MIDDLESEX COUNTY COLLEGE

Catalogue

1967-68

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MIDDLESEX COUNTY COLLEGE
CATALOGUE
1967 - 1968

MIDDLESEX COUNTY COLLEGE is sponsored by the citizens of Middlesex County through the Board of Chosen Freeholders, and is under the supervision of the New Jersey State Education Department.

ACCREDITATION

Middlesex County College is accredited by the New Jersey State Department of Education and has been approved by the Department of Education to offer the Associate Degrees. The College has also filed an intent to become accredited by the Middle States Association of Colleges and Secondary Schools, and is presently a recognized candidate for accreditation by this authority.

The Nurse Education program has received reasonable assurance of accreditation from the National League for Nursing.

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MIDDLESEX COUNTY COLLEGE
CALENDAR — 1967-1968

FALL SEMESTER

September 25	M	8:00 a.m.	Freshman Orientation begins
September 27	W	10:00 a.m.	Senior Registration
September 27	W	12:00 noon	Classes begin
October 11	W	5:00 p.m.	Last day to register
November 1	W	5:00 p.m.	Last day to drop course without grade of "F"
November 15	W	12:00 noon	Mid-term grades due
November 22	W	12:00 noon	Thanksgiving recess
November 27	M	8:00 a.m.	Classes resume
December 15	F	5:00 p.m.	Christmas recess
January 2	T	8:00 a.m.	Classes resume
January 29 through February 2	M F		Examination week
February 5	M	8:00 a.m.	Final grades due

SPRING SEMESTER

February 12	M	8:00 a.m.	Registration for Spring semester—Classes begin
February 23	F	5:00 p.m.	Last day to register
March 15	F	5:00 p.m.	Last day to drop course without grade of "F"
April 1	M	12:00 noon	Mid-term grades due
April 5	F	5:00 p.m.	Spring recess
April 15	M	8:00 a.m.	Classes resume
May 30	Th		Memorial Day — College Holiday
June 3 through June 7	M F		Examination week
June 10	M	8:00 a.m.	Final grades due
June 12	W	8:00 p.m.	Graduation

SUMMER SESSION 1968

June 17 and 18	In-Person Registration
June 24	Classes begin
July 4 and 5	Independence Day Weekend—No classes
July 19	End of first 4-Week Day Session
August 2	End of 6-Week Day Session
August 15	End of 8-Week Evening Session
August 16	End of second 4-Week Day Session

Summer Session includes an 8-Week Session of classes held in the evening, a 6-Week Session and two 4-Week Sessions of classes held during the day.

MIDDLESEX COUNTY COLLEGE
CALENDAR 1968-1969

FALL SEMESTER

September	11	W	8:00 a.m.	Freshman Orientation and Registration
September	13	F	8:00 a.m.	Senior Registration
September	16	M	8:00 a.m.	Classes begin
September	27	F	5:00 p.m.	Last day to register
October	18	F	5:00 p.m.	Last day to drop course without grade of "F"
November	1	F	5:00 p.m.	Mid-term grades due
November	27	W	12:00 noon	Thanksgiving recess
December	2	M	8:00 a.m.	Classes resume
December	20	F	5:00 p.m.	Christmas recess
January	2	Th	8:00 a.m.	Classes resume
January through	20	M		Fall semester examination week
January	24	F		
January	27	M	8:00 a.m.	Final grades due

SPRING SEMESTER

January	31	F	8:00 a.m.	Spring Registration
February	3	M	8:00 a.m.	Classes begin
February	14	F	5:00 p.m.	Last day to register
March	7	F	5:00 p.m.	Last day to drop course without grade of "F"
March	21	F	5:00 p.m.	Mid-term grades due
March	28	F	5:00 p.m.	Spring recess
April	7	M	8:00 a.m.	Classes resume
May	26	M	8:00 a.m.	Spring semester examination week begins
May	30	F		Memorial Day — College Holiday
June	2	M	4:00 p.m.	Examination week ends
June	4	W	12:00 noon	Final grades due
June	6	F	8:00 p.m.	Graduation

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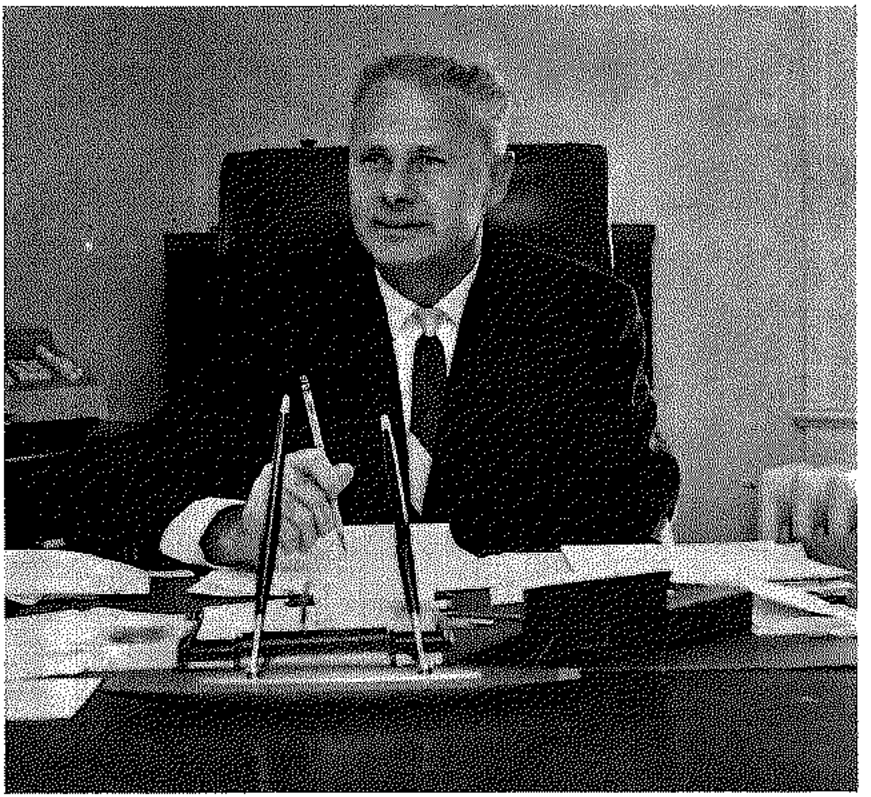
President's Message



The two-year college is a logical outgrowth of change in social, political and educational thought over the past half century. We have found that the education of every citizen to the extent of his abilities gives the greatest strength to the individual and to society.

There is a twofold purpose in the education provided at a two-year college. It must first of all be technical in order to prepare a person for a job. It must teach intricate details that provide for preparation, mechanization and the communication of industry, business and health services. Secondly, it must be intellectual. We must know the nature and needs of man in order to see their connection with our personal contribution in the progress of life. We must know why we work. We must learn what has happened in the past in order to predict the future.

Nowhere in the world has the individual person contributed more to the overall success of a nation as in this country. Our college will help to continue this fundamental process.

OBJECTIVES OF THE COLLEGE

To provide the environment and the experiences which promote the student's vocational competence, individual growth and social responsibility through the integration of the following:

Knowledge—The acquisition of facts, principles, theories and insights which are fundamental to the understanding of a specialized field of study and of life itself; cognizance of common sources of information for further intellectual growth.

Proficiency—Development of analytical thinking and language abilities for the comprehension, evaluation and communication of knowledge; development of laboratory techniques relevant to the student's chosen vocational field.

Attitudes—The stimulation for personal growth—vocational, intellectual, cultural and physical; the appreciation of and commitment to desirable social values.

To commit the resources of the College to the business, industrial, educational and cultural enrichment of the community.

ABOUT MIDDLESEX COUNTY COLLEGE

The College—Middlesex County College is a new College which opened its doors to students for the first time in September 1966. The College is a two-year publicly supported co-educational institution developed under a program of the New Jersey State Education Department, and sponsored by the people of Middlesex County through the Board of Chosen Freeholders.

The Campus—The Middlesex County College campus is located on Woodbridge Avenue in Edison on a 160-acre campus tract previously occupied by the Federal Government as the Raritan Arsenal. The grass, trees and landscaped grounds are bordered by the College Golf Course. The College has renovated and occupied fifteen buildings which accommodate classrooms, cafeteria, laboratories, offices and College Union. In addition, three new buildings—a library, an academic-science building and a physical education building—were ready for occupancy in September 1967. The renovated and new facilities provide space for 1,500 full-time students and have been developed at a cost of less than $4,000,000.

PROGRAMS OF THE COLLEGE

Middlesex County College provides diverse educational opportunities through a full-time day progam and a part-time Evening and Extension Division.

Full-time day curriculums have two objectives—to prepare graduates for immediate employment, or to prepare them for transfer to the junior year of a four-year college or university. All graduates receive an Associate Degree.

The Evening and Extension Division offers a wide variety of specialized unit courses and sequential programs leading either to a Certificate of Completion or to an Associate Degree.

Degree Programs

Technical Programs—The College offers four technical programs:

Engineering Science is the first two years of a baccalaureate Engineering curriculum. Students completing this curriculum may expect to continue study at an Engineering College.

Two other programs are designed to prepare engineering technicians in the fields of *Chemical Technology* and *Electrical Technology*. Graduates of these programs are prepared for immediate employment in various types of technical work upon graduating from the College.

The fourth technical program is *Laboratory Technology* with a biochemical emphasis to prepare students for work as technicians in the many pharmaceutical laboratories located in the community.

Nurse Education—The Nurse Education program is designed to prepare men and women in two years to qualify for the New Jersey Board of Nursing License Examination to practice as Registered Nurses.

Business Programs—The College offers two programs in the area of Business:

The *Business* curriculum is designed primarily to prepare graduates for immediate employment in one of two fields—accounting and marketing sales.

The *Secretarial Science* curriculum prepares graduates for immediate employment in the secretarial field.

Liberal Arts and Sciences—This curriculum is a university parallel course designed especially for the student who wishes to transfer to a four-year college or university after graduation. A sound Liberal Arts education is basic to many of the professions such as medicine, law or teaching, and applicants who have such goals would be well advised to consider this selection. It is also considered excellent preparation for further study in business administration.

Special Programs

The Evening and Extension Division—The Evening Division courses comprise the majority of the Evening and Extension Division offerings. These consist of a wide variety of specialized unit courses, college pre-

paratory courses, and sequential programs leading either to a diploma or to an Associate Degree. A student can earn approximately twelve credit hours annually through the Evening and Extension Division if he attends classes two evenings per week in both terms of the College year.

Summer Program—Credit courses are given in many subjects during the summer. The program is organized mainly to meet the needs of college students and other high school graduates who wish or require additional course work before returning to or entering college. Some non-credit offerings are also given. Further information regarding the summer session may be obtained by contacting the Director of the Evening and Extension Division.

The *Pre-Technical Program*—Students who either lack the minimum requirements for admission to the Engineering Technology programs, or have been out of school for several years may request enrollment in the Pre-Technical Program. This is a one-year, non-credit full-time day program, emphasizing the fundamental concepts of English, Mathematics and Science. At the end of the year students are evaluated by the faculty and must be recommended for entrance to a regular program before being admitted in the subsequent year.

Job Horizons for Women—This program is being offered to prepare women to enter the labor force after a prolonged absence. An integrated college-level program has been designed to develop clerical skills and self-confidence for employment in existing jobs in the community.

Contracts to Encourage Full Utilization of Educational Talent (CEFUET)—The Talent Search Project at Middlesex County College was contracted with the United States Office of Education under the Higher Education Act of 1965. The purpose of this program is to reach high school youth in an attempt to encourage the utilization of educational talent and to educate for an awareness of financial aids available for educational purposes. This was done through the services of a counselor on campus in cooperation with high schools, community organizations and county industrial personnel.

THE COLLEGE PHILOSOPHY OF ADMISSIONS

The philosophy of admissions at Middlesex County College is based upon four premises:

1. That within the limitations of its physical facilities and budget the College should provide an opportunity for continuing education for all within the community who can benefit from attendance.

