## WILKES COLLEGE

B ULLETIN
$1948-1949$

WILKES.BARRE, PENNSYLVANIA

# WILKES COLLEGE 

BULLETIN 1948-1949

## Marks of an Educated Man . .

1. He seeks truth, for without truth there can be no understanding, and without understanding the problems that separate us are insoluble.
2. He is able to communicate his ideas to others in a manner that assures understanding and enlists cooperation.
3. He is tolerant, for his knowledge creates an awareness of his own limitations and his neighbor's possibilities. He respects differences because he knows how they have come to be. He fears uniformity because it confines both mind and spirit.
4. He possesses vision, for he knows that vision precedes all great attainments. "Where there is no vision, the people perish.'
5. He cultivates inner resources, for he knows that crisis reveals the strength or weakness of a man, and he knows that crisis demands independence of judgment and action.

## College Calendar 1948-1949

## SPRING TERM 1948

Thursday, February $12 \ldots$. . . . Freshman Week begins Thursday, February 19. . . . . . 8:00 a.m., Classes begin Friday, March 26............ Holiday, Good Friday Monday, April 5 .............. Mid-Semester examinations begin Saturday, April 10 .......... Mid-Semester examinations end Examinations for removal of conditions
Monday, April 19 ............ Trial Registration begins
Monday, May 24........... . Final Registration begins
Friday, May 28. . . . . . . . . . . . Senior examinations begin
Friday, June 4. . . . . . . . . . . . . . Final examinations begin
Friday, June 11 ...................Final examinations end
Saturday, June 12............. Graduation
SUMMER TERM 1948
Thursday, June $10 \ldots \ldots \ldots$. Freshman Week begins
Thursday, June 17..........8:00 a.m., Classes begin
Monday, July 5 . . . . . . . . . . . . . Holiday, Fourth of July
Monday, July 26 ............... Mid-Semester examinations begin
Saturday, July 31 $\qquad$ Mid-Se
$\qquad$ mester examinations end Examinations for removal of conditions
Monday, August 11 .......... Trial Registration begins
Friday, August $27 . .$. . . . . . . Senior examinations begin
Monday, August 30......... Final Registration begins
Friday, September 3......... . Final examinations begin

## FALL TERM 1948-1949

Wednesday, September 8..... Freshman Week begins Thursday, September 16. . . . 8:00 a.m., Classes begin Monday, November 8 ......... Mid-Semester examinations begin Saturday, November 13 ...... Mid-Semester examinations end Examinations for removal of conditions
Wednesday, November 24... 5:00 p.m., Thanksgiving vacation begins Monday, November 29......8:00 a.m., Thanksgiving vacation ends Trial registration begins
Saturday, December 18. . . . . . 5:00 p.m., Christmas vacation begins Monday, January 3 . . . . . . . . . 8:00 p.m., Christmas vacation ends Monday, January 10.......... . Final registration begins Monday, January 17......... . Senior examinations begin Saturday, January $22 \ldots$. . . . . Final examinations begin

## Board of Trustees

Gilbert S. McClintock, Chairman* Frederick J. Weckesser, Vice-Chairman The Rev. Charles S. Roush, Secretary James P. Harris, Treasurer

Jasper B. Carr
Mrs. Charles E. Clift
Mrs. Franck G. Darte
Samuel M. Davenport, M.D
Miss Annette Evans
George W. Guckelberger
Mrs. Edward H. Kent
Joseph J. Kocyan, M.D.
Miss Mary R. Koons
Reuben H. Levy
Charles H. Miner, Jr. Edward B. Mulligan
F. Ellsworth Parkhurst, Jr.
J. Henry Pool

Andrew J. Sordoni*
Julius Long Stern
Julius Lo

## Officers of Administration

Herbert Lincoln Spencer, Ph.D. (Pittsburgh) President of Bucknell University
Eugene Shedden Farley, Ph.D., (Pennsylvania) President of Wilkes College
Herbert John Morris, M.A. (Pennsylvania) Director of Admissions and Registrar
Betty L. Harker, M.A. (Northwestern) Dean of Women
George Francis Ralston, B.A. (North Carolina) Dean of Men
Donald R. Kersteen, B.S. (Bucknell) Comptroller
Samuel M. Davenport, M.D. (Virginia) College Pbysician
Joseph H. Meyers, B.L.S. (McGill) Librarian
John A. Hall, M.S. (Bucknell) Director of Guidance
Mrs. Clement J. Alderfer, B.A. (Wellesley) Housemother, Weckesser Hall
Nada Vujica, M.A. (Zagreb) Assistant Librarian
Ellen Mary Brennan
Assistant in Library

## Faculty

Herbert Lincoln Spencer, Ph.D. (Pittsburgh) President of Bucknell University

Eugene Shedden Farley, Ph.D. (Pennsylvania) President and Associate Professor of Education
Herbert John Morris, A.M. (Pennsylvania) Director of Admissions and Assistant Professor of Economics
George Francis Ralston, A.B. (North Carolina) Dean of Men and Instructor in Biology
Betty L. Harker, M.A. (Northwestern) Dean of W omen and Instructor in Psycbology

- Mary Elizabeth Craig, Ph.D. (Cornell) Professor of English
( Charles Braddock Reif, Ph.D. (Minnesota) Professor of Biology
Lisabeth H. Beynon, Sc.D. (John Hopkins) Professor of Chemistry

Harold W. Thatcher, Ph.D. (Chicago) Uto Professor of History
m Voris Blaine Hall, M.S. in E.E. (Bucknell), M.A. (Columbia) Associate Professor of Physics
$\overbrace{\text { Lenore Ward, Ph.D. (Michigan) }}$ Associate Professor of Biology
Elwood John Disque, B.A. (Dickinson)
$\qquad$
$\infty^{N}$ Assistant Professor of German

Thomas Richards, M.S. (Bucknell) Assistant Professor of Mathematics

Konstantin Symonolewicz, M.S. (Warsaw) Assistant Professor of Sociology

Catherine Bone, M.S. (Pennsylvania State) Assistant Professor of Chemistry

Stanley Wasilewski, M.S. (Bucknell) Assistant Professor of Mathematics

Joseph G. Donnelly, M.A. (Bucknell)* Assistant Professor of English
Gertrude Marvin Williams, M.A. (Pennsylvania) Assistant Professor of English
Bernard Neivelt, M.S. (Chicago) Assistant Professor of Chemistry
Clare Bedillion, M.A. (New York) Assistant Professor of Economics

Mildred E. Hull, M.A. (Pennsylvania) Assistant Professor of Mathematics

Stanley L. Chickson, M.S. (Bucknell) Assistant Professor of Mathematics

Edward Mercur Williams, M.A. (Columbia) Assistant Professor of English
Edward Nicholas Heltzel, M.A. (Bucknell) Assistant Professor of Engineering
Kathryn Dominguez, M.A. (Columbia) Assistant Professor of Psychology
Julius Bertram Spiro, M.A. (Columbia) Assistant Professor of Economics

Thaddeus Mitana, Ph.D. (Cracow) Assistant Professor of Modern Languages

Frank J. J. Davies, Ph.D. (Yale) Assistant Professor of Englishb
Leon Agranat, M.S. (New School) Assistant Professor of Economics
Pearl Beattie Mitchell, Ph.D. (Stanford) Assistant Professor of English

Arthur Kruger, Ph.D. (Louisiana) Assistant Professor of English

Catherine Fehrer, Ph.D. (Bryn Mawr) Assistant Professor of Modern Languages

Donald Cobleigh, M.A. (Wisconsin) Assistant Professor of Music
Cromwell Edwards Thomas, B.S. (Washington and Lee) Instructor in Engineering

Paul R. Werner, M.S. (New York) Instructor in Economics
H. Willard Burchard, Litt.M. (Pittsburgh) Instructor in Chemistry

Edwin R. Creasy, M.S. (Bucknell) Instructor in Mathematics

James J. Laggan, B.S. (Pennsylvania) Instructor in Economics

Hugo V. Mailey, A.M. (Pennsylvania) Instructor in Political Science

John A. McKee, M.A. (Duke) Instructor in Mathematics

Martha J. Silseth, M.A. (Minnesota) Instructor in Spanish

Virgil Аbbot, B.S. (Stroudsburg) Instructor in Engineering Drawing

Robert R. Smith, M.S. (Pennsylvania) Instructor in Economics

Edward J. Manley, B.S. (Bloomsburg) Instructor in Economics

Alfred S. Groh, A.B. (Syracuse) Instructor in English

Irvin M. Gottlieb, M.S. (Pennsylvania) Instructor in Chemistry

Robert Partridge, M.S. (Pennsylvania) Instructor in History

Stanko M. Vujica, Ph.D. (Zagreb) Instructor in Pbilosophy and Religion

Phyllis Nelson, M.A. (Harvard) Instructor in History

Ruth L. Knowles, M.A. (Columbia) Instructor in English

Nicholas Revotskie, B.S. (Annapolis) Instructor in Physics

Charles L. Taylor, M.S. (Pennsylvania State) Instructor in Physics

Lawrence Ditoro, B.S. (Alabama) Instructor in Engineering

Joseph Markowitz, B.S. (Bucknell) Instructor in Chemistry

Charles Cann, B.A. (Pennsylvania State) Instructor in Economics

John P. Whitby, B.S. (Bloomsburg) Instructor in Economics

Hazel Hart, B.S. (Pennsylvania State) Instructor in Mathematics

John J. Williams, M.A. (Bucknell) Instructor in Engineering
John Riley, B.A. (Bucknell) Instructor in Economics

John W. Boyce, B.S. (Bucknell) Instructor in Economics

Charles N. Henderson, B.A. (Bucknell) Instructor in Music

Edward J. Pugh, B.S. (Pennsylvania) Instructor in Biology

Carl Julius Schindler (Berlin) Instructor in Pbilosophy
Newton J. Friedman, B.A. (Western Reserve) Instructor in Religion
Edith Namisniak, M.S. (Michigan) Assistant in Biology

## Guidance Center

John A. Hall, M.S. (Bucknell) Director of Guidance

Clarence S. Boston, M.S. (Bucknell) Assistant Director of Guidance
John J. Chwalek, B.S. (Tennessee S.T.C.) Vocational Counselor

Paul R. Mehm, B.S. (Lafayette) Vocational Counselor

## Highway Safety

Clemens A. Pell
Director

## Radio Workshop

Roy E. Morgan, M.A. (Pennsylvania State) Director

Guest Lecturers in Journalism
Robert W. Johnson
Managing Editor, Wilkes-Barre, Pa. Record

## Joseph T. Murphy

Managing Editor, Wilkes-Barre, Pa., Times-Leader Evening News
Thomas E. Heffernan
Managing Editor, Wilkes-Barre, Pa. Sunday Independent
Howard Risley
Editor and Publisher, Dallas, Pa. Post
*On leave of absence for advanced study.

## A History of the College

NTIlkes College was founded in Wilkes-Barre as a Junior College in 1933 by Bucknell University and was established to offer young men and women of the Wyoming Valley opportunities previously denied them. At the time, this was the largest community in Pennsyl vania, if not in the United States, lacking a local college.

The first classes were held in a rented office building with an enrollment of 155 students. A majority of the faculty were drawn from the staff of Bucknell University. After an experimental three years, the ad ministration and local trustees appealed to leading citizens to enable the college to move from rented quarters into a permanent home. The response was prompt and generous.

Mrs. John Conyngham and Admiral and Mrs. Harold R. Stark were the first donors, and John N. Conyngham Hall and. Chase Hall, given in 1937, were dedicated by President Marts on April 9, 1938. Five hundred residents of the Valley contributed to the funds for adapting these buildings to college use. Mr. and Mrs. Fred Weckesser added the residence at 78 West Northampton Street to the college property in 1938

Mr. Allen Kirby's gift in 1941 of the former residence of his parents with spacious grounds adjoining those of Chase Hall provided the College with a real campus and permitted expansion from quarters that were already overcrowded. The new building, named the Kirby Home for Education, was dedicated on December 2, 1941

Members of the Board of Trustees gave the College three additional buildings during 1945-46, all neighbors to the campus: 154 and 158 South River Street, and 191 South Franklin Street. Another adjacent property, the former Ashley residence at 164 South River Street, has been deeded to the College by the heirs of the Ashley estate, Mrs. Marion A. Ahlborn, Dr. Henry A. Carr, and Mrs. Roccena Wolfe.

From February 1943 to June 1944, the Sixth College Training Detachment of the Army Air Forces was stationed at the College. Two hundred and fifty Air Corps cadets, quartered at Hotel Sterling, received training in separate classes.

Responsibility originally assumed by the administration and board of trustees of Bucknell University was transferred in 1938 to an indigenous board of trustees as being more strategically placed to forecast future needs and to integrate the College as a community institution.

Bucknell University, while continuing to lend its support, offered the College complete independence whenever the affiliation ceased to be advantageous.
Under this agreement, the Junior College advanced rapidly and by successive steps extended its program to include four years of work. In 1946, the University offered extension courses in Wilkes-Barre enabling students to finish their junior year at Wilkes-Barre. At the same time authorization was received for the extension of this program to include the senior year in 1947 and 1948. Meanwhile, the college trustees expanded the facilities of the college and established an endowment of more than $\$ 500,000$. Having satisfied the requirements of the State, the Junior College was chartered as Wilkes College in June, 1947, and thus gained an independent legal status.

Although Wilkes College is legally an independent institution, it will maintain close relations with Bucknell University until commitments made to students, while the Junior College was an integral part of the University, have been satisfied. It is anticipated that these commitments can be met in 1948 or 1949. Thereafter the separation of the two institutions will be completed.

## Information

Curriculum
The College, with the cooperation of Bucknell University, is now offering four years of college work in the liberal arts, biology, chemistry, commerce and finance, and education. Two years are offered in physics and engineering. These courses lead toward the bachelor's degree in the Arts and Sciences, Commerce and Finance, Education, and Engineering. They combine subjects of general cultural value with the technical instruction required as preparation for professional and business fields.

## Terminal Curricula

To students desiring only two years of college or unable to make arrangements for a four-year college course, the College offers terminal courses, completed in two years, in music, secretarial work, radio production, and laboratory-technician training.

## Extension Classes

Extension courses from Bucknell University are offered for both undergraduate and graduate credit. Selected courses have been offered in the evening during the past ten years, and now courses are being offered through which students may obtain special training or credit toward a degree. Persons seeking a master's degree from Bucknell University may take 18 hours in Wilkes-Barre, but must take the remaining 12 hours in residence at Lewisburg.

## Accreditment

Wilkes College was fully accredited by the Department of Public Instruction of the State of Pennsylvania in June, 1947
Bucknell University Junior College, which preceded Wilkes College, was accredited by the Department of Public Instruction of the State of Pennsylvania in 1936 and by the Association of Colleges and Secondary Schools of the Middle States Association and Maryland in 1937. Prior to the incorporation of Wilkes College, the Junior College division was accredited by all accrediting agencies having jurisdiction in this area.
During the period of its affiliation with Bucknell University, all students received credit for their work from the offices of the University.

Because the present junior and senior classes were admitted to Bucknell University at the same time that they were admitted to the Junior College, the University is continuing its affiliation and giving credit for courses taken in Wilkes-Barre until these classes have graduated in June, 1949.
In consequence of this arrangement, work taken at Wilkes College in conjunction with Bucknell University is given the recognition that is extended to work done in accredited institutions.

