but also for interested engineers, scientists, and others who have a minimum amount of background education in this area. For those who have background deficiencies, pre-seminar courses are listed. These courses are intended to provide the necessary background and also act as refresher courses for those who have been away from formal coursework for a number of years.

All candidates for this degree are required to take the Admission Test for Graduate Study in Business.

Each student upon admission to the program will be assigned an advisor to guide him in the program.

DEGREE REQUIREMENTS

All candidates for the Master of Business Administration Degree are required to complete satisfactorily Economics 501, Business Administration 502, Accounting 503 or Accounting 504, Economics 505, Economics 506, and Business Administration 507. A total of 30 credits of graduate work in 500-level courses is required.

A graduate student in Business Administration is required to pass successfully a written comprehensive examination covering the broad field of business administration. This examination is given once during the fall semester and once during the spring semester.

Students who are registered for or plan to complete their final graduate course work for the Degree of Master of Business Ad-

ministration during the next semester may take this examination. A student who fails the comprehensive examination may retake it only once.

COURSES OF INSTRUCTION

BUSINESS ADMINISTRATION

Approval of the instructor and faculty adviser is a prerequisite for all courses.

ECONOMICS 473-4. PRE-SEMINARS (no graduate credit)
Seminars which provide review and training to a minimal level, on the current state of knowledge in respective fields.

Core Courses (18 semester hours required)

ECONOMICS 501. MANAGERIAL ECONOMICS Three credits
Problems of the firm. Price and output determination with analysis of cost and demand functions in markets of various types and under various conditions of business. The course will deal with the application of economic theory to business practice.

BUSINESS ADMINISTRATION 502. MANAGEMENT SCIENCE Three credits
This course familiarizes the student with the general field of management theory. It surveys the current literature and practice. It is designed to give a broad view of management as a science and art.

ACCOUNTING 503. MANAGERIAL ACCOUNTING Three credits
A thorough examination of financial statements and uses of accounting data for effective managerial planning and control. Topics include valuation factors; cost, expense and revenue concepts; cost control; capital expenditure planning; the price-level problem and other decision-making guides.

ACCOUNTING 504. ACCOUNTING THEORY AND THOUGHT Three credits
Analysis of the development of modern accounting concepts; interpreting and effectively communicating data based upon the relationship of modern accounting concepts and related economic considerations.

ECONOMICS 505. MANAGERIAL STATISTICS Three credits
An introductory graduate course in techniques, limits, and areas of application of statistical techniques.

ECONOMICS 506. LABOR-MANAGEMENT ECONOMICS Three credits
A course dealing with issues and trends in collective bargaining and industrial relations today. The shifting roles and relationships of labor management and government will be dealt with. Problems of maintaining the labor force and the social aspects of industry will be dealt with.

BUSINESS ADMINISTRATION 507. BUSINESS AND SOCIETY Three credits

This course deals with the problems of the responsible business manager in a private enterprise society, particularly those problems dealing with policy-making and administration when both economic and non-economic factors are involved. Questions are raised as to the kinds of responsibility and the extent of responsibility business managers have to the goals of our society, to the communities in which they operate, to the people they employ, and to governmental policies, as well as to the stockholders of their own firms.

AREA I—MARKETING SPECIALIZATIONS

BUSINESS ADMINISTRATION 511. MODERN INTERNATIONAL COMMERCE Three credits

This course is designed to introduce the student to the practical principles and methods of international marketing. Subjects covered will include the development and management of exports and imports, channels of trade, the mechanics of international finance, foreign credits, technical procedures and documentation, and the legal aspects of trade.

BUSINESS ADMINISTRATION 512. PRICE POLICY AND PROCEDURE Three credits

This course describes the basic pricing process, relates it to pricing decisions, and attempts to provide a systematic pricing program for managers to follow. Topics covered will include internal and external factors in pricing decisions, legal and ethical aspects of pricing, normative pricing models, and the special problems of manufacturers and distributors.

BUSINESS ADMINISTRATION 513. HUMAN BEHAVIOR AND THE MARKETING PROCESS Three credits

This course deals with the behavior of man in social groupings and as an individual entity. Processes such as learning, perception, motives, personality, and intelligence will be studied particularly as they relate to marketing problems and procedures.

BUSINESS ADMINISTRATION 514. MARKET RESEARCH AND EXPERIMENTATION (Seminar) Three credits

This course deals with the experimental techniques that can be applied to the planning, execution, and analysis of marketing problems. Modern concepts of statistical decision theory and survey techniques are included.

AREA II—MANAGERIAL SCIENCE

BUSINESS ADMINISTRATION 521. ORGANIZATIONAL THEORY Three credits

This course is concerned with the human relations aspects of organizations. It draws on the newer research in organization theory to analyze

groups and individual behavior. It gives emphasis to the problems of managers at different levels of responsibility in regard to leadership, mobilization of resources, rationalization, planning motivation, and dynamic administration.

BUSINESS ADMINISTRATION 522. QUANTITATIVE ASPECTS OF MANAGEMENT Three credits

This course examines the quantitative aspects of management. It analyzes the optimization of management decisions in the operation of the firm. It applies the new tools and techniques of game theory, linear and non-linear programming, input-output analysis, and other mathematical and statistical approaches to operational problems faced by the firm.

BUSINESS ADMINISTRATION 523. MANAGEMENT SEMINAR I Three credits

This seminar brings to bear current management techniques on a variety of problems. Students will be guided in theoretical readings and will apply their knowledge in seminar discussions.

