STATE UNIVERSITY OF NEW YORK

FULTON-MONTGOMERY COMMUNITY COLLEGE

JOHNSTOWN, NEW YORK

CATALOG 1965, 1966

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COLLEGE CALENDAR 1965–66

FALL SEMESTER

Sept. 7-10	Faculty Seminars
Sept. 13-14	Orientation, new students
Sept. 15	Registration, first-year students
Sept. 16	Registration, second-year students
Sept. 20	Classes begin
Sept. 24	End of late registraion, last date for changing courses.
Sept. 27	Registration for Extension, Johnstown
Sept. 29	Registration for Extension, Amsterdam
Oct. 29	Last date for dropping a course without academic penalty
Nov. 24	Thanksgiving recess, classes end 10 P.M.
Nov. 29	Classes resume
Dec. 17	Last date for applying for a degree to be granted in June
Dec. 23	Winter recess, classes end 10 P.M.
Jan. 3	Classes resume
Jan. 19-25	Final examination
Feb. 3	End of Extension Semester

SPRING SEMESTER

Jan. 29	Extension Registration
Jan. 31 – Feb. 1	Registration
Feb. 2	Classes begin
Feb. 8	End of late registration, last date for changing courses
March 9	Last date for dropping a course without academic penalty
April 2	Spring recess, classes end 12 noon
April 11	Classes resume
May 27	Late spring recess, classes end 10 P.M.
May 31	Classes resume
June 1-7	Final Examinations — End of Extension
June 13	COMMENCEMENT

COLLEGE CALENDAR 1966–67

FALL SEMESTER

Aug. 1	Last date to apply for admission for the fall semester
Sept. 6-9	Faculty Seminars
Sept. 10	Extension Registration
Sept. 12-13	Orientation New Students
Sept. 14-15	Registration
Sept. 19	Classes begin
Sept. 23	End of late registration, last date to change courses
Oct. 21	Last date for dropping courses without academic penalty
Nov. 23	Thanksgiving Recess, classes end 10 P.M.
Nov. 28	Classes resume
Dec. 16	Last date to file application for degree to be granted in June
Dec. 22	Christmas Recess; classes end 10 P.M.
Jan. 2	Classes resume
Jan. 6	Last date to apply for admission for the spring semester
Jan. 16-20	Final Examinations — Extension Semester ends

SPRING SEMESTER

Jan. 24	Registration for Extension, Johnstown
Jan. 26	Registration for Extension, Amsterdam
Jan. 26-27	Registration
Jan. 30	Classes begin
Feb. 3	End of late registration, last date to change courses
March 3	Last date for dropping a course without academic penalty
March 23	Spring recess, classes end 10 P.M.
April 3	Classes resume
May 31 –	
June 6	Final Examinations — Extension Semester ends
June 12	COMMENCEMENT

STATE UNIVERSITY OF NEW YORK

THE STATE UNIVERSITY OF NEW YORK was established by the State Legislature in 1948. It includes 60 colleges and centers. At present 58 of these are conducting classes: four University Centers, two Medical Centers, ten Colleges of Arts and Science, eight Specialized Colleges, six two-year Agricultural and Technical Colleges and 28 locally-sponsored, two-year Community Colleges.

Two additional Colleges of Arts and Science, in Westchester and Nassau Counties, were established by the University's Trustees in the Spring of 1965. These colleges are in the earliest planning stages and by present plans are scheduled to accept their first classes in September of 1970.

The University offers programs in agriculture; American folk culture; business administration; ceramics; dentistry; engineering; forestry; home economics; industrial and labor relations; law; liberal arts and sciences; library science; maritime service; medicine; nursing; pharmacy; professional museum work; public administration; social work; teacher education and veterinary medicine.

Its two-year programs also include nursing and liberal arts study and a wide variety of technical courses in such areas as agriculture, business, and the industrial and medical technologies.

Graduate study at the doctoral level is offered by the University at 12 of its colleges, including the University Centers and the Graduate School of Public Affairs. While graduate work can be pursued at 24 of the colleges, the programs at the majority of these colleges are now limited to the master's level. The University, however, is continuing to broaden and expand overall opportunities for advanced degree study.

Governed by a Board of Trustees appointed by the Governor, State University of New York comprises all State-supported institutions of higher education, with the exception of the four-year college of City University of New York. Each college and center of State University is locally administered. Although separated geographically, all are united in the purpose to improve and extend opportunities for youth to continue their education beyond high school.

The State University motto is: "*Let Each Become All He Is Capable of Being.*"

FULTON-MONTGOMERY COMMUNITY COLLEGE

The College was approved by resolution of the Boards of Supervisors of Fulton and Montgomery Counties on March 21, 1963.

The Board of Trustees of the State University of New York established the Community College by approval of the resolutions on June 13, 1963. It is under the program of the State University of New York. The cost of building and equipment is shared equally by the State and the two counties. The cost of operating the college is shared three ways—by the State, by the two counties, and by the tuitions of the students.

Fulton-Montgomery Community College is one of many locally sponsored colleges in New York State. It is established to meet the needs of the rapidly expanding high school population in this area. It is the answer to the need of low-cost, close-to-home, higher education facilities.

The College belongs to the citizens whom it serves and upon whom it depends for support. In order to begin operation in September 1964, the College Board of Trustees gratefully accepted the use of the former Johnstown High School building until a permanent site could be obtained and building completed.

Since it is impossible to meet all varieties of local needs in a temporary building, it was decided to offer College Parallel Programs and Business, Electrical and Laboratory Technologies. The College Parallel Program enables area students to transfer for their third and fourth years of college to four-year institutions offering courses in Engineering, Business Administration, Teaching, and general Liberal Arts. Extension and summer session programs of study are offered at the college.

The College enrolled approximately 300 students in September 1964 for its first year of operation. A total of 721 students registered in September 1965. Facilities to accommodate 1,000 students will be built on a 194-acre site acquired in 1965. This location is on N.Y. Route 67, approximately midway between Amsterdam and Johnstown. Tourists will be able to drive to the new site from either Exit 27 or Exit 28 of the Thruway.

STATE UNIVERSITY OF NEW YORK

Board of Trustees

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FULTON-MONTGOMERY COMMUNITY COLLEGE

Board of Trustees

	Term Ends
Reverend Edward Glavin, *Chairman*	1966
Allen H. Pulsifer, *Vice Chairman*	1967
William A. Wright, *Treasurer*	1972
Joel W. Ager	1973
John Deisseroth	1968
Ward J. Hinkle	1969
Carl S. Salmon, Jr.	1971
Mrs. Alfred Simon	1970
Judson Zimmer	1965

FULTON-MONTGOMERY COMMUNITY COLLEGE

Administration

William L. Gragg.....President
Indiana University, B.S.
Cornell University, M.S., Ph.D.

Peter C. Brase, Jr.....Dean
Tufts University, B.S.
Columbia University, M.A., Ed.D.

George T. Engelman, Jr.....Director of Admissions
Indiana University, A.B., M.S.

Ralph G. Hoag.....Director of Extension
State University of New York at Albany, B.S.
Columbia University, M.A.

Ralph D. Chapman.....Business Manager
Syracuse University, B.S.

Faculty

Edwin Bernstein.....Instructor, Business
Los Angeles City College, A.A.
University of Southern California, B.S., M.S.
New York University, M.B.A.; C.P.A. (Calif.)

Miss Rita M. Burke.....Assistant Professor, Foreign Languages
McGill University, B.A.
Columbia University, M.A.

Robert I. Cole.....Assistant Professor, Social Science
Hartwick College, B.A.
State University of New York at Albany, M.A.

David T. Cooney.....Instructor, Foreign Languages
Our Lady of Hope, A.A.
LeMoyne College, A.B., U.S. Army Language School

Andrew V. DeMarco Instructor, Business
Rochester Institute of Technology, B.S.
Syracuse University, M.B.A.