2. That the quality of education must be offered at a level that will enable students to meet realistically the goals of the curriculum whether these are designed for transfer to a four-year college, preparation for immediate employment, or preparation of the student for eventual acceptance to other curriculums.

3. That a public college should operate in a manner that leads to the most good for the most students.

4. That the acceptance of unqualified or poorly motivated students to degree-granting programs would retard the progress of other students or lower the standards of performance and therefore would not be in the best interests of the people of the County or of the College as a contributor to quality education.

The College offers a variety of curriculums, each with different objectives. These curriculums are designed to meet different needs, to appeal to a number of interests and varying levels of ability. Students are admitted to a curriculum rather than to the College. Students should enter curriculums with reasonable preparation to succeed in the program. Through counseling, applicants may be referred to other curriculums which are more appropriate for their goals, interests and achievements, or, in the case of those who are unqualified or poorly motivated, to further preparation through the Extension Division or the Pre-Technical program.

In some cases it may be more appropriate for an applicant to attend another college or post-secondary school insititution. Experience has pointed our that it is sometimes better for students to take time off from their educational pursuits between high school and college in order to gain a certain degree of maturity and develop a stronger motivation towards success.

Some colleges operate with an "open door" policy towards admissions, where students are accepted solely on the basis of high school graduation and without demonstration of ability for further accomplishment. The result is that high numbers of students are failed from college during the first term or first year. The Middlesex County College approach to admissions recognizes that:

a. It is wasteful in human and financial resources to use faculty and facilities for admission purposes where an open door policy is required.

b. Students need certain skills levels in the verbal area or in mathematics to reasonably achieve success in any curriculum.

c. It is psychologically poor to admit students who do not exhibit a chance of being successful and then fail them. Often these students will not return to education and human resources have been wasted where with counseling and additional preparation these resources might have been developed.

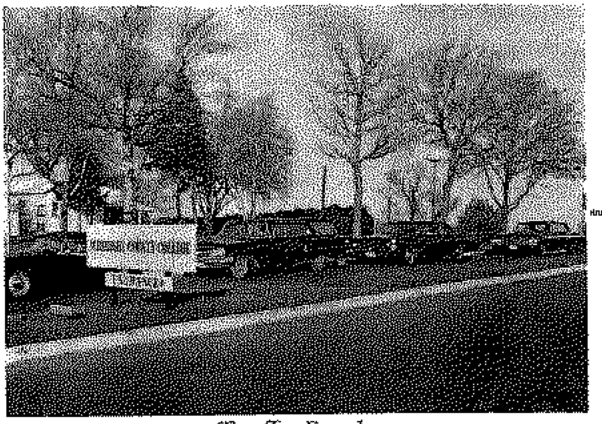
d. Each applicant's high school record, including the achievement grades of each course taken during high school, secondary school teacher

and counselor recommendations, scores on the Scholastic Aptitude Test of the College Boards, information regarding health and the personal questionnaire, and where appropriate, the results of his admissions counseling, must be considered by the Admissions Committee.

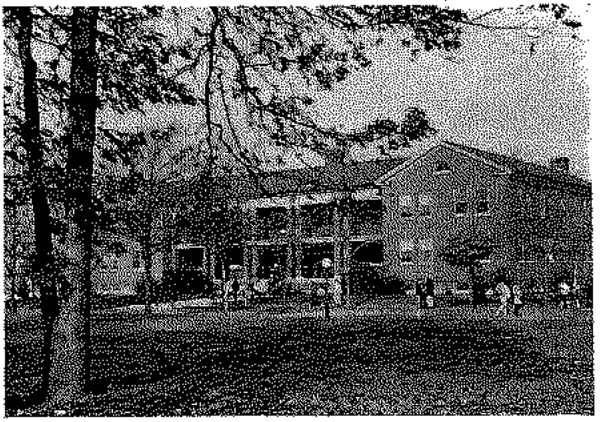
What may appear best for the student is not always consistent with the wishes of the student and his parents. However, the College must retain the right to determine a student's readiness for continuing education.

e. The members of the Admissions Committee, as professional educators, are the ones best prepared to make admissions decisions based upon a combination of both objective and subjective criteria.

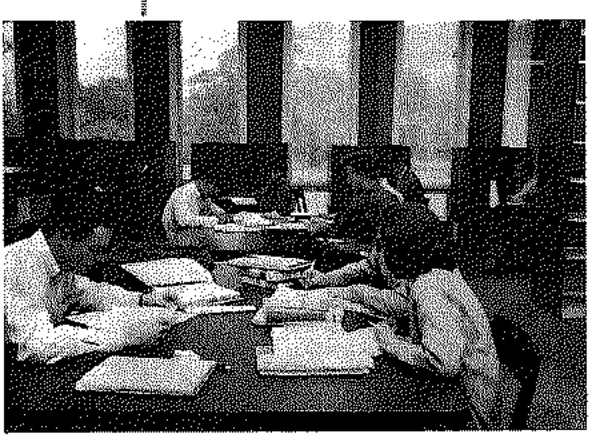
f. A college must retain the privilege of accepting or rejecting applicants for admission.



Traffic Exodus



Raritan Hall



Library Interior

ADMISSION TO FULL TIME STANDING

Entrance Requirements

A high school diploma or a New Jersey high school equivalency certificate is required for entrance to full-time standing. All applicants must take the Scholastic Aptitude Test of the College Entrance Examination Board. Information concerning the Scholastic Aptitude Test may be obtained from high school guidance directors or from the Admissions Office. If requested, applicants must appear at the College for a personal interview.

In addition, an applicant must meet the minimum requirements of physical ability required by the occupational field in which he wishes to engage.

In preparing for college, it is advisable for high school students who are planning to attend Middlesex County College to enroll in a college preparatory curriculum. The following table should help in designing your high school program. It should also assist applicants who have already graduated from high school to determine whether or not they have the proper background for full-time admission to a particular curriculum.

Curriculum	*Recommended High School Subjects*	*Other Desirable High School Subjects*
Business	*2 units Mathematics 2 units Science	College preparatory courses, typing, additional mathematics
Secretarial Science	*1 unit Mathematics 2 units Science	College preparatory courses; typing and shorthand will qualify the student for advanced courses
Nurse Education	*1 unit Mathematics 2 units Science—Biology and Chemistry	Additional Mathematics and Science
Engineering Science	Chemistry, Physics *Mathematics through Advanced Algebra	Additional Mathematics, Science, or Technical courses
Chemical Technology	Chemistry, *Mathematics through Intermediate Algebra	Additional Mathematics, Science, Technical courses
Electrical Technology	Physics, *Mathematics through Intermediate Algebra	Additional Mathematics, Science, Technical courses
Laboratory Technology	*1 unit Mathematics 2 units Laboratory Science	Additional Mathematics, Science

Liberal Arts and Sciences	*2 units Mathematics, 2 units Science and 2 units in any combination of Science, Language or Additional Mathematics	College preparatory courses, typing

*Academic Mathematics (Algebra, geometry, etc.)

Application Procedure

Application Procedure for Full-Time Enrollment—An application for admission must be made on official forms supplied on request by the Admissions Office.

A deposit of $10.00 must accompany the preliminary application card. The deposit is non-refundable but is applied as an advance payment on the student activity fee if the applicant is accepted. The applicant must complete and return all forms and submit all records requested in the Admissions Application Packet before any decision will be made. After an applicant is accepted, he will be billed for an advance tuition payment of $50.00. Once paid, this is also non-refundable.

Applicants may make an appointment with an admissions counselor for assistance in making a choice of curriculum.

Advanced Standing Students—Students who have attended one or more other colleges must, in all cases, submit an official transcript of work completed to the College Admissions Office before formal acceptance will be granted. Transfer of credit for a student who has been enrolled in another accredited college is subject to the approval of the Dean of Instruction.

Credit by Examination—Advanced Placement Examinations and College Proficiency Exams: Applicants who have completed any of the Advanced Placement Examinations sponsored by the College Entrance Examination Board may apply for credit and advanced placement. Such requests will be handled similarly to requests for transfer credit and will be granted, where applicable, subject to the approval of the Dean of Instruction.

Late Registration—An applicant may not register later than one week after the beginning of the Fall term except by permission of the Dean.

Readmission—Applications for readmission to the College must be submitted to the Admissions Office prior to three weeks before the start of the term in which the applicant is requesting readmission. Applications received later than the above period may be returned to the applicant by the Director of Admissions without processing.

Academic Dismissals—Students who have been academically dismissed from Middlesex County College or any other college will not be allowed to enroll as full-time students until they have remained out of college for one academic semester. Any exceptions must be by special appeal to the Admissions Committee.

Pre-Technical Program—Applicants who do not satisfactorily meet the entrance requirements may apply to enter the full-time Pre-Technical Program. This preparatory-year program provides an opportunity for the student to strengthen his overall academic background so that he may enter the full-time program with a better expectation of successful accomplishment. Those who complete this program satisfactorily may, with permission of the faculty, enter any curriculum of the College. Applicants should note, however, that the program is oriented toward preparing students for a technical or science-oriented curriculum and that it has a heavy math-science emphasis.

Part-Time Evening Study—Applicants who do not qualify academically for full-time admission may also prepare for such consideration with part-time studies and are encouraged to enroll in the part-time Evening Division. Individuals who want to become qualified by this method should request an appointment with an admissions counselor so that they may be advised about the proper courses in which to enroll. Successful work in the Evening Division will be a prime factor in their being admitted to the full-time day program.

Application Procedure for Part-Time Day School Enrollment—All enrollments on a part-time basis during the day school hours will be on a strict space-available basis after full-time students have registered. Individuals may register for part-time enrollment during day school hours or a combination of day and evening hours for a maximum of six credit hours by applying to the Director of the Evening and Extension Division.

In exceptional circumstances, applicants will be permitted to enroll for a maximum of twelve credit hours, subject to the approval of the Admissions Committee of the College. This committee will require high school or other academic credentials prior to the beginning of the classes in any term.

All other individuals admitted on other than a full-time basis will be considered extension students and will be subject to policies governing students in the Evening and Extension Division in addition to regulations governing full-time students. Such enrollment does not automatically make the enrollee a candidate for an Associate Degree.

ACADEMIC STANDARDS AND REGULATIONS

Requirements for Graduation

The Associate in Applied Science Degree

1. Degree requirements: a minimum of 60 semester credits (in addition to physical education).
2. Curriculum requirements:
   a) A minimum of 40 credits in a student's major field. These are courses intrinsic to and required by the various curriculums.
   b) A minimum of 20 credits in general education or liberal arts courses.
      1) Social Sciences: a minimum of six credits.
      2) Biological and Physical Sciences (including Mathematics): a minimum of six credits.

3) Humanities: a minimum of six credits in English (composition and/or speech).
4) Electives (or additional courses) in the foregoing fields comprising a minimum of 20 credits in the liberal arts and sciences or general education areas.

c) Satisfactory completion of all courses in a curriculum or as approved by a department.
d) Physical Education: in accordance with requirements of the college. Exception to this requirement may be made with approval of the Dean of Students.

3. Cumulative grade point average must be a minimum of 1.50.
4. Satisfaction of all obligations to the College.

The Associate in Arts Degree

1. Degree requirements: a minimum of 60 semester credits (in addition to physical education.)
2. Curriculum requirements: a minimum of 45 credits distributed as follows:
   a) Social Sciences: a minimum of 12 credits.
   b) Biological Sciences and Physical Sciences: a minimum of 8 credits.
   c) Mathematics: a minimum of six credits.
   d) Humanities: a minimum of 18 credits, 12 of which shall be English (composition, speech, and literature) and six of which shall be in other subjects in the humanities.
   e) Electives: At least 80% of courses enrolled in shall be in the fields of study listed above—additional electives may be chosen from other fields of study with consent of the student's major department.
   f) Physical Education: 4 credits required in Health and Physical Education. Exception to this requirement may be made with approval of the Dean of Students.
   g) Satisfactory completion of all courses in a curriculum or as approved by the student's major department.
3. Cumulative grade point average must be a minimum of 1.50.
4. Satisfaction of all obligations to the College.