## Transfer of Credits

Heretofore, graduates have transferred to the Junior classes in more than one hundred colleges, although a majority have continued their work in the last two years at Bucknell University. Now that four years of college work are offered on this campus, transfer is still possible, but no longer necessary except for degrees in physics and engineering.
Veterans' Guidance Center
The Veterans' Guidance Center of the College, which was set up in April, 1945, offers its services to veterans seeking entitlement under the Vocational Rehabilitation Act and the "G.I. Bill." A staff of experienced Vocational Counselors and a Testing Department, headed by a clinical psychologist, are on hand five days a week to help the veteran explore his background, capacities, interests, and general qualifications for the purpose of developing or forwarding a vocational plan.

## Vocational Counselling

Choice of a career is a baffling problem for many students. It is relatively rare for a young person to know exactly what he wants to do and how to go about it. He needs to know so much, not only about himself, but about practical opportunities. There is always a large group who, although unable to determine a special interest, are capable of fine work in many fields. Such students face two choices: the selection of a special field of work, or of a course that will develop varied interests and breadth of experience. The effectiveness of any training must ultimately depend upon the interest, capacity, and effort of the student.

Although each individual must make his own choice, the College, recognizing the seriousness of the problem, assigns a faculty adviser to counsel with each student in his selection of a course and a career.

## physical Education

Intercollegiate sports schedules are maintained in football, basketball, wrestling, baseball, tennis, and swimming. Colleges within the state and in adjacent states are met in these sports. Men may substitute an intercollegiate sport for physical education courses if they meet depart-
mental requirements. A program of intramural sports and physical education gives every man an opportunity to participate. Basketball, boxing, handball, volley ball, bowling, swimming, and table tennis are some of the sports available. Veterans may receive physical education credit for their armed service records if they so desire.
The physical education program for women includes rhythmic dancing, archery, badminton, bowling, bicycling, hiking, swimming, tennis, ice hockey, and basketball.

## Orientation Program

The transition from the directed work of the secondary school to the independent and more intensive work of the College occasionally causes difficulty. To assist students in making an early adjustment, several days at the beginning of the term are set aside for discussions with Freshmen. These talks range from individual conference to lectures on the meaning of a college education. During this first week, new students take aptitude, interest, foreign language, and English placement tests. They also discuss their plans and hopes with their faculty advisers and arrange schedules under their guidance. This week also gives the new students the opportunity to become acquainted with one another and to learn about student activities.
Special Interests
Many students have interests and abilities that lie outside the field of studies. Activities supplementing the academic program provide opportunities for the expression and development of interests and talents in such recreational and semi-professional fields as athletics, dramatics, debating, journalism, and choral work. Special clubs include Pre-Medical, Engineering, French, German, Spanish, International Relations, Sociology, Camera, etc. All are conducted by students with the guidance of a member of the faculty, and care is taken to prevent their conflicting with the time needed for study.

## Bulldings

The College buildings stand on South River Street and South Franklin Street between West Northampton and South Streets along the Susquehanna River Common. Besides classrooms and administration and faculty offices, the buildings include a men's dormitory, a women's dormitory, a joint dining room, a cafeteria, and lecture hall.

## Faculty

The value to be derived from a college is less dependent upon material equipment than upon the character of its teachers and the quality of their interest in the students. The faculty of the College has been carefully
selected for their training, experience and personalities. Doctor's degrees have been granted to the members of the faculty by the following universities: Columbia, Michigan, Cornell, Chicago, Zagreb, Cracow, Minnesota, Pennsylvania, and Johns Hopkins; master's degrees by Bucknell, Chicago, Columbia, Indiana, Syracuse, Temple, New York, Warsaw, and Pennsylvania and special training has been obtained through study at Berlin, Freiburg, Heidelberg, Marburg, Mexico, Muenster, Munich, Prague, and the Sorbonne. A cosmopolitan group, they have taught in schools and universities throughout the United States and Europe, and their travels have taken them to all parts of the world. They bring to the college a breadth of experience and of vision that enables them to treat their subjects in large perspective, and they bring an academic preparation that fits them to give the intensive training essential to their various fields.

## COMMUNITY PROGRAMS

In addition to its regular classes, the college occasionally offers noncredit programs for groups and organizations desiring specialized training. All such programs are adapted to the needs and desires of the sponsoring group, and emphasis is placed upon practical applications rather than theory.
The character and extent of such work may be determined by means of a job analysis, thus assuring the practicability of the work. Some idea of the services that are available can be gained from a statement of services that already have been offered.

During the war, special courses in drafting, mathematics, and engineering were offered to prepare persons for work in defense plants. Currently, a group of underwriters is studying life insurance problems and policies to increase their understanding of the services they sell Simultaneously, chiropractors from eastern Pennsylvania are meeting to prepare for refresher examinations that are being given by the State Board of Medical Examiners. Over a period of years, special courses in musical literature have been offered by the Department of Music

As the college expands its faculty and facilities, it will be able to offer similar courses in economics, selling, and advertising; and it is hoped that technical services in chemistry may be available to small industries requiring laboratory services that cannot be maintained economically in their industrial plants.

## Admission

Wilkes seeks students who give promise of developing sound intellectual interests. Admission is determined by high school grades, principal's rating, college aptitude tests, and a personal interview.

## Application

Application for admission should be made early. Prospective students should arrange their school programs, preferably on entering high school, to meet the college requirements. Required forms for application may be secured from the Registrar in Chase Hall. A matriculation fee of $\$ 5$ must accompany the application.

## Special Requirements

Placement tests determine the level at which the student begins his college work in English, mathematics, foreign languages, and other subjects. A student may lose credit in foreign languages if his examination indicates that he is not prepared for the course he had expected to enter. Students will be advised of dates of these tests

The Engineering course presupposes an adequate knowledge of mathematics. For preparation, courses in algebra, plane and solid geometry, and trigonometry are recommended. Students entering the Commerce and Finance or Science courses should have had at least two years of algebra, or one year of algebra and one year of plane geometry in high school.

Waiver of High School Credits for Veterans
Veterans who show unusual promise may be accepted with only a high school equivalent certificate if such certificate is awarded on the basis of successful completion of the General Educational Development Tests of the American Council on Education and is approved by the Department of Public Instruction.

AdVanced Standing
Application for admission to advanced standing should be made to the Registrar. The institution last attended should be asked to send the Registrar a transcript of all work accepted for admission, and of all work completed, accompanied by a letter of honorable dismissal.

Registry of Medical Technolosists * Box 1209 * Iruncie, Indiana CHANGE IN COLLEGE REQUIREITINTS * * December 1949
Beginning at once, persons who wish to enter an Approved School of Medical Technology must fulfill the following requirements: Two years ( 90 quarter hours or 60 semester hours) of college work in a college or university accredited by a recognized standardizing association. During the two years the following courses must be taken: 18 quarter hours or 12 semester hours of biolocy which may include zeneral biology, bacteriology, parasitology, physiology, anatomy, histology, embryology and zoology; one year of general inorgenic chemistry, 9 quarter hours or 6 semester hours, includiry lectures and laboratory, and 4 quarter hours or 3 semester hours of quantitative analysis, orgenic chemistry or bio-chemistry, including lecture and laboratory. Nurses' training is not accepted in lieu of college for students beginning technical training after 1949.

WILKES COLLEGE

## SUMMER SEVESTER SCHEDULF

June 17 to September 10, 1948 (Twelve Weeks)

## Course

Biological Science 100
Biology 100
Biology 102
Biology 104
Biology 207
Biology 208
Biology 225
Chemistry 101
Chemistry 102
Chemistry 115
Chemistry 203
Chemistry 209
Chemistry 227
Chemistry 302
Chemistry 325
Chemistry 329
Civil Engineering 103
Civil Engineering 214
Economics 101
Economics 103
Economics 104
Economics 105
Economics 106
Economics 116
Economics 121
Economics 201 Economics 202 Economics 207 Economics 209 Economics 210 Economics 213 Economics 220 conomios 231 Economics 232 Economics 303 Economics 308 Economics 324

Education 101 Education 201

Fingineering 100 Engineering 101 Engineering 104

Description
Biological Survey
Hygiene
Zoology
General Botany
Bacteriology
Bacteriology
General Entomology
General Inorganic Chemistry General Inorganic Chemistry
Qualitative Inorganic Analysis
Quantitative Inorganic Analysis
Organic Chemistry
Advanced Quantitative Analysis
Fhysical Chemistry
Qualitative Organic Analysis
Advanced Organic Chemistry
Surveying
Route Surveying
Business Education and Guidance
Principles of Economics
Economic Problems
Principles of Accounting
Principles of Accounting
Business Correspondence
Banking and Finance
Corporation Accounting
Advanced Accounting
Transportation
Business Law
Business Law
Credits and Collections
Advertising
Business Law
Business Law
Cost Accounting
Insurance (Life)
Advanced Economics
Introduction to the Study of Education
Educational Psychology
Engineering Problems
Engineering Drawing and Geometry
Engineering Drawing and Geometry

English 101
English 102
English 103
English 104
English 131
English 133
English 201
English 262
English 274
French 101
French 102
French 103
French 104
German 101
German 102
German 103
German 104
History 100
History 107
History 108
History 231
History 256
History 304
Mathematics 101
Mathematics 107
Mathemati cs 109
Mathematics 115
Mathematics 116
Mathematics 202
Mathematics 205
Mathematics 206
Mathematics 208
Mathematics 210
Mathematics 215
Mathematics 310
Mechanical Engineering 205 Mechanical Engineering 209

Philosophy 100
Physical Science 100
Physics 201
Physics 202
Political Science 103
Political Science 106
Political Science 112
Composition ..... 3
Creative Writing ..... 3
World Literature ..... 4
World Literature ..... 4
Fundamentals of Speech ..... 2
Oral Interpretation ..... 2
Advanced Exposition ..... 3
18th Century Literature ..... 3
Victorian Prose ..... 3
Elementary French ..... 3
3
Intermediate French3
3
Intermediate French ..... 3
Elementary German ..... 3
Elementary German ..... 3
Intermediate German ..... 3
Intermediate German ..... 3
History of Western Civilization ..... 3
History of the United States ..... 3
History of the United States ..... 3
Hispanic American History ..... 3
Recent European History ..... 3
History of Foreign Policy of the U. S. ..... 3
Aigebra Review ..... 3
3
College Ilgebra ..... 3
Plane Trigonometry ..... 3
Commercial Algebra3
3
Introduction to Statistics ..... 3
Analytic Geonetry ..... 4
Differential Calculus ..... 4
Integral Calculus ..... 4
History of Mathematics ..... 3
Theory of Equations and Determinants ..... 3
Mathematics of Finance and Investment ..... 3
Differential Equations ..... 3
Elements of Mechanism ..... 3
Engineering Mechanics ..... 5
Introduction ..... 3
Physical Science ..... 3
General Physics ..... 5
General Physics ..... 5
Government in the United States ..... 3
Municipal Government ..... 3
Pemsylvania State Government ..... 3

- Page 3 -

Psychology 100
Psychology 201
Psychology 204
Psychology 207
Religion 100
Sociology 100
Sociology 107
Sociology 110
Spanish 101
Spanish 102
Spanish 103
Spanish 104
Spanish 204
Spanish 206

Economics 314
Economics 315
Economics 316 Economics 317
General Psychology ..... 3
Industrial Psychology ..... 3
Advanced Experimental Psychology3
3
Child Psychology3
History of Religions ..... 3
Introduction to the Study of Society ..... 3
The Modern City ..... 3
Social Disorganization3
Elementary Spanish ..... 3
Elementary Spanish ..... 3
Intermediate Spanish ..... 3
Intermediate Spanish3
3
Spanish Conversation19th Century Novel3
Tax Aecounting3
Public Utility Accounting3
Interpretative Accounting3
3

## Registration

Students must register on the dates fixed at the beginning of each term, when all course schedules are completed and fees for the term are due.

The maximum registration allowed a student during his first semester is the normal amount for the particular course as specified in the catalogue. In succeeding semesters a student may be allowed additional hours beyond the normal requirement, provided the student's record indicates ability to carry a heavier schedule. A student will not be permitted to carry more than twenty hours without permission of the Dean.

## Preparation for Professions and Vocations

Training and skill are required in many fields, but they are not enough. The world needs men possessing broad vision as well as technical competence. The telegraph, radio, aeroplane, and finally the atomic bomb have rendered obsolete the isolated nationalism of yesterday. As science and technology reduce the size of the world, and man's mobility increases the tempo of competition, a liberal education becomes a necessity rather than a privilege.
Two thousand years ago, Aristotle wrote: "Educated men are as much superior to uneducated men as the living are to the dead." The character of a man's world has always been determined by his understanding of the motives of other men. To offset the trend of specialization which limits the field of a man's knowledge, the scientist and technologist need increasingly to temper their training with a background of the humanities, the distilled essence of the experience of mankind. Specialized training should be combined with courses that help the student to understand human nature, his own and other men's.

The College offers two opportunities: a general education for life, and specific training for various vocations. The general education develops understanding of our civilization and prepares the student for constructive citizenship. The specific training consists of courses required for selected occupations and professions.
The Liberal Arts and Science courses may be adapted to specific vocations by the selection of congenial fields of concentration and of appropriate electives. A prospective journalist may enroll for the Bachelor of Arts course; he may major in one of the social studies and choose electives in English composition, literature, and other subjects useful in his future work.
In Engineering, and in Commerce and Finance, the course of study is, by contrast, primarily vocational, although courses from the Liberal Arts program are required, and the choice of electives is left to the individual preference. Students find the Engineering course a useful preparation for our mechanized civilization, even though they do not make engineering their life work. The curricula in Engineering and in Commerce and Finance are also adapted for those who plan to teach these subjects.

Law
Preparation for practice of the law is based on the fundamental liberal arts: English, history, political science, economics, sociology, natural science, languages, and mathematics. Most law schools do not specify a required major in undergraduate work. Requirements can usually be met in the four-year course of accredited colleges and universities.

## Ministry

The various churches differ widely as to the training required of prospective ministers. The student should learn the requirements of his denomination and its divinity schools. In general, the Liberal Arts course, with major or electives in religion and Bible, is appropriate.

## Teaching

A teacher's training depends upon the kind of teaching contemplated. For college and university work the best institutions require advanced degrees; their faculty members ordinarily take graduate work in the field in which they concentrated as undergraduates. Prospective teachers of English, history, sociology take the Arts degree; teachers of science take the B.S. or degrees in such specialized fields as engineering.
Certification is usually based on the following requirements: the college degree, specialized courses in education, and some specialization in teaching subjects. Bucknell University is authorized by the State Department of Public Instruction to prepare secondary teachers in most of the usual fields of high school instruction and offers work in Wilkes-Barre for the benefit of school teachers and Wilkes College students.

## Medicine

Wilkes offers a pre-medical course that is adapted to the requirements of the various medical schools. The latter have, in recent years, restricted their enrollment, and most of them scrutinize closely the qualifications of applicants. Medical aspirants should determine as soon as possible the demands they must meet.

## Nursing

The demand for nurses with college training has increased with the progress of medical science and the wide adoption of highly skilled scientific techniques. It has been further accelerated by the war need for nurses of superior intelligence and capacity. A number of hospitals and universities now offer three years of training with a B.S. degree to student nurses who have completed two years of college. For those who wish to make a life work of nursing, and who aspire to administrative positions in the major hospitals, this course is recommended.

## Library Work

Librarians are generally expected to complete a four-year college course before beginning their special library training. Foreign languages, English, science, history, economics, sociology, or education constitute appropriate major fields. Many library schools also require a knowledge of two foreign languages. Proficiency in typewriting is also desirable.