Donald H. Dockstader.....Instructor (part-time), Graphics
State University College at Oswego, B.S.
Cornell University, M.S.

Jackson Douglas.....Laboratory Teaching Assistant
State University of Agricultural and Technical
College at Morrisville, A.A.S.

Rochelle D. Downing.....Instructor, Chemistry
University of Georgia, B.S. in Chemistry, M.S.

George T. Engelman, Jr.....Associate Professor, English
Indiana University, A.B., M.S.

Gerald J. Fabiano.....Professor, Social Sciences
State University College at Fredonia, B.S.
Syracuse University, M.A.
New York University, Ph.D.

Eleanor F. Ferris.....Instructor, Art History
Bryn Mawr College, A.B.
State University College at Oneonta, M.S.

Ernest A. Fierro.....Assistant Professor, Physical Education
State University College at Cortland, B.S., M.S.

Jack M. Frederick.....Assistant Professor, Social Sciences
St. Lawrence University, B.A.
Columbia University, M.A.

Bernard J. Gudaitis.....Instructor, Physics
Fairleigh Dickinson University, B.S.

Ralph C. Hoag.....Associate Professor, Business
State University of New York at Albany, B.S.
Columbia University, M.A.

Gerald A. Iannotti.....Instructor, English
LeMoyne College, B.A.
Niagara University, M.A.

William J. Joyce.....Instructor, English
Fordham College, B.S.

Paul A. Koehler.....Assistant Professor, Music
West Chester State Teachers College, B.S.
Columbia University, M.A., Professional Diploma

Helen P. Mandato.....Instructor, Business
State University of New York at Albany, B.S.

Robert E. Meacham.....Instructor, Mathematics
Massachusetts State Teachers College
at North Adams, B.S.
University of Notre Dame, M.S.

William Miskinis.....Instructor, Business
State University of New York at Albany, B.S.; M.S.

Arnold E. Perlmutter.....Instructor, Social Science
Boston University, A.B.; A.M.

Frederick Renvyle.....Assistant Professor, Mathematics
Harvard College, A.B.
Bowdoin College, A.M.

Donald W. Rogers.....Assistant Professor, Biology
Mansfield State Teachers College, B.S.
Alfred University, M.S.

Eloisa C. Sacerio.....Instructor, Foreign Languages
Havana University, Dr. Ciencias Politicas Sociales
y Economicas; Dr. in Farmacia; Licenciado,
Derecho Diplomatico y Consular
Indiana State University, B.A.

Eleanor D. Sutliff.....Librarian
State University of New York at Albany, B.A.

Paul A. Tague.....Instructor, Physical Science
Michigan State University, B.S.
Temple University, M.S.

Louise Tornatore.....Instructor, Social Science
State University of NewYork at Albany, B.A., M.A.

John D. Vadney.....Instructor, Mathematics
Utica College of Syracuse University, B.A.

Josephine C. Villacorta.....Instructor, English
University of the East, Philippine Islands, A.B.
Indiana University, M.A.

Joseph D. Villoni.....Instructor, English
State University College at Plattsburgh, B.S.

Albert C. Vunk.....Assistant Professor, Electrical Technology
Clarkson College, B.E.E.

Harold C. Vunk.....Instructor, Biology
Cornell University, B.S.
Dartmouth College, M.A.

A. Bruce Wadsworth.....Instructor, Business
State University of New York at Albany, B.S., M.S.

Aims and Purposes

Fulton-Montgomery Community College was established by the citizens of Fulton and Montgomery counties to provide educational opportunities to the young people and adults of the area. The College is under the program of the State University and subscribes to its motto: "Let each become all he is capable of being." To this end the College proposes to offer educational programs as diversified as its means will allow to meet the needs of a varied student population. Programs in the Liberal Arts and Engineering Science are offered for those students who desire to transfer to four-year institutions to work for a bachelor's degree, and programs in Business and the Technologies, for those who plan to seek employment after completion of the requirements for the Associate Degree.

The College owes a further obligation to its students and to the community it serves. Our students will soon be entering the life of the community. They should develop a vocational goal which is compatible with their abilities and interests. They should learn about their society and the world in which they live, so they can function in their community as well-informed and contributing citizens. They should be given a firm educational foundation which will permit them to continue to develop intellectually, both in fields related to their vocations and in broad cultural areas.

Service to the community further entails offering programs for in-service growth in occupations and for avocational interests and cultural activities. Similarly, the College offers counseling in educational matters to all members of the community beyond secondary school.

Accreditation

The programs offered by Fulton-Montgomery Community College are registered with the New York State Department of Education.

The College is authorized by the Board of Regents of the University of the State of New York to confer upon its graduates the degrees of Associate in Arts and Associate in Applied Science.

All programs are approved for the training of veterans under the various public laws and the college is approved for holders of New York State scholarships.

Admissions

Applications are accepted for students desiring to enter the college in either September or February. All who wish to matriculate must file formal application, involving the use of the State University Admissions Program forms.

Forms may be secured by writing to the Director of Admissions at the College. When all forms are received by the College, the applicant will be asked to make an appointment for a personal interview which is requested of all prospective students.

Acceptances are normally made to applicants upon completion of all forms and interviews.

Applicants are selected for full matriculation on the basis of:

1. High school grades (particularly junior and senior grades) and rank in class;
2. High school subjects appropriate to the selected college program;
3. High school and community activities;
4. Interest and motivation as judged by high school principal, guidance counselor, teachers, and personal interview at the College;
5. Either the Regents Scholarship Examination or State University Selective Admissions Examination.

Financial Information

FEES

Application Fee (this must be included with initial application. Non-refundable)	$ 5.00
Registration Fee	5.00
Laboratory Fees (each semester)	$5-10.00
College Service Fee (each semester)	20.00
Student Insurance Fee (per year)	6.50

TUITION

New York State Residents*	
Full-Time (each semester)	$150.00
Part-Time (each semester) per credit hour	12.50
Non-Residents	
Full-Time (each semester)	$300.00
Part-Time (each semester) per credit hour	25.00

*Residents of New York State must file a "Certificate of Residence." (See below.)

CERTIFICATE OF RESIDENCE

To qualify for the New York State resident tuition fee, a student is required by law to present to the College Business Office a Certificate of Residence before registration, indicating that he has been a resident of New York State for a period of *at least one year* prior to the date of the Certificate and a resident of a County in New York State for *at least six months prior to the date.*

Certificate of Residence forms may be obtained from the Admissions Office. New York State residents who are *not* residents of Fulton or Montgomery counties must have the form SUNY-B-81 completed by the County Treasurer of the County in which they reside.

REFUNDS

Refunds may be made within the first four weeks of instruction as approved by the Board of Trustees of the College. Procedures regulating refunds may be made without notice.

Financial Aid

New York State Scholarships

Fulton-Montgomery Community College is approved for New York State Regents College Scholarships. Candidates should seek directions from their high school principals or guidance counselor.

New York State Scholar Incentive Award

Eligible students should write to the Regents Examination and Scholarship Center, State Education Department, Albany 1, New York for application forms. Applications should be filed prior to July 1 of each academic year, but will be accepted up to December 1. Applications for the Spring Semester only have an April 1 deadline. Annual application is required.

Student Loans

The College participates in the New York State Higher Education Assistance Corporation Student Loan Program. Information may be obtained from the Dean's office. Applicants initiate the loan request with an officer of a local bank. The student should assume the responsibility of making plans in advance of registration when seeking a loan from this source.

The College also participates in the National Defense Student Loan Program. Information may be obtained from the Dean's office. Applicants, in order to be eligible for this program, must have applied for a New York State Scholar Incentive Award.

Student Employment

The College has a limited number of student aide positions available each year. The College participates in the federally sponsored Work-Study Program, under the Economic Opportunity Act and the Vocational Education Act. Students interested must apply to the Dean.