BUSINESS ADMINISTRATION 524. MANAGEMENT SEMINAR II Three credits

This seminar has a research orientation. Research, objectives, techniques, and methodology will be dealt with.

BUSINESS ADMINISTRATION 572. MANAGEMENT DEVELOPMENT SEMINAR Three credits

This seminar area will deal with techniques of management training, problems, pitfalls, objectives, and the current state of the art.

AREA III—LABOR

ECONOMICS 531. INDUSTRIAL RELATIONS AND THE LAW Three credits

An in-depth study of labor legislation, federal, state, and local. Emphasis will be placed on recent N.L.R.B. decisions and precedents.

ECONOMICS 532. WAGE DETERMINATION AND ADMINISTRATION Three credits

A study of economic and institutional forces determining wages. Wage theories are analyzed. Problems of wage administration will be dealt with.

ECONOMICS 533. THE LABOR MARKET Three credits

Economic and non-economic forces influencing labor supply and demand will be studied. Determinants of the labor force, unemployment, labor mobility, and the functioning of the labor market will be investigated.

ECONOMICS 534. LABOR SEMINAR Three credits

This seminar deals with current issues and theoretical concepts in industrial relations.

ECONOMICS 571. LABOR-MANAGEMENT SEMINAR Three credits

This seminar will deal with labor-management conflict and successful problem-solving techniques. The orientation and approach will be that of the concerned public.

AREA IV—ACCOUNTING

ACCOUNTING 541. ADVANCED PROBLEMS Three credits
A comprehensive review of technical and professional accounting problems. Review of the structure and content of the Uniform C.P.A. examination.

ACCOUNTING 542. FINANCIAL AND TAX PLANNING Three credits
Analysis of federal tax regulations and interpretations. Stress will be placed upon the timing of business transactions and the tax implication in choosing financial alternatives.

ACCOUNTING 543. ACCOUNTING POLICIES AND PRACTICES Three credits
This course considers the ethical questions and legal implications in the performance of the accounting function; reporting data to management, governmental agencies, and other interested parties.

ACCOUNTING 544. CONTROLLERSHIP Three credits
Review of the controllership function and the role of the controller in the planning and coordination of the large business organization. Attention will be directed to the effective use of accounting information and facilities.

ACCOUNTING 545. PROFESSIONAL SEMINAR Three credits
Discussion of current accounting research, literature and theory, consideration of the role of the accountant in management advisory services.

AREA V—FINANCE

BUSINESS ADMINISTRATION 551. INVESTMENT AND PORTFOLIO MANAGEMENT Three credits
A study of the various types of corporation and government securities coupled with an examination of the machinery of investment. Particular emphasis will be given to the investment alternatives relating to portfolio management decisions.

BUSINESS ADMINISTRATION 552. FINANCIAL MANAGEMENT Three credits
A study of financial management problems of business. Attention is given to the control of current funds, working capital operations, and estimating the need for funds; the problem of long-term capital funds and expansion, and the choice between risk and profitability in the capital structure are also considered.

BUSINESS ADMINISTRATION 554. MANAGERIAL FINANCE SEMINAR Three credits
Problems in managerial finance. Special topics.

BUSINESS ADMINISTRATION 590. THESIS Three or six credits

Chemistry

Master of Science

Master of Science in Education

ADMISSION

For admission to graduate study in chemistry, the applicant shall have a Baccalaureate Degree in Chemistry from an accredited institution or the equivalent. Requirements include courses in physical chemistry and qualitative organic analysis, as well as one advanced chemistry course. A working knowledge of calculus and ordinary differential equations is also required. Students deficient in any phase of chemistry may, at the discretion of the Chemistry Faculty, be granted provisional admission.

All applicants must take the Graduate Record Examination and forward scores in support of their application. Foreign students must also supply TOEFL scores.

DEGREE REQUIREMENTS

Two graduate programs are offered in chemistry leading to the degree of Master of Science or Master of Science in Education with major in chemistry. Information on requirements for the Master of Science degree is given below. Requirements for the Master of Science in Education with major in chemistry are listed under Education on page 24.

All candidates for the Master of Science Degree in Chemistry are required to complete satisfactorily Chemistry 411, 431, and 440. A minimum of 18 credits in 400- and 500-level graduate chemistry courses is required, exclusive of dissertation credit. The remainder of the required credits may be obtained in 400- or 500-level graduate biology, physics, or mathematics courses, with 300-level courses in these departments acceptable only on specific petition to the chemistry department.

Chemistry courses listed below at the 300-level are only available to those candidates for the M.S. degree in Secondary Education or other M.S. candidates with approval of their department.

Departmental requirements in chemistry allow two options with respect to the dissertation. It may be on an original research

problem, or it may be a critical survey and evaluation of the literature on a specified subject. In the first instance, 24 hours of course work are required, and six hours credit is allowed for research. No graduate credit is allowed for the second option. Therefore, 30 credit hours of course work are necessary to fulfill the degree requirements. The research thesis is strongly recommended.

COURSES OF INSTRUCTION

CHEMISTRY 341. ELEMENTARY PHYSICAL CHEMISTRY **Three credits**
The first, second, and third laws of thermodynamics are emphasized. The topics of electrochemistry, chemical kinetics, the phase rule, and the states of matter are introduced. Class, three hours a week; laboratory (optional), three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Permission of instructor.