Grading

Honor Points Per Credit Hour	*Grade*	*Expanation*
4	A	Outstanding achievement in meeting the objectives of the course.
3	B	Above average achievement.
2	C	Average achievement.
1	D	Below average achievement.
0	F	Failure to meet the objectives of the course.
0	W	Withdrawal from course when determined by the Dean of Students that withdrawal is

		necessitated by factors that are not under the control of the student. Withdrawal other than the above will result in an "F" grade, and will be computed with the semester and cumulative averages.
0	I	Incomplete work to be made up within one week from the end of the semester or by special arrangement of the Department.
0	S	Satisfactory.

Note: A cumulative point average of 1.5 will qualify the student for the Associate Degree; however, the College does not recommend a student who has not achieved an overall average of 2.0 for a baccalaureate degree program.

Scholastic Standing—To remain in satisfactory standing, a student must earn a semester grade point average of 1.2 the first semester and 1.5 in each succeeding semester. A cumulative grade point average of 1.5 must be achieved to qualify for the Associate Degree. Any student who does not maintain this minimum average in any semester is placed on probation for the following semester. More than one consecutive probationary period, more than one failing grade in a semester, or failure to earn a grade point average of 1.0 in any semester will subject a student to dismissal.

In order for a student to remain in good standing he must also demonstrate mature attitude, interest and cooperation. Grades are issued at the end of each semester. Students will also be notified of their academic standing at the approximate mid-point of each semester. Satisfactory progress will be denoted by an "S" letter grade. Progress below average (below "C") will be denoted by an appropriate letter grade.

Residence Requirements—Students transferring from other colleges will be expected, as a general rule, to complete a minimum of one year's work at Middlesex immediately prior to being granted the Associate Degree.

Attendance Regulations—Every student is expected to attend all sessions of classes and laboratory work for which he is registered, and all absences will be recorded. More than three contact hours of absence from any course may be considered valid reason for dismissal or other disciplinary action.

Withdrawal from the College—A student compelled to withdraw at any time must immediately notify the Student Personnel Office and complete the proper termination form. Failure to comply with this regulation will cause the individual to forfeit his right to honorable withdrawal and to lose any refund of fees.

Withdrawal from Course—A student permitted to withdraw from a course during the first five weeks of any semester will have no notation of such registration on his permanent official college record. If a student is permitted to withdraw from a course after this date he will receive an "F" grade. If, for reasons of health or circumstances beyond his control,

the Dean of Students permits the student to drop the course, he will receive a "W."

Dismissal—Students may be considered for dismissal for the following causes: more than one consecutive probationary period, more than one failing grade in a semester (one failing grade in Pre-Tech), failure to earn a point average of 1.0 in any semester, irregular attendance, neglect of work or financial obligations, failure to comply with College rules and regulations or official notices, conduct unbecoming a student. Any action leading to the requested withdrawal of a student is taken up by the Administrative Council. The College reserves the right to be the sole judge in all matters pertaining to dismissal. Students who are dismissed from the College will not be permitted to re-enroll in the College semester immediately following the dismissal action.

Transfer to Senior Institutions—Students desiring to transfer are encouraged to consult with their faculty advisor, department chairman, or counselor in the Student Personnel Office for assistance in selecting colleges that are appropriate in terms of their goals and demonstrated college achievements. As a general rule, Middlesex County College will not recommend students who have less than a "C" (2.0) average for transfer to other colleges.

An applicant for transfer who will not complete the requirements for the Associate Degree at Middlesex County College prior to the time of anticipated transfer may not be recommended for tranfer if the faculty of the College feels the applicant has not completed a desirable breadth or depth of study to provide suitable criteria for measuring academic ability.

The following procedures are to be followed by students desiring transfer:

1. Initiate an application to transfer by applying directly to the college of choice. Applications should be submitted prior to January of the second year. Applications submitted after these dates involve the risk of being deferred or returned due to lack of space at the four-year college.

2. Fill out the Transfer Record Form in the Student Personnel Office. Students in Liberal Arts and Sciences and the Engineering Science curricula will be requested to complete the Transfer Record Form regardless of their intention to transfer immediately upon graduation from Middlesex.

3. Complete Request for Transcript of Academic Record Form in the Registrar's Office for each college to which they are applying.

4. Forward request for references or recomendation forms from other colleges to the Student Personnel Office.

These procedures should be reviewed carefully. Omission of any step would result in a delay of records being forwarded to another college. If there are any questions regarding the above procedure, a member of the Student Personnel Staff may be consulted.

GENERAL INFORMATION

Expenses

Tuition for full time students

For Middlesex County residents $ 300.00 per year
(payable at the rate of $150 per semester)
For out-of-County residents 600.00 per year
(payable at the rate of $300 per semester)
For out-of-State residents 1200.00 per year
(payable at the rate of $600 per semester)

Tuition for all students is payable at the beginning of each term of the College year.

Students under 21 are defined as County residents if they, and a parent or legal guardian, have resided in Middlesex County other than for the purpose of attending Middlesex County College for at least six months immediately preceding the date of registration. For students over 21, the student himself must meet the above requirements.

Fees

Student Activity ..... $36.00 per year

The $10.00 deposit required with the application becomes advance payment on the activity fee if the applicant is accepted. This fee will be used in the support of men's and women's athletics, social programs, student clubs, student publications, and related activities.

Students enrolled for less than twelve, but more than six, credit hours in a given term will be assessed at the rate of $1.00 per credit hour for their student activity fee.

Health ..... $24.00 per year

This fee covers the cost of the student health insurance program. If a student is covered under his family's health insurance, however, a statement to this effect will be accepted instead of the health fee, provided the statement is signed by a parent or by the student if he or she is 21 years of age. This statement should cite the name of the insurance program under which the student is covered, and it should be returned to the Finance Office.

Graduation $10.00

This fee is paid at the start of the semester preceding graduation.

Late Registration $5.00

Levied upon failure to register on dates specified or to pay bills on date due.

Tuition and fees must be paid before a student is admitted to class.

Schedule of Tuition Refund-Withdrawal at the end of:

First week ..... 100% refund (less non-refundable deposit)
Second week ..... 80% refund
Third week ..... 60% refund
Fourth week ..... 40% refund
Fifth week ..... No refund

Tuition for part-time students

For Middlesex County residents	$12.00 per contact hour
For out-of-County residents	16.00 per contact hour
Late Registration	$5.00

Levied for registration after last day designated for In-Person registration.

Books and Supplies

Each student provides, at his own expense, the necessary books and instructional materials. These may be purchased at the Book Store maintained by the Faculty-Student Association for the convenience of the students. The cost varies, depending on the curriculums, from about $75.00 to $150.00 per year.

Uniforms for Nurse Education students will cost approximately $60.00.

Financial Aid

Many young people are denied the advantages of higher education because of costs. Middlesex County College has made a sincere effort to overcome these economic barriers through its Student Financial Aids Program, which includes funds from Federal, State and local sources.

Educational Opportunity Grants—Under grants provided by the Federal Government certain students are eligible for Educational Opportunity Grants. These vary in amount but may be as high as $800.00 per year. Further information regarding the grants may be obtained from the Student Financial Aids Office, Student Personnel Services.

Scholarships—Scholarships and grants-in-aid are available through the Middlesex County College Foundation. All applicants for admission to the College are given a financial aids application.

New Jersey State Scholarships—Recipients of New Jersey State Scholarships may use them at the College.

Student Loans—Students enrolled at the College are eligible to borrow up to $1,000 from either the New Jersey Higher Education Assistance Authority or from funds made available under the auspices of the National Defense Student Loan Program. Additional information may be obtained from the Student Financial Aids Office, Student Personnel Services.

The College Work Study Program—Employment opportunities exist for students to work on a part-time basis through the College Work Study Program. Students may work up to fifteen hours per week during the academic year and up to forty hours per week under the College Work Study Program when classes are not in session. Positions include clerical assistants, maintenance assistants, laboratory assistants, library assistants, and other part-time student assistant positions. For further information please contact the Student Financial Aids Office, Student Personnel Services.

PART-TIME WORK—Students should not attempt to work for more than 15 hours per week maximum. This amount of work should be attempted only by well-qualifed students.

Veterans

All full-time curriculums are approved by the Veterans Administration. Those applicants wishing to obtain Government educational benefits should consult the nearest veterans agency. Additional information may be obtained from the Registrar.

Living Accommodations

The College does not maintain dormitories since the primary function is to serve the educational needs of the community. Students who will live away from home are responsible for arranging their own living accommodations.

Campus Traffic and Security

Transportation—Students are responsible for arranging their own transportation to and from the campus. Public transportation is available near the campus; however, because of the wide distribution of students, the majority will find an automobile necessary or may arrange to travel in car pools.

Parking—The College is designed as a compact walk-on campus with perimeter parking. All parking lots are located on the perimeter, and walk-ways are provided between buildings on the campus.

Speed Limit—Maximum speed limit on campus is 20 mph, 5 mph in Parking and Pedestrian areas. This will be strictly enforced.

Vehicle Identification—Full-time and part-time students, faculty and staff must register with the Campus Traffic and Security Office any vehicle which will be operated on campus. No fee is charged for this registration. Vehicle Registration decals must be displayed on each vehicle, and temporary parking permits are available for any vehicle temporarily on campus. Traffic and parking regulations are in effect at all times. Violators are liable to fines.

Security—The Middlesex County Parks Police are the acting campus security force. They are authorized to enforce all regulations regarding parking and traffic and to issue citations for violations.

Campus of the future.

CURRICULUM DESCRIPTIONS

Career-oriented curriculums are designed to prepare students for immediate employment upon graduation from the College. They offer a combination of general education courses such as English, Mathematics, Science, Sociology, Psychology and Economics together with the special courses of the major field. The career-oriented programs include:

Chemical Technology
Electrical Technology
Laboratory Technology
Nurse Education
Business
Secretarial Science

The *transfer-oriented* curriculums are designed as the basic two years of a baccalaureate program. Students planning to transfer should explore four-year college programs and study their bulletins with particular reference to statements regarding admissions with advanced standing and requirements for the bachelor's degree. The transfer-oriented programs include:

Liberal Arts and Sciences
Engineering Science

THE ENGINEERING TECHNOLOGIES

Middlesex County College offers curriculums to prepare students for one of the newest, most interesting and challenging occupational areas—Engineering Technology. Industry today has a broad range or spectrum of technical jobs ranging in complexity from the highly skilled jobs closely related to the skilled craftsman to complex and theoretically-oriented jobs very closely associated with the work of the graduate engineer.

There has emerged within this broad spectrum of jobs two general classifications of technicians—the industrial technician, or highly skilled technician, who works at the end of the spectrum closest to the skilled trades and the engineering technician, or semi-professional technician, who works at the end of the spectrum closest to the engineer. Engineering technicians are employed in research, design, development, testing, installation, operation and sales. The work of the engineering technician is basically the translation of ideas into programs, processes or hardware models, and then the use, testing, evaluation and selling of these items. One has only to look at the personnel wanted ads in any large newspaper to see the large number of opportunities available for engineering technicians. These opportunities exist for both men and women.