Orientation and Advisement

New students are required to attend the orientation sessions held each year in September. During the period, they will be informed about the student activity program of the College and the student regulations. They will meet with their faculty adviser who will assist them in planning their programs for registration. Subsequent meeting with the faculty adviser may be arranged at the request of the student, or his adviser.

Transfer

Students who plan to transfer to other institutions for higher degrees should consult with their advisers early in their first year. They should also consult the file of college catalogs in the library to familiarize themselves with the requirements of the several colleges they are considering. In the fall of their second year they should write to the college of their choice for catalogs and application blanks. Particular note should be taken of application deadlines and specific requirements of individual colleges. Grades lower than *C* are usually not transferable.

Student Activities

All student activities at Fulton-Montgomery Community College are organized through the Student Government Association. The President, Vice-President, Secretary, Treasurer, and Parliamentarian are elected from the first-year students and serve as the Executive Committee for the following year. The Senate is composed of 12 members, six elected from each class at the beginning of the academic year.

The Student Government Association organizes an Orientation Program for new students each fall and publishes the Student Handbook and the Student Directory. It sponsors the newspaper and yearbook. All clubs must be chartered by this Association and at present, the Radio Club, the Drama Guild, and the Newman Club are in operation, and a concert band and chorus provide opportunities for students to maintain and develop their musical talent. The Association also sponsors a program of cultural activities open to members of the College and Community, and it supports a program of intercollegiate athletics, including cross-country, basketball, wrestling, bowling, softball and golf.

The social program of dances and picnics, and other programs open to all students, are arranged by the Association through its chartered clubs.

The Student Government Association is a member of the College and Institute Student Government Association, an organization made up of student government representatives from the two-year colleges of the State University of New York.

Student Housing

Fulton-Montgomery Community College does not maintain dormitories. A list of rooms is available at the college office, but the College assumes no responsibility either to the student or to the landlord.

Students planning to secure rooms near the college should contact the College Administrative Office for a listing of available rooms.

Employment and Placement

The College maintains a placement service to assist its graduates in obtaining full-time employment after graduation.

Students seeking positions after graduation should see the Placement Director early in the spring semester. The placement office also serves as a clearing house for part-time positions for those students who plan to work while attending college. Full-time students should limit the hours in outside employment to 15 hours a week, in order not to jeopardize their academic standing.

Extension and Summer Session

The Extension Program provides an opportunity for adults who desire to continue their education but are unable for a variety of reasons to attend college full-time. While many students intend to seek associate degrees, others elect to take specific courses to meet job requirements, to facilitate professional advancement, or to develop and improve an individual's cultural and intellectual advancement. Courses are offered at the campus in Johnstown and also in Amsterdam.

The College also conducts a summer session at its campus. Courses may be used for credit either at the college or transferred to other institutions.

Students who plan to work for a degree in Extension should plan to matriculate. Matriculation is the procedure by which the College:

Evaluates a student's qualifications to pursue a program of study leading to a degree;

Accepts or rejects the student's application for admission to the College as a degree-candidate;

Sets up in conference with the student, if he is accepted as a degree-candidate, a specific plan of study, including all required and elective courses;

Accepts the obligation to provide the student with advisement and to grant him a particular degree when he has successfully completed his approved program of study; and

The College reserves the right to dismiss, or deny, a degree to any student who fails to comply with its regulation and policies.

Extension students desiring to matriculate must apply to the office of the Director of the Extension Division. This may be done any time after registration.

Students applying for matriculation should request application forms from the Director of Admissions. These should be filed promptly according to "How to File" instructions.

Procedures outlined in the current college catalog must be followed by all students seeking a degree.

You will be notified by mail as to the actions of the Admissions Office with regard to your application.

Students, after being dismissed from the Day Division for academic reasons, cannot be admitted to the Extension Division for at least one semester. These students, when admitted to the Extension Division, must apply for re-admission in order to become reinstated as a matriculated student.

For further information write or call the Director of Extension.

Academic Regulations

The progress of students at the College is indicated by the grades received in each course. The following grade system is used:

Grade		*Grade Points*
A	Excellent	4
B	Very Good	3
C	Average	2
D	Passing	1
F	Failing	0
I*	Incomplete	0
W	Withdrawal	0
WF	Withdrawal, Failing	0

The grade-point average is computed by multiplying the grade points earned in a course by the number of credit-hours for the course, adding these products for each course and dividing by the total number of credit-hours.

A grade-point-average of less than 2.0 is unsatisfactory and students whose average at the end of a semester is unsatisfactory will be placed on probation. If in the following semester the student does not attain a grade-point-average of 2.0 or better, he will be dismissed. A grade-point-average of 2.0 or better is required for graduation. A student whose grade-point-average in any one semester falls below 1.0 is ineligible to continue at the college.

Attendance at all classes for which a student is registered is expected. Excessive absences may lead to a student being denied the right to take the final examination and consequently to a grade of *F* in the course.

Cheating constitutes reasonable grounds for dismissal from the course with a grade of *WF* assigned thereto.

*A grade of *I* indicates that, at the end of the course, some of the requirements were not completed by the student due to circumstances beyond his control. These requirements must be completed in the following semester or the grade of *I* automatically becomes *F*.

DEAN'S LIST

A student may be named to the Dean's List when his cumulative grade average is 3.30 or higher.

Credit on Proficiency Examination

Fulton-Montgomery Community College cooperates with the New York College Proficiency Examination Program and will grant credit towards a degree to students who receive satisfactory grades on the examination. Credit will be granted under the following rules:

1. Each case will be evaluated individually by the academic dean. His decision will be final.
2. Credit will be given for satisfactory performance on a CPE if the examination is based upon the content of a course offered by the college or one which would be acceptable on a transfer basis from another college.
3. Credit will be granted only to a student who has met the entrance requirements of the college and has been admitted officially.
4. Credits shall not exceed 15 semester hours.
5. Examinations must have been taken within 5 years of application for credit.
6. A student failing a course may not obtain credit for said course by CPE.

Requirements for Degrees

By the authority of the Board of Regents of the University of the State of New York the College confers the degrees of Associate in Arts (A.A.) and Associate in Applied Science (A.A.S.) upon its graduates. To be eligible, candidates for these degrees must be matriculated and must meet the following minimum requirements established by the Board of Regents:

ASSOCIATE IN ARTS (A. A.)

I. Degree requirements: A total of 60 semester hours.

II. Curriculum requirements: The course of study leading to this degree should be an organized curriculum, composed essentially of courses in the liberal arts and sciences. At least 80 per cent of the program in terms of credit hours should comprise work in the following fields:

A. Social Sciences: A minimum of 12 semester hours;

B. Biological Sciences and Physical Sciences (including Mathematics): a minimum of 9 semester hours. At least 3 semester hours of mathematics should be included in this total;

C. Humanities: a minimum of 18 semester hours to include the following:
   1. 12 semester hours in English (composition, speech, and literature);
   2. 6 semester hours in other subjects in the Humanities;

D. Electives in the foregoing fields to ensure a total of 80 per cent of the program in terms of credit hours in the liberal arts and sciences.

ASSOCIATE IN APPLIED SCIENCE (A. A. S.)

I. Degree requirements: A total of 60 semester hours.

II. Curriculum requirements:

A. A minimum of 20 semester hours drawn from the liberal arts and sciences or general education areas as follows:

1. Social Sciences: a minimum of 6 semester hours;
2. Biological Sciences and Physical Sciences (including mathematics): a minimum of 6 semester hours. At least 3 semester hours of mathematics should be included in this total;
3. Humanities: a minimum of 6 semester hours in English (composition and/or speech);
4. Electives in the foregoing fields to ensure a total of 20 semester hours in the liberal arts and sciences **or** general education areas;

B. A minimum of 20 to 30 semester hours in the major concentration and related courses.

The College has established requirements in its program which exceed those established by the Board of Regents and which must be met before the appropriate degree will be conferred.