## Journalism

A number of well-known graduate schools of journalism require a preliminary four-year college course, but aspirants may also follow the old-fashioned method of securing experience on local newspapers and working their way up. Almost any type of college work will be found to fit in with the broad demands made upon the newspaper reporter and editor, although English composition is fundamental. The Bachelor of Arts degree with an English major is the most popular choice of journalism students, but the science and other courses also prove useful, since the newspaper reports all phases of human activity. The increasing interest of the United States in other countries and its participation in international affairs makes a knowledge of foreign languages particularly desirable in preparation for responsible positions as foreign correspondents.
Journalism students may gain practical experience by working on the staff of one of the student publications: the Beacon, the yearbook, or the literary magazine.

## Speaking and Dramatics

The College offers preliminary work in speech. Courses in speech and dramatics, practical experience in debating and play production afford opportunity for development in this field.

## Social Work

The demand for trained social workers has grown enormously in recent years. Taxpayers rebel against the wastefulness of haphazard distribution of charity as a matter of political patronage. Governmental agencies, municipal, county, state, and federal are realizing the necessity for a professional approach to the problems of unemployment, poverty, and crime. Wilkes offers a pre-social work program. Sociology, supplemented by work in economics, biology, and allied fields, provides a valuable background.

## Chemistry

Modern industries offer many opportunities to the chemist. and chemical engineer. Today, most large industries employ both chemists and chemical engineers. In the smaller industries either may be called
upon to do the work of both. The chemist usually works in the laboratories, analysing, studying, and perfecting procedures and developing new processes, new methods and new uses. He meets the chemical engineer in the pilot plant where together they design and construct on a small scale, the new manufacturing plant. The duties of the engineer may include design, construction, or operation of the chemical plant. Managers of industrial and chemical and chemical plants need technical training, as do salesmen for specialized products, buyers for manufacturing concerns, many fields of government service, and similar activities. The chemical industries include coke, gas, dyes, gasoline, and other petroleum products, rubber, textiles, explosives, cement metallurgy, plastics, nylon, paints, ceramics, fertilizers, solvents, leather, drugs, light and heavy chemicals and other substances. Last, this is an atomic age and to be an intelligent modern, one can scarcely gain too great an understanding of chemistry.

## Engineering

Bucknell University grants degrees in chemical, civil, electrical, and mechanical engineering. The first two years of work in these four-year courses may be taken at Wilkes College. Students may also transfer their credits to other engineering schools if they make their plans in advance. With slight modification of program, students may complete the first two years of work in such types of engineering as aeronautical, mining and metallurgical, and industrial, although Bucknell University does not grant degrees in these fields.

Two years of the engineering curriculum affords a foundation for a wide range of occupations. Students desiring such technological training should consult the Registrar or the engineering faculty when planning their programs.

## Business Administration

Training applicable to most fields of business is offered in the three programs of the Commerce and Finance curriculum. The General Course is for those desiring a broad business background; the Secretarial Course for secretarial positions; the Business Education Course for teachers of business subjects.

The Commerce and Finance curriculum covers business principles and practice; it also includes Liberal Arts electives. This diversification of program enables the student to secure a comprehensive foundation for a business, secretarial, or teaching career. Young men and women with this broad cultural background find themselves eligible for opportunities closed to those lacking such training.

## eneral Opportunitie

Promotion or advancement is often made possible by additional train ing. It is sometimes practicable for students who are employed to continue their education without giving up their positions. In its desire to be of the widest possible service to Wyoming Valley, Wilkes welcomes part time and special students.
Anyone interested in some special opening not included in this list of the major professions and vocations should consult the Registra and the professors in charge of related subjects. They will be glad to discuss appropriate courses

## General Regulations

Regular attendance in class is expected of all students.
A student is also expected to attend all assemblies during his freshman and sophomore years unless excused by the Deans. Students failing to meet this requirement will not receive their grades until an arrangement for satisfying this requirement is made with the Dean.

Any student withdrawing from the college should promptly notify the Registrar.

## Reports

Students receive oral reports from their faculty advisers in the middle of each term; written reports are mailed home at the end of each term The grades have the following significance:

| A-Excellent |  | D-Passing |
| :--- | :--- | :--- |
| B-Good |  | Con-Condition |
| C-Average |  | I-Incomplete |

Quality credit "points" are assigned to each grade as follows:
Each hour of A grade, 3 points
Each hour of B grade, 2 points
Each hour of C grade, 1 point
Each hour of D grade, 0 points

## Quality Credits

A student earning no better than a passing grade in all of his work will scarcely receive sufficient benefit to justify continuation of his coHege course. To enter the sophomore class, the student is therefore required to have earned a minimum of 20 quality credits during his freshman year. To continue at Wilkes or Bucknell for more than two years, a student must have earned not less than 50 quality credits. To enter the senior class, a minimum of 85 quality credits is required. For gradua tion a student must have a minimum of 124 quality credits. The quality credits also must equal at least 95 per cent of the semester hours taken by the student.
Selection of a Major Field
Students should select a major field and arrange their schedules to satisfy all requirements. The complete program should be tentatively
outlined at the beginning of the freshman year, although there may be some shifting of courses at the beginning of the sophomore year.
Requirements for Graduation
Candidates for graduation must meet requirements as to both quantity and quality of work. The student must have completed one hundred and twenty hours of academic work plus four hours in Physical Education, unless he has been excused from the latter by the College upon certification by a physician that he is physically disqualified. In addition, the student must have earned one hundred and twenty-four quality credits, including four quality credits for Physical Education.
Candidates for the Junior College certificate must complete the require ments in their selected course and must earn at least sixty quality credits Quality credits must also equal at least 95 per cent of the semester hours of work taken in college
No student notably deficient in the use of spoken or written English will be recommended for graduation until he has satisfied the faculty that his deficiencies have been corrected.

## BACHELOR OF ART'

## College Curricula

The College offers courses leading to both the B.A. and B.S. degrees.
Four years of work are offered in the Liberal Arts, Biology, Chemistry, and Commerce and Finance

Only the freshman and sophomore years in Physics and Engineering may be taken at Wilkes College. The college has made arrangements to place students in the junior year of the engineering schools at Bucknell University or at other colleges chosen by the students.
Students, wishing to teach in high schools, may elect the liberal arts and scientific courses, although the required courses in education must be taken with Bucknell University under a special plan arranged by the University and the College.
For students planning less than four years of study the College offers other programs. Two-year terminal courses are offered in music, radio production, secretarial training, and laboratory technology. Special programs may be arranged for persons interested in a program of study suited to their particular needs and interests.
Before completing his program, a student should always consult his faculty adviser or the Dean, thereby preventing misunderstandings and disappointments.

The Liberal Arts course makes available to the student the accumulated wisdom of mankind. It helps him to identify the basic values of modern civilization and to discover objectives worthy of a lifetime's interest and effort. It may also contribute to his preparation for a specific vocation
To provide the breadth of vision required in the Liberal Arts, it is necessary that a student explore several fields of knowledge. Therefore the work of the student is spread in four fields from which he must select certain courses.

To provide depth of knowledge it is necessary that the student concentrate in one of these four fields. In his field of concentration it is necessary that he take at least 24 hours in one subject and in addition one-half of the work of the junior and senior years should be confined to other subjects within the same field. Exceptions to this rule occur in the fields of Mathematics, the Social Studies, and Philosophy.
A major in Mathematics must take 24 hours in courses numbered above 200 but is not required to take one half of the work of his junior and senior years in related fields.
A major in the Social Studies will take 18 hours in one of four subjects, History, Economics, Political Science, or Sociology, of which nine semester hours must be in courses numbered above 200. In addition, he must take six semester hours in each of the other three subjects.
A major in Philosophy may consist of 33 hours distributed over the departments of Philosophy, Psychology, and Religion. Not less than nine hours will be allowed in any one of these departments.
The selection of work is to be made under the direction of the student's adviser. Substitutions to meet the needs of individual case may be allowed with the consent of the student's adviser and the Dean.
A well-planned program enables students to prepare for secondary school and college teaching or administration, government service, social work, journalism, the fine arts, law, and accounting.
The following courses are not accepted toward a major: Biological Science 100; Chemistry 101, 102; Economics 116, 123, 124, 125, 135 136, 137, 138, 139, 140, 235, 236; English 101, 102, 121, 131, 132; French 101, 102; History 99, 100; German 101, 102; Mathematics 101, 103, 107, 109, 115, 116; Polish 101, 102; Spanish 101, 102

FIELDS OF CONCENTRATION AND WORK REQUIRED IN EACH FIELD

|  | Field <br> I <br> Languages | Departments. | Requirements |
| :--- | :--- | :--- | :--- |

Major fields of study available in the liberal arts are:

| Science | Arts | Languages | Social Sciences |
| :---: | :---: | :---: | :---: |
| Biology | Music | English | Economics |
| Chemistry | Art | French | Education |
| Geology | Philosophy | German | History |
| Mathematics | Psychology | Spanish | Sociology |
| Physics | Religion |  | Political S |

*Not required of students majoring in a physical science.

LIBERAL ARTS
FRESHMAN YEAR

| First Term | T.H. | Second Term |
| :--- | ---: | :--- |$\quad$ T.H.



JUNIOR YEAR
Major and Electives $\qquad$
$\qquad$ 30 semester hours

SENIOR YEAR
Major and Electives....................... 30 semester hours

* Not required of students majoring in a physical science.


## BACHELOR OF SCIENCE

The curricula in this division provide a thorough grounding in scientific method, supplemented by study of the humanities.

The Bachelor of Science course offers three alternatives to meet the individual purposes and interest of the student: Group I, Biology; Group II, Chemistry; Group III, Physics. The work in the freshman year is common to all three groups. To insure a well-rounded program, a faculty adviser will assist each student to choose his elective studies.

Language Requirements
A reading knowledge of scientific German or of French is required for this degree. The requirement may be satisfied as follows:

1. A student prepared in a language may take a reading-knowledge test.
2. A student who has taken two years or more of German must complete scientific German; if he has taken two years or more of French, he must complete six hours of intermediate or advanced French.
3. A student beginning either language in college must complete 12 semester hours.
Group I-Biology

Special emphasis upon biology is recommended in preparation for the study of medicine, osteopathy, dentistry, and allied studies; the teaching of biology; industrial and medical technology; graduate work in botany, genetics, and bacteriology.

## Groups II and III-Chemistry and Physics

These groups are primarily for the students planning to enter the following fields: graduate study leading to positions as research chemists or physicists; industrial chemistry or physics; teaching.

GROUPS I, II, III
Freshman Year

| First Term T.H. | Second Term |
| :---: | :---: |
| Chemistry 101 | Biology 100 |
| English 101 ................. 3 | Chemistry 102 |
| History 99 ................... 3 | English 102 or 201 |
| Mathematics 107 .............. 3 | History 100. |
| Mathematics 109 .............. 3 | Mathematics 202 |
| Physical Education 101 ........ 1 | Physical Education 102 |

GROUP I - BIOLOGY
Sophomore Year


Junior Year

$$
\begin{array}{lll}
\text { First Term } & \text { T.H. Second Term } & \text { T.H. }
\end{array}
$$

German 103 or French 103.... ${ }^{3}$
Physics 107 or $201 \ldots \ldots .4$ or 5 Physics 107 or $201 \ldots \ldots .4$ or 5
Electives $\ldots \ldots . . . . . . . . . . . .$.
8
Electives
Biology 103, 203, 207, 221, Chemistry 115, or 209. Other electives listed below.
$15 \overline{\text { or } 16}$
German 120 or French $104 \ldots$ or
Physics 108 or $202 \ldots \ldots .4$ or 5 Physics 108 or $202 \ldots \ldots \ldots 4$ or 5
Electives $\ldots \ldots \ldots \ldots \ldots$ Biology 104, 204, 208, 222 ,
Blective Chemistry 203 or 210 . Other electives listed below.

Senior Year

| First Term | T.H. | Second Term | T.H. |
| :---: | :---: | :---: | :---: |
| Biology 319 | . 1 | Biology 230 | 1 |
| English 201 | .. 3 | Electives | 13 |
| Electives | .. 10 |  |  |
|  | 14 |  | 4 |

Suggested Electives

## Art 100

Art 100
Education
English 131, 234
English Literature
History
History
Music

> Natural Science
> Philosophy 100
> Political Science 100 or 103
> Psychology 103, 208
> Religion 100
> Sociology 110, 205, 206

GROUP II - CHEMISTRY
Sophomore Year
Chemistry 115
Mathematicc 20
Physics 201
Sociology 100
hysical Education 103

| T.H. |  |
| ---: | ---: |
| .. | 4 |
| .. | 4 |
| .. | 5 |
| .. | 3 |
| . | 1 |
|  | 17 |

Chemistry 203
Mathematics 20
Physics 202
Physical Education 10

| Junior Year |  |  |  |
| :---: | :---: | :---: | :---: |
| First Term | T.H. | Second Term | T.H. |
| Chemistry 301 | 4 | Chemistry 302 |  |
| Chemistry 209 | .. 4 | Chemistry 210 |  |
| Chemistry 227 | 4 | French 102 or prefe |  |
| French 101 or pref |  | 102 |  |
| 101 | 3 | Electives |  |
|  | 15 |  | 15 | Senior Year


| First Term | T.H. | Second T'erm | T.H. |
| :---: | :---: | :---: | :---: |
| Chemistry 303 | 3 | Chemistry 320 |  |
| Chemistry 319 | 1 | Chemistry 329 |  |
| Chemistry 325 | 3 | Chemistry Electives |  |
| Chemistry Electives | or 4 | French 104 or Germ |  |
| English 103 | 4 | English 104 |  |
| French 103 or pref |  | Elective |  |

GROUP III — PHYSICS
Sophomore Year

## First Term

English 103
French 101 or preferably
German 101
Mathematics 205
hysics 2
Physics 201 ...........
Second Term

$$
\text { French } 102 \text { or preferably }
$$

$$
\text { German } 102
$$

$$
\begin{aligned}
& \text { Gethematics } 206 \\
& \text { Physic }
\end{aligned}
$$

$$
\text { Physics } 202
$$

Physical Education

BACHELOR OF SCIENCE IN COMMERCE AND FINANCE
The Commerce and Finance department, which provides training for business life combined with a well-rounded education, is divided into two courses.

1. The General Course, for those who desire a broad business ducation.
2. The Secretarial Course, for those who wish to prepare for secretarial positions.
The department offers specialized work in the following fields:
Accounting
Banking and Finance
Marketing Insurance
Banking and Finance
Insurance
Marketing Economics
Secretarial Training
Terminal courses of concentrated secretarial work for students limited to two years of college are described under Terminal Curricula in this catalogue.
I. General Coursf

FRESHMAN YEAR

| FRESHMAN YEAR |  |  |  |  |
| :--- | :--- | :---: | :---: | :---: |
| First Term | T.H. |  |  |  | Second Term $\quad$ T.H.

SOPHOMORE YEAR

| First Term | T.H. | Second Term | T.H. |
| :---: | :---: | :---: | :---: |
| Economics 103. | 3 | Economics 104 or 202. |  |
| Electives | 3 | Economics 210 |  |
| Economics 201* |  | English 104. |  |
| Sociology 100 |  | Mathematics 116. |  |
| Political Science 103 |  | Music 100 |  |
| Economics 209 |  | Physical Education 104 |  |
| English 103. |  |  |  |
| Mathematics 115 | 3 |  | 16 |

JUNIOR AND SENIOR YEARS Economics Electives from Groups I-V Electives outside the field of economics of which the following are required:
 Physical Science...................... 3
*Those majoring in accounting should elect Economics 201 this semester. It will follow, thereyears to 18 .