CHEMISTRY 342. INTERMEDIATE PHYSICAL CHEMISTRY **Three credits**
Electrochemistry, electrokinetic phenomena, kinetic molecular theory, statistical mechanics, chemical kinetics, and the states of matter are studied in detail. Quantum mechanics and radiochemistry are introduced. Class, three hours a week; laboratory (optional), three hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Permission of instructor.

CHEMISTRY 352. BIOCHEMISTRY **Three credits**
A study of the nature and metabolism of proteins, carbohydrates, lipids, and other physiological substances. Emphasis is placed on the mechanism of enzymatic catalysis. Class, three hours a week.

Prerequisite: Permission of instructor.

CHEMISTRY 376. ADVANCED ANALYTICAL CHEMISTRY **Three credits**
The theory and application of modern techniques and instructional procedures, such as spectrophotometric, electroanalytical, and chromatographic. Theory and practice of analysis of more complex materials. Class, two hours a week; laboratory, six hours a week. Breakage deposit required. Fee: \$20.

Prerequisite: Chemistry 342.

CHEMISTRY 411. ADVANCED INORGANIC CHEMISTRY **Three credits**
Systematic chemistry of the elements, introduction to ligand field theory, chemistry of the first transition series and π — acceptor compounds.

CHEMISTRY 431-432. ADVANCED ORGANIC CHEMISTRY I AND II **Three credits each**
A detailed study of modern theories of mechanism and structure. Topics include nucleophilic and electrophilic substitution, elimination reactions, molecular rearrangements, carbonyl reactions, stereochemistry, kinetics.

CHEMISTRY 440. QUANTUM CHEMISTRY **Three credits**
The experimental foundations and the mathematical formulation of the

quantum theory, including the quantum mechanics of simple systems, the hydrogen atom, and approximate methods. The use of symmetry properties is applied to molecular orbital theory.

CHEMISTRY 451. BIOCHEMISTRY I **Three credits**
A study of the physical and chemical properties of biological molecules with emphasis on enzyme kinetics, coenzymes and various metabolic pathways.

Prerequisite: Chemistry 238 or equivalent.

CHEMISTRY 452. BIOCHEMISTRY II **Three credits**
A study of metabolism with emphasis on metabolic regulation and regulated enzymes. Certain special topics such as photosynthesis may also be covered.

Prerequisite: Chemistry 451 or equivalent.

CHEMISTRY 516. SELECTED TOPICS IN INORGANIC CHEMISTRY **Three credits**
(Offered on sufficient demand)

Selected topics in inorganic chemistry which are of special interest to the Staff and are designed to complement research.

CHEMISTRY 531. STEREOCHEMISTRY **Three credits**
A detailed study of symmetry classifications, stereoisomerism, optical activity and conformational analysis, including related theory and experimental applications of ORD, CD, and NMR.

CHEMISTRY 536. SELECTED TOPICS IN ORGANIC CHEMISTRY **Three credits**
Selected topics in organic chemistry which are of special interest to the Staff and are designed to complement research.

CHEMISTRY 541. CHEMICAL THERMODYNAMICS AND STATISTICAL THERMODYNAMICS **Three credits**
The First, Second, and Third Laws of thermodynamics are studied in detail. Statistical thermodynamics is also thoroughly treated, using the Fermi-Dirac, Bose-Einstein, and Maxwell-Boltzmann statistics.

CHEMISTRY 542. SPECTROSCOPY **Three credits**
The theory of absorption and emission of radiation, including microwave, Raman, and infrared spectra of molecules and electronic spectra of atoms and molecules. Other topics may include magnetic resonance spectroscopy, Mossbauer spectroscopy, and fluorescence and phosphorescence spectroscopy.

CHEMISTRY 544. KINETICS **Three credits**
A review of the analysis of kinetic results and the measurement of reaction rates. Emphasis is placed on the theoretical interpretation of elementary gas phase reactions, liquid solution kinetics, rapid reactions, and enzyme kinetics.

CHEMISTRY 546. SELECTED TOPICS IN PHYSICAL CHEMISTRY **Three credits**
(Offered on sufficient demand)
Selected topics in physical chemistry which are of special interest to the Staff and are designed to complement research.

CHEMISTRY 590. THESIS **Six credits**

Education

Master of Science in Education

PURPOSE

Graduate study in Education is offered primarily to enable teachers to enhance their preparation for classroom leadership. Study in various academic fields is required as well as in professional courses. Sufficient flexibility is provided, however, to permit others interested in education to arrange programs of study appropriate to their interests.

Programs are offered in Education, Elementary Education, and Secondary Education, with major in Biology, Chemistry, English, History, Mathematics, or Physics.

SPECIAL FEATURES OF THE PROGRAM

The program is arranged so that students may pursue the degree on a full- or part-time basis. Late afternoon and evening classes are offered to enable full-time teachers within a reasonable distance from Wilkes-Barre to take courses toward fulfillment of degree requirements during the academic year. Credits may also be earned during the summer sessions.

ADMISSION

For admission to graduate study in education, the applicant must have a baccalaureate degree from an accredited institution or the equivalent with an appropriate major.

Applicants who wish to pursue master's work in elementary or secondary education must hold an appropriate teacher's certificate.

Students deficient in any phase of requirements may, at the discretion of the academic department, the Education Department, and the Director of Graduate Studies, be granted provisional admission. Deficiencies must be made up satisfactorily before full admission to graduate study will be granted.