Local studies have indicated need for electrical and chemical engineering technicians. Typical jobs for *chemical engineering technicians* include chemical laboratory technician, control analyst, pilot plant operator, chemical sales representative, production supervisor and research

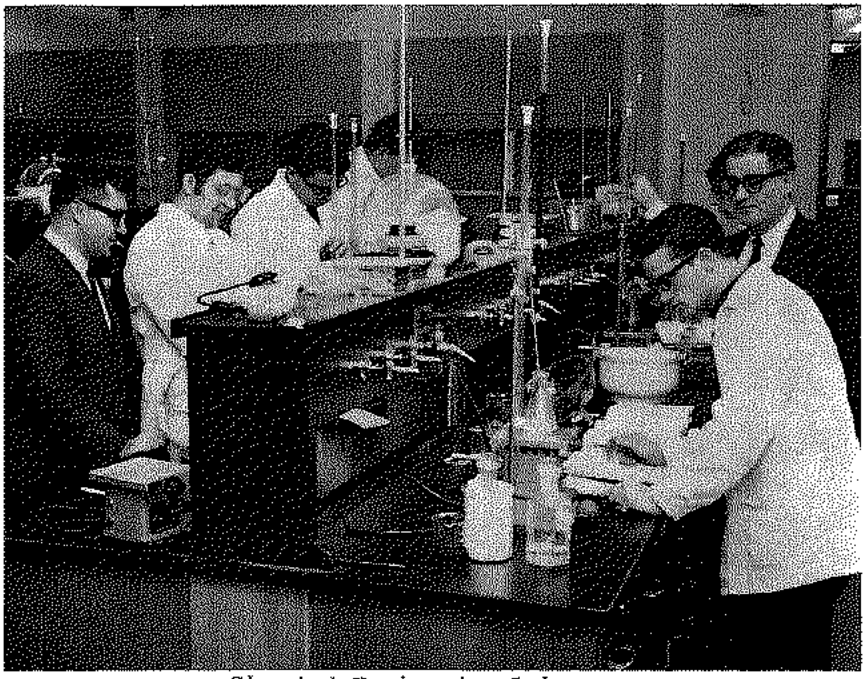
assistant. Typical jobs for *electrical engineering technicians* include test technician, technical sales representative, electronic engineering aide, electrical draftsman, customer service technician, research technician and production supervisor.

Manpower reports indicate that unskilled jobs are disappearing, that jobs at all levels are becoming more complex; and professional and technical jobs are, as a group, increasing at a faster rate than any other segment of manpower needs. Nearly 70,000 new technicians will be needed annually within the next decade. The number of technicians entering the labor force each year is far below that needed to fill existing positions. During the first two years of this decade only about 30,000 industrial and engineering technicians per year were graduated. In 1964 and 1965 less than half this number each year were graduated from engineering technology programs.

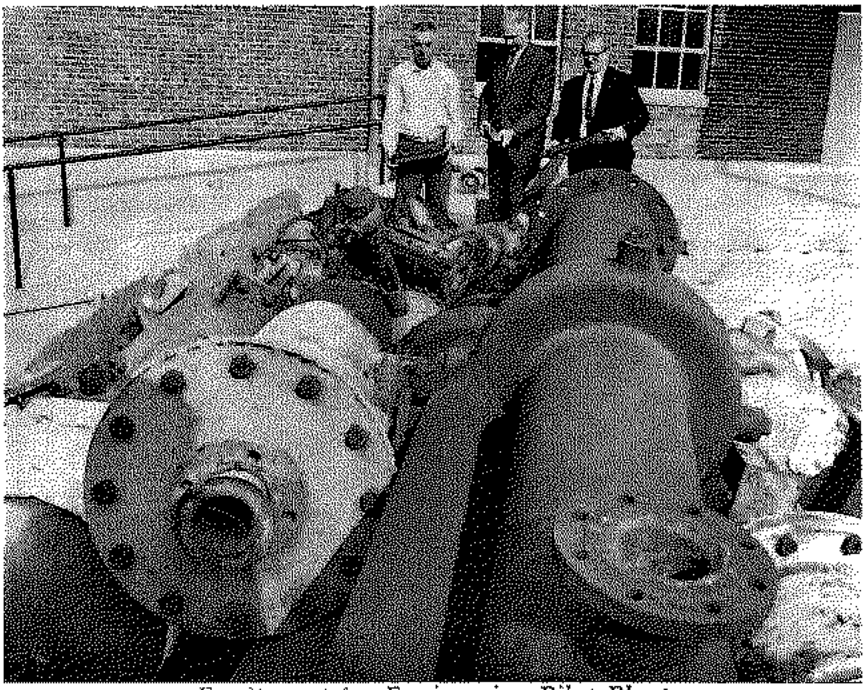
The New Jersey Council for Research and Development has estimated that during the period 1960-1964 only 240 engineering technicians were graduated in the State of New Jersey. Recent local and State studies in New Jersey have stressed the need for more trained personnel with the type of education acquired through an engineering technology curriculum. Currently many of the industries and laboratories in New Jersey must look outside of the State to seek the engineering technologist.

Other indications of the needed and important roles that engineering technicians play in the occupational spectrum are manifest in the salaries offered and the opportunities available for advancement and responsibility. According to a recent report of the Engineering Manpower Commission beginning salaries for engineering technology graduates average approximately $500.00 per month and some graduates receive substantially more when they appear capable of assuming greater job responsibility. The individual who is interested in engineering, that is the application of theoretical knowledge to practical and useful ends, is the kind of person who will find engineering technology challenging and financially rewarding. The engineering technician, through his technical education and experience with the practical side of industry, is well qualified to supervise production lines, direct the engineering or building of experimental prototypes, or even assume supervision of pilot production plants. The demands of most semi-professional engineering technology plants require the equivalent of two years of post high school technical training involving significant work in mathematics, science and English, as well as rigorous course work in the technical specialty.

Courses offered in the Chemical Technology and Electrical Technology curriculums are shown on the following pages.



Chemical Engineering Laboratory



Equipment for Engineering Pilot Plant

CHEMICAL TECHNOLOGY CURRICULUM

FRESHMAN YEAR — SEMESTER I

Course Code		Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
CHM— 105	Chemical Calculations	0	2	1
CHM— 121	General Chemistry	3	3	4
ENG— 101	Communication Skills I	3	0	3
ENR— 111	Technical Graphics I	0	3	1
HED— 101	Health	1	1	1
MAT— 111	College Algebra & Trigonometry	4	0	4
PHY— 121	General Physics I	3	2	4
		14	11	18

SEMESTER II

CHM— 122	General Chemistry & Qualitative Analysis	4	3	5
ENG— 102	Communication Skills II	3	0	3
ENR— 105	Introduction to Digital Computation	0	2	1
ENR— 112	Technical Graphics II	0	3	1
MAT— 112	Analytic Geometry & Calculus I	3	0	3
PED— 101	Physical Education	0	2	1
PHY— 122	General Physics II	3	2	4
		13	12	18

SENIOR YEAR — SEMESTER III

CHM— 213	Quantitative Analysis	2	6	4
CHM— 221	Organic Chemistry I	3	3	4
ENR— 211	Unit Operations in Chemical Engineering I	3	3	4
MAT— 211	Analytic Geometry & Calculus II	3	0	3
PED— 102	Physical Education	0	2	1
	Social Science Elective	3	0	3
		14	14	19

SEMESTER IV

CHM— 214	Instrumental Methods of Analysis	2	6	4
CHM— 222	Organic Chemistry II	3	3	4
ECO— 203	General Economics	3	0	3
ENR— 212	Unit Operations in Chemical Engineering II	3	3	4
PED— 103	Physical Education (Optional)	(0	2	1)
	Elective	3	0	3
		14	12-14	18-19

TOTAL CREDITS 73-74

ELECTRICAL TECHNOLOGY CURRICULUM

FRESHMAN YEAR — SEMESTER I

Course Code			Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
ELT—	101	Circuits I	3	3	4
ENG—	101	Communication Skills I	3	0	3
ENR—	105	Introduction to Digital Computation	0	2	1
ENR—	111	Technical Graphics I	0	3	1
HED—	101	Health	1	1	1
MAT—	111	College Algebra & Trignometry	4	0	4
PHY—	121	General Physics I	3	2	4
			14	11	18

SEMESTER II

ELT—	102	Circuits II	3	3	4
ELT—	103	Electronics I	3	3	4
ENG—	102	Communication Skills II	3	0	3
ENR—	112	Technical Graphics II	0	3	1
MAT—	112	Analytic Geometry & Calculus I	3	0	3
PHY—	122	General Physics II	3	2	4
			15	11	19

SENIOR YEAR — SEMESTER III

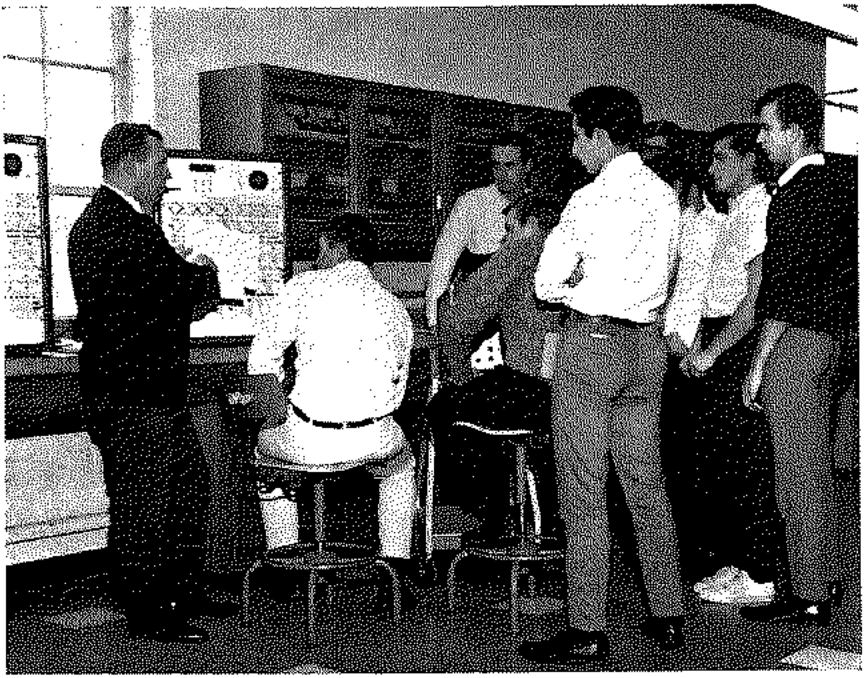
ELT—	201	Manufacturing Processes I	1	3	2
ELT—	203	Electronics II	3	3	4
ELT—	205	Electro Magnetic Devices	2	3	3
ELT—	207	Digital Circuits	2	3	3
MAT—	211	Analytical Geometry & Calculus II	3	0	3
PED—	101	Physical Education	0	2	1
PSY—	101	Introduction to Psychology			
SOC—	101	Social Science } OR	3	0	3
			14	14	19

SEMESTER IV

ECO—	203	General Economics	3	0	3
ELT—	202	Manufacturing Processes II	1	3	2
ELT—	204	Electronics III	3	3	4
ELT—	206	Automatic Control	2	3	3
ELT—	208	Microwave Principles	2	3	3
PED—	102	Physical Education	0	2	1
		Elective	3	0	3
			14	14	19

TOTAL CREDITS 75

*Physical Education required in Semesters III and IV. It is optional in Semester II.



Electrical Technology Laboratory

Laboratory Technology Experiment

LABORATORY TECHNOLOGY

The Laboratory Technology program is designed to prepare graduates for immediate employment as laboratory technicians. The program has a biochemical emphasis and includes courses in general education, such as English, Psychology, Sociology and Economics. While emphasis is placed upon the scientific approach in relating biology and chemistry, less emphasis is found in the mathematical relationships.

In Middlesex County and the surrounding communities are located many large scientific laboratories. A graduate of the Laboratory Technology program is well prepared for employment in pharmaceutical firms, hospital laboratories and many other industries and institutions employing biological or chemical laboratory assistants.