## ECONOMICS ELECTIVES

Economics Electives are to be selected from the following groups:

## GROUP I

## General Economic

Economic Problems 104... Government in Business 150 Transportation 207.
Business Cycles 261.
Eonomic History 318
Economics Investigation 322 ..... 3

Advanced Economics 324
History of Economic Thought 326 .. Consumer Economics Education
330


GROUP II

## Accounting and Business



GROUP III
Banking and Finance

| Banking and Finance 121...... 3 | Investments |
| :---: | :---: |
| Banking and Money 122........ 3 | Foreign Exchange 228 |
| Credits and Collections 213...... 2 | Public Finance 313 |
| Real Estate 214.............. 2 | Banking Systems, Credit Control, |
| Organizations and Financial Man- | and Prices 328. |
| agement of Business Units and | Mathematics 215-216, Mathemat- |

GROUP IV
Marketing and Insurance


GROUP V
Management

Labor Problems and Personnel Management 223 Purchases and Stores Control Business Organization and Management 301
Personnel Management 306
Production Management 310

Business Management Statistics

 Industrial Management. ............
.. 2
.. 3
II. SECRETARIAL COURSE


SOPHOMORE YEAR

| First Term | T.H. | Second Term | T.H. |
| :---: | :---: | :---: | :---: |
| Economics 105 | .. 3 | Economics 106 |  |
| Economics 137 | 4 | Economics 138 |  |
| English 201 | - 3 | English 131 | . 2 |
| Music 100 | 2 | Physical Science 100 or |  |
| Elective | 3 | Psychology 100 | 3 |
| Physical Education 103 | 1 | Elective ............. | 3 |
|  | 16 | Physical Education 104 |  |



SENIOR YEAR


Electives should be divided between economics and liberal arts courses according to the interests and vocational objectives of each student.

## BACHELOR OF SCIENCE IN ENGINEERING

The engineer's main purpose is to apply scientific knowledge and discoveries to the uses of civilization. He is obliged to specialize because of the vast range of modern engineering techniques. In selecting his particular field, the student should consult his natural interests. The demands of this profession are exacting, but it should appeal to those genuinely interested in mathematics, the natural sciences and their application.
The following general distinctions may be made between the various fields: Research appeals to the imaginative mind; the more practical person may be interested in development and design; others find satisfaction in the tangible results of construction, operation, and production. Technically trained men are always needed to sell applications and equipment. As his experience broadens and his judgment matures, the engineer qualifies for the higher executive and administrative positions.

## Aeronautical Engineering

Mechanical engineering is basic for the study of aeronautical engineering. Bucknell University does not offer the last two years in this field, but its first two years in mechanical engineering qualify the student for the advanced work offered by several universities.

Chemical Engineering
Students desiring to become chemical engineers may select one of three courses. All take a two year course at Wilkes College. They, then, may transfer to a school of their choice to complete the four year course for a B.S. in Chemical Engineering. They may take the B.A. degree in chemistry at Wilkes College and then enter another institution for specialized training in engineering taking a B.S. in Chemical Engineering: This is frequently done in larger colleges and universities. Sometimes the B.S. degree is taken first and then the B.A. degree. This allows for a liberal education which is the best preparation for success in all fields of pure and applied sciences. The other choice is to terminate their formal education at the end of the second year. They are then prepared for careers as assistants in industrial plants or laboratories, draftsmen, electricians, shopforemen, or salesmen.

## Civil Engineering

The civil engineer deals with problems in structural, highway, railroad, hydraulic, and sanitary engineering, and also with surveying and geodesy. He specializes in the design, construction, and maintenance of bridges, tunnels, dams, and the structural members of buildings.

His services are indispensable in the design of river, canal, and harbor improvements; in the development and control of water resources, treat ment and disposal of sewage and industrial waste; and in the location and construction of all transportation facilities.
Electrical Engineering
Today nearly every activity of civilized life depends upon electricity The electrical engineer is trained to design, construct, and operate all electrical generating equipment. He must supervise and control the distribution of electricity for driving the machinery in mills, factories, and mines; for electric railways, chemical processing, heating, lighting, and for all electrical devices used in the home.
The communications field, including telegraph, telephone, radio, radar, teletype, transmission of print and pictures, offers numerous opportunities. Development of electronic tubes, circuits, and equipment for commercial processes offers opportunities in many fields of endeavor.

## Mechanical Engineering

The mechanical engineer specializes in the application of mechanical power to industry. It is his job to utilize power economically, whether by diesel, gas, or steam propulsion. He applies it in refrigeration, transportation, and other fields. He is responsible for the design, construction, and maintenance of the machinery used in transportation and in other fields of engineering.

The College offers the first two years of the Engineering curriculum. A more complete statement in regard to engineering as a profession will be found in the Engineering Bulletin of Bucknell University. All engineering students will receive this Bulletin.

FRESHMAN YEAR
(Common to all Engineering Courses)


SOPHOMORE YEAR
Chemical Engineering

| First Term | T.H. | Second Term | T.H. |
| :---: | :---: | :---: | :---: |
| Chemistry 115 | . 4 | Chemistry 203 |  |
| Economics 103 | . 3 | Mathematics 206 |  |
| Mathematics 205 | . 4 | Mechanical Engineeri |  |
| Physics 201 | 5 | Physics 202 |  |
| Physical Education 103 | . 1 | Physical Education 10 |  |
|  | 17 |  | 19 |
| Civil Engineering |  |  |  |
| First Term | T.H. | Second Term | T.H. |
| Civil Engineering 103 | . 3 | Civil Engineering 214 |  |
| Economics 103 | - 3 | Mathematics 206 |  |
| Mathematics 205 | . 4 | Mechanical Engineerin |  |
| Physics $201 .$. | 5 | Physics 202 |  |
| Elective (in social studies o humanities) |  | Physical Education 10 |  |
| Physical Education 103 |  |  | 18 |
|  | 19 |  |  |
| Electrical Engineering |  |  |  |
| First Term | T.H. | Second Term | T.H. |
| Civil Engineering 103 | ${ }^{3}$ | Mathematics 206 |  |
| Economics 103 | . 3 | Physics 202 |  |
| Mathematics 205 | . 4 | Mechanical Engineerin |  |
| Physics 201 | . 5 | Elective (in social st |  |
| Mechanical Engineering 205 | - 3 | humanities) |  |
| Physical Education 103 | .. 1 | Physical Education 10 |  |
|  | 19 |  | 18 |

Mechanical Engineering

| First Term T.H. | Second Term T.H. |
| :---: | :---: |
| Civil Engineering $103 . . . . . .$. . 3 | Mathematics 206 |
| Economics 103 ................ 3 | Mechanical Engineering 209 |
| Mathematics 205 ............. 4 | Physics 202 |
| Mechanical Engineering 205 | Elective (in social studies or |
| Physics 201 ................. 5 | humanities) |
| Physical Education 103 ........ 1 | Physical Education 104 |

## Junior College Curricula

To students desirous of completing a program in less than four years, the college offers two year terminal courses in music, secretarial work, laboratory-technician work, and radio production. While giving concentrated work in these fields, the curricula also include the choice of several electives from the liberal arts course.

## MUSIC

Although a two-year course in Music cannot lead to finished artistry, the College considers it important to give students taking a real interest in music an opportunity to develop their talents so that they may continue their studies on a professional basis.

| First Term | T.H. | Second Term | T.H. |
| :---: | :---: | :---: | :---: |
| Music 100 | . 3 | Music 106 | . 3 |
| Music 105 | . 3 | Music 107 | 3 |
| English 101 | 3 | English 102 or 201 | 3 |
| Foreign Language | 3 | Foreign Language | 3 |
| Practical Music | 2 | Practical Music | 2 |
| Physical Education | . 1 | Physical Education | . 1 |
|  | 15 |  | 15 |

$\begin{array}{lll} & \text { SECOND YEAR } & \\ \text { First Term S.H. Second Term T.H. } & \text { T.H. }\end{array}$
Music 203
Music 205
Foreign Languag
Practical Music
Physical Education

| I. |
| :--- |
| .. |

$\begin{array}{ll}\ldots \ldots \ldots \ldots & 3^{3} \\ \cdots \cdots \cdots \cdots \cdots & 3^{3} \\ \cdots \cdots \cdots \cdots & 2\end{array}$


| .$\quad 1$ |
| :--- |
| 15 |

## SECRETARIAL COURSE

(Two-Years)

The two-year intensive secretarial courses equips a students with a broad cultural and business background and a specialization in the secretarial studies. The work in advanced stenography merges the three fields of shorthand, typewriting, and the use of correct English. The course in secretarial training provides for the application of those skills on a pro fessional level, with emphasis on the quality of the person as well as the quality of her work.

FIRST YEAR

First Term
Biology 100 . Economics 109 Economics 114 Economics 135 Physical Education

## Second Term

Economics 101
Economics 115
Economics 116
Enonomics 136
English 102.......................
Physical Education............
18
SECOND YEAR

## First Term

Economics 137
Economics 137
Economics 200 Economics 205.
History 99 or 107.
History 99 or $107 \ldots . .$.
Music 100 (or elective) Physical Education

Second Term
Economics 138. Economics 138.
Economics 210 $\begin{array}{ll}\text { Economics } & 210 \\ \text { Economics } & 236\end{array}$
conomics 236 ..................
English 131 (or elective)
History 100 or 108
Physical Education.
(

Students who have had shorthand and typewriting in high school may substitute electives for one or more of the courses in the stenographic skills pro vided they demonstrate adequate skill. Examinations wil
of the first term to determine their levels of attainment.

## MEDICAL STENOGRAPHY*

## RADIO PRODUCTION

Medical secretaries require special training so that they may possess an intelligent understanding of the work in which they will assist the physician. To provide this essential background the secretarial courses are supplemented by courses in biology, physiology, and bacteriology.
Laboratory periods in bacteriology and physiology are not required for the secretarial students, but they will attend all lectures and meet all other requirements of these two courses. The courses in secretarial accounting and office procedures will be adapted to the needs of students preparing to work in a medical office.

FIRST YEAR


SECOND YEAR

## First Term



As the influence of radio increases, it will inevitably demand men and women possessed of broad training and specialized technical skills. This course does not pretend to develop experts in radio production and programming, but it does aid to create familiarity with broadcasting in combination with courses in general education.
The courses in general education will be given in the college and the technical courses will be given in the workshop of a local broadcasting station.

FIRST YEAR


SECOND YEAR
First Term T.H. Second Term T.H.

First Term
Economics 103 English
English
131
Psychology 100
adio 104*
Radio 104
Physical Education 103

Laboratory Course
*Candidates for a degree with a major in medical stenography must consult the instructor
before planning their program of study.

## TRAINING COURSE FOR

## LABORATORY TECHNICIANS OR MEDICAL TECHNOLOGISTS

The following requirements for laboratory technicians or medical technologists are those set forth by the Registry of Medical Technologists of The American Society of Clinical Pathologists. Students who complete this terminal curriculum are eligible to apply for registration.

Biology:

## REQUIREMENTS

12 semester hours, of which 10 hours must be in zoology. Additional courses which may be taken to fulfill this requirement are histology, embryology, comparative anatomy, physiology, bacteriology, and hygiene.

Chemistry:
10 hours of general inorganic chemistry, including laboratory work.
4 hours of quantitative analysis, including laboratory work.
Electives
Sufficient to give a total of 60 semester hours of college credit. The following courses are recommended, but not required: physics, organic chemistry, bacteriology, histology, embryology, physiology, and comparative anatomy.

| FIRST YEAR |  |  |  |
| :---: | :---: | :---: | :---: |
| First Term | T.H. | Second Term | T.H. |
| Biology 101. | 5 | Biology 102 | 5 |
| Chemistry 101 | 5 | Chemistry 102 | 5 |
| Mathematics 107 | 3 | English 101 | 3 |
| Mathematics 109 | 3 | Mathematics 202 | 4 |
| Physical Education 101 |  | Physical Education 102 | 1 |
|  | 17 |  | 18 |

SECOND YEAR


## Description of Courses

A brief description of courses offered by the College will assist students in planning their schedules. The titles and numbers of courses are identical with those used at Bucknell University.
The College reserves the right to cancel any course for which fewer than six students register.
The word hour, unless otherwise specified, signifies semester hour.
100. History of Art

A rapid survey of art from prehistoric times to the present. The importance of art as a factor in man's development and as an indication of changing conditions in life is emphasized; its significance in contemporary life is especially stressed. Two hours.
141 and 142. Play Production
The fundamental principles of scene design and construction, lighting, make-up, costuming, properties, and technical practice. Theater management, budgeting publicity, and organization. Practical work in connection with the regular dramatic and artistic program of the college. Three hours each semester.

## BIOLOGY

100. Personal Hygiene

A study of present day health problems from the standpoint of the individua and the community. The course undertakes to help students to enjoy maximum
health and happiness through better understanding of nutrition, infection, disease nervous and mental disorders, and the problems of parenthood. Two bours.
101 and 102. Zoology of the Invertebrates and Vertebrates
Surveys the whole animal kingdom; outlines the history of biology; explains the organization of living matter; teaches anatomy and physiology of animals, the evolution, and genetics. Special attention is given to the comparative anatomy of a few of the invertebrates and vertebrates. Required of all pre-medical students technicians, and nurses; may be elected by others. Class, three hours a week; laboratory, four hours a week. Breakage deposit required. Five hours each semester. 103 and 104. General Botany

First term gives a general idea of the plant world. It includes the study of fundamental principles of biology, plant anatomy, physiology, genetics, ecology, and geographic distribution. It demonstrates the economic importance of plants to man.

The second term's work includes a comprehensive survey of the great divisions of the plant kingdom with special studies of chosen groups. Class, three hours a of the plant kingdom with special studies of chosen groups. Cl
week; laboratory, four hours a week. Five hours each semester.
110. Biological Science

A survey course intended for students who do not take other courses in biology. It presents the essential general information about plants and animals; explains the ship to man. Three hours.
203. Embryology

Embryology is the study of the beginnings of development in animals. Growth is traced from the egg to later stages in the frog, chick, and man. Technique in the making of slides for this study is part of the laboratory work. Important for premedical students, and interesting to others. This course is given with Histology as a year's work, or separately. Class, three hours a week; laboratory, four hours a Prerequisite: Biology 101 and 102
204. Histology

Histology is the study of tissues. The semester's work includes a study of the cells which compose normal tissues and a study of the structure of organs formed nantly of mammalian and human material. Histology is basic knowledge for students in the fields of zoology, medicine, dentistry, medical technology, and veterinary medicine. Class, three hours a week; laboratory, four hours a week.
Breakage deposit required. Five hours.

Prerequisite: Biology 101 and 102.

207 and 208. BACTERIOLOGY
First term, General Microbiology: methods of microscopy, morphology, identification of bacteria. Techniques of making media, methods of sterilization, and of he culturing of bacteria. Second term, Medical and Industrial processes: biological rophylaxis and allergy, diseases and disease transmission, viruses, ricketsias, an .
Prerequisite: Biology 101 and 102

## 209. Genetics

This course is a presentation of the fundamental principles of genetics with experiments and problems on the kinds, causes, measurements, and inheritance of week

Prerequisite: One year of general botany or general zoology

221 and 222. PHYSIOLOGY
A study of the functioning of the systems of the human body. Experimental work in the laboratory is included. Class, two hours a week; laboratory, two hours week. Three hours each semester.