Students who do not wish to earn a degree are invited to request "special non-degree" admission status.

DEGREE REQUIREMENTS

All candidates for the Master of Science in Education degree

must complete a program of thirty credits; at least twelve credits must be in education, six in Area I and three in Area II.

A candidate for the Master of Science in Education degree who majors in one of the secondary school teaching subjects must complete eighteen credits in the appropriate academic department; three of the twelve credits in education must be in Area IV.

A candidate for the Master of Science in Education degree who majors in elementary education must take three courses in the Education 532 series and Education 534.

A candidate for the Master of Science in Education degree who majors in education must take Education 522, must earn nine credits in one Area in education beyond the twelve-credit basic requirement, and must complete a thesis for which three credits may be granted.

Certification courses in Area 0 are not accepted for degree requirement credit. Transcripts will show credit for these courses for certification purposes only.

PROGRAM OF STUDY

Each student develops a program of study which will satisfy requirements for the degree. The program must be approved by his advisor and by the Education Department. To facilitate securing this approval, students in secondary education are assigned a co-advisor in the Education Department.

COURSES OF INSTRUCTION

EDUCATION

AREA 0—CERTIFICATION COURSES

EDUCATION 400.

GENERAL SECONDARY SCHOOL METHODS

Three credits

An introduction to principles, methods, and materials appropriate for secondary school instruction.

EDUCATION 401-02.

ELEMENTARY CLASSROOM METHODS

Three credits each semester

An introduction to principles, methods, and materials appropriate for elementary school instruction. Education 401 is prerequisite to 402.

EDUCATION 403-04. INTERN TEACHING Three credits each semester
Beginning teachers holding the interim certificate are assigned to supervisors who work with them to facilitate their introduction to classroom teaching.

Section A Elementary
Section B Secondary

EDUCATION 405. INTRODUCTION TO READING INSTRUCTION Three credits
A foundation course in reading instruction.

AREA I — FOUNDATIONS OF EDUCATION

EDUCATION 510. PSYCHOLOGICAL FOUNDATIONS OF EDUCATION Three credits
A study of human development and learning, application of psychological principles in the practice of education.

EDUCATION 511. PHILOSOPHICAL FOUNDATIONS OF EDUCATION Three credits
An examination of philosophical issues which bear upon American education. The problem of relating theory to practice is considered.

EDUCATION 512. SOCIAL FOUNDATIONS OF EDUCATION Three credits
An introduction to the history, scope, materials and methods of the sociological analysis of education. Instruction includes the concepts of culture, socialization, stratification, social control and change as they relate to formal education.

EDUCATION 513. COMPARATIVE FOUNDATIONS OF EDUCATION Three credits
An analytic study of educational patterns in contemporary societies. Educational policies and institutions are studied in their cultural context. Educational patterns of developed and developing nations are described, analyzed and compared; examples from each pattern are examined.

EDUCATION 514. HISTORICAL FOUNDATIONS OF EDUCATION Three credits
A survey of the great landmarks of Western education from antiquity to the recent past. The development of primary, secondary, and higher education; objectives; curricula; methods; and systems of education are considered. Attention is given to some contemporary problems in their historical perspectives.

EDUCATION 515. EDUCATIONAL PLANNING IN DEVELOPING NATIONS Three credits
An analytical study of educational patterns in developing nations. Educational systems are described, analyzed and compared with particular attention to planning and system analysis.

AREA II — PROFESSIONAL SKILLS IN EDUCATION

EDUCATION 520. TESTS AND MEASUREMENTS Three credits
Study of characteristics, construction, and use of various standardized and non-standardized measuring instruments; statistics through basic correlation.

EDUCATION 521. STATISTICS IN EDUCATION Three credits
Correlation and regression through statistical inference.
Prerequisite: Education 520 or equivalent.

EDUCATION 522. RESEARCH IN EDUCATION Three credits
An introduction to research, techniques for gathering and presenting data.
Prerequisite: Education 520 or equivalent.

AREA III — ELEMENTARY EDUCATION

EDUCATION 430. DEVELOPMENTAL READING Three credits
An advanced course in techniques and materials of reading instruction.
Prerequisite: Education 405 or equivalent.

EDUCATION 436. CHILDREN'S LITERATURE Three credits
A study of methods and materials appropriate for elementary school instruction in literature.

EDUCATION 530. DIAGNOSIS AND CORRECTION OF READING DIFFICULTIES Three credits
A study of methods and materials for detection, analysis, and remediation of reading disabilities.
Prerequisite: Permission of the Instructor.

EDUCATION 531. PRACTICUM IN READING INSTRUCTION Three credits
This course places students in a clinical setting for detection, analysis, and remedial instruction of children with reading disabilities.
Prerequisite: Education 530 and permission of the instructor.

EDUCATION 532-33. PROBLEMS IN ELEMENTARY EDUCATION Three credits
Advanced study of materials and methodology appropriate for elementary classroom instruction.

Section A Mathematics
B Science
C Language Arts
D Social Studies
E Special Subjects

EDUCATION 534. ELEMENTARY SCHOOL CURRICULUM Three credits
A study of curricula offered in elementary schools, grade placement of content, articulation of subject matter areas, development of specialized programs.

**EDUCATION 535. NONGRADED INSTRUCTION
IN THE ELEMENTARY SCHOOL**

Three credits

A study of the rationale for nongrading, the nongraded curriculum, and instructional staffing design.