LABORATORY TECHNOLOGY CURRICULUM

Course Code		Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
FRESHMAN YEAR	**SEMESTER I**			
BIO— 113	Anatomy	3	3	4
BIO— 123	General Biology I	3	3	4
CHM— 101	Principles of Chemistry I	3	3	4
ENG— 101	Communication Skills I	3	0	3
HED— 101	Health	1	1	1
MAT— 101	Freshman Mathematics I	3	0	3
		16	10	19
	SEMESTER II			
BIO— 114	Physiology	3	3	4
BIO— 124	General Biology II	3	3	4
CHM— 102	Principles of Chemistry II	3	3	4
ENG— 102	Communication Skills II	3	0	3
MAT— 102	Freshman Mathematics II	3	0	3
PED— 101	Physical Education	0	2	1
		15	11	19
SENIOR YEAR	**SEMESTER III**			
BIO— 221	Microbiology	2	4	4
CHM— 201	Principles of Organic Chemistry	3	3	4
PED— 102	Physical Education	0	2	1
PHY— 101	Principles of Physics	2	2	3
PSY— 101	Introduction to Psychology	3	0	3
SCI— 201	Laboratory Techniques	2	4	4
		12	15	19
	SEMESTER IV			
BIO— 202	Histology	3	3	4
BIO— 222	Bacterial Physiology	3	3	4
ECO— 203	General Economics	3	0	3
PED— 103	Physical Education (Optional)	(0	2	1)
SCI— 202	Laboratory Instrumentation	2	4	4
	Elective	3	0	3
		14	10-12	18-19
	TOTAL CREDITS			75-76

NURSE EDUCATION

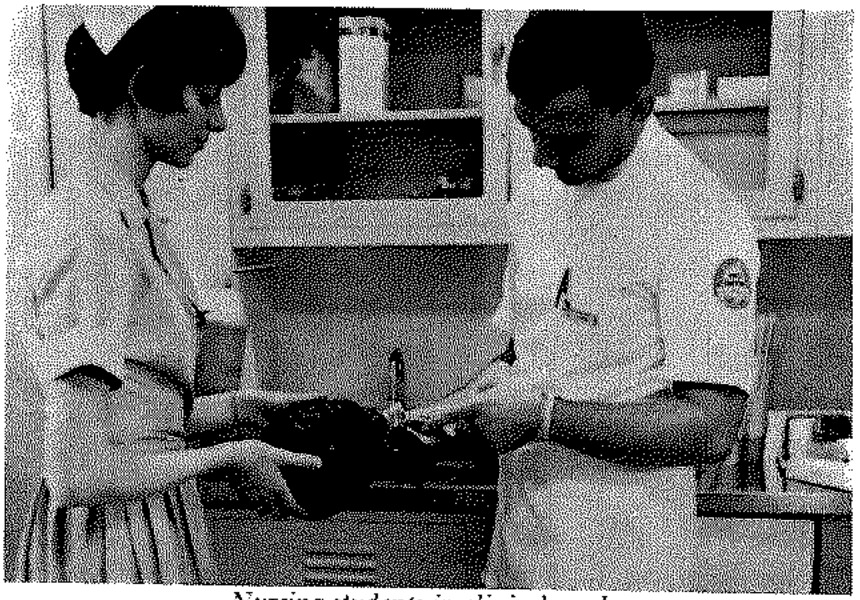
The Associate Degree nursing program is a planned two-year curriculum of study and clinical experiences preparing the graduate for general duty nursing.

Nursing courses are offered in the areas of Nursing Fundamentals, Nursing of Mothers and Children and Nursing of Adults. These courses are given by the nurse faculty members of the college Department of Nurse Education and include theory and related clinical experience in hospitals and other health agencies.

These experiences include care of individuals in a variety of settings such as newborn nursery, operating room, medical-surgical units and psychiatric treatment centers. The student is oriented to other community health services through experiences in clinics, physician's offices and nursery schools.

The Associate Degree Nursing program offers the student the advantage of participating in campus activities and of enrolling with other students in courses such as biological and physical sciences and humanities.

The registered nurse plays a significant role in meeting growing community health needs. This program is open to men and women who, upon graduation, receive an Associate in Applied Science Degree and are qualified to take the New Jersey Board of Nursing Examination for licensure as a Registered Nurse.



Nursing students in clinical work

NURSE EDUCATION CURRICULUM

FRESHMAN YEAR

Semester I

Course Code			Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
BIO—	111	Human Anatomy & Physiology I	3	2	4
ENG—	101	Communication Skills I	3	0	3
NUR—	101	Nursing Fundamentals	4	12	8
SCI—	101	Physical Science	3	2	4
			13	16	19

Semester II

BIO—	112	Human Anatomy & Physiology II	3	2	4
ENG—	102	Communication Skills II	3	0	3
NUR—	102	Nursing of Mothers & Children	4	12	8
PED—	101	Physical Education	0	2	1
PSY—	101	Introduction to Psychology	3	0	3
			13	16	19

SENIOR YEAR

Semester III

BIO—	211	Principles of Microbiology	2	2	3
HIS—	201	American History	3	0	3
NUR—	201	Nursing of Adults I	4	12	8
SOC—	101	Social Science	3	0	3
			12	14	17

Semester IV

ECO—	203	General Economics	3	0	3
NUR—	202	Nursing of Adults II	4	12	8
NUR—	203	Contemporary Nursing Problems	1	2	2
PED—	102	Physical Education	0	2	1
		Elective	3	0	3
			11	16	17

Total Credits 72

BUSINESS

The Business curriculums are designed to prepare students for immediate employment upon graduation from Middlesex County College. Two options are offered—Accounting and Marketing. We have only to look around us and note the developments taking place to recognize the need for semi-professional personnel in the business field. The increasing size and complexity of business organizations and the widespread growth of record-keeping among all types of enterprises have led to occupational opportunities which far outnumber the availability of qualified, educated personnel.

Opportunities for employment are available in business and industry as well as management training programs offered by banks, chain stores, insurance companies and similar business firms.

The *Secretarial Science* curriculum is also designed to prepare graduates for immediate employment. Graduates will find opportunities as secretaries in the professions, in government and with business firms.

BUSINESS CURRICULUM

FRESHMAN YEAR — SEMESTER I

Course Code			Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
ACC—	103	Principles of Accounting I	2	2	3
BUS—	101	Business Organization & Management	3	0	3
BUS—	103	Business Mathematics	3	0	3
BUS—	107	Introduction to Data Processing } OR	2	0	2 }
SES—	105	Developmental Typewriting* } OR	1	2	1 }
ENG—	101	Communication Skills I	3	0	3
PED—	101	Physical Education	0	2	1
SOC—	101	Social Science	3	0	3
			15-16	4-6	16-18

SEMESTER II

ACC—	104	Principles of Accounting II	2	2	3
BUS—	107	Introduction to Data Processing } OR	2	0	2 }
SES—	105	Developmental Typewriting* } OR	1	2	1 }
BUS—	201	Business Law I	3	0	3
ENG—	102	Communication Skills II	3	0	3
HED—	121	Health Education	2	0	2
PSY—	101	Introduction to Psychology	3	0	3
		Fine Arts Elective: Art, Drama, Music	2	0	2
			15-17	2-4	16-18

*May be waived if completed in high school.

SENIOR YEAR — *Accounting Option*

Semester III

Course Code		Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
ACC— 201	Intermediate Accounting	2	2	3
ACC— 203	Accounting Systems & Procedures I	3	0	3
ACC— 205	Automated Accounting	1	3	2
BUS— 202	Business Law II	3	0	3
ECO— 201	Principles of Economics I	3	0	3
ENG— 201 / SCI— 203	Introduction to Literature / Natural Science — OR	3	0	3
PED— 102	Physical Education	0	2	1
		15	7	18

Semester IV

ACC— 202	Cost Accounting	2	2	3
ACC— 204	Accounting Systems & Procedures II	3	0	3
ACC— 206	Tax Accounting	2	2	3
BUS— 109	Business Orientation	1	0	1
ECO— 202	Principles of Economics II	3	0	3
ENG— 201 / SCI— 203	Introduction to Literature / Natural Science — OR	3	0	3
PED— 103	Physical Education (Optional)	(0	2	1)
	Fine Arts Elective: Art, Drama, Music	2	0	2
		16	4-6	18-19

TOTAL CREDITS 70-72

Marketing Option

Semester III

BUS— 202	Business Law II	3	0	3
ECO— 201	Principles of Economics I	3	0	3
MKT— 201	Marketing I	3	0	3
MKT— 203	Principles of Advertising	3	0	3
PED— 102	Physical Education	0	2	1
SCI— 203 / ENG— 201	Natural Science / Introduction to Literature — OR	3	0	3
	Fine Arts Elective: Art, Drama, Music	2	0	2
		17	2	18

Semester IV

BUS— 109	Business Orientation	1	0	1
ECO— 202	Principles of Economics II	3	0	3
MKT— 202	Marketing II	3	0	3
MKT— 204	Principles of Retailing	3	0	3
MKT— 206	Marketing Management Seminar	2	2	3
PED— 103	Physical Education (Optional)	(0	2	1)
SCI— 203 / ENG— 201	Natural Science / Introduction to Literature — OR	3	0	3
		15	2-4	16-17

TOTAL CREDITS 68-70

SECRETARIAL SCIENCE CURRICULUM

FRESHMAN YEAR — SEMESTER I

Course Code			Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
BUS—	101	Business Organization & Management	3	0	3
BUS—	107	Introduction to Data Processing	2	0	2
BUS—	109	Business Orientation	1	0	1
ENG—	101	Communication Skills I	3	0	3
PED—	101	Physical Education	0	2	1
SES—	101	Typewriting I*	1	3	2
SES—	103	Shorthand I*	3	2	3
		Fine Arts Elective: Art, Drama, Music	2	0	2
			15-17	2-7	17-18

SEMESTER II

BUS—	103	Business Mathematics	3	0	3
ENG—	102	Communication Skills II	3	0	3
HED—	121	Health Education	2	0	2
SES—	102	Typewriting II	1	3	2
SES—	104	Shorthand II	2	2	2
SOC—	101	Social Science	3	0	3
		Fine Arts Elective: Art, Drama, Music	2	0	2
			16	5	17

SENIOR YEAR — SEMESTER III

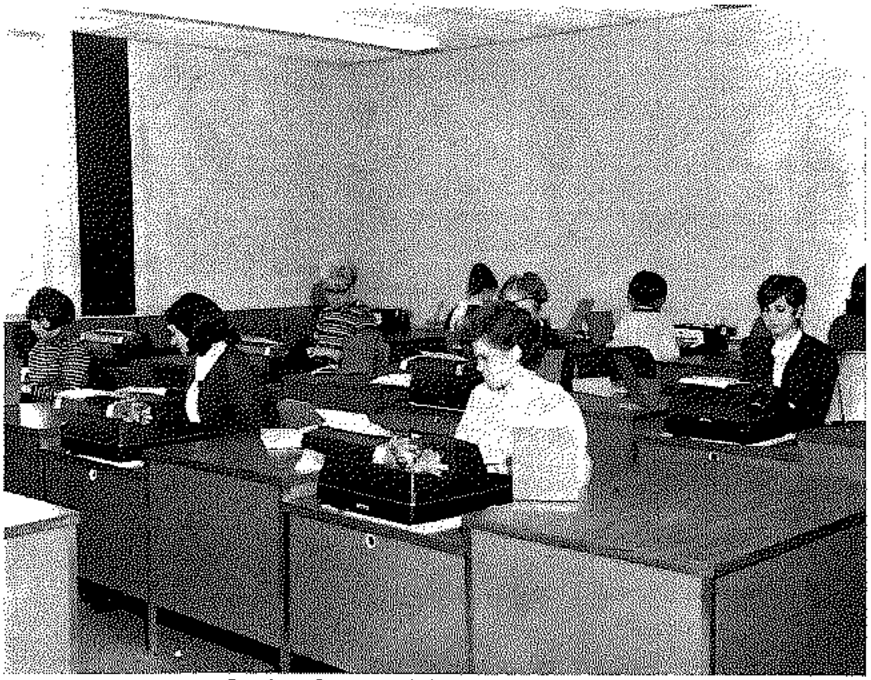
ACC—	103	Principles of Accounting I		2	2	3
ENG—	201	Introduction to Literature	OR	3	0	3
SCI—	203	Natural Science				
PED—	102	Physical Education		0	2	1
SES—	201	Typewriting III		1	3	2
SES—	203	Shorthand III		2	2	2
SES—	211	Secretarial Procedures I		3	0	3
		Elective		3	0	3
				14	9	17