Prerequisite: Biology 101 and 102
224. Eugenics

This course is concerned with the applications of the principles of genetics for improvement of the human race. Special emphasis is placed upon reproduction, evelopment, and inheritance of normal and morbific characters, and the applica of genetics to sociology and medicine. Three hour
Prerequisite: Biology 101 and 102, or a major in sociology
25. General Entomology

The collection and identification of insects, the study of their life histories, heir econonic relationships, and their significance in industry and medicine. ive hour

Prerequisite: Biology 101 and 102
26. Comparative anatomy of Vertebrates

The study of the general morphological characteristics of all vertebrates on the basis of their embryology, so that a broad conception of vertebrate structure may e obtained. Dissections and discussions. Five bours

Prerequisite: Biology 101 and 102.

## CHEMISTRY

The Chemistry Department offers four-year curricula leading to a B.A. or B.S. in Chemistry, a B.S. in Biochemistry. The aim of the department is to train students thoroughly in the fundamentals of the various branches of chemistry.
For a B.S. degree 57 semester hours in chemistry (more than meeting the requirements of the American Chemical Society), and, in addition, foundation courses in physics, mathematics, and a minimum of certain social and humanistic subjects are required. This curriculum is planned primarily for those desiring to enter industrial laboratories immediately after graduation.

The curriculum for a B.A. degree is planned for students who wish o become professional chemists, or to enter a graduate school of chemistry. Students graduating with a B.S. in pure chemistry meet the admission requirements of standard graduate schools and are eligible for recommendation for assistantships, scholarships, teaching or employment in chemical industry and government service. Only thirty four hours of chemistry, a year of physics and mathematics through calculus are required for this degree. This permits a broader education which is the equipment of every well educated man and which is essential for the proper training of chemists, because of its practical application in industrial, business and civic life.

A B.A. in biochemistry requires less chemistry and mathematics and is recommended to those who intend to become physicians, druggists, home economists, medical technicians, nurses, dentists, patent lawyers, secondary school teachers, or enter the laboratories of manufacturers of drugs, dairy and various food products. It is the most pliable and permits other fields of minor concentration.
Students desiring to take an A.B. degree in Chemistry should elect chemistry and mathematics in both their freshmen and sophomore years. In addition, they should start German in their sophomore year.

Students desiring to take an A.B. in Biochemistry should elect chemistry and mathematics in their freshmen year and chemistry and biology in their sophomore year

All students in chemistry during the last semester of their sophomore year should seek the advice of the Head of the Chemistry Department and a special Curriculum will be arranged to meet their particular abil ities, interests and aims.

101 and 102. General Inorganic Chemistry
Fundamental laws, principles, and theories of chemistry, supplemented by illustrative laboratory experiments. Class, three hours a week; laboratory, 3 hour a week; discussion, 1 hour a week. Five hours each semester
115. Qualitative Inorganic Analysis

Theory and practice in separation and detection of the common anions and cations of inorganic chemistry. Class, two hours a week; laboratory, six hours week. Four hours

Prerequisite: Chemistry 101 and 102.
203. Quantitative Inorganic Analysis

Theory and practice of typical volumetric analyses. Class, two hours a week; laboratory, six hours a week. Four hours.

Prerequisite: Chemistry 115.
209 and 210. Organic Chemistry
Introduction to nomenclature and to the principal types of organic compounds of the alipratic and aromatic series. First term: Class, three hours a laboratory, six hours a week. Four hours each semester.

Prerequisite: Chemistry 203
227. Advanced Quantitative Analysis

Gravimetric analysis using precipitation, electrodeposition, and colorimetric methods. Class, two hours a week; laboratory, eight hours a week. Four hours Prerequisite: Chemistry 203.
301 and 302. Physical Chemistry
An introduction to the principles of physical chemistry and the elements of thermodynamics. Class, three hours a week; laboratory, three hours a week. Four hours each semester

Prerequisite: Chemistry 203 and Mathematics 206.
303. Physical Chemistry

A continuation of Chemistry 302. Three hours.
319 and 320. Chemical Literature
An orientation course in foreign and domestic chemical literature. Confer ence, one hour a week. One hour each semester.
325. Qualitative Organic Analysis

A course designed to give practice in the systematic identification of pure organic enpors, labs, one 210.
327. Advanced Inorganic Chemistay

A course designed to introduce the student to the modern theories of inorganic chemistry. Two lectures and three laboratory hours a week. Three hours. Prerequisite: Chemistry 302.
328. Advanced Physical Chemistry A study of chemical equilibrium, usi
329. Advanced Organic Chemistry

A continuation of Chemistry 210, in which emphasis is placed on the a contry of cyclic compounds and on the theory of organic reactions. Class, two hours a week. Two hours.

Prerequisite: Chemistry 210.
330 and 331. Biological Chemistry
The study of the application of chemical and physiochemical principles and methods to chemical constitution, reaction, and products of living matter. Class, three hours a week; laboratory, three hours a week. Four hours each semester. Prerequisite: Chemistry 203 and 210.

## ECONOMICS AND COMMERCE AND FINANCE

Business Education and Guidanc
A basic course in the essentials of modern business. Studies are made of problems pertaining to administrating and financing the organization of enterprise, the manufacturing and distribution of goods, personnel problems, and governmental policies toward business. Three bours.
103. Principles of EConomics

A course designed to acquaint the student with the organization of the economic system and the principles which govern economic activity. The material of the course will include study of production, consumption, exchange, and distribution. Three bours.
104. Economic Problem

A study of modern economic problems in the light of the principles developed in Economics 103. The risks of the industrial enterprise, banking, international trade and the tariff, the relations between labor and capital, problems growing ou social reform such as liberalism, socialism, and communism. Three bours.

Prerequisite: Economics 103.
105. Principles of Accounting

Theory of balance sheets; problems of technique; classification and interpretaion of accounts; preparation of financial statements. First semester. Three bours 106. Principles of Accounting

A continuation of Economics 105. Problems of partnership and corporation accounts; labor saving devices; valuation of assets. Second semester. Three hours. Prerequisite: Economics 105.
109. Economic Geography

A study of the relation of geography to the economic activity of man. This urse describes analyzes the regional distribution of world resources, industries, nd populio. It is designed as an introductory course to the further study of economic geography and related fields. Three hours.
110. Economic Geography

A study of the economic regions of the North American continent, with special emphasis on the role of the United States in the Western hemisphere. Three bours.

## 114. Business Mathematics

Review of fundamental arithmetic processes and their application to business. Special attention is given to problems of credit and interest; inventory and urnover, depreciation, and distribution of overhead; investment, insurance, stocks
and bonds. Tbree bours.
115. Secretarial Accounting

Instruction in the fundamental principles of accounting and their application to the keeping of books and records in business and professional offices. Four hours.
16. Business Correspondence

Fundamental principles of business writing, with constant practice in writing arious types of letters and reports. Three hours.
121. Banking and Finance

A study of the organization of financial institutions, their operation and influence upon the economy. Consideration is given to commercial and savings banks, invest ment institutions, and other credit organizations. Three bours.
122. Banking and Money

An analysis of the monetary and credit system in relation to contemporary economics, currency and credit problems, governmental regulations, control of foreign
exchange, and central banking. Three bours. .

23 and 124. Business Mathematics*
Review of fundamental arithmetic processes, and their application to business problems. Three hours each semester.
134. Personal-use Typewriting

Development of typing skill; application of typing skill to writing of business letters and term papers. Laboratory fee required. Four hours a week. No credit. 135 and 136. Shorthand-typewriting

Shorthand: Development of reading and writing skill in Gregg Shorthand Ability to take dictation at 80 words a minute required by end of second term Typewriting: Development of typing skill; application of typing skill to the writing of business letters and other office problems. Laboratory fee required.
Eight hours each week. Four credits each term.

137 and 138. Advanced Stenography
Dictation: Review of reading and writing techniques in Gregg Shorthand Ability to take dictation at 120 words a minute required by end of second term. Transcription: Further development of typing skill; application of skill to
advanced typing problems, transcription of shorthand notes at a commercially acceptable speed. Laboratory fee required. Eight hours each week. Four credits
each term.
*Secretarial students on
39. Specialized Stenography

Technical dictation and transcription for students preparing to work in professional offices. Students planning to specialize in medical stenography mus ollow the curriculum outlined. Those wishing to take legal stenography mus demonstrate superi
week. Two credits.
140. Speech Reporting

Speed dictation for speech reporting. As many electives as possible should be taken in English. Prerequisite: ability to take sustained dictation fluently a 100 words a minute, and to transcribe notes rapidly and accurately. Four bour a week. Two credits.
150. Government in Business

A study of the relationship of government to economic enterprises with specia attention to conditions in the United States; the regulatory activities of governmenta 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. Tbree hours.
201. Corporation Accounting

Accounting for stock and bond issues; voucher systems; principles of valuation; epreciation; capital and revenue expenditures; intangible assets; reserves; surplus; sinking funds; consolidation. Three hours.

Prerequisite: Economics 106.
202. Advanced Accounting

Practical problems and questions in accounting theory; financial and operating statements; analysis of statements; principles of auditing. Tbree hours.

Prerequisite: Economics 201.
206. Salesmanship

The art of selling, the motive behind all buying, the customer's mental journey creating interest and desire, presentation of services, meeting objections, types o rs. Tbree bour

## 207. Transportation

Problems and policies of railroads, busses, inland waterways, and air and ocean transportation policies of railroacs, busses, inland waterways, and air and ocean tion to society. Juniors and seniors. First semester. Three bours.

Prerequisite: Six hours in economics.
209. Business Law

This course is intended to establish the foundation for all subjects included in the broad field of business law. The essential elements of a valid contract are ex-
amined by the student and applied to typical business transactions. These essential elements are: the agreement; the subject matter (what the contract is about); the consideration (that value which is given by each party for his interest in the subject matter); the form (written or oral); the competency of parties; and the genuineness of assent (legal or illegal inducement to agree). Three hours.
210. Business Law

This course includes a general study of the Law of Sales, the Law of Agency, and the Law of Bailment. These subjects together might well be called the Laws of Marketing and concern themselves with the legal problems arising out of the sale
of merchandise by manufacturer, distributors and dealers; out of the financing, of merchandise by manufacturer, distributors and dealers; out of the financing,
processing, shipment, and warehousing of merchandise; and out of government regprocessing, shipment, and wareho
211. Public Relations

The technique of creating favorable public opinion. Consideration of the more important media, such as the newspaper, magazine, pamphlet, letter, radio, motion picture, exhibit, and the lecture platform. Public relations work for educational and business institutions, and the conduct of a practical publicity camaign. Three hours.

Prerequisite: Six hours in economics.
213. Credits and Collections

The fundamentals of credit, investigation and analysis of risks, and collecion plans and policies. Special attention given to the organization of the credit Prerequisite: Fconomics 106

## 214. Real Estate

The fundamentals of the real estate business, including a consideration of titles mortgages, leases, advertising, sale, purchase, development, and management of property. Second semester. Two hours
Prerequisite: Six hours in Group I.

## 217. Marketing

This course covers the evolution of the marketing system and the functions of marketing, trade structure, and organization and the nature of competition. It deals with the principles of distribution, assembling, grading, transportation, finance, and
storage. Each student is required to make a special study of the marketing of a storage. Each student is required to make a special study of the marketing of a
selected commodity. Three hours. Prerequisite: Six Three hours.
Prerequisite: Six hours in economics.
220. Advertising

A survey of the different departments of advertising work, including copy, art display, engraving, trade-marks, and media; advertising as a social force. Second semester. Three bours.
223. Labor Problems and Personnel Management

An introduction to American labor problems. The origin and development of the labor movement. Employer personnel policies, union policies, governmental par ticipation in labor relations, collective bargaining, investigation and arbitration in or disputes, social security. Three hours.
Prerequisite: Six hours in economics.
225. Organization and Financial Management of

Business Units and Combinations
A study of the economic principles underlying the capital structure of modern business enterprise. Consideration will be given to alternative types of business or ganization, corporate securities and financial policies involved in promotion, dispo-
sition of net earnings, working capital sition of net earnings, working capital and short term financing, mergers, expansion,
financial readjustments, and reorganizations. Prerequisite: Six hours in economics.
226. Investments

This course is based on the widespread interest in the agencies and pitfalls to be found in the field of investment finance and on the great need for more exper ment programs, the 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 Second semester. Three bours.

Prerequisite: Six hours in economics.
22. International Trad

Theory and practice of international trade with special reference to contemporary problems and policies. The topics covered include tariffs, quotas, foreign exchang (exchange controls), equilibrium in international payments. A study will be made review of current policies and developments in the United States. Three hours.
Prerequisite: Six hours in economics.

## 231. Business Law

This course examines the principles of law governing partnerships and corpora tions, in their formation, operation, internal relationships and dissolution, with par ticular reference to their dependency upon the law of agency. The course examines so the legal aspects of the insurance contract with respect to the insured, insurer, and
inay, and the interest necessary to create an quivalent.
232. Business La

This course examines the law of property; the mortgager-mortgagee relation ship; the landlord-tenant relationship; business crimes (crimes against the person, property, and business transactions); bankruptcy; and pacts (security of person, roperty, business relations, and business transactions). Two hours.

Prerequisite: Economics 209 and 210 and two years of accounting or its equivalent.
235. Secretarial Training and Office Machines

Application of skills to integrated office problems; procedures in typical business and professional offices; study of personal and technical requirements fo secretaries; understanding and use of various commercial forms; operation and use of office machines and equipment; personal and vocational guidance. Labora-
tory fee required. Eight hours each week. Four credits.

## 236. Office Management

The organization and management of the office with emphasis on the administration and supervision of office routines; the problems of office record and filing; selection of stationery and other office supplies; the selection and use of machines and specialized equipment; office arrangement and working condi tions; employment, training, and compensation of office workers; and the meas bours each week. Four credits.
255. Purchasing and Stores Control

Importance of purchasing. Principles and methods. Sources of supply and market information. Forms of procedure Handling, storing, and warehousin methods. Inventories and their control. Two hours.

Prerequisite: Six hours in economics.
261. Business Cycles

An historical analysis of major business cycles. Contemporary theories and a critical examination of public policy toward business cycles. Three bours.
301. Business Organization and Management

A study of the organization and management of industry, with emphasis upon the principles developed. Problems of the interrelation of functions operating in the several fields of management, such as production control, personnel, financing and the forecasting of business conditions. First semester. Three hours.

Prerequisite: Six hours in economics courses numbered above 200.
303. Cost Accounting

Accounting for material, labor, and manufacturing expense; analytical and comparative statements; estimating cost systems; establishment and uses of cost
systems. Second semester. Three Prerequisite: Economics 202
306. Personnel Management

Principles and modern practices of personnel management. Instruments of con trol. The training and education of the worker. Incentives used and special problem Prerequisite: Six honrs.
307. Property Insurance

The fundamentals of fire and marine insurance. First semester. Two bours
Prerequisite: Six hours in economics courses numbered above 200.
308. Life Insurance

The fundamentals of life and casualty insurance, and fidelity and surety bonds second semester. Two bours.

Prerequisite: Six hours in economics courses numbered above 200.
310. Production Management

A study of the production problems that confront executives. Developing opera problems. Appraisal of relative risks involved in production. Three bours.

Prerequisite: Six hours in business courses numbered above 200.
311 and 312. Economic Statistic
A course in statistical methods and their application to the social sciences. A collection and interpretation of statisical data, frequency distribution and measure of central tendency, fitting the normal curve, time-series analysis, construction of index numbers, methods of correlation analysis, multiple and partial correlation Chi-square test. Test of significance for small samples, analysis of variance. Thre
hours.