The credits submitted by a student for a degree must be of satisfactory quality, that is, a minimum grade-point-average of 2.0 must be attained for the program and courses taken at the college.

LIBERAL ARTS

FIRST YEAR

First Semester		
EN 131	English Composition	3
SS 183	Western Civilization	3
	Foreign Language	3
	Mathematics or Science	3–4
	Elective	3–4
		15–17
Second Semester		
EN 132	Speech	3
SS 184	Western Civilization	3
	Foreign Language	3
	Mathematics or Science	3–4
	Elective	3–4
		15–17

SECOND YEAR

First Semester		
EN 231	Literature	3
	Social Science Elective	3
	Foreign Language or Elective	3
	Mathematics or Science	3–4
	Elective	3–4
		15–17
Second Semester		
EN 232	Literature	3
	Social Science Elective	3
	Foreign Language or Elective	3
	Mathematics or Science	3–4
	Elective	3–4
		15–17

All students must complete 2 years of English, 2 years of social science and one year of each of the following: foreign language, mathematics, and science. At least 80 per cent of the credits offered for the Associate Arts degree must be in the area of the liberal arts and sciences.

ENGINEERING SCIENCE

FIRST YEAR

First Semester

EN 131	English Composition	3
MA 157	Analytic Geometry and Calculus	4
CH 175	College Chemistry	4
MD 171	Engineering Graphics	3
PH 131	Engineering Physics	4
		18

Second Semester

EN 132	Speech	3
MA 158	Analytic Geometry and Calculus	4
CH 176	College Chemistry	4
MD 172	Engineering Graphics	3
PH 132	Engineering Physics	4
		18

SECOND YEAR

First Semester

	Social Science Elective	3
MA 257	Analytic Geometry and Calculus	4
PH 235	Engineering Mechanics	3
PH 231	Engineering Physics	4
	Engineering Elective	3–4
		17–18

Second Semester

	Social Science Elective	3
MA 258	Topics in Calculus	4
PH 236	Engineering Mechanics	3
PH 232	Engineering Physics	4
	Engineering Elective	3–4
		17–18

Students entering the program must have satisfactorily completed high school chemistry, physics, and mathematics through trigonometry.

ELECTRICAL TECHNOLOGY

FIRST YEAR

First Semester

EN 131	English Composition	3
MA 155	Technical Mathematics	3
PH 175	Technical Physics	4
EL 121	Electricity	4
MD 175	Electrical Graphics	3
		17

Second Semester

EN 132	Speech	3
MA 156	Technical Mathematics	3
PH 176	Technical Physics	4
EL 122	Electricity	4
MD 176	Electrical Graphics	3
		17

SECOND YEAR

First Semester

	Social Science Elective	3
MA 255	Technical Mathematics	4
EL 223	Electric Machines	3
EL 221	Electronics	4
EL 225	Computers and Instrumentation	3
		17

Second Semester

	Social Science Elective	3
MA 256	Technical Mathematics	4
EL 224	Electric Machines	3
EL 222	Electronics	4
EL 226	Computers and Instrumentation	3
		17

ACCOUNTING

FIRST YEAR

First Semester

EN 131	English Composition	3
SS 183	Western Civilization	3
BU 141	Elements of Business	3
BU 111	Business Mathematics	3
BU 121	Principles of Accounting	3
		15

Second Semester

EN 142	Business English	3
SS 184	Western Civilization	3
MA151/153	Mathematics	3
	Science	3
BU 122	Principles of Accounting	3–4
		15–16

SECOND YEAR

First Semester

EN 132	Speech	3
	***Elective (Liberal Arts and Science)	3–4
*BU 133	Typewriting or Elective (Business)	3
BU 224	Cost Accounting	3
BU 221	Intermediate Accounting	3
		15–16

Second Semester

	***Elective	3–4
BU 144	Office Machines	3
BU 225	Income Tax Procedures	3
	**Elective (Business)	3
BU 222	Intermediate Accounting	3
		15–16

Business Electives

*BU 245 Business Law
*BU 241 Marketing
**Available Second Semester
**BU 142 Business Organization and Management
**BU 246 Business Law
***Economics extremely desirable
**BU 242 Personnel Administration
**BU 248 Money and Banking
SS 181 Economics
SS 182 Economics

BUSINESS ADMINISTRATION

FIRST YEAR

First Semester

EN 131	English Composition	3
SS 183	Western Civilization	3
	Elective (Science)	3–4
BU 111	Business Mathematics	3
BU 121	Principles of Accounting	3
		15–16

Second Semester

EN 142	Business English	3
SS 184	Western Civilization	3
MA 151/153	Mathematics	3
BU 141	Elements of Business	3
BU 122	Principles of Accounting	3
		15

SECOND YEAR

First Semester

EN 132	Speech	3
	***Elective (Liberal Arts and Science)	3–4
BU 221	Principles of Accounting or Elective	3
BU 133	Typewriting or Elective (Business)	3
BU 245	Business Law	3
		15–16

Second Semester

	***Elective	3–4
	**Elective (Business)	3
	**Elective (Business)	3
	**Elective (Business)	3
	Office Machines	3
		15–16

ELECTIVES

**Available Second Semester
**BU 222 Intermediate Accounting
**BU 141 Business Organization and Management
**BU 225 Income Tax Procedures
**BU 246 Business Law
***Economics extremely desirable
**BU 242 Personnel Management
**BU 248 Money and Banking
** SS 182 Economics
*BU 241 Marketing
SS 181 Economics

SECRETARIAL SCIENCE

FIRST YEAR

First Semester

EN 131	English Composition	3
SS 183	Western Civilization	3
BU 133	Typewriting	3
BU 111	Business Mathematics	3
BU 141	Elements of Business	3
BU 131	Shorthand	3
		18

Second Semester

EN 142	Business English	3
SS 184	Western Civilization	3
BU 134	Typewriting	3
MA 151/153	Mathematics	3
BU 132	Shorthand	3
		15

SECOND YEAR

First Semester

EN 132	Speech	3
	Science	3–4
BU 234	Advanced Typewriting	3
BU 235	Secretarial Practice	3
BU 231	Advanced Shorthand and Transcription	3
		15–16

Second Semester

	Elective (Liberal Arts and Science)	3–4
BU 125	Secretarial Accounting	3
BU 236	Secretarial Practice	3
BU 232	Advanced Shorthand and Transcription	3
BU 238	Secretarial Seminar	1
BU 144	Office Machines	3
		16–17

BUSINESS

Accounting

BU 111 Business Mathematics **3 s.h.**

Review of arithmetic operations. Preparation and use of shortcut operations. Instruction and drill in percentage, cash and trade discounts, markup, payroll, sales, property and other taxes. Simple and compound interest, bank discounts, interest, investments, annuities. Stocks, bonds and other securities. Principles of life insurance and fire insurance, liabilities and coinsurance.

Hours of class per week: 3.

BU 121 Accounting **3 s.h.**

First half of a one-year course introducing accounting theory. Theory of debit and credit; accounts and special journals; the accounting cycle; accounting for notes and interest, accrued items, receivable, inventories, and plant assets; preparation of financial statements. Emphasis is on sole proprietorship.

Hours of class per week: 3.

BU 122 Accounting **3 s.h.**

A continuation of BU 121. Accounting for partnerships and corporations; control systems for departments, manufacturing, job costs and cost control; analysis of statements and data.

Prerequisite: BU 121. Hours of class per week: 3.

BU 221 Intermediate Accounting **3 s.h.**

Corporate accounting is emphasized. Major classification of items found in financial statements, cash and investments, receivables, inventories, liabilities, plant and equipment are analyzed.

Prerequisite: BU 122. Hours of class per week: 3.