Prerequisite: Permission of the instructor.

EDUCATION 539.

SEMINAR IN ELEMENTARY EDUCATION

Three credits

An advanced course dealing with some significant issues selected by the instructor. The seminar technique provides a review of major problems based on the current level of knowledge in the area.

AREA IV — SECONDARY EDUCATION

**EDUCATION 540. SPECIAL METHODS IN
SECONDARY SCHOOL INSTRUCTION**

Three credits each semester

Section A	Biology	F	Mathematics
B	Chemistry	G	Physics
C	Environmental Science	H	Reading
D	English	I	Social Sciences
E	History	J	Educational Theater

EDUCATION 541. SECONDARY SCHOOL CURRICULUM

Three credits

A study of secondary school curricula, traditional programs, recent developments, provisions for innovation and individualization.

EDUCATION 542. EXTRA-CURRICULAR ACTIVITIES

Three credits

A study of the development of extra-curricular activities, organization and administration, the role of the sponsor, recent trends.

EDUCATION 549. SEMINAR IN SECONDARY EDUCATION

Three credits

An advanced course dealing with some significant issues selected by the instructor. The seminar technique provides a review of major problems based on the current level of knowledge in the area.

Prerequisite: Permission of instructor.

**AREA IX — ADVANCED GENERAL
COURSES**

EDUCATION 590. THESIS

Three credits

EDUCATION 595-96 WORKSHOP

Three credits each semester

Provides an opportunity for experienced teachers to develop study programs designed to meet their special needs. Students may receive credit more than once if there is no duplication in subject matter covered.

EDUCATION 597-98. INDEPENDENT STUDY

Three credits each semester

Affords an opportunity for independent study of selected topics under faculty supervision.

English

Master of Science in Education

COURSES OF INSTRUCTION

SPECIAL DEGREE REQUIREMENTS

Information on requirements of the Education Department for the Master of Science in Education, major in English, will be found under Education on page 24.

ENGLISH 310. MEDIEVAL ENGLISH LITERATURE

Three credits

A study of English literature to 1500, exclusive of Chaucer and the drama.

ENGLISH 320. TUDOR PROSE AND POETRY

Three credits

Study of English non-dramatic literature from 1485 to 1603.

ENGLISH 321. EARLY ENGLISH DRAMA

Three credits

Study of the drama from the tenth century to 1642; reading of plays by pre-Elizabethan and Elizabethan dramatists exclusive of Shakespeare.

ENGLISH 330.

SEVENTEENTH CENTURY PROSE AND POETRY

Three credits

A study of the non-dramatic literature of the period.

ENGLISH 335. MILTON

Three credits

A study of Milton's poetry and major prose.

ENGLISH 341.

RESTORATION AND EIGHTEENTH CENTURY DRAMA

Three credits

Study of the drama from 1660 to 1780.

ENGLISH 343.

EIGHTEENTH CENTURY PROSE AND POETRY

Three credits

The chief poets and essayists of the eighteenth century. Includes Swift, Pope, and Johnson.

ENGLISH 345. EARLY ENGLISH NOVEL

Three credits

English prose fiction of the sixteenth and seventeenth centuries; rise of the novel to the close of the eighteenth century.

ENGLISH 354. ROMANTIC PROSE AND POETRY

Three credits

Study of Wordsworth, Coleridge, Shelley, Keats, and Byron, with related prose writers of the Romantic Period.

ENGLISH 360. VICTORIAN PROSE AND POETRY

Three credits

Readings in Tennyson, Browning, Arnold, and other significant writers of the Victorian Age.

ENGLISH 366. LATER ENGLISH NOVEL

Three credits

The major novelists of the nineteenth and early twentieth centuries.

ENGLISH 370. MODERN POETRY

Study of the major English and American poetry of the twentieth century. **Three credits**

ENGLISH 372. MODERN NOVEL

Study of the major English and American novels of the twentieth century. **Three credits**

ENGLISH 374. MODERN DRAMA

Study of important dramatists, European and American, from the time of Ibsen. **Three credits**

ENGLISH 400. INTRODUCTION TO RESEARCH

An introductory course in research and bibliography designed to acquaint the graduate student with the resources and procedures used in literary research. **Three credits**

ENGLISH 405. STUDIES IN LINGUISTICS

A study of generative transformational grammar as developed by Chomsky, Lees, and others resulting from work done by Harris and other structuralists. **Three credits**

ENGLISH 410. STUDIES IN MEDIEVAL LITERATURE

The study of selected topics in Medieval English literature. **Three credits**

ENGLISH 420. STUDIES IN RENAISSANCE LITERATURE

A study of selected major figures of the English Renaissance. **Three credits**

ENGLISH 440. STUDIES IN RESTORATION AND EIGHTEENTH CENTURY LITERATURE

A study of selected topics in English literature from 1660 to 1800. **Three credits**

ENGLISH 450. STUDIES IN ROMANTIC AND VICTORIAN LITERATURE

A study of selected major English prose and poetry of the nineteenth century. **Three credits**

ENGLISH 470.**STUDIES IN MODERN BRITISH LITERATURE**

A study of selected major British authors of the twentieth century. **Three credits**

ENGLISH 480. STUDIES IN AMERICAN LITERATURE

A study of selected major movements and figures in American literature from the Puritans to contemporary authors. **Three credits**

ENGLISH 497. SEMINAR IN SPECIAL PROBLEMS

This course is designed for intensive research in any specific area of English or American literature. **One to three credits**

Environmental Science

These courses may be taken by special students or may be applied towards graduate degrees offered by other departments. Students planning to apply these credits towards degree programs should secure the approval of their academic advisor prior to inclusion in their course of study.