Prerequisite. Six hours in economics courses numbered over 200, including Mathematics 116, also Economics 311
313. Public Finance

Fundamental principles of public finance, government expenditures and revenue, financial policies and administration, taxation, principles of shifting and incidence of financial policies and administration, taxation, principles of shifting and incidence of
taxation, public debts and the budget, fiscal problems of federal, state, and local governments, and the relation of government finance to the economy. Ttate, and local Prerequisite: Economics 103, 104 and six hours in courses numbered above 200 in either economics or related departments.
314. Tax Accounting

A study of the theory and practice of federal income, inheritance and gift, and excise taxation. Actual cases, problems, and forms are used to illustrate the law and to determine the taxpayer's liability to the government. First semester. bree bours.
Prerequisite: Economics 201 or 202.
315. Public Utility Accounting

This course considers leading types of public utilities. After a general surve of the legal characteristics and political aspects of utilities, the problem of valua tion is attacked from the accounting angle. Rates of return, rate structures, and capitalization bases. Uniform cost accounting systems. First semester. Three bours.

Prerequisite: Economics 201.
316. Interpretative Accounting

An advanced course, reviewing the principles and procedures underlying all ypes of accounting. The proprietorship, the partnership, the corporation, and the of modern law and economics. Second semester. Three bours.
317. Auditing

This course comprehends the science of verifying, analyzing, and interpreting accounts and reports. Both theory and procedure are studied in a review of variou types of audits. Throughout the semester, an audit project is presented, solved, an Prerequisite: Economics 202.
318. Economic History

An advanced course which deals with the origin, growth, and significance of conomic institutions, with special emphasis upon those of Europe and the Unite tates. Juniors and seniors only. Three hours.

Prerequisite: Six hours in economics courses numbered above 200.
321. Sales Management

The relation of the sales department to all other departments; types of sales organizations; selection, training, compensation, and management of the sales force; sales research and market analysis; the determination of price and brand Prerequisite: Economics 206.
322. EConomic Investigation

Each student conducts an investigation in the field of his major interest and constructs a final report. Class instruction will consist of (1) the principles of and use of bibliographies, (3) details of goo form as to content, table, body, footnotes, and bibliography. Second semester
ours.
Prerequisites: Six hours in economics courses numbered above 200
324. Advanced Economics

Intended to coordinate the work of the special courses pursued in the general field of economics and business. A more penetrating analysis of economic force than can be

Prerequisite: Economics 103, 104, and six hours in courses numbered above 200 in either economics or related departments.
326. History of Economic Thought

A study of the historical development of economic doctrines. The writings of he leading thinkers in the field of economics, beginning with the Greeks and Romans and continuing to the present. The leading economic movements an schools of thought. Second semester. Three hours.
Prerequisite: Economics 103, 104, and six hours in courses numbered above
200 in either economics or related departments.
328. Banking Systems, Credit Control, and Prices

Central banking systems and credit control policies and their relation to money Cards and prices. Seniors and graduate students. Two bours.
erequisite. Economics 121 and 212, or the equivalent.
329. Retail Distribution

A study of the policies and practices of the various retail institutions, types of retail institutions and types of merchandise handled, store location and layout trends in the field of merchandising. First semester. Three bours. policies, and
Thactices, lier 330. Consumer Economics Education

The place of the consumer in the economic system. Theories of consumption of living, planning and budgetinger as affected by income consumer habits, standar disposition, marketing processes of consumption of trends of consumption, incom to make a study of the consumption of a selected commodity student is require

Prerequisite: Six hours in economics courses numbered above 200
336. History of Economic Thought

A study of the historical development of economic doctrines. The writings o the leading thinkers in the field of economics, beginning with the Greeks an Romans and continuing to the present. The leading economic movements and P thought. Three hours.
Prerequisite: Economics 103, 104, and six hours in courses numbered above .
380. Thesis in Economics

Open only to graduate students majoring in economics. Three hour Prerequisite: Economics 322

Mathematics 215. The Mathematics of Finance and Investment A first course that considers such topics as simple and compound interest, present value and discount, equations of payments, annuities, amortization, and sinking funds. The computations are carried out with the aid of calculating machines Alternates with Mathematics 217 . First semester. Three bours
Prerequisite:

Prerequisite: Mathematics 115
Mechanical Engineering 221. Industrial Management
Principles of management and organization governing production in industry. Juniors and seniors, not engineering students, only. First semestern Three hours.

Prerequisite: Mathematics 107 or 115 .

## EDUCATION*

101. Introduction to the Study of Education

A broad view of the forces affecting modern education; the place of the school in a technical and changing society; contrasting philosophies of education; problems and opportunities confronting the American school system. Three bours 201. Educational Psychology

The psychology of learning; individual differences, their nature and signifi cance; motivation in education, transfer of learning; the evaluation of educationa

Prerequisite: Psychology 100.
207. Student Teaching

Classroom teaching and observation under the direction of experienced teachers and supervisors; cooperative planning and evaluation; group conferences to discus problems arising in the classom

Prerequisite: Three courses in education, including Education 201.

## 214. Guidance

A general survey of the principles and problems of guidance with an intro duction to activities and techniques of guidance, the discovery of individual need and capacities with a consideration of the adjustments required in the educationa program. Night classes. Two bours.
246. Methods of Instruction in Secretarial Studies

General methods in commercial teaching; in the latter part of the semeste members of the class are organized in
commercial sequences. Three hours.

Prerequisite: Economics 135 and 136; Education 201.
258. Visual Education

A study of the materials and techniques of visual education; principles and plans for the use of visual aids; the incorporation of visual instruction in the wor Prerequisite: Education 201

## EDUCATION ELECTIVE

Extension (Evening) classes offered by the University
216. Occupations and Occupational Research

A survey of fields of work in America with consideration of requirements fo entrance, income, likely future development, etc.; methods of presenting such infor mation to pupils; job analysis and research techniques in vocational guidance placement, and follow-up. Required for Pennsylvania guidance teacher's and coun-
225. Intelligence and Its Measurement

The theories of intelligence and the history of intelligence tests. A careful study of the Terman Revision of the Binet-Simon Scale, with practice in giving the test and in evaluating the results. An examination of several of the group tests. The course is planned for those interested in social or educational work Two hours.

Prerequisite: Two courses in psychology.

* Bucknell University Courses

256. Counseling Methods

Methods and techniques of counseling. The course is intended for classroom teachers and home room teachers as well as for counselors and deans of boys and girls. The scientific attitude toward counseling is emphasized Two bours.
301. Principles of Secondary Education

A study of secondary education as carried on in the United States; history of the movement; comparisons with foreign schools; aims and functions; articulation
with elementary and higher schools; student and faculty activities; guidance; the with elementary and higher schools; student and faculty activities; gu
high school pupil; technique of high school instruction. Three bours.
305. Advanced educational psychology

Application of psychological principles to special educational problems. Origi nal investigations are carried out by individual members of the class. Two bours.
320. Advanced Educational Psychology (Mental Hygiene)

A review of the principal types of behavior disorders together with an account of their symptoms, causes, and course of development. Emphasis is placed on the The main emphasis is on conditions which contribute to the integrated personality. Three hours.
357. Psychology of Secondary School Teaching

The emphasis is upon the psychological problems in teaching and learning the curriculum of the junior and senior high schools, and it is designed to acquaint the student with the increasing amount of useful research which is applicable to classoom practice on the high-school level. Opportunity is given for the student to
360. The Secondary School Curriculum

History of the development of the curriculum, present curriculum trends, scientific nd empirical methods of determining curricular materials, organization. Each studen will make a careful study of the curriculum materials in his teaching field. Three hours.
Prerequisite: Education 201.
Certification Requirements for Secondary School Teacher Pennsylvania (College Provisional Certificate)

Teaching Subjects:
(a) Academic subjects: 18 semester hours in each subject. Exceptions in science and social studies will be explained in the education office.
(b) Commercial subjects: A total of 30 hours in commercial subjects with specific requirements as follows
Commercial and Economic Geography ........................... ${ }^{12}$
Commercial Law
Office Practice
Shorthand.
Typewriting
Junior Business Training
Economics
$\qquad$
Business English: (a) Twelve semester hours in English. (b) Not less than two semester hours in Business English or Correspondence.

## ducation Courses

Education 101, 201, 207, and six hours from an approved list of electives.
History 107 and 108 , or 220 are required for all certificates.

## Basic requirements:

English, 12 hours; social studies, 12 hours; science, 6 hours
Teaching subjects:
A major of 30 semester hours, and a minor of 18 semester hours or two minors of 12 semester hours each in prescribed fields. For prescribed fields, consult the department of education
Education Courses:
Students planning to teach in New Jersey should take at least one two-hou iology course in addition to Biology 100. Such students should also include Education 201, 301, and 360, a three-hour methods course, and eight semeste hours of practice teaching.

## New York

Teaching subjects:
Mathematics, 15 hours; English, foreign language, history, biological or physi al sciences, 18 hours. Res (any two), classical languages, socia studies, sciences, 30 hours.*

Education courses ( 18 semester hours required):
History, philosophy, problems or principles of education Secondary school methods and materials.
educatio
3 to 6 hour Adolescent development and/or psychology for teachers.......... 3 to 6 hour Observation and supervised practice teaching. examination in the languag must be satisfactorily passed, in addition to satisfying the above requirements.

## Other States

Students who expect to teach in other states than Pennsylvania should confer arly in their college course with the education department as to specific stat requirements.
*For certification, foreign languages, mathematics, and social science must be preceded by two units of entrance credit.

## ENGINEERING

100. Engineering Problems

Lectures to acquaint the student with the aims, purposes, and methods of engineers. An introduction to the proper method of attack upon problems, proper presentation of solutions, both mathematical and graphical. Instruction in the us f the slide rule necessary to problem solution is given. Graphs. Three hours class and lecture. One hour.

101 and 104. Engineering Drawing and Descriptive Geometry
This course bears the same relation to the engineering profession as the sub ject of English bears to our daily life. Use of instruments. Theory and practice in lettering, orthographic and isometric drawing, sketching, dimensioning, and sec tioning. Execution of detail and assembly drawings, their tracing and reproduction Application of the various techniques used in drawing in enting practice. Drafting room, seven hours a week each term. Three hours each term.
103. Geometry of Engineering Drawing

Training in visualizing the appearance of structures and analyzing them into their geometrical elements. Solution of problems by applying the elemental prin-
ciples to practical work. Two bours. Prerequisite: Engineering 101 and 104

## ENGINEERING, CIVIL

103. Plane and Topographical Surveying

Ying
transit, Y, dumpy and hand levels, plane table, and comp position on corps using for topography, in leveling for profile, grading, excavation, etc. Making attendant computations and maps. Adjustment and care of instruments. First term, seven Prerequisite:
Prerequisite: Mathematics 107 and 109
214. Route Surveying

Theory and practical application of surveying in the location, construction and maintenance of routes of transportation and communication. Field work, comPrerequisite: Civil Engineering 103.

## ENGINEERING, MECHANICAL

205. Elements of Mechanism

Study of kinematic pairs and trains involving linkages, pulleys, gears, and cams; development of common gear tooth shapes and their application to spur, evel, helical, and worm gears. Class, two hours a week; laboratory, three hours Prerequisites: Mours a week; drafting room, three hours a week. Three bours. Prerequisites: Mathematics 107 and 109; Engineering 101 and 102.
209. Engineering Mechanics

Study of force systems in equilibrium, and of first and second moments of areas volumes, and masses. Motion of a particle and of a rigid body. Work energy, mpulse, and momentum. Five hours.
Prerequisites: Physics 201 and Mathematics 206 must be taken concurrently or previously.

## ENGLISH

 Students who major in English are required to complete 24 hours of workbeyond the prescribed courses of the freshman and sophomore years. Prescribed courses include English 101, 102, 103, 104, and 131 or a three-hour elective. Additional required courses include 201 or 202;250, 251, or $253 ; 257$. For course credited toward a major see Page 27.
Electives in English may be chosen in any one of the four divisions of the department (Literature, Language, Speech, Journalism) but at least 14 hours mus be carried in the division of literature. English 253 will be considered a course in literature only if English 250 or 251 is elected to meet the language require ment. English 280 will be accepted as an English elective only if not carried fo credit in Education.

Students demonstrating superior ability in the English placement test will be permitted to substitute English 201 for English 101. Students whose rating in the English placement test is unsatisfactory will be required to carry an additional course in English for which no credit is given

## LITERATURE

103. World Literature

Survey of western world literature to the middle of the eighteenth century lectures, term papers, quizzes, conferences, collateral reading. Four bours.

Prerequisite: English 101 and 102 or 201
104. World Literature

Continuation of survey, bringing the study of literature down to the present time. Four hours.

Prerequisite: English 103.
250. History of the English Language

Study of the origins of the English language and of the principal phenomena of later development. Three hours.

Prerequisite: English 104.
251. Anglo-Saxon

Study of the language and literature of Old English; reading of representative selections. Three bours.

Prerequisite: English 104 and consent of instructor.
253. Chaucer

Study of the language and literature of Middle English; reading of the Canter bury Tales; written reports on collateral reading. Three bours. Prerequisite: English 104.
255. Early English Drama

Study of the drama as a literary type and its history from the earliest times to 1642; reading of plays by pre-Elizabethan and Elizabethan dramatists exclusive of Shakespeare. Juniors and seniors. Three hours.

Prerequisite: English 104
257. Shakespeare

Intensive study of selected plays; written reports on others not studied in class. Three hours.

Prerequisite: English 104.
260. Later English Drama

Study of the drama in England from 1660 to the end of the Victorian period; reading of representative plays. Juniors and seniors. Three bours.

Prerequisite: English 255.
261. Milton and His Contemporaries

Study of the poetical works of John Milton and his contemporaries; lectures,
discussions, written discussions, written reports. Three bours.

Prerequisite: English 103 and 104.
262. Eighteenth Century Prose

Study of the leading prose writers of the eighteenth century. Three bours. Prerequisite: English 104
263. Early English Novel

English prose fiction of the sixteenth and seventeenth centuries; rise of the novel to the close of the eighteenth century. Three hours.

Prerequisite: English 104.
264. Later English Novel

The major novelists of the nineteenth and early twentieth centuries. Three bours.
Prerequisite: English 104.

## 265. The Romantic Movement

Study of the works of Wordsworth, Coleridge, Scott, and the prose writers contemporary with them. Three bours.

Prerequisite: English 104.
266. The Romantic Movement

Continuation of 265. Study of the works of Byron, Shelley, Keats and the prose writers contemporary with them. Three hours. Prerequisite: English 104.
268. Tennyson and Browning

Study of the poetry of Alfred Tennyson and Robert Browning and its relation to other literature of the nineteenth century. Three hours. Prerequisite: English 104.
274. Victorian Prose

Study of the influence of movements in science, philosophy, art, religion, and society as reflected in the works of Carlyle, Arnold, Huxley, Newman, and Ruskin. society as refle
Three hours.

Prerequisite: English 104.
277. Contemporary Literature

A course designed to familiarize the student with the best books of the twen
tieth century. Three hours. Prerequisite: English 104.
280. Teaching of English

Analysis and discussion of those methods of instruction which have been used most effectively in the teaching of English literature and composition. Study of the principal phenomena in the development of the English language and grammar Intended for seniors majoring in English. Three hours.
283. American Poetry and Prose

Survey of American poetry and prose from the beginning to the Civil War Three hours.

Prerequisite: English 104.
284. American Poetry and Prose

Survey of American poetry and prose from the Civil War to the present time. Three hours.

Prerequisite: English 104.