SEMESTER IV

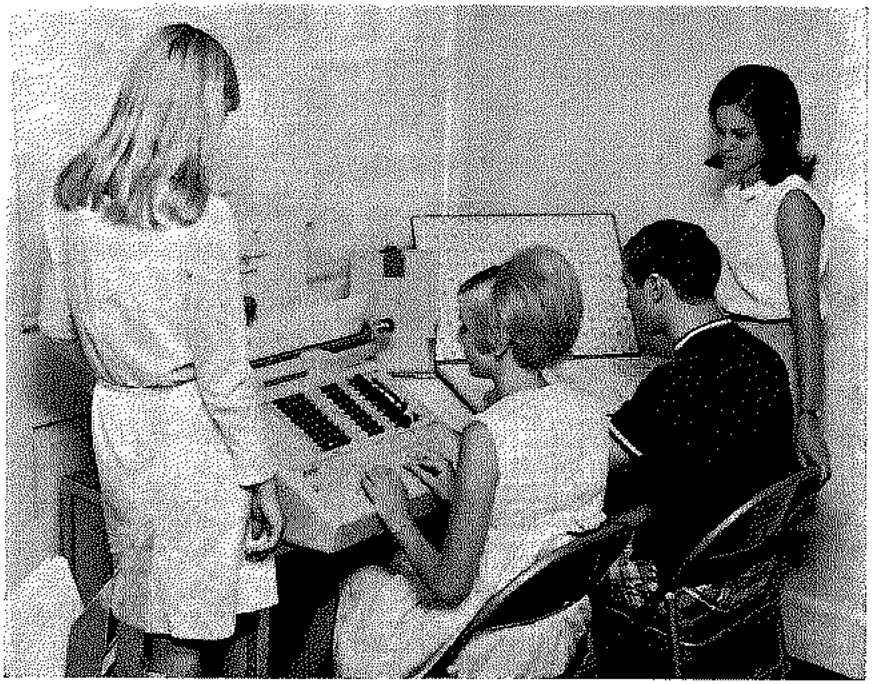
BUS—	201	Business Law I		3	0	3
BUS—	204	Mechanics of Business		2	2	2
ENG—	201	Introduction to Literature	OR	3	0	3
SCI—	203	Natural Science				
PED—	103	Physical Education (Optional)		(0	2	1)
SES—	204	Shorthand IV		2	2	2
SES—	212	Secretarial Procedures II		3	0	3
		Elective		3	0	3
				16	4-6	16-17

TOTAL CREDITS 67-69

*May be waived if 2 years of study completed in high school. Electives to be substituted with approval of Advisor.



Senior Secretarial Science students



Fundamentals of office machine equipment

LIBERAL ARTS AND SCIENCES

The Liberal Arts and Sciences curriculum is primarily intended to enable the student to take the first two years of the four-year degree within the community college. This is a two-year university parallel program designed for those who wish to continue their college education at a four-year college or university. Students who complete this curriculum will have obtained a breadth of education preparatory to such professional careers as law, medicine, and education. A special science emphasis option offers particularly appropriate preparation for students who plan to move from Middlesex County College to pre-medical, pre-dental or pre-pharmaceutical programs in four-year colleges.

The required and elective courses give the students essential credits in such areas as mathematics, science, the social sciences and the humanities. This curriculum can also perform an exploratory function for many students. It is regarded as an ideal course of study for those qualified students who have not yet decided on a specific career. The program enables them to complete certain studies while they are making their career decisions.

Students who are interested in transfer to a four-year Business Administration program should review the elective offerings in the Business Option listed at the end of this section.

CURRICULUM FOR LIBERAL ARTS

FRESHMAN YEAR — SEMESTER I

Course Code			Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
ENG—	121	English Composition I	3	0	3
HED—	121	Health Education	2	0	2
PED—	101	Physical Education (OR)	0	2	1
HIS—	121	History of Western Civilization I	3	0	3
		Language*	3	2	3
		Elective (OR)	3	0	3
MAT—		Mathematics†	3	0	3
SOC—	121	Sociology I	3	0	3
SCI—		Science‡ (OR)	3	3	4
			15-17	0-7	16-18

SEMESTER II

ENG—	122	English Composition II	3	0	3
HED—	121	Health Education	2	0	2
PED—	101	Physical Education (OR)	0	2	1
HIS—	122	History of Western Civilization II	3	0	3
		Language*	3	2	3
		Elective (OR)	3	0	3
MAT—		Mathematics†	3	0	3
SOC—	122	Sociology II	3	0	3
SCI—		Science‡ (OR)	3	3	4
			15-17	0-7	16-18

SENIOR YEAR		SEMESTER III			
ENG— 221	English Literature I	} OR	3	0	3
ENG— 223	American Literature I				
	Language	} OR	3	2	3
	Humanities Elective		3	0	3
PED— 102	Physical Education		0	2	1
SCI—	Science	} OR	3	3	4
SOC— 121	Sociology I		3	0	3
	Social Science Elective		3	0	3
	Elective		3	0	3
			15	2·7	16·17
		SEMESTER IV			
ENG— 222	English Literature II	} OR	3	0	3
ENG— 224	American Literature II				
	Language	} OR	3	2	3
	Humanities Elective		3	0	3
PED— 103	Physical Education (Optional)		(0	2	1)
SCI—	Science	} OR	3	3	4
SOC— 122	Sociology II		3	0	3
	Social Science Elective		3	0	3
	Elective		3	0	3
			15	0·7	15·17
		TOTAL CREDITS			66·67

Business Option: Seniors who wish to transfer to a four-year Business Administration program may elect ECO 201-202 (Principles of Economics I and II) as the Social Science elective and ACC 103-104 (Principles of Accounting I and II) as the free elective.

*Foreign Language competency through the intermediate level must be demonstrated by each student in this curriculum prior to graduation. Entry level will be determined by the Language Department prior to initial registration.

†One year of mathematics will be required in this curriculum and may be selected from the following courses with the concurrence of the Mathematics Department.

MAT—101-102 Freshman Mathematics
MAT—111 } College Algebra and Trigonometry
MAT—131 } Analytic Geometry and Calculus I
MAT—121 } Finite Mathematics
MAT—122 } Probability and Statistics
MAT—131-132 Analytic Geometry and Calculus

‡One year of science will be required in this curriculum. Students with two years of high school algebra may take it during their freshman year.

LIBERAL ARTS CURRICULUM
SCIENCE EMPHASIS OPTION*

FRESHMAN YEAR — SEMESTER I

Course Code		Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
BIO— 123	General Biology I	3	3	4
CHM— 121	General Chemistry	3	3	4
ENG— 121	English Composition I	3	0	3
HED— 121	Health Education	2	0	2
HIS— 121	History of Western Civilization I	3	0	3
MAT—	Mathematics†	3	0	3
		17	6	19

SEMESTER II

BIO— 124	General Biology II	3	3	4
CHM— 122	General Chemistry & Qualitative Analysis	4	3	5
ENG— 122	English Composition II	3	0	3
HIS— 122	History of Western Civilization II	3	0	3
MAT—	Mathematics†	3	0	3
PED— 101	Physical Education	0	2	1
		16	8	19

SENIOR YEAR — SEMESTER III

BIO— 221	Microbiology	2	4	4
CHM— 221	Organic Chemistry I (OR)	3	3	4
ENG— 221	English Literature I			
ENG— 223	American Literature I (OR)	3	0	3
	Humanities Elective	3	0	3
PHY— 121	General Physics I	3	2	4
PED— 102	Physical Education	0	2	1
	Social Science Elective	3	0	3
		14-15	7-8	18

SEMESTER IV

BIO— 222	Bacterial Physiology			
CHM— 222	Organic Chemistry II (OR)	3	3	4
ENG— 222	English Literature II			
ENG— 224	American Literature II (OR)	3	0	3
	Humanities Elective	3	0	3
PHY— 122	General Physics II	3	2	4
PED— 103	Physical Education (Optional)	(0	2	1)
	Social Science Elective	3	0	3
		15	5-7	17-18

TOTAL CREDITS 73-74

*Students who intend to continue their education in such fields as medicine, dentistry, or pharmacy are advised to enroll in this option.

†MAT 111-131, MAT 121-122, or MAT 131-132.

ENGINEERING SCIENCE

Engineering Science is the first two years of the traditional baccalaureate program. The curriculum emphasizes the study of physical sciences and higher mathematics. General studies will include subjects in the humanities and social sciences. An introduction will also be made to the application of mathematics and science to technical operations and problems. The curriculum has been carefully planned to provide maximum transfer of credit for students wishing to complete the baccalaureate engineering degree.

ENGINEERING SCIENCE CURRICULUM

Course Code		Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
FRESHMAN YEAR	**SEMESTER I**			
CHM— 121	General Chemistry	3	3	4
ENG— 121	English Composition I	3	0	3
ENR— 105	Introduction to Digital Computation	0	2	1
ENR— 121	Engineering Graphics I	0	6	2
HED— 101	Health	1	1	1
MAT— 131	Analytic Geometry & Calculus I	4	0	4
PHY— 131	Engineering Physics I	3	3	4
		14	15	19
	SEMESTER II			
CHM— 122	General Chemistry & Qualitative Analysis	4	3	5
ENG— 122	English Composition II	3	0	3
ENR— 122	Engineering Graphics II	0	6	2
MAT— 132	Analytic Geometry & Calculus II	4	0	4
PED— 101	Physical Education	0	2	1
PHY— 132	Engineering Physics II	3	3	4
		14	14	19
SENIOR YEAR	**SEMESTER III**			
CHM— 221	Organic Chemistry I } OR	3	3	4
ELT— 221	Electrical Circuits I }			
ENR— 221	Engineering Mechanics I	4	0	4
MAT— 231	Analytic Geometry & Calculus III	3	0	3
PED— 102	Physical Education	0	2	1
PHY— 231	Engineering Physics III	3	3	4
	Social Science Elective	3	0	3
		16	8	19
	SEMESTER IV			
CHM— 222	Organic Chemistry II } OR	3	3	4
ELT— 222	Electrical Circuits II }			
ENR— 222	Engineering Mechanics II	4	0	4
MAT— 232	Differential Equations	3	0	3
PED— 103	Physical Education (Optional)	(0	2	1)
PHY— 232	Engineering Physics IV	3	3	4
	Social Science Elective	3	0	3
		16	6-8	18-19
	TOTAL CREDITS			75-76

PRE-TECHNICAL PROGRAM

The Pre-Technical Program is designed for applicants who are not prepared for entrance to collegiate-level study. The course is a one-year, non-credit full-time day developmental program. It is open to high school graduates or those who possess a high school equivalency diploma. The curriculum includes integrated courses in developmental English, reading, graphics, mathematics, science and technical calculations.

This program is designed to prepare students to enter one of the College's technical curriculums. Since there is a heavy math-science emphasis in this curriculum, only students who are interested in entering one of the technical curriculums or a science-oriented program of study should apply. Students with academic deficiencies or weaknesses who are interested in Liberal Arts, Business or Secretarial Science would be well advised to remove these deficiencies in the Evening Extension Division rather than by entering the full-time Pre-Technical Program. All students must study the program as outlined and are not permitted to omit or to substitute courses.

Upon satisfactory completion of one year of study in the Pre-Technical Program, and upon *recommendation of the faculty,* students may be admitted to a regular College curriculum.

Pre-Technical students have all the privileges of regular full-time day students except that they are not eligible to play on varsity athletic teams.