BU 222 Intermediate Accounting **3 s.h.**

Problems in valuation of assets. Corporate formation; paid-in capital, retained earnings, analysis of single entry systems, corrections of errors, use of data in financial statements.

Prerequisite: BU 221. Hours of class per week: 3.

BU 125 Secretarial Accounting **3 s.h.**

Introductory course for secretarial students designed to familiarize them with the elements of accounting dealing with cash, banking, petty cash transactions, payroll procedures, simple notes and securities, and financial statements.

Hours of class per week: 3.

BU 224 Cost Accounting **3 s.h.**

Accounting for direct labor, materials, and factory overhead with emphasis on job order costing. Process cost system, standard cost principles and procedures, budgets and direct decision making.

Prerequisite: BU 122. Hours of class per week: 3.

BU 225 Income Tax Accounting **3 s.h.**

Federal and state income tax law and regulations are studied. Taxable income, inclusions and exclusion, capital gains and losses, deductions, and other topics are covered. Practice is provided in preparation of income tax returns.

Prerequisite: BU 122. Hours of class per week: 3.

BU 144 Office Machines **3 s.h.**

Development of proficiency is sought in the use of the ten-key and full keyboard adding-listing machines, printing calculator, rotary calculator, and duplicating machines with emphasis on correct technique in operating machines and practical application of these machines by use of special office projects.

Hours of class per week: 3.

Business Administration

BU 141 Elements of Business **3 s.h.**

An introductory survey of the functions and problems of business management giving the student an overview of the interrelationship among the functional areas of business which he will study in more detail in later courses.

Hours of class per week: 3.

BU 142 Business Organization and Management **3 s.h.**

Advantages, limitations, and financing of basic forms of business organization. Management problems of organization, policy formation, communication and efficiency with particular reference to personnel and their supervision, budgets and automation.

Prerequisite: BU 141. Hours of class per week: 3.

BU 245 Business Law **3 s.h.**

An introduction to the laws applicable to business with major emphasis on contracts, agency and employment, negotiable instruments, personal property and bailments, and sale of goods. Text and case studies of legal precedents are used extensively.

Prerequisite: BU 141. Hours of class per week: 3.

BU 246 Business Law **3 s.h.**

A continuation of the study of the legal aspects of business covering partnerships, corporations and related business organizations, real property and leases, insurance, suretyship, trusts, and estates.

Prerequisite: BU 245. Hours of class per week: 3.

improvement of transcription techniques, spelling, punctuation, grammar, and the development of good business vocabulary is stressed. Use of dictation equipment is taught.

Prerequisite: BU 231. Hours of class per week: 5.

BU 235-6 Secretarial Practice **3 s.h.**

This is a two-semester course in general secretarial procedure. Fundamental secretarial skills are emphasized and filing procedures, receptionist and telephone techniques, secretarial duties, and preparation of reports are included. Experience related to the functions of the business office are simulated.

Hours of class per week: 3.

BU 133 Typewriting **3 s.h.**

Development of basic skills and techniques. Introduction to the use of carbon paper, simple tabulation, business and personal letters, manuscripts and business forms.

Hours of class per week: 3.

BU 134 Typewriting **3 s.h.**

The course emphasizes the development of speed and accuracy and includes extensive work in the production of business letters, reports, business forms, tabulations and manuscripts.

Prerequisite: BU 132. Hours of class per week: 3.

BU 234 Advanced Typewriting **3 s.h.**

This course continues the development of increased speed and accuracy with special emphasis on integrated office problems. Preparation of masters and stencils for duplication and instruction in the use of the electric typewriter is included.

Prerequisite: BU 133. Hours of class per week: 3.

BU 238 Secretarial Seminar **1 s.h.**

A course designed to provide a broad knowledge of the business world and the responsibilities of the secretary. It includes visits to business offices, panel discussions, speakers, the secretarial social graces, rules of office etiquette, and a consideration of the qualities and skills that are needed to obtain a position in the business world.

Hours of class per week: 1.

HUMANITIES

English

EN 131 Composition **3 s.h.**

This course attempts to strengthen the individual's ability to express himself in the use of the English language and to improve

upon the fundamentals previously learned. The student investigates essays and in turn applies research and knowledge in a series of written assignments. He investigates the methods of description, exposition, argumentation and narration. This course gives an over-all review of the mechanics of English usage and emphasis is placed on effective writing. A number of outside readings is required and the student submits critical analyses as an aid in helping him develop style and technique as it is evidenced in the works of representative authors.

EN 132 Speech **3 s.h.**

This course attempts to introduce the students to the forms of public speaking and affords him the opportunity to practice both the formal and informal deliveries of speech. Individual expression and creativity are still the main tenets of this course. The course aims to enrich the student's ability to communicate. Emphasis is placed on the spoken word. Various forms of discourse are studied and put into practice. A number of outside readings is required and the student prepares critical evaluations. The student is also given the opportunity to work with panel and discussion groups.

EN 133 Reading ***No credit***

The course assists the student in strengthening the skills necessary for comprehension and expression. Much time will be devoted to individual assistance and problems, and remedies suggested. Reading techniques will be taught, reviewed and strengthened. (Offered in Extension only.)

Hours of class per week: 3.

EN 231 World Literature I **3 s.h.**

The course surveys world literature from the Greek classics up to, but not including, 20th Century materials. The readings include selections from Homer, Sophocles, Dante, Shakespeare, Milton, and Hawthorne. The epic, the drama, the novel, the essay, and short stories will be studied. A number of outside readings is required to supplement the materials treated in the course.

Prerequisite: EN 131 (EN 132 desirable).

EN 232 World Literature II **3 s.h.**

The course surveys world literature, beginning with a study of Melville and representative authors, including Flaubert, Dostoyevsky, Tolstoy, Twain, Conrad, Eliot, Faulkner, and Miller. A number of outside readings is required to supplement the materials treated in this course.

Prerequisite: EN 131 (EN 132 desirable).

EN 142 Business English **3 s.h.**

This course, designed for those students interested in pursuing a business career, will aid them in the development of the writing style for effective business communications. The course endeavors to improve grammar, spelling, and word usage. Practice is provided in the writing of business reports, letters of inquiry, credit, collection, sales, application, and routine business letters. Opportunity is also provided to practice oral communication related to business situations and public relations.

Prerequisite: EN 131. Hours of class per week: 3.

Modern Languages

FL 141-142 French **3 s.h. each sem.**

A beginner's course covering the fundamentals of oral comprehension, oral expression and grammar. Simplified French readers, read first and second semester, familiarize the student with the civilization of France. Tapes supplement the text.

Hours of class per week: 3.

FL 241-242 French **3 s.h. each sem.**

In this intermediate course the comprehension and use of the spoken language are studied, as well as its grammar and composition, and the cultural aspects of the language. Reading texts are chosen to enable the student to converse in idiomatic French and to awaken his interest in French literature.

Prerequisite: FL 141-142. Hours of class per week: 3.

FL 341-342 Advanced French **3 s.h. each sem.**

A rapid review of grammar. Various types of French literature from the works of important authors; oral expression is stressed.

Prerequisite: FL 241-242. Hours of class per week: 3.

FL 145-146 Russian **3 s.h. each sem.**

An elementary course covering the fundamentals of oral comprehension, oral expression and grammar. A secondary aim of this course is to provide the student with an ability to read and write elementary Russian. Tapes supplement the text.

Hours of class per week: 3.

FL 245-246 Russian **3 s.h. each sem.**

A continuation of elementary Russian in which the oral language is stressed. Graded readers introduce the student to Russian literature.

Prerequisite: FL 145-146. Hours of class per week: 3.

FL 147-148 German **3 s.h. each sem.**

An elementary course covering the fundamentals of oral comprehension, oral expression and grammar. Readings are from the text and reflect a cross section of contemporary German literature. Tapes supplement the text.

Hours of class per week: 3.