## COMPOSITION

101. COMPOSITION

Principles of exposition; collateral reading; writing of themes. Three bours. 102. Creative Writing

Elementary narration and description; collateral reading; writing of themes. Ibree bours.
Prerequisite: English 101
201. ADVANCED Exposition

Study of the principles of exposition; types of exposition. Collateral reading Themes. Special sections for students interested in science. Tbree bours.
Prerequisite: English 101 or exceptionally high rating in the English place ment test.
202. Short Story

A writing course. Training in the selection and use of materials for the short tory. Three hours.

Prerequisites: English 101 or 201

## JOURNALISM

121. Journalistic Writing

A beginner's course in practical newspaper writing. Study of journalistic techniques: news stories, feature articles, interviews, book and dramatic reviews, editorials. Comparative study of styles and policies of representative America Prerequisite: At least 9 quality credits in English 101 and 102.
122. Journalistic Writing

This course supplements English 121. Some attention will be given to the history of English and American journalism. Three hours.

Prerequisite: English 121.
222. The Newspaper and the Community

A study of such problems as covering City Hall, the law courts, police courts, hotels, meetings and conventions, politics and elections, business and finance, labor, science, sports. A survey of various types of newspapers: city, small town,
country weeklies, trade, business, scientific and professional papers. Three bours. Prerequisite: English 121 and 122.
223. Newspaper Editing

Practical training in handling the reporter's copy, copy reading, proofreading headlines, pictures and captions, make-up of pages. Survey of editorial policies, use of propaganda, cartoons, publicity services; legal responsibilities and liabilities;

## SPEECH

131. Fundamentals of Speech

The physical, mental and social equipment requisite for effective speaking Class projects include group discussion, book reviews, oral reading, and informa public speaking. Two hours.
132. Extemporaneous Speaking

Continuation of English 131. Purposes and forms of oral English, the elements of interest and emphasis, with considerable practice in extemporaneous speaking. the critical analysis of selected speeches, the purpose being to produce not only better speakers but also better critics of speech. Two bours.

Prerequisite: English 131.
133. Oral Interpretation

The principles and methods of oral interpretation of common prose and poetic forms are studied, with frequent practice in class; emphasis throughout is upon
the sensitive understanding and appreciation of the selections read. Two bours. Prerequisite: English 131 and 132.
233. Argumentation and Debate

The commoner forms and methods of argumentation, both written and oral, are studied and practiced, with emphasis on briefing and debate; contemporary problems and current debate questions are discuss
pating in intercollegiate debate. Two hour

Prerequisite: English 131 must precede or accompany this course.
236. Principles of Persuasion

Human motivation as exemplified in basic principles of persuasive speaking is nalyzed and practiced in frequent extemporaneous speeches; the influence of emoTwo hours. Required of all pre-law and pre-ministerial students.

Prerequisite: English 132.

## FRENCH

103. Intermediate French

Reading; composition; use of language in the classroom. Three bours.
104. Intermediate French

Review of grammar; introduction to civilization. Three hours. Prerequisite: French 102 or two years of high school French.
200. Survey of French Literature. Three hours. Prerequisite: French 104
204. Conversation and Composition. Three hours. Prerequisite: French 104.
301. Classic Drama.

Study of drama in works of Corneille, Racine, Moliere, and their immediate successors. Three hours.

Prerequisite: French 104 and 200.
302. History of French Literature

Study of seventeenth century authors. Three bours. Prerequisite: French 301.
304. Nineteenth Century Novel. Three hours. Prerequisite: French 200
306. Nineteenth Century Drama. Three hours. Prerequisite: French 200
310. Contemporary Literature

French prose from 1910 to the present. The following authors will be studied to acquaint the American student with certain outstanding works that best interpret the sentiments, aspirations, and thought of the French people: Henri Bergson,
Romain Rolland, Andre Gide, Marcel Proust, Colette, Henri Barbusse, Roger Martin du Gard, Georges Duhamel, Jules Romains, Paul Morand. Reports and discussions will be given. Three hours.

## GERMAN

101 and 102. Elementary German
Grammar, reading, practice in writing and speaking the language. Three bours each semester.

03 and 104. Intermediate German
Reading, composition, use of language in classroom. Three bours each semester.
Prerequisite: German 102 or two years of high school German.
120. Scientific German

Reading of selections from scientific German. Open to students majoring in science. Three hours.

Prerequisite: German 103 or three years of high school German.
201 and 202. The Classical Period
Reading and interpretation of selected works of Goethe, Schiller, and Lessing; individual reports; lectures. Three bours each semester.

Prerequisite: German 104 or the equivalent.
204. Conversation and Composition

Emphasis laid on speaking, with drill in the colloquial vocabulary. Three bours.

Prerequisite: German 104
51 and 252. Nineteenth Century Literature
Reading and interpretation of selected works of the romantic school and later athors; individual reports; lectures. Three hours each semester.
Prerequisite: German 104 or the equivalent.
261 and 262. Recent Literature
Reading and interpretation of selected works from the rise of naturalism to the World War. Three hours each semester.

Prerequisite: German 104.

## HISTORY

A major in history consists of twenty-four hours.
History 99, 100 are not accepted toward a major.
99 and 100. History of Western Civilization
A chronological survey of the civilization of the western world from Egypt and Mesopotamia to the present time. The development of government, social life, religion, scientific thought, literature and philosophy, and commerce and industry will be traced in general outline. Three bours each semester.

101 and 104. Medieval and Modern European History
In two semesters, the progress of European History during the Middle Ages, the Renaissance, the Period of Enlightment, and the Age of the Revolutions will be outlined and discussed. Three bours each semester.

Prerequisites: History 99 and 100.
05. English History to the Elizabethan Period

A general course on the development of the English nation. The principal opics are: Britain before the Anglo-Saxons, the Anglo-Saxon period, the Norman Conquest, the development of English common law, the beginnings of parliaments, towns and universities, continental wars, the Tudor dynasty, and the Revival of Learning. First semester. Tbree hours.

107 and 108. History of the United States
A general survey of American History from the pre-Columbian Era to the present time. Various aspects of the economic, social, iliplomatic, and politic development of the people of the United States will bestudied and discussed Three hours each semester.
206. Recent American History

An intensive study of the period since the Civil War, emphasizing (1) the growth of industry and of cities and (2) the emergence of the United States as orld power. Three hours.

Prerequisite: History 107 and 108.
220. American and Pennsylvania History

A course of study based upon the documents of American and Pennsylvania history. Emphasis will be placed upon the foundations of American civilizatio and rise of significant institutions during the national and state periods. Social, economic, and cultural aspects as well as the political will be treated. This cours meets the requirements for permanent certification of teachers by the Common wealth of Pennsylvania.

Prerequisite: Two courses in history or the consent of the instructor.
231. Hispanic American History

A study of the transit of civilization from Spain and Portugal to the New World and of the rise and growth of the Hispanic American Republics. Three bours.

Prerequisite: History 107
235. Soviet Russia

A study of the culture of the peoples of the U.S.S.R. against the pre-Revolution background

Prerequisite: History 104
256. Recent European History

Against a background of the internal and international developments of the leading powers, the class will study the origins and results of the two Worl Wars. First semester. Three hours.

Prerequisite: History 99-100 or 104.
304. 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 bours.

Prerequisite: History 107 and 108.

MATHEMATICS
101. Algebra Review

Secondary algebra, extending through simultaneous quadratic equations Three bours.
103. Solid Geometry

Two bours.
Prerequisite: Plane geometry.

107 COliege Algebra
Logarithms, proportion, inequalities, mathematical induction, binomial the Logarithms, proportion, inequalities, mathematical ind combinations, prob ability, determinants. Three hours.

Prerequisite: Math. 101 or its equivalent
109. Plane Trigonometry

Trigonometric functions, solutions of triangles, trigonometric identities, inverse functions, trigonometric equations. Three bours
115 Commercial Algebra
Modification of Math. 107 for business students. Three hours.
Prerequisite: Math. 101 or its equivalent.
116. Introduction to Statistic

Measures of central tendency, dispersion correlation, elementary curve fitting use of table of areas under normal curve. Three hours.
202. Analyic Geometry

Study of geometric figures by means of coordinate systems. Four bours. Prerequisites: Math. 107 and 109.
205. Differential Calculus

Limits, derivatives, differentials, applications, theorem of mean value. Four bours.

Prerequisite: Math. 202
206. Integral Calculus

Integration, fundamental theorem, applications, series, partial differentiation multiple integrals. Four hours. Prerequisite: Math. 205
207. The Teaching of Mathematics in Secondary School

Methods in algebra and geometry; teacher's point of view. Three bours.
208. History of Mathematics

Three bours.
210. Theory of Equations

Roots and graphs of equations, determinants and matrices, miscellaneous opics. Three bours.

Prerequisite: Mathematics 205
211. Advanced Euclidean Geometry

The most important of the notable lines, points, and circles associated with the plane triangle are considered. The geometry of circles and systems of circles. Three hours.
214. Advanced Trigonometry

Relations between circular functions, complex numbers, and hyperbolic func tions; trigonometric series; the spherical triangle. Two bours. Prerequisite: Math. 107 and 109
215. Mathematics of Finance and Investmen

Bonds, insurance, miscellaneous items involving use of algebra. Three hours. Prerequisite: Math. 115
217. Statistical Methods

Formulation and testing of hypotheses, statistical inference. Three hours. Prerequisite: Math. 205
219. Higher Algebra

Additional topics in college algebra. Three hours. Prerequisite: Math. 107
306. Solid Analytic Geometry

Study of space geometry by means of coordinate systems. Three hours. Prerequisite: Math. 205.
308. Advanced Calculus An elaboration of the theory and applications of calculus. Three bours. Prerequisite: Math. 206.
310. Differential Equations

Solution of ordinary differential equations, applications. Three bours. Prerequisite: Math. 206.
311. The Theory of Numbers

Divisibility, continued fractions, congruences, quadratic residues, Diophantine
equations. Three bours.
312. Synthetic Projective Geometry

Three hours.
341. Sequences and Series

Three bours.

## MUSIC

100. Introduction to Music

An elementary course in the art of enjoying and listening to music. Nontech nical, it covers briefly the entire range of music in various forms, styles, and media. Primary emphasis is laid upon definite recognition of a selected list of representative compositions. Two bours.
105. Theory

Designed to give a thorough training in the melodic, harmonic, and rhythmic elements of music, and to give the necessary preparation for the higher theoretical subjects.

Major and minor chords, keys and scales, intervals, and cadences are studied in singing, writing, playing, and dictation. First term three hours.
106. Theory

A continuation of Music 105. Harmony and part-writing. The major, minor and diminished triads, the dominant seventh and secondary seventh chord Second term three bours.
203. Theory

A continuation of Music 106. Altered chords, modulation, harmonization of melodies, figured and unfigured basses. Dictation and keyboard harmony. First term three hours.

Prerequisite: Music 106
204. Theory

A continuation of Music 203. Composition in smaller forms. Harmonic and contrapuntal analysis. Dictation and keyboard harmony. Second term three bours. Prerequisite: Music 203
205. History and Literature of Music

Brief surveys of ethnology as affecting primitive music; the allied arts of the medieval period; the early forms of music; the beginnings of opera and oratorio and the development of orchestra. First term three bours.

Prerequisite: Music 100.
206. History and Literature of Music

A continuation of Music 205. The study of critical and historical work and iterature of recognized authorities, based upon a knowledge of the nature of his toric musical events and their relation to each other and to the general intellectual Prerequisite: Music 205
Practical Music
Individual instruction is given to qualifying students in piano, pipe organ, violin, voice. A one-half hour lesson weekly is usually sufficient to meet with the requirements of the music department. One hour for each term.

## PHILOSOPHY

100. Introduction

Historical introduction to philosophical thought with special attention to the great systems of philosophy. Three bours.
213. Individual and Social Ethics

How to live creatively. The nature and principles of creative thought and action. The history of ethical thought in the Orient and Occident. The application of the principles of moral value to present day problems. First semester Three hours.

Prerequisite: Philosophy 100.

## PHYSICAL EDUCATION

101 and 102-Freshman Year; 103 and 104 -Sophomore Year
Practice and instruction designed to improve health, to develop physical coordination, and to encourage regular participation in activities that will provide relaxation and exercise in later years. Three hours each week. One bour each term

## PHYSICS

100. PhYSICAL SCIENCE

The fundamental facts, theories, and principles concerning the origin and nature of the universe and the physical world to give students an appreciation of the inorganic environment and its relationship to man. Three bours.
201 and 202. Gbneral Physics
To give a thorough grounding in the theoretical and mathematical basis of the physical laws of Nature, and to meet requirements for later work in technical courses. Instruction by demonstration, lecture, recitation, and experimental work
in the laboratory. Classroom, four hours a week; laboratory, three hours a week. in the laboratory. Classsoo
Five bours each semester.

Prerequisite: A working knowledge of algebra and trigonometry.

## POLISH

101 and 102. Elementary Polish
Drill in reading writing speaking and hearing the language, with emphasis on pronunciation and the elements of grammar. Two bours each semester.

103 and 104. Intermediate Polish
Review of the elements of grammar, stress on vocabulary and idioms; reading for knowledge of the Polish language, literature, history, and culture. I wo bours ach semester.

Prerequisite: Polish 101 and 102, or the consent of the instructor.
200. History of Polish Literature

A rapid survey of the literature of the historically important periods from the eginnings to 1939. Two bours.

203 and 204. Conversation and Composition
Intensive drill in speaking and writing Polish. Two bours each semester. Prerequisite: Polish 104 or the consent of the instructor
208. History of Polish Culture

A study of the development of Polish culture from the earliest times, with emphasis on Polish contributions to Western Civilization. Two bours.

251 and 252. Modern Polish Literature
Reading and interpretation of selected authors of the nineteenth and twentieth century; lectures on the literary and cultural history of the times. Two bours each semester.

## POLITICAL SCIENCE

103. Government in the United States

An introduction to American government and a consideration of the institutions elated to it. Three hours.
105. American Political Parties

The organization, position, and work of political parties in a democracy have assumed new significance with the rise of one-party totalitarian states. The respon sibility and function of American political parties in relation to government and democratic processes must be examined critically by students of government. Thi course attempts to analyze the movements which influence parties and party growth the membership of parties, and the place of parties in American democracy irst semester. Three bours.
Prerequisite: Political Science 103
06. Municipal Government

City government in the United States has changed rapidly in recent years to meet the changing conditions and problems of an industrial age. New burdens
have been placed upon city governments, and new relationships with the national have been placed upon city governments, and new relationships with the nationa overnment have developed. In this course, the government of the modern city is onsidered with refere
Prerequisite: Political Science 103
112. Pennsylvania State Government

This course is offered in lieu of a generalized course in state government. Its purpose is to present the principles of state government through the specific illustrations furnished by the agencies of government which are operative within this commonwealth. Students who desire to study state governmis course and will be given an opportunity to study the government of their own states. Second semester. Three bours.

Prerequisite: Political Science 103
201. Constitutional Law

First Semester. Case study designed to explain the government and its relation the people. Three hours

Prerequisite: Six hours in political science.
Second Semester. Case study course designed to explain the government and its relation to the people and their problems

Prerequisite: Six hours in Political Science; only juniors and seniors eligible.
Three hours credit; students must take both semesters.
204. Public Opinion

A study in the behavior of governance. The factors which determine attitude, the formation and expression of public opinion, the influencing of public opinion by propaganda as used by pressure groups, and the measurement and importance opinion. Second semester, Ibree bours.
Prerequisite: Six hours in political science.
205. Comparative Government

A study of leading democratic governments of today; constant comparison with the government of the United States. Three hours.
Prerequisite: Political Science 103. Desideratum: a semester of European history
208. Problems of American Diplomacy

Many tensions have developed as the result of contacts between nation and nation. The United States, in her relationships with the states of the world, has encountered many problems. These political, economic, and legal problems are considered from a critical point of view and are considered in the light of the present position of the United States in world affairs. Second semester. Three bours.