PRE-TECHNICAL CURRICULUM

Semester I

Course Code		Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
ENG— 11	Developmental Reading I	0	3	0
ENG— 13	Pre-Technical English I	3	0	0
MAT— 11	Pre-Technical Math I	4	2	0
SCI— 11	Physical Science	5	0	0
PRT— 11	Technical Calculations I	0	4	0
ENR— 101	Basic Graphics I	0	3	1
PRT— 13	Counseling Seminar I	0	3	0
		12	15	1

Semester II

ENG— 12	Developmental Reading II	0	3	0
ENG— 14	Pre-Technical English II	3	0	0
MAT— 12	Pre-Technical Math II	4	2	0
SCI— 12	Physical Science	3	2	0
CHM— 10	Pre-Technical Chemistry	3	2	0
PRT— 12	Technical Calculations II	0	4	0
ENR— 102	Basic Graphics II	0	3	1
PRT— 14	Counseling Seminar II	0	3	0
		13	19	1

JOB HORIZONS FOR WOMEN

This is a one-year clerical retraining program offered under Title I of the Higher Education Act in cooperation with the New Jersey State Department of Education. It has been developed to meet the needs of women who have been away from work or study for a prolonged period. By providing training, skills and college level instruction, the course will qualify graduates for existing clerical positions in the community.

The aim of the program is to build self confidence as well as basic clerical skills. The emphasis will be on business training coordinated with studies in social science to assist students to better understand woman's role in a changing society. Professional counseling to help clarify the student's objectives and prospects, along with guidance in job placement, will form an integral part of the program.

The courses have been designed specifically for housewives and are scheduled at times most convenient for mothers of school age children, i.e., during morning and early afternoon hours. The program will be limited to mature married women with a high school diploma or its equivalent. Women who are no longer needed at home on a full time basis will now have the opportunity to prepare for a rewarding career.

JOB HORIZONS FOR WOMEN CURRICULUM

SEMESTER I

Course Code			Class Hrs./Wk.	Lab. Hrs./Wk.	Course Credit
SES—	171	Office Communications	3	0	3
SOC—	173	Basic Concepts of Sociology	3	0	3
SES—	101	Typewriting I	1	3	2
SES—	173	Seminar in Business Mathematics	2	0	2
			9	3	10

SEMESTER II

SES—	172	Office Communications	3	0	3
SOC—	174	Seminar in Contemporary Society	3	0	3
SES—	102	Typewriting II	1	3	2
BUS—	105	Office Machines	1	2	2
			8	5	10

HEALTH, PHYSICAL EDUCATION, AND RECREATION

All full-time students are required to take one semester of Health* and two semesters of Physical Education. A third semester of Physical Education is optional.

The Physical Education activities are designed to develop students physically, mentally, emotionally, and socially in order to assist in preparing them to better adjust to present day society.

*Excluding Nurse Education students.

COURSE DESCRIPTIONS

ACC 103 PRINCIPLES OF ACCOUNTING I — 3 credits
The accounting cycle from the recording and analyzing procedures through the summarizing procedures and preparation of general purpose Financial Statements. Emphasis is on the sole proprietorship and on service and merchandising operations.

ACC 104 PRINCIPLES OF ACCOUNTING II — 3 credits
Pre-requisite: ACC 103 Principles of Accounting I
The introduction of accounting for partnerships and corporations with considerable emphasis on the capital structure and relevant procedures of the latter. The course covers accounting for manufacturing entities, including a survey of cost accounting and budgeting procedures and the use of accounting data by management.

ACC 201 INTERMEDIATE ACCOUNTING — 3 credits
Pre-requisite: ACC 104 Principles of Accounting II
A depth study of fixed assets, working capital, comparative statement analysis, application of funds. Included in the course is a survey of accounting procedures for merchandising and manufacturing.

ACC 202 COST ACCOUNTING — 3 credits
Pre-requisite: ACC 104 Principles of Accounting II
Instruction in the principles of cost accounting and the keeping of cost records. The course involves a detailed study of Job Order, Process and Standard Cost systems and a survey of other costing techniques and applications.

ACC 203 ACCOUNTING SYSTEMS AND PROCEDURES I — 3 credits
Pre-requisite: ACC 104 Principles of Accounting II
Co-requisite: ACC 205 Automated Accounting
Prepares the student to design and install an accounting system tailored to the requirements of a particular business and to the available automatic data processing equipment. The course commences with an analytical approach to the problem and proceeds through the theoretical knowledge required for the actual design of procedures.

ACC 204 ACCOUNTING SYSTEMS AND PROCEDURES II — 3 credits
Pre-requisite: ACC 203 Accounting Systems and Procedures II
Students, working as teams, apply their systems and procedures theory to actual case studies and design complete accounting systems for automated accounting.

ACC 205 AUTOMATED ACCOUNTING — 2 credits
Pre-requisite: One semester of Accounting
A basic course in automated accounting designed to give the students a thorough understanding of the practical aspects of processing from very basic integrated hand systems through accounting machines systems and unit record systems. Emphasis is placed on the principles, functions, and operation of the equipment.

ACC 206 TAX ACCOUNTING — 3 credits
Pre-requisite: ACC 104 Principles of Accounting II
Commences with a study of Federal Income Tax Regulations and their application to individuals, partnerships and corporations and proceeds to instruction and actual practice in the preparation of tax returns.

ART 101 ART APPRECIATION — 2 credits
A course designed to develop an appreciation of art as a means of communication and expression. Practical application of artistic principles and concepts is stressed.

ART 121 ART HISTORY AND APPRECIATION — 3 credits
A course in the understanding and appreciation of art from the historical point of view. Major periods studied include Greek, Roman, Byzantine, Gothic, Renaissance, and Modern.

BIO 111 HUMAN ANATOMY AND PHYSIOLOGY I — 4 credits
Covers the study of the organs and organ systems of the human. Laboratory work reinforces lectures by dissections of the various organs of the other vertebrates such as the pig and the cat.

BIO 112 HUMAN ANATOMY AND PHYSIOLOGY II — 4 credits
A continuation of BIO 111.

BIO 113 ANATOMY 4 credits
A study of the organs and organ systems of the vetebrates. Laboratory work includes dissection of the cat and various organs from other vertebrates.

BIO 114 PHYSIOLOGY 4 credits
A continuation of BIO 113.

BIO 121 PRINCIPLES OF BIOLOGY I 4 credits
This course presents basic principles of biology, acquainting the student with modern concepts of the interrelationships between living things and their environment. It begins with the molecular biology of the cell and, through a study of its metabolism, moves from the simpler to the more complex forms of plant life. Stress is placed on the recent progress of science, and the acquisition of a scientific vocabulary which will encourage continuation of student interest. Laboratory work is planned to illustrate general principles and develop knowledge of scientific method.

BIO 122 PRINCIPLES OF BIOLOGY II 4 credits
Pre-requisite: BIO 121 Principles of Biology I
A continuation of the study of life relationships from the viewpoint of development and heredity. Emphasis is on the animal form, from the lower animals through vertebrates, including man.

BIO 123 GENERAL BIOLOGY I 4 credits
This course presents modern biology, beginning at the cellular level, with the molecular approach to problems of metabolism and heredity. Consideration of equilibrium, ecology and evolution follow. Finally the role of plants, from simple through higher forms, and their relationship to the biosphere are evaluated.
Laboratory practice is planned to develop techniques, the scientific approach to problems, and modern methods of research.

BIO 124 GENERAL BIOLOGY II 4 credits
Pre-requisite: BIO 123 General Biology I
A continuation of the study of life relationships from the viewpoint of development and heredity. Emhpasis is on the animal form, from the lower through the vertebrate, including man. Genetics topics are stressed in this portion of the course.

BIO 202 HISTOLOGY 4 credits
Pre-requisite: BIO 123-124 General Biology I and II
A detailed study of the histological structure of vertebrate cells, tissues, and organs stressing the relationship of structure to function. A study of selected prepared slides of tissues and organs is undertaken in the laboratory to gain an undertanding of their diagnostic characteristics.

BIO 211 PRINCIPLES OF MICROBIOLOGY 3 credits
Pre-requisite: BIO 111-112 Human Anatomy and Physiology I and II
An introductory study of the microbial world. Emphasis is placed on the bacteria as agents of infection. The laboratory work involves the identification, cultivation, and control of micro-organisms.

BIO 221 MICROBIOLOGY 4 credits
Pre-requisite: BIO 123-124 General Biology I and II
The purpose of this course is to introduce the student to the biology of micro-organisms with particular emphasis on the bacteria. Topics covered include the organization and functioning of microbes, the position of microbial groups in the world of living things, techniques used in working with and controlling potentially pathogenic organisms, and host-parasite interactions.

BIO 222 BACTERIAL PHYSIOLOGY 4 credits
Pre-requisite: BIO 221 Microbiology
This course assumes a prior introduction to the bacteria, and its purpose is to amplify the student's knowledge of how a unicellular bacterium carries out the activities associated with "life." The laboratory work consists of experimental investigations, with much of the procedural detail left to the student.

BUS 101 BUSINESS ORGANIZATION AND MANAGEMENT 3 credits
This course introduces basic principles, policies, problems, and successful methods of business organization and management. The functions of organizing, staffing, directing, and planning are explored from the standpoint of the sole proprietorship, the partnership, and the corporation. This is an introductory business course.

BUS 103 BUSINESS MATHEMATICS 3 credits
The arithmetics of interest, bank discounts, payrolls, insurance, taxes, trade discounts, and problems in retailing, business ownership, corporate securities and funds are covered in this course.

BUS 105 OFFICE MACHINES 2 credits
This course will provide practice in the fundamental applications of various business machines. Emphasis will be placed on the application of this equipment in processing various business data.

BUS 107 INTRODUCTION TO DATA PROCESSING 2 credits
The course covers a full range of data processing methods and devices. Included are manual, mechanical, punched card, and electronic data processing. Other topics studied are the history of data processing, business organization, sources of data, integrated data processing, and systems design.

BUS 109 BUSINESS ORIENTATION (M) 1 credit
Discussion and suggestions relating to professional ethics, appearance, and attitude in the business world of today. Emphasis is on poise, the planning of a wardrobe, speech and conversation, and employer-employee relationships. Outside speakers bring business experience to the classroom.

BUS 109 BUSINESS ORIENTATION (F) 1 credit
A seminar for young women interested in the business world. The course is designed to teach personal care and grooming, wardrobe planning, business and social etiquette and professional ethics. This course will give the student understanding of her role and responsibilities with respect to the business community.

BUS 201 BUSINESS LAW I 3 credits
An introduction to the operation of the United States legal system commencing with a survey of the historical development of the law, of the content of its various branches and of the procedures by which courts enforce the law. This background material is followed by a more detailed study of the basic principles of the substantive law of contracts, agency, and partnerships.

BUS 202 BUSINESS LAW II 3 credits
Pre-requisite: BUS 201 Business Law I
Involves study in detail of the basic principles of the substantive law governing corporations, real and personal property, sales transactions and negotiable instruments. In applicable areas the Uniform Commercial Code is covered as well as the common law principles.

BUS 204 MECHANICS OF BUSINESS 2 credits
This course is designed to introduce the secretarial student to the equipment currently utilized in business. It places special emphasis on the use of a variety of duplicating and transcribing equipment. Continuity is effected through the use of unit record and other small machines.

CHM 10 PRE-TECHNICAL CHEMISTRY No credit
A study of the fundamental principles of chemical structure and chemical reactions with application of theoretical material to related laboratory work.

CHM 101 PRINCIPLES OF CHEMISTRY I 4 credits
A study of the fundamental principles of chemistry and their application to chemical reactions.

CHM 102 PRINCIPLES OF CHEMISTRY II 4 credits
Pre-requisite: CHM 101 Principles of Chemistry I
A continuation of CHM 101.

CHM 105 CHEMICAL CALCULATIONS 1 credit
A review of the mathematics necessary for the solutions of problems in General Chemistry.

CHM 121 GENERAL CHEMISTRY 4 credits
A theoretical treatment of fundamental principles and laws underlying chemical reactions, atomic structure, the chemical bond and the following topics: states of matter, solutions, acids and bases, oxidation-reduction, ionization and electrolysis, chemical kinetics and equilibria and an introduction to Chemical Thermodynamics.

CHM 122 GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS 5 credits
Pre-requisite: CHM 121 General Chemistry
A continuation of CHM 121 with emphasis on the application of these principles to the chemistry of the elements including qualitative analysis procedures.