FL 247-248 German **3 s.h. each sem.**

A continuation of elementary German and an introduction to German literature. Selected works of contemporary German authors are read. Conversation is emphasized.

Prerequisite: FL 147-148. Hours of class per week: 3.

FL 143-144 Spanish **3 s.h. each sem.**

A beginner's course using the audio-lingual approach. The course gives the student a working knowledge of the essentials of grammar and the ability to read with reasonable facility. Graded readings supplement the text and serve as a basis for conversation.

Hours of class per week: 3.

FL 243-244 Spanish **3 s.h. each sem.**

In this second year language course the comprehension and use of the spoken language is further developed. Grammar, composition and the cultural aspects of the language are studied. The reading texts introduce the student to Hispanic life and literature.

Prerequisite: FL 143-144. Hours of class per week: 3.

FL 343-344 Advanced Spanish **3 s.h. each sem.**

A rapid review of grammar. Various types of Spanish literature from the works of important authors; oral expression is stressed.

Prerequisite: FL 243-244 or the equivalent. Hours of class per week: 3.

Art and Music

AR 101 Art History **3 s.h.**

Introduction to History of Art. A survey of world painting, sculpture, and architecture from prehistoric to present times. Emphasis will be placed on stylistic developments and appreciation of man's æsthetic achievements. Presentation will combine lecture, text and visual materials.

Hours of class per week: 3.

AR 103 History and Literature of Music **3 s.h**

An appraisal of the art of music through directed listening with illustrations from significant composers. Enables student to understand music from various periods of history and the relationship to social and cultural life of the period being studied. An overview from the late Baroque to the Modern including the rapprochement of Jazz and serious music. Required collateral readings.

Hours of class per week: 3.

MATHEMATICS

MA 151 Essentials of Mathematics **3 s.h.**
Designed to prepare students who have not taken mathematics in high school to pursue college mathematics. Further study in areas such as the structure of the number system, mathematical operations, equation solving, variation, and logic is included.

Hours of class per week: 3.

MA 152 Trigonometry **3 s.h.**
Angles and angle measurement; trigonometric functions; radian measure; identities, solution of plane triangles; logarithms; inverse functions; complex numbers; reduction formulas; sum, difference and product formulas.

Prerequisite: MA 151 or high school algebra. Hours of class per week: 3.

MA 153 College Algebra **3 s.h.**
Logic; sets; induction; graphs of functions; partial fractions; systems of first and second degree equations; determinants; transcendental functions; sequences and series.

Prerequisites: MA 151 or one year of high school algebra or equivalent. Hours of class per week: 3.

MA 155 Technical Mathematics **3 s.h.**
This is an integrated course designed to provide mathematical foundations for students of technology. Topics include: slide rule; linear and quadratic solutions; graphing approximations; trigonometry of the right and oblique triangles.

Prerequisite: High school algebra. Hours of class per week: 3.

MA 156 Technical Mathematics **3 s.h.**
A continuation of MA 155. Topics include: exponentials, logarithms, and cologarithms; graphs of the transcendental functions; vectors and the j-operator.

Prerequisite: MA 155. Hours of class per week: 3.

MA 157 Analytic Geometry and Calculus **4 s.h.**
Topics include inequalities; relations and functions; limits; continuity; differentiation and integration of algebraic functions; applications.

Prerequisite: MA 153 or three years of high school mathematics, including 1½ years of algebra. Hours of class per week: 4.

MA 158 Analytic Geometry and Calculus **4 s.h.**
Topics include the analytic geometry of conics; differentiation and integration of transcendental functions; polars; methods of integration; applications.

Prerequisite: MA 157. Hours of class per week: 4.

MA 159 Mathematics of Finance **3 s.h.**

Open to liberal arts and selected business students. Topics include: simple interest and discounts; partial payments; mark up; depreciation methods, negotiable instruments; stocks and bonds; annuities; life insurance; taxes; payroll mathematics.

Prerequisite: MA 153 or 1½ years of algebra. Hours of class per week: 3.

MA 252 Finite Mathematics **3 s.h.**

A course designed for students who desire a firm foundation in many models of mathematical structure. Topics covered include: number systems; groups, rings, fields, congruence, matrices, determinants, vectors, Boolean Algebra, number bases, foundations of statistics.

Prerequisite: MA 153. Hours of class per week: 3.

MA 255 Technical Mathematics **4 s.h.**

A continuation of MA 156. Review of analytic geometry of the straight line and conic sections; differentiation of algebraic functions; logarithmic and trigonometric differentiation; curve sketching; maxima and minima; time rates; implicit functions; antidifferentiation; applications.

Prerequisite: MA 156. Hours of class per week: 4.

MA 256 Technical Mathematics **4 s.h.**

A continuation of MA 255. The definite integral; integration techniques; areas; volumes; moments of inertia; areas of surfaces of revolution; curve acceleration; Fourier series; applications.

Prerequisites: MA 255. Hours of class per week: 4.

MA 257 Analytic Geometry and Calculus **4 s.h.**

Topics include vectors: volumes; centroids; elements of solid analytic geometry; indeterminant forms; convergence; Taylor's Theorem with remainder; applications.

Prerequisite: MA 158. Hours of class per week: 4.

MA 258 Topics in Calculus **4 s.h.**

Topics include: vectors in E_3; partial differentiation; multiple integration; selections from linear algebra and differential equations; applications.

Prerequisite: MA 257. Hours of class per week: 4.

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SCIENCE AND ENGINEERING

Biology

BI 171-172 Biology I + II **4 s.h. each sem.**

A comprehensive course stressing the molecular approach to the study of the origin of life, cells, physiology, heredity and taxonomy. The laboratory provides the students with tanglible evidence of scientific principles.

Hours of class per week: 3. Hours of lab per week: 2. Lab. fee: $7.50 each semester.

BI 181-182 Anatomy and Physiology I & II **3 s.h. each sem.**

A course designed for nurses with emphasis on human anatomy and physiology. The laboratory stresses physiological experiments along with location of all involved systems.

Hours of class per week: 2. Hours of lab per week: 2. Lab. fee: $7.50 each semester.

SC 141-142 Life Science I + II **3 s.h. each sem.**

A course designed to emphasize the historical and philosophical development of biology.

Modern concepts of structure and function will be introduced. Select topics will be pursued to better prepare the general population to participate in policy-making activities of our society.

Hours of class per week: 2. Hours of lab per week: 2. Lab. fee: $5.00 each semester.

BI 271 Zoology I **4 s.h.**

The course investigates activities of life in light of mechanistic views, stressing the experimental approach and the relation to other fields of physiology. Topics under consideration include biochemistry, structure, function and organization of the cell.

Prerequisite: BI 171-172. Hours of class per week: 3. Hours of lab per week: 2. Lab Fee: $10 each semester.

BI 272 Zoology II **4 s.h.**

This course is primarily an investigation of the physical basis of heredity, including such topics as mitosis, meiosis, differentiation, Mendelian concepts, including modifications due to incomplete dominance, linkage, crossing over and other recombination possibilities. Topics from human genetics, evolution, and gene-enzyme relationship will also be stressed.

Prerequisite: BI 171-172. Hours of class per week: 3. Hours of lab per week: 2. Lab Fee: $10 each semester.

CH 173-174 Fundamentals of Chemistry ***4 s.h. each sem.***
A course in general chemistry designed for the liberal arts student; stressing a "principles" approach to such topics as chemical bonding, states of matter, thermodynamics, and periodic classification in laboratory and lecture.

Prerequisite: 3 years of high school mathematics or college algebra or the equivalent; high school chemistry and/or physics helpful. Hours of class per week: 3. Hours of lab per week: 2. Lab Fee: $7.50 each semester.