Prerequisite: Six hours in political science.
212. International Relations

Broad, general course covering world policy and elements in conditioning it.
bours. Bree bours. History, and International Trade or Economic Geography.
221. International Government

In the Western State System, the state is the basic unit of governmental organization. Machinery has been developed by states to supervise and administer the relationship of these units to each other. In this course, a study is made of the background, the organization, Perequiste. Poe hours

205, and a course in European history, or another three hour course in political science.
239. Government and Busines

A study of the relationship of government to economic enterprises with special attention to conditions in the United States; the regulatory activities of governmental 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. Three bours.
304. Public Administration

The national government is accepting more and more responsibility for the control and regulation of the economic and social life of the nation. In conformity with this trend, public administration takes on added significance due to the fact that the governmental machinery must cope with these affairs. This course deals service. Special problems of the merit system are considered. Second semester. Three hours.
Prerequisite: Three courses in political science, one of which is numbered above 200 .
309. International Law

The inter-relationships of modern states are governed by a body of customs and rules which have been developed by these states for that purpose. This course races the development of the enforcement. The nature object and effect considered in light of the conditions now facing the states of the world. First semester. Three bours.
Prerequisite: Political Science 103 and 205, and one other political science or
history course history course.
311. Political Theory

Course deals with the concepts of justice, law, government, sovereignty, nd the state.

Prerequisite: Nine hours of Political Science; only juniors and seniors eligible.
314. Seminar in Responsible Citizenshif

This course is especially arranged for those students who are interested in particular probiems relating to the broad general subject of citizenship. Individual attention will be given to students who are working on problems in order to assist hem in the methods of approach, analysis, and content of subject matter. Juniors and seniors. Second semester. Three bours.

Prerequisite: Consent of the instructor.
-

## PSYCHOLOGY

100. General Psychology

Basic facts of human behavior and adjustment explained from data drawn from tudies in heredity, child development, and the psychology of adolescence and maturity. Three bours.
203. Introduction to Experimental Psychology

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
hours.
urrs.
Prerequisite: Psychology 100 and the permission of the instructor
208. APPLIED PsYCholog

A survey of significant contributions to individual differences. Methods of evaluating and measuring these differences; their significance to the individual the home, the school, and to vocational and community life. Three bour

Prerequisite: Psychology 100.
214. Psychological Tests

An intensive study of the theory and the applications of individual and group testing. Particular emphasis upon personal techniques. Three bours. Prerequisite: Psychology 100.
301. Systematic Psychology

A historical introduction to the conflicting points of view in recent psychology解 McDougall, Thorndike, and Kohler. Three hours.

Prerequisite: Three courses in psychology.

## 302. ABNORMAL PSYCHOLOGY

A general survey of the principal forms of mental abnormalities, with emphasis upon causes, symptoms, course, and treatment. Three hours. Prerequisite: Three courses in psychology
310. Clinical Psychology

The interpretation, by the clinical method, of normal and abnormal behavior of ildren and adults. Histericl sketch; outline of method including examinations, classification, prognosis, and remedial measures. Three bours.

Prerequisite: Four courses in psychology.
educational Psychology (Education 201)
Intelligence and Its Measurement (Education 225)

## RADIO WORKSHOP

100. Introduction to Radio a history development, and principles of An orientation course covering the operation of a radio station. Two bours.
101. Radio Announcing I

A laboratory-studio course in basic microphone techniques, stressing practica A raboratory-studio course inv basic microphone conducting of various kinds of discussion programs. Laboratory fee. Four hours a week. Two hours.
102. Radio Announcing II

A continuation of Radio 101, with advanced studio work in various announcing techniques, including the handling of audience-participation programs and othe studio productions. Laboratory fee. Four hours a week. Two hours.

Prerequisite: Radio 101.
103. Radio Continuity and Script Writing

A study of the principles and methods of writing for radio, providing class instruction in the writing of all kinds of continuity: commercial copy, program scripts, news, etc. Two hours.

## 104. Control Room Techniqu

A course designed to acquaint the student with the technical aspects of contru room operation, such as operation of console and turntables, proper care and cue ing of recordcasts. Laboratory fee. 105. Radio Acting

A workshop course affording opportunity for student participation in radio broadcasts, all types of dramatic and dramatic narrative forms. Two bours.
106. Radio Program Planning and Building

A study of the principles and problems of programming in terms of audience, market, network service, community resources, etc., covering such types of pro grams as the following: public service, religious, agricultural, women's shows, dren's shows, sports, etc. Two hours.
Prerequisite: Radio 103
107. Radio Production

A studio course with emphasis on the technique of radio production, tracing the development of a program from the idea stage to the preparation, and including script reading, rehearsals, sound effects, music, etc. Laboratory fee. Two hours. Prerequisites: Radio 102, 103, and 104.
108. Radio Advertising and Selling

A comprehensive course detailing the development of commercial radio, organ ization of the sales staff, and the selling and servicing of commercial accounts. An analysis will be made of radio as an advertising medium, using the case stud technique. Two hours.

## RELIGION

100. History of Religions

Nature of religion; significant founders and leaders of religions; nature of com plex social and religious forces in development of religion; sacred literatures and

107 and 108. Old Testament and New Testament Three hours each semester.

## SLOVAK

101. Elementary Slovak
aking, and hearing the language, with emphasis on pronunciation and the elements of grammar.
102. History of Slovak Culture

History of Slovak culture from the earliest times.

## SOCIOLOGY

100. An Introduction to the Study of Society

The nature of man's social heritage; bearing of group life upon the individual' personality; development of social institutions and community life; process o social change and reorganization. Three hours.
107. The Modern City

The development of modern cities; effect of urban life upon social organization and personality patterns, major social problems of the cities. Three bours. Prerequisite: Sociology 100
10. Social Disorganization

A survey of most pressing contemporary social problems and an examination furrent theories of social disorganization. Three hours.

Prerequisite: Sociology 100
203. Criminology

Analysis of crime as a form of social behavior. A study of the individual and social factors in juvenile delinquency and criminal careers. Three bours.

Prerequisite: Sociology 100
204. Public Opinion

A study in the behavior of governance. The factors which determine attitude the formation and expression of public opinion, the influencing of public opinion by propaganda as used by pressure groups, and the measurement
205. Marriage and the family

The development of marriage and the family in ethnological and historical perspective. Problems of adjustments to modern conditions. Family disorganizatio and changes in marital and domestic relationships. Practical aspects of marriagefactors responsible for marital success or failure. Three hours.

Prerequisite: Sociology 100.
209. Anthropology

A general survey of the field of anthropology stressing its cultural aspects fossil man and prehistoric cultures, modern races and their classifications, growth and spread of religion and culture, rise of political institutions, contemporary primitive societies. Three hours.

Prerequisite: Two courses in sociology, or one course in sociology and one course in a related department
210. Makers of Sociology

A historic study of the development of sociology as a science, traced through its principal leaders. Three bours.

Prerequisites: Two courses in sociology, or one course in sociology and one course in a related department.
212. Social Psychology

The origin and development of personality in the individual as the result of contact with his fellows. Three hours.

Prerequisite: Two courses in sociology, or one course in sociology and one course in a related department.
213. Minority Groups

A study of the ethnic, racial, and religious minority groups in American society; heir origin, social organization, and contributions to American culture; the proc esses of group conflict and acculturation. Three hours.

Prerequisite: Sociology 100
215. Introduction to Social Work

A pre-professional exploratory course dealing with the nature and require A pre-professional expleral the different fields of social work, with emphasis upon the private and governmental application of sociological knowledge to the public welfare. Three ours.

Prerequisite: Six hours in social science.
216. Population

A study of qualitative and quantitative aspects of population with special reference to modern trends in growth, composition, migration, and differential rates in relations to the social structure. Three bours.

Prerequisite: Two courses in sociology, or Sociology 100 and the consent of the instructor.
302. Social Institutions

Study of social behavior patterns as systems of action based on the mores, legal codes, and ideologies. Comparative culture case studies of religious, economic and political institutions. Analysis of the breakdown of modern social institution as a method of understanding current social unrest under the democratic and totalitarian governments. Three hours.

Prerequisite: Three courses in sociology, or the consent of the instructor.
309. Social Change

A discussion of such topics as (1) the characteristics of stationary and changing societies, (2) why some societies change more rapidly than others, (3) the socia effects of modern inventions, and (4) the problems caused by rapid change in our day. Juniors and seniors. Three bours.

Prerequisite: Three courses in sociology, one of which is numbered above 200, or two courses in sociology, one of which is numbered above 200, one course in a related department, and the consent of the instructor.

319 and 320. Seminar in Social research
A seminar in which a few carefully selected senior students are supervised in an individual program of research. Two hours.

Prerequisite: Twelve hours in sociology or psychology.

## SPANISH

101. Elementary Spanish

A study of grammar, vocabulary, emphasizing conversation. Three bours. 102. Elementary Spanish

Reading of simple prose illustrative of Spanish-American life. Three bours. 103. Intermediate Spanish

Reading of representative Spanish authors. Three hours. Prerequisite: Spanish 102.
104. Intermediate Spanish

Survey of the Spanish-American literature to the nineteenth century. Three Prerequisite: Spanish 103.
201. History of Spanish Literature

A survey of the field of Spanish literature through the nineteenth century A survey of the field of Spanish literature through the
Lectures, outside readings, and written reports. Three hours. Prerequisite: Spanish 104 or four years of high school Spanish
202. Spanish-American Literature

Representative works of Spanish-American authors read in and outside of class Tbree bours.

Prerequisite: Spanish 104
205. Eighteenth and Nineteenth Century Drama

Representative work read in class; lectures and individual reports. Three bours

Prerequisite: Spanish 103 or 202.
206. Nineteenth Century Spanish Novel

Outside readings of representative Spanish authors; written reports; and lec tures. Three bours.
Prerequisite: Spanish 104
310. Contemporary Spanish Literature

Prose, 1910 to the present. The following authors will be studied to acquaint the American student with certain outstanding works that best interpret the sentiments, aspirations, and thought of the Spanish people: Benevente, Blasco Ibanez Camba, Dario, Palacio, Valdes, Espina, Arniches. Reports and discussions Three hours.

## Scholarships and Assistance

To aid superior students in need of financial assistance, the College makes every effort to provide scholarships. Applications for such aid and for work may be made through the Registrar.
Scholarships may not be used as an initial payment, but they are accepted for the final balance of each term. A student who withdraws during the term cancels any scholarship arrangements.

## Competitive Scholarships

A number of scholarships are available through the interest and generosity of friends of the College. They are awarded to students who rank in the upper quarter of their high school classes and who receive the highest grades in competitive examinations.
All competitors must apply for admission to the College to be eligible for the test.

Loan Fund
The Wyoming Valley Women's Club has created a revolving loan fund from which small sums may be borrowed on a personal note. Loans of $\$ 50$ per year may be borrowed from a similar fund held by the College. No interest accrues while the student is enrolled in the College, but interest is charged when the student leaves the College.

## Student Employment

More than one-third of the students are earning some part of their College expenses. Students desiring work should apply to the Dean of Men. A number of part-time jobs are available; requests for student help are frequently received from local business offices.

## Placement Service

A placement office for students and graduates is centered in the office of the Deans. All students interested in obtaining employment are requested to register in this office. Employers seeking students for parttime employment are requested to make inquiries at this office.
Graduates of the College, or those in their last year who seek im mediate employment upon graduation, are invited to register.
The Seligman J. Strauss Lodge of B'nai B'rith is sponsoring this office by contributing to its maintenance.

## Student Activities

The scholastic program is supplemented by a representative group of student activities, organized and controlled by the students. They supply values which cannot be developed through academic work alone. All students are encouraged to participate in at least one activity during the year.

Student Government
To provide a coordinating agency, to establish social standards, and to assure responsibility, a Student Council, representative of all students, is elected annually. The Council is responsible for planning, supervising, and executing the program of student activities.

## Dramatics

Students of the drama present several one-act plays and two major productions each year. The students are given training in the arts of the theatre, acting, make-up, scenery-building, costuming, and stage lighting. The College Theatre serves as workshop for major and experimental productions.

## Chorus

A mixed chorus gives several public recitals, broadcasts programs over the radio, and meets for training twice a week. Members of the chorus meeting College requirements may receive one credit each year for this work. The chorus is directed professionally, but its business affairs are handled by a student manager.

## Publications

Amnicola, an annual yearbook; a newspaper, the Beacon; and Manuscript, a literary magazine, are published by the students. Those interested in writing, photography, and advertising have an opportunity to join the staffs.

Debating
Debating has proved particularly popular with students preparing for the law, or interested in public speaking. A number of intercollegiate debates are arranged each year. Students may earn credits for debating if their work attains required standards.

## ATHLETICS

Intercollegiate sports schedules are maintained in football, basketball, wrestling, baseball, tennis, and swimming. Colleges within the state and in adjacent states are met in these sports. Men may substitute an intercollegiate sport for Physical Education if they meet departmental requirements.

A program of intra-mural sports and physical education gives every man an opportunity to participate. Basketball, boxing, handball, volleyball, bowling, swimming, and table tennis are some of the sports available.

The athletic program for women includes: rhythmic dancing, archery, badminton, bowling, bicycling, hiking, swimming, tennis, ice hockey, and basketball.

Departmental Clubs
Special clubs stimulate and satisfy individual interest in academic, professional, and artistic fields. These clubs, developed cooperatively by students and faculty, are kept quite flexible in order that they may be easily adapted to changing and current interests.

## Expenses

Charges are subject to adjustment to conform to changing price levels.
SCHEDULE OF RATES
Charges per term for students electing a full program of studies:
Tuition
atriculation fee to accompany application for admission
Laboratory fees for Biolory Chemistry Engineering, Physics, Psychology
Laboratory fee for Economics 134 (Personal typewriter use)
Chemistry Breakage Deposit
(Any balance refunded)
Music-individual instruction:
One lesson a week.
Rent of practice room
35.00
............................................ 5.00
Charges for part time students and for semester hours beyond those required in regular courses:
Semester hour of study.
Laboratory fees (See above)
Student Activity Fee for those
12.50

10 sent Activity Fee for those taking less than 16 or more than
10 semester hours, or for any part time student wishing to par-
ticipate in activities.
12.50

Dormitory charges per semester
Board and Room.
Bills for board and room in college dormitories are due before the opening of the term. A deposit of $\$ 50$ is required to reserve a room.
SPECIAL CHARGES:
Change of schedule per credit hours. ............................... 1.00
Special Examination. ................................................. 5.00
Transcripts (first copy is free) ....................................... $\quad 1.00$
Late trial registration. 1.00
5.00

Late final registration

## PAYMENTS

Bills for tuition, fees, and incidentals are payable at the beginning of each term.
The tuition fee of $\$ 200$ includes the cost of such student activities as athletics and dramatics to which no admittance is charged

No student may receive a transcript of his record until all college ac counts have been paid, or satisfactory arrangements made.

## Withdrawals and Refunds

Refund of tuition will be made to students who withdraw volun tarily from the College while in good standing under the following conditions.

During the first six weeks of a term, one-half the tuition will be refunded upon request if the withdrawal is made for adequate and satisfactory reasons.
Tuition for unfinished courses will be refunded to all men called from the College by the Selective Service Act.

Refund of room and board (dormitory charges) will not be made except under special conditions.
No courses may be dropped after the second week, except with ap. proval of the dean, registrar, or director.