COURSES OF INSTRUCTION**ENVIRONMENTAL SCIENCE 401-402.****TOPICS IN ENVIRONMENTAL SCIENCE I AND II**

A variety of geophysical processes are studied with special attention given the relevant mathematics and physics used in their analysis and description. Topics may include motion in a gravitational field, kinetic theory, hydrostatic stability, geochronology, radiative transfer processes, frictional boundary layer, and condensation and precipitation processes. **Three credits each**

History**Master of Science in Education****SPECIAL DEGREE REQUIREMENTS**

Candidates for the degree of Master of Science in Education, major in History, must take at least nine hours of their history in History 395-396, Sociology 397 or history courses numbered 400 or above. Sociology 397 is strongly recommended.

Information on requirements of the Education Department for the Master of Science in Education, major in history, will be found under Education on page 24.

COURSES OF INSTRUCTION**HISTORY 321-322. AMERICAN SOCIAL AND INTELLECTUAL HISTORY**

A study of social and intellectual developments in the United States from the colonial period to the present time. During the first semester emphasis will be placed on the influence of the American environment during the colonial period and of expansion and sectional disputes in the federal period upon society and upon religious, economic, and political thought. During the second semester the influences of industrialization, the rise of nationalism, and the emergence of the United States as a World Power will be emphasized. **Three credits each semester**

HISTORY 327-328. HISTORY OF THE FOREIGN POLICY OF THE UNITED STATES

A study of the evolution of the several policies that give direction to the relations of the United States with other nations. **Three credits each semester**

HISTORY 331. COLONIAL AMERICA

Discovery, exploration, and settlement; development of social, political, religious, and intellectual institutions; independence and political re-organization. **Three credits**

HISTORY 332. THE NATIONAL PERIOD (American History) Three credits
A study of the political and economic history of the United States from 1783 to 1865. Special attention will be given to the evolution of sectional differences and the culmination of these differences in intersectional warfare.

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

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

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

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

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

HISTORY 357. HISTORY OF RUSSIA TO 1815 Three credits
A brief review of demographic and geographic factors will be used as background for a study of the political, social, and intellectual history of Russia from early times to 1815.

HISTORY 358. HISTORY OF MODERN RUSSIA Three credits
A thorough examination of nineteenth century Imperial Russia will serve as a basis for a detailed study of the development of Russia in the twentieth century. Emphasis will be on the origins and political, social, and cultural evolution of the Soviet State from its inception to the present.

HISTORY 371. HISTORIOGRAPHY Three credits
An introduction to the aims, methods, and accomplishments of some of the most renowned historians of Europe and America.
Prerequisite: Approval of the instructor.

HISTORY 381. COLONIAL LATIN AMERICA Three credits
A survey of Latin American History from ancient times to 1820.

HISTORY 382. LATIN AMERICA SINCE 1820 Three credits
A survey of Latin American History since 1820. Includes the evolution of independent national governments and international relations, particularly with the United States.

HISTORY 395-396. INDEPENDENT RESEARCH

One to three credits per semester
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 the department chairman.

SOCIOLOGY 397. SEMINAR IN ANTHROPOLOGY Three credits
Presentation and discussion of selected topics.

HISTORY 497. SEMINAR IN AMERICAN AND/OR EUROPEAN HISTORY Three credits per semester
Presentations and discussions of selected topics.
Prerequisite: Approval of the instructor.

Mathematics

Master of Science

Master of Science in Education

THE COURSE OF STUDY IS INTENDED FOR:

- Students who plan to continue their studies beyond the master level
- teachers of secondary or junior college mathematics who seek to strengthen their subject-matter competence, and
- persons seeking a terminal master degree to further their career in industry or government.

ADMISSION

An applicant should have a baccalaureate degree from an accredited college or university. He is expected to have completed courses in advanced calculus or real variables and in modern and linear algebra. Students with a weak mathematical background may be required to make up certain deficiencies before being admitted to candidacy.

DEGREE REQUIREMENTS

- M.S. in Mathematics

A minimum of thirty credits of approved courses is required. All candidates are required to complete Math. 311-312, 331, and 334, or the equivalent, if they have

not done so as an undergraduate. At least six credits, exclusive of those for the optional thesis, must be in courses numbered above 500. No more than twelve credits of the 300 level courses may be applied towards this degree.

b. M.S. in Education with a major in Mathematics:

A minimum of thirty credits of approved courses, to be distributed as follows, is required.

1. Education courses: 12 credits
 - six credits in Area I
 - three credits in Area II
 - three credits in Area IV
2. Mathematics courses: 18 credits
 - At least three credits must be in courses numbered above 400.

COURSES OF INSTRUCTION

MATHEMATICS 311-312. FUNCTIONS OF A REAL VARIABLE I AND II Three credits each

Topological preliminaries for analysis, sequences and series of functions, Riemann-Stieltjes integral, introduction to the Lebesgue integral, Fourier series.

MATHEMATICS 314. FUNCTIONS OF A COMPLEX VARIABLE Three credits
Complex functions, limit and continuity, analytic functions, Cauchy's integral theorem and formula, power series, Laurent expansion, residues.