CH 175 College Chemistry with Qualitative Analysis ***4 s.h.***
A course in the fundamentals of chemistry, including a rigorous approach to thermodynamics. The course outline of The American Chemical Society's Advisory Council on College Chemistry is closely followed. Topics covered include: atomic theory, the Periodic Law, the Kinetic Molecular Theory as applied to the states of matter, the chemical bond, and solutions. The laboratory consists of typical physico-chemical experiments which closely follow the lecture material.

Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $7.50.

CH 176 College Chemistry with Qualitative Analysis ***5 s.h.***
A continuation of CH 175 with more emphasis on laboratory work which consists of semi-micro qualitative analysis. Topics covered in the second semester include: Chemical equilibrium, kinetics, electro-chemistry, selected representative families from The Periodic Classification, nuclear chemistry, and selected topics from organic chemistry.

Prerequisite: CH 175. Hours of class per week: 3. Hours of lab per week: 4. Lab. Fee: $7.50.

CH 221 Organic Chemistry ***4 s.h.***
An integrated course treating aliphatic and aromatic organic compounds from a structural approach. Reaction mechanisms and kinetics are stressed. The laboratory is designed to familiarize the student with the basic techniques of organic chemistry. Some of the topics include: alkanes, alkenes, alkynes, cyclic aliphatic hydrocarbons, benzene, resonance, electrophilic aromatic substitution, alcohols, alkyl and aryl halides.

Hours of class per week: 3. Hours of lab per week: 3. Lab. Fee: $10.

CH 222 Organic Chemistry ***5 s.h.***
A continuation of CH 221 with additional laboratory emphasis on classical syntheses. Topics covered include: ethers and epoxides,

carboxylic acids, amines, aldehydes, ketones, carbohydrates, polynuclear aromatics, and heterocyclics.

Prerequisite: CH 221. Hours of class per week: 3. Hours of lab per week: 6. Lab. Fee: $10.

Electricity and Electronics

EL 121 Electricity *4 s.h.*

This pilot course in the Electrical Technology curriculum investigates the concepts of current, voltage and power as applied to D.C. network analysis. The nature of resistance, inductance, and capacitance is also studied. The fundamental laws of electric circuits and the nature of magnetic circuits are also covered.

Prerequisite: High school algebra. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10 each semester.

EL 122 Electricity *4 s.h.*

This course investigates the nature of alternating current circuits including the application of complex wave forms. Reactance, impedance, resonance, and circuit analysis of various networks are studied. Power relationships, transformers, and three phase systems are also investigated.

Prerequisite: EL 121. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10 each semester.

EL 221 Electronics *4 s.h.*

This course covers electron tubes and semi-conductors including static and dynamic characteristics of vacuum tubes, cathode ray tubes, crystal diodes, semi-conductor power rectifiers, transistor types, silicon controlled rectifiers, power transistors, single phase rectifiers and power supply filters. Class A amplifiers, RC and transformer coupling, direct-coupled, push-pull and feedback amplifiers are also studied.

Prerequisite: EL 122. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10 each semester.

EL 222 Electronics *4 s.h.*

This course in electronics covers the various classes of amplifiers including R.F. amplifiers. Other topics include oscillators, modulation and demodulation, wave shaping circuits, gaseous conduction, power rectification, magnetic amplifiers, and light sensitive devices. Particular mention is made of communication systems and microwave devices.

Prerequisite: EL 221. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10 each semester.

EL 223 Electric Machines *3 s.h.*

Electric Machines 223 is concerned with the operation and construction and characteristics of AC and DC machinery, including the transformer, winding geometry, armature reaction, starting methods, speed control, ratings of both single phase and multiphase rotating machinery.

The testing, rating, connection of both current and voltage transformers and their vector diagrams are also studied.

Prerequisite: EL 121. Hours of class per week: 3.

EL 224 Electric Machines *3 s.h.*

This course in electric machines is an extension of EL 223 dealing with the study of industrial control applications of electric machines. Methods of speed control, dynamic braking, parallel operation of machines and single phase motors will be stressed. The application of these devices to the servo-mechanism system will be introduced by simultaneous study of control system parameters and characteristics.

Prerequisite: EL 223. Hours of class per week: 3.

EL 225-226 Computers and Instrumentation *3 s.h. each sem.*

The computers section of this course presents a basic understanding of electronic computers, their operational principles and a study of their subsystems. Both analogue and digital computers will be studied. Specific topics include number systems, Boolean algebra, magnetic devices, multipliers, scaling, counters, shift registers, limiters, and operational amplifiers.

The instrumentation portion of the course provides the electrical student with an understanding of the operational principles of various measurement and laboratory devices. This indoctrination includes a study of meter movements, bridge and other measurement systems, cathode ray, oscilloscope, electronic test equipment, electrical sensors, test methods and electrical standards.

Prerequisite: EL 122 and Physics 176. Hours of class per week: 3.

Graphics

MD 171 Engineering Graphics *4 s.h.*

The course covers drafting work in lettering, use of drawing instruments including the drafting machine and parallel straight edge, geometrics, orthographic projection, cross sections, axonometric projection, intersections and sketching.

Hours of class per week: 3.

MD 172 Engineering Graphics **3 s.h.**
Course covers development, detail and assembly drawings, screw thread work, production, dimensioning, charts and graphs, and gearing.

Prerequisite: MD 11. Hours of class per week: 3.

MD 175 Electrical Graphics **2 s.h.**
Course covers basic drafting including orthograph projection geometrics, cross sections, axonometric projection, electrical symbols, and schematic drawings.

Hours of class per week: 3.

MD 176 Electrical Graphics **2 s.h.**
Course covers intersections, development, detail and assembly drawing, screw threads, piping diagrams, graphs and charts, and gears.

Prerequisite: MD 175. Hours of class per week: 3.

Physics

PH 131 Engineering Physics — Mechanics **4 s.h.**
Vectors, forces, equilibrium, analysis, centroid, kinematics, kinetitcs, centrifugal force, work and energy, impulse and momentum, rotation, elasticity, hydrostatics, pressure, hydrodynamics.

Prerequisite: High school chemistry, physics, mathematics, trigonometry, and concurrent registration in MA 157. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10.

PH 132 Engineering Physics—Heat, Light and Sound **4 s.h.**
Thermometry, calorimetry, heat transfer, thermodynamics, Carnot cycle, gas laws, Dalton's principle, wave theory, sound ranging, strings, Melde's Law, elastic-mediums, harmonics, pipes, bars, illumination, reflection, refraction, lenses, optical instruments, color, interference, diffraction, polarization.

Prerequisite: PH 131 and concurrent registration in MA 158. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10.

PH 231 Engineering Physics—Electricity and Magnetism **4 s.h.**
Electrostatics, Coulomb's Law, field strength, potential, potential difference, capacitance, current and resistance, Ohm's Law, direct current circuits, alternating current, electronics, electrochemistry, instruments, induction and capacitance.

Prerequisite: PH 132 and concurrent registration in MA 257. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10.

PH 232 Engineering Physics—Modern ***4 s.h.***

Introduction to atomic physics, radioactivity, electron and nuclear masses, quantum physics, photoelectric and Compton effects, Bahr theory of atomic structures, X-rays, neutrons, electron and ion accelerators, nuclear reaction, nuclear fission, atomic energy.

Prerequisite: PH 231. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10.

PH 175 Technical Physics ***4 s.h.***

Mechanics of particles, rigid bodies, sound and wave motion, fluids and atomic and molecular structure.

Prerequisite: High school algebra. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10.

PH 176 Technical Physics ***4 s.h.***

Heat and thermodynamics, electricity and magnetism, optics and modern physics.

Prerequisite: PH 175. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10.

PH 177-8 Physics ***4 s.h. each sem.***

The first semester stresses the fundamentals of mechanics, fluids, heat, and wave motion.

The second semester includes the study of electricity and magnetism, optics, and atomic and nuclear physics.

Prerequisite: High school physics and mathematics through trigonometry. Concurrent registration in MA 157-8. Hours of class per week: 3. Hours of lab per week: 2. Lab. Fee: $10 per semester.