CHM 201 PRINCIPLES OF ORGANIC CHEMISTRY 4 credits
Pre-requisite: CHM 101-102 Principles of Chemistry I and II or equivalent
A one-semester course presenting brief introductions to the basic concepts of organic chemistry.

CHM 202 BIOCHEMISTRY 3 credits
Pre-requisite: CHM 201 Principles of Organic Chemistry
An introduction to the chemistry of the main constituents of living matter.

CHM 213 QUANTITATIVE ANALYSIS 4 credits
Pre-requisite: CHM 121-122 General Chemistry and Qualitative Analysis or equivalent.
The theory and practice of typical gravimetric, volumetric, and newer methods of analysis.

CHM 214 INSTRUMENTAL METHODS OF ANALYSIS 4 credits
Pre-requisite: CHM 213 Quantitative Analysis
The applications of modern instruments commonly used in industrial practice and research.

CHM 221 ORGANIC CHEMISTRY I 4 credits
Pre-requisite: CHM 121-122 General Chemistry and Qualitative Analysis or equivalent
The study of the reactions of organic compounds and the theories of Organic Chemistry.

CHM 222 ORGANIC CHEMISTRY 4 credits
Pre-requisite: CHM 221 Organic Chemistry I
A continuation of CHM 221.

DRA 101 DRAMA APPRECIATION 2 credits
An introduction to contemporary theatre and films. Such playwrights as Saroyan, Wilder, Williams, Miller, Albee and films which present the contemporary attitude will be explored with a view toward understanding and interpreting the intention of the author and/or director.

DRA 121 DRAMA HISTORY AND APPRECIATION 3 credits
An introduction to the masterpieces of drama from Aeschylus to Ibsen and the modern theater. Through selected readings, lectures and discussion, the conventions of the major historical periods of the theater will be examined and analyzed as they contribute to the development of the modern theater. Major periods include the Greek Theater, Renaissance Theater, French Baroque Theater and the 19th Century Theater.

ECO 201 PRINCIPLES OF ECONOMICS I 3 credits
This course introduces the foundations of economic analysis and explores the problems of macro-economics, including national income, employment, and economic growth. The public sector of the national economy is also stressed.

ECO 202 PRINCIPLES OF ECONOMICS II 3 credits
Pre-requisite: ECO 201 Principles of Economics I or permission of Department Chairman
This course is a study of micro-economics. Included are such topics as the price system, the allocation of resources, the distribution of income, and the prospects for economic change.

ECO 203 GENERAL ECONOMICS 3 credits
This is a one-semester course intended for those students whose needs are limited to an introductory treatment of economic subject matter. While macro-economics (problems of the National Economy) are stressed, micro-economics (problems of profit-motivated firms) are also included.

ELT 101 CIRCUITS I 4 credits
Co-requisite: MAT 111 College Algebra and Trigonometry or equivalent
A study of the fundamentals of electrical circuits including current and voltage, resistance and restive networks, work and power, network theorems, magnetic circuits, electrical measurements, resistance and inductance.

ELT 102 CIRCUITS II 4 credits

Pre-requisite: ELT 101 Circuits I or equivalent

A continuation of Circuits I. Topics included are capacitance, alternating current circuits, reactance and impedance, vector mathematics, resonance, transformer action, coupled circuits, three phase systems and harmonics.

ELT 103 ELECTRONICS I 4 credits

Pre-requisite: ELT 101 Circuits I or Equivalent

Co-requisite: ELT 102 Circuits II or Equivalent

An introduction to the operating characteristics of both active and passive devices both from theory and actual laboratory measurements. Graphical analysis of operating characteristics leads to the development of an Equivalent Circuit Model of each device. This model then becomes the foundation for further analysis and circuit application studies.

ELT 201 MANUFACTURING PROCESSES I 2 credits

The first of two semesters of industrial laboratory experience to familiarize the student with manufacturing and assembly techniques and skills that may be demanded of the electrical and electronic technician. The first semester will emphasize layout and bonding methods and interconnection problems in printed circuit boards and modern electrical equipment.

ELT 202 MANUFACTURING PROCESSES II 2 credits

Pre-requisite: ELT 201 Manufacturing Processes I

The processes to be explained in this course will include electrochemical etching, anodization and photolithographic methods of manufacturing modern integrated circuit devices. A thin-film resistor will be developed from initial drafting design through final evaluation and stabilization.

ELT 203 ELECTRONICS II 4 credits

Pre-requisite: ELT 103 Electronics I

An introductory analysis of elementary circuit characteristics using the Equivalent Circuit Models of semiconductor and vacuum devices. Circuit functions of amplification, oscillation and switching are explored and performance calculations are introduced.

ELT 204 ELECTRONICS III 4 credits

Pre-requisite: ELT 203 Electronics II

Analysis and design of transistor circuits including low and high frequency amplifiers, oscillators, pulse circuits and power-supply circuits. Field-Effect-Transistors and integrated circuit applications will be introduced.

ELT 205 ELECTRO-MAGNETIC DEVICES 3 credits

Pre-requisite: ELT 102 Circuits II

This course is designed to introduce the student to the characteristics and principles of operation of such devices as A.C. and D.C. motors and generators, synchros, and magnetic amplifiers.

ELT 206 AUTOMATIC CONTROL 3 credits

Pre-requisite: ELT 205 Electro-Magnetic Devices

This course is an introduction to the theory and practice of modern automatic control systems. It includes an introduction to control theory, Laplace Transforms, Bode Diagrams, control system components, control system design, transient analysis and root locus.

ELT 207 DIGITAL CIRCUITS 3 credits

Pre-requisite: ELT 103 Electronics I

An introduction to the logical design of digital circuits and systems. Topics covered include an introduction to binary numbers, Boolean algebra and digital circuits, parallel addition and subtraction, BCD arithmetic and code conversion. It also includes sections on control circuitry and timing, A-D and D-A conversion.

ELT 208 MICROWAVE PRINCIPLES 3 credits

Pre-requisite: ELT 203 Electronics II

An introduction to microwave theory and measurements. The course includes elementary field theory, transmission lines, Smith Chart, wave guides, ferrite devices, active devices, alternation and power. Measurement of the characteristics of these devices and concepts is emphasized.

ELT 221 ELECTRICAL CIRCUITS I 4 credits
Co-requisite: MAT 231 Analytic Geometry and Calculus III
This course is an introductory circuit analysis course for engineering students. The first semester includes the resistive circuit, the fundamental law, mesh and nodal analysis, source transformations and the circuit theorems. Also included are Transient Circuit: R-L & R-C circuits, the unit step forcing function, the unit impulse; and R-L-C circuits and sinusoidal analysis: the sinusoidal forcing function, phasors, steady state response and effective value.

ELT 222 ELECTRICAL CIRCUITS II 4 credits
Pre-requisite ELT 221 Electrical Circuits I
Co-requisite: MAT 232 Differential Equations
A continuation of ELT 221, this course contains the complex frequency, the exponential forcing function, and frequency response. It also contains coupled magnetic circuits, two-part networks, network topology, and Fourier analysis.

ENG 11 DEVELOPMENTAL READING I No credit
Developmental Reading I is designed to develop the reading skills needed to succeed in college. Using college-level materials, the student works to promote a flexible reading speed, to develop a superior vocabulary, to improve comprehension, and to develop sound study habits. Library use and study skills in specific subject areas are also covered in the course.

ENG 12 DEVELOPMENTAL READING II No credit
Developmental Reading II continues to promote reading improvement in speed, vocabulary, and comprehension. A major emphasis of the course is on critical reading skills, or learning to interpret and evaluate reading materials for biases, prejudices, logic, etc.

ENG 13 PRE-TECHNICAL ENGLISH I No credit
It is the objective of this course to remove English language deficiencies by reviewing the basic fundamentals of modern English usage from the parts of speech and sentence structure to the writing of clear and correct sentences and paragraphs. Spelling, punctuation, and use of the dictionary are also covered in the course.

ENG 14 PRE-TECHNICAL ENGLISH II No credit
Pre-Technical English II reviews the major language deficiencies not corrected in Pre-Technical English I. Major emphasis of the course is on writing the paragraph and the composition.

ENG 101 COMMUNICATIONS SKILLS I 3 credits
This course emphasizes the exchange of ideas by means of reading, writing, speaking, and listening. Critical thinking is important for the development of all these skills. The course provides information regarding, and further practice in, skills basic to effective communications.

ENG 102 COMMUNICATIONS SKILLS II 3 credits
A continuation of ENG 101.

ENG 121 ENGLISH COMPOSITION I 3 credits
An introduction to the nature of language. Emphasis is on instruction and practice in the writing of short expository compositions.

ENG 122 ENGLISH COMPOSITION II 3 credits
An introduction to literature. The student is also taught the tools and techniques of writing a research paper.

ENG 201 INTRODUCTION TO LITERATURE 3 credits
Pre-requisite: ENG 101-102 Communication Skills I and II or equivalent
An introduction to literary types and characteristics. Representative examples of poetry, the short story, and drama are read and discussed.

ENG 221 ENGLISH LITERATURE I 3 credits
Pre-requisite: ENG 121-122 English Composition I and II or equivalent
A survey of English literature from Beowulf to Blake. Representative works by major writers are read and discussed. Authors studied include Chaucer, Spenser, Shakespeare, Dryden, Pope, and Johnson.

ENG 222 ENGLISH LITERATURE II 3 credits
Pre-requisite: ENG 121-122 English Composition I and II or equivalent
A survey of English Literature from the Romantics to the present. Representative works by major writers are read and discussed. Authors studied include Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning, Hardy, Yeats, and Eliot.

ENG 223 AMERICAN LITERATURE I 3 credits
Pre-requisite: ENG 121-122 English Composition I and II or equivalent
Reading, analysis and discussion of works of representative American writers from the Federal period to transcendentalism. Major figures are Bradford, Taylor, Franklin, Irving, Cooper, Hawthorne, Melville, Poe, Emerson and Thoreau.

ENG 224 AMERICAN LITERATURE II 3 credits
Pre-requisite: ENG 121-122 English Composition I and II, ENG 223 American Literature I or consent of instructor
Reading, analysis, and discussion of works of representative American writers from Whitman to the present. Major figures are Whitman, Emily Dickinson, Twain, James, Crane, Frost, O'Neill, Eliot, Faulkner, and Hemingway.

ENG 225 WESTERN WORLD LITERATURE 3 credits
Pre-requisite: ENG 121, 122 English Composition I and II or equivalent
An introduction to the great works of continental literature. The inter-relation of art, literature, and philosophy is discussed. Authors studied include Sophocles, Plato, Dante, Goethe, Rosseau, Dostoevsky, and Sartre.

ENR 101 BASIC GRAPHICS I 1 credit
Basic fundamentals and concepts of graphical communication are presented. Lettering, drawing instrument skills, geometric construction, multiview drawing, linework techniques, dimensioning and standards are covered. Practical exercises on instrumental and freehand drawing are performed.

ENR 102 BASIC GRAPHICS II 1 credit
Pre-requisite: ENR 101 Basic Graphics I
Additional skills are developed in isometric and other perspective projections. Introduction to graphics and preparation of working drawings.

ENR 105 INTRODUCTION TO DIGITAL COMPUTATION 1 credit
Pre-requisite: Two years high school Algebra or equivalent
Historical development of computers, the organization of a modern Digital Computer. Binary and octal mathematics are introduced and used in writing machine language instructions and symbolic language programs. Fortran-IV is the source language studied. Flow-diagramming and logical decision-making concepts are applied in developing Fortran-IV programs to solve simple scientific problems.

ENR 111 TECHNICAL GRAPHICS I 1 credit
Introduction to the basic concept of graphical communication, lettering, linework techniques, orthographic projection and preliminary design projects in the chosen field —electrical, chemical, etc.

ENR 112 TECHNICAL GRAPHICS II 1 credit
Pre-requisite: ENR 111 Technical Graphics I
Continuation of the application of graphical methods in solution of technical problems and some preliminary designs

ENR 121 ENGINEERING GRAPHICS I