MATHEMATICS 331. INTRODUCTION TO ABSTRACT ALGEBRA I Three credits
A study of elementary number theory, groups, rings, and fields.

MATHEMATICS 334. LINEAR ALGEBRA Three credits
Vector spaces, linear transformations, matrices, determinants, inner products, bilinear and quadratic forms, matrix polynomials.

MATHEMATICS 343. INTRODUCTION TO GEOMETRY Three credits
A study of selected topics from Euclidean geometry, affine geometry, projective geometry, and convexity.

MATHEMATICS 351-352. PROBABILITY AND MATHEMATICAL STATISTICS I AND II Three credits each
Random variables, probability distributions, expectation and limit theorems, estimation, testing statistical hypotheses, confidence intervals.

MATHEMATICS 364. NUMERICAL ANALYSIS Three credits
Numerical methods of differentiation, integration, solution to equations and of differential equations with emphasis on problems that lend themselves to solution on computers.

MATHEMATICS 380. TOPICS IN MATHEMATICS Two to four credits
Study of one or more special topics in pure or applied mathematics. May be repeated for credit.

Prerequisite: Consent of the instructor.

MATHEMATICS 413. FUNCTIONS OF SEVERAL VARIABLES Three credits
A modern treatment of calculus of functions of several real variables. Topics include: Euclidean spaces, differentiation, integration on manifolds leading to the classical theorems of Green and Stokes.

Prerequisites: Mathematics 311 and 334.

MATHEMATICS 414. FUNCTIONS OF A COMPLEX VARIABLE II Three credits
A continuation of Mathematics 314. Topics include analytic continuation, Riemann surfaces, conformal mapping, the Riemann mapping theorem.

Prerequisite: Mathematics 314 or consent of instructor.

MATHEMATICS 432. INTRODUCTION TO ABSTRACT ALGEBRA II Three credits
A continuation of Mathematics 331. Topics from General Commutative Algebra: Polynomial rings, ideals, field extensions and Galois Theory.

Prerequisite: Mathematics 331.

MATHEMATICS 441. INTRODUCTION TO TOPOLOGY I Three credits
Metric spaces, topological spaces, countability and separation axioms, compactness and connectedness, product spaces.

Prerequisite: Mathematics 311.

MATHEMATICS 442. INTRODUCTION TO TOPOLOGY II Three credits
A continuation of Mathematics 441. Hilbert spaces, Banach spaces, and Banach algebras.

Prerequisite: Mathematics 441.

MATHEMATICS 451-452. ADVANCED STATISTICS Three credits each
Random variables, stochastic independence, sampling theory, order and sufficient statistics, testing statistical hypotheses, estimation, time series, analysis of variance, and multivariate distribution.

Prerequisites: Mathematics 311 or 351-352 or consent of instructor.

MATHEMATICS 470. READINGS IN MATHEMATICS Three credits per semester
Individual study of an outstanding text under the supervision of a faculty member. Designed for students who have completed a substantial amount of course work in mathematics.

Prerequisite: Consent of department chairman.

MATHEMATICS 480. TOPICS IN MATHEMATICS Three 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.

Prerequisite: Consent of instructor.

**MATHEMATICS 511-512.
MEASURE AND INTEGRATION**

Three credits each

An introduction to the general theory of measure and integration, topological measure spaces, L_p -spaces, Borel measure.

Prerequisite: Mathematics 312.

**MATHEMATICS 531-532.
MODERN ALGEBRA I AND II**

Three credits each

Sylow theorems, Jordan-Holder theorem, Hilbert basis theorem, modules, tensor algebra, field theory and Galois theory, and selected topics such as semi-simple rings and modules, algebraic number theory, group representations, algebraic geometry.

Prerequisite: Mathematics 331 and 334.

MATHEMATICS 541. FUNCTIONAL ANALYSIS

Three credits

Topics include: Banach spaces, L_p -spaces, Hilbert spaces, topological vector spaces, and Banach algebras.

Prerequisite: Mathematics 441.

MATHEMATICS 542. ALGEBRAIC TOPOLOGY

Three credits

Polyhedra, simplicial homology theory, cohomology rings, and homotopy groups.

Prerequisite: Mathematics 441.

MATHEMATICS 580. TOPICS IN MATHEMATICS

Three credits each

A wide range of topics in pure and applied mathematics may be offered upon demand.

Prerequisite: Consent of instructor.

MATHEMATICS 590. THESIS

Six credits

Physics

Master of Science

Master of Science in Education

ADMISSION

Applicants for admission to graduate study in physics must present at least 24 hours of undergraduate credit in physics. Proficiency in calculus and ordinary differential equations is assumed, and it is desirable that the student have some acquaintance with the use of complex variable theory.

DEGREE REQUIREMENTS

Two graduate programs are offered in physics leading to the degree of Master of Science or Master of Science in Education

with major in Physics. Information on requirements for the Master of Science degree is given below. Requirements for the Master of Science in Education degree with major in physics are listed under Education on page 24.

All candidates for the Master of Science Degree in Physics are required to complete satisfactorily Physics 511, Analytical Mechanics; Physics 530, Electricity and Magnetism; Physics 401-402, Topics in Mathematical Physics; and Physics 550-551, Quantum Mechanics. A minimum of 18 credits in graduate physics courses is required, exclusive of dissertation credits.

COURSES OF INSTRUCTION

PHYSICS 401-402.