PH 235 Engineering Mechanics—Statics ***3 s.h.***

Analytical and graphical analysis of force systems, moments, couples, resultants, simple structures and trusses. Equilibrium of force systems, friction, kinematics of particles and rigid bodies, displacement, velocity, acceleration, rectilinear motion.

Prerequisite: PH 131. Hours of class per week: 3.

PH 236 Engineering Mechanics—Dynamics ***3 s.h.***

Motions of particles and rigid bodies and the force systems causing these motions, force, mass, and acceleration, work and energy, impulse and momentum.

Prerequisite: PH 235. Hours of class per week: 3.

SC 165-166 Physical Science ***3 s.h. each sem.***

A course designed primarily for students who are non-science majors. The course provides the student with a basic knowledge of

the physical sciences. Chemistry and physics are emphasized, along with selected topics from meteorology, astronomy, and geology. Each semester may be taken independently.

Hours of class per week: 3. Hours of lab per week: 1. Lab. Fee: $5 each semester.

SC 143 Physical Geology **3 s.h.**

The course includes a thorough study of topographic maps, glaciation, erosion, and vulcanism. Offered in Extension only.

Hours of class per week: 3. Hours of lab per week: 1. Lab. Fee: $7.50.

SOCIAL SCIENCE

Economics

SS 181 Economics **3 s.h.**

A sequential course, and it should be elected by all business majors, except those majoring in secretarial science. Fundamental principles and concepts of economics in production, exchange, and distribution. Study of basic institutions and major problems of our economy.

Hours of class per week: 3.

SS 182 Economics **3 s.h.**

A continuation of SS 181, and should be elected by all business majors, except those majoring in secretarial science. Analysis of national income, banking, government finance, labor relations, agricultural problems and international trade.

Prerequisite: SS 181. Hours of class per week: 3.

History

SS 183 Modern Western Civilization **3 s.h.**

An introductory course in Western Civilization beginning around the tenth century. The course examines the major social, political, and economic ideas and their contributions to the western heritage.

Hours of class per week: 3.

SS 184 Modern Western Civilization **3 s.h.**

Follows the same basic plan as SS 183 and is a continuation of that course to the present. The course enables the student to identify contributions made to the western heritage, changing patterns of power in the western world and their implications for the future.

Hours of class per week: 3.

SS 185 History of Ancient Civilizations **3 s.h.**

A study of ancient peoples with special emphasis upon the culture developed in the Near East, Rome, and Greece. (Offered in Extension only.)

Hours of class per week: 3.

SS 283 Survey of American History 1 **3 s.h.**
A survey of the political, social, and intellectual development of the United States from the Colonial period to post-Reconstruction.
Hours of class per week: 3.

SS 284 Survey of American History 11 **3 s.h.**
A continuation of SS 283 from Reconstruction to the present. Emphasis is placed on the changing character of the American society and its role in international affairs.
Hours of class per week: 3.

SS 285 The Soviet Union
A study is made of the social, political, and economic conditions in Czarist Russia prior to the 1917 Revolution to establish a common background. Emphasis is placed on a study of the Soviet Union since the Bolshevik Revolution with special examination of Marxism, the Soviet government, the Communist Party, and the Soviet Union in international affairs.
Prerequisite: SS 183 and SS 184. Hours of class per week: 3.

SS 286 Twentieth Century Europe **3 s.h.**
The course begins with a study of the Treaty of Versailles and stresses the major political, social, economic, and intellectual movement and reactions to them in England, France, Germany, Italy and the Soviet Union.
Prerequisite: SS 183 and SS 184. Hours of class per week: 3.

Political Science

SS 282 Introduction to American Government **3 s.h.**
This introductory course supplies the factual information about the structure and procedures of American government. The course gives the student an opportunity to examine the effectiveness of the American political record as tested by democratic principles.
Prerequisite: Permission of instructor. Hours of class per week: 3.

SS 287 International Organizations **3 s.h.**
Emphasis is on an examination of international organizations with primary consideration of the United Nations. This involves a study of the major crises which have confronted the United Nations since its establishment and those which it presently faces, the use of the veto; the specialized agencies; and the constitutional and political issues involved in the question of Chinese membership. A one-day field trip to the United Nations in New York City is required.
Prerequisite: SS 183 and SS 184. Hours of class per week: 3.

Psychology

SS 291 General Psychology **3 s.h.**

A basic orientation in the psychology of human behavior is provided. A study of the aims and methods of psychological investigation, the inter-relationships of heredity and environment as determiners of behavior, and the structure and function of the human nervous system is included, as well as an investigation of learning, motivation, and the nature of emotion. (Offered in Extension only.)

Hours of class per week: 3.

SS 292 Clinical and Abnormal Psychology **3 s.h.**

The focus is on the elucidation of nosology and symptomotology of the more common psychiatric and psychosomatic disorders. Clinical case material will be presented to illustrate the psychopathological principles of the everyday life of children and adults. (Offered in Extension only.)

Hours of class per week: 3.

Sociology

SS 281 Introduction to Sociology **3 s.h.**

An introductory course designed to acquaint the student with the study of sociology as one of the sciences that deals with man in his relationships with the members of his society and the world in which he lives. The methods and objectives of sociological research, the varying patterns of social organization, and the study of society in relation to individual and group behavior are major areas of study.

Hours of class per week: 3.

STATE UNIVERSITY OF NEW YORK

OFFICE OF THE PRESIDENT
8 Thurlow Terrace Albany, N.Y. 12201

UNIVERSITY CENTERS

State University at Albany
State University at Binghamton
State University at Buffalo
State University at Stony Brook

MEDICAL CENTERS

Downstate Medical Center at Brooklyn (New York City)
Upstate Medical Center at Syracuse

COLLEGES OF ARTS AND SCIENCE

College at Brockport
College at Buffalo
College at Cortland
College at Fredonia
College at Geneseo
College at New Paltz
College at Oneonta
College at Oswego
College at Plattsburgh
College at Potsdam

(Two additional Colleges of Arts and Science have been established in Westchester and Nassau Counties. In the early stages of development, they are expected to accept first classes in 1970.)

SPECIALIZED COLLEGES

College of Forestry at Syracuse University
Graduate School of Public Affairs at Albany
Maritime College at Fort Schuyler (Bronx)
College of Ceramics at Alfred University
College of Agriculture at Cornell University
College of Home Economics at Cornell University
School of Industrial and Labor Relations at Cornell Univ.
Veterinary College at Cornell University

AGRICULTURAL AND TECHNICAL COLLEGES (Two-year)

Agriculture and Technical colleges at:

Alfred
Canton
Cobleskill
Delhi
Farmingdale
Morrisville

COMMUNITY COLLEGES (Locally-sponsored two-year colleges under the program of State University)

Adirondack Community College at Hudson Falls
Auburn Community College at Auburn
Borough of Manhattan Community College at New York City
Bronx Communitty College at New York City
Broome Technical Community College at Binghamton
Corning Community College at Corning
Dutchess Community College at Poughkeepsie
Erie County Technical Institute at Buffalo
Fashion Institute of Technology at New York City
Fulton-Montgomery Community College at Johnstown
Hudson Valley Community College at Troy
Jamestown Community College at Jamestown
Jefferson Community College at Watertown
Kingsborough Community College at Brooklyn
Mohawk Valley Community College at Utica
Monroe Community College at Rochester
Nassau Community College at Garden City
New York City Community College of Applied Arts and Sciences at Brooklyn
Niagara County Community College at Niagara Falls
Onondaga Community College at Syracuse
Orange County Community College at Middletown
Queensborough Community College at New York City
Rockland Community College at Suffern
Staten Island Community College at New York City
Suffolk County Community College at Selden
Sullivan County Community College at South Fallsburg
Ulster County Community College at Kingston
Westchester Community College at Valhalla

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