TOPICS IN MATHEMATICAL PHYSICS

Three credits each

Development of the solutions of various differential equations of physics and chemistry arising from thermodynamics and statistical mechanics, kinetic theory, hydrodynamics, etc.

PHYSICS 405-406. THEORETICAL PHYSICS I AND II

Three credits each

The great unifying principles of physics will be examined and applied in the special branches of physics. Aspects of mechanics, optics, electromagnetism, relativity, atomic and nuclear physics will be treated from many points of view. Familiarity with subject matter will be assumed. The object of this course will be to develop deeper insight into physical laws and greater flexibility of approach to physical problems.

PHYSICS 430. SOLID STATE DEVICES

Three credits

Atomic structure and energy band theory. Application of energy band theory. Fermi-Dirac statistics. Conduction theory. Intrinsic and impurity conduction. Semi-conductor properties and characteristics of p/n junctions. Transistors and transistor theory. Characteristics of transistors. High-current characteristics. Feedback effects.

PHYSICS 471. CRYSTALLOGRAPHY

Three credits

Symmetry properties of crystalline solids and symmetry axes, planes, and crystallographic groups. Cohesive energies of crystals. The electron theory of crystals, and electrical and magnetic properties. The formation and growth kinetics of crystallization. The specific heats, thermal conductivities and expansions of crystals. Diffusion mechanisms in crystals. Some mechanical properties of crystals.

PHYSICS 472. 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. Fee: \$20. Laboratory: one period per week.

Prerequisite: Physics 471.

PHYSICS 473. ANISOTROPIC PROPERTIES OF CRYSTALS Three credits
Application of matrices and tensors to represent anisotropic physical properties of crystalline solids. The stress-strain and elastic properties. Paramagnetic and diamagnetic susceptibility, and electric polarization. Thermal expansion and thermodynamics of equilibrium properties of crystals. Thermal and electrical conductivity, and thermoelectricity. Double refraction, optical activity, and crystal optics.

Prerequisite: Physics 471.

PHYSICS 511. ANALYTICAL MECHANICS Three credits
The dynamics of particles and rigid bodies. Topics include central forces, orthogonal transformations, variational principles, Lagrange's equations, Hamiltonian method, etc.

Prerequisites: differential equations, undergraduate mechanics.

PHYSICS 530-531. ELECTRICITY AND MAGNETISM Three credits
A detailed analytical study of the laws of electrostatics, magneto-statics and electromagnetism. Topics include Laplace's equation, Poynting's flux, etc.

PHYSICS 540. STATISTICAL MECHANICS Three credits
The statistical theory of particles, both classical and quantum. Application to solid state and nuclear physics.

Corequisite: Physics 551.

PHYSICS 550-551. QUANTUM MECHANICS Three credits each semester
The fundamental principles of quantum mechanics, according to both Schrodinger and Heisenberg formulations. Topics include variational methods, perturbation methods, the uncertainty principle, angular momentum, the hydrogen atom, radiation theory, and collision theory.

Prerequisites: Physics 511, Physics 401.

Corequisite: Physics 402.

PHYSICS 571. SOLID STATE THEORY Three credits
An introduction to the theory of solids. Topics treated include crystal structure, point and line defects, superconductivity, the band theory of solids, etc.

Corequisite: Physics 550.

PHYSICS 574. SEMICONDUCTIVITY Three credits
A detailed study of the theory of semiconductivity. Topics include statistical theory of rectification, transistor effect, etc.

Corequisite: Physics 571.

PHYSICS 580-581. NUCLEAR PHYSICS Three credits each semester
An introduction to the theory and practice of nuclear physics. Nuclear reactions, scattering theory, fission, fusion, etc.

Corequisite: Physics 551.

PHYSICS 590. THESIS Six credits

Administration of the Graduate Program

Graduate programs at Wilkes College are the administrative responsibility of the Director of Graduate Studies. A Faculty Committee on Graduate Studies acts in an advisory capacity to the Director of Graduate Studies and is listed below.

Faculty Committee on Graduate Studies

FRANCK G. DARTE II

Chairman of the Committee
Professor of Education
Ed.D. (Pennsylvania)

HAROLD E. COX

Director of Graduate Studies
Professor of History
Ph.D. (Virginia)

JAMES J. BOHNING

Professor of Chemistry
Ph.D. (Northeastern)

DALE A. BUEHLER

Associate Professor, Library
M.S. (Drexel Institute of Technology)

HARRIE E. CALDWELL

Associate Professor of Education
Ph.D. (Syracuse)

FRANCIS J. DONAHOE

Professor of Physics
Ph.D. (Pennsylvania)

MAHMOUD H. FAHMY

Associate Professor of Education
Ph.D. (Syracuse)

CLYDE R. HOUSEKNECHT

Assistant Professor of Biology
Ph.D. (Minnesota)

BRONIS KASLAS

Professor of History
Ph.D. (Strasbourg)

PHILIP L. RIZZO

Professor of English
Ph.D. (Pennsylvania)

JAMES M. TOOLE

Associate Professor of Engineering
Ph.D. (Pennsylvania State)

STANKO M. VUJICA

Professor of Philosophy
Ph.D. (Zagreb)

ROBERT E. WERNER

Professor of Economics
Ph.D. (Wisconsin)

BING K. WONG

Professor of Mathematics
Ph.D. (Illinois)

Information on the graduate school may be obtained by writing to:

Director of Graduate Studies
Wilkes College
Wilkes-Barre, Pennsylvania 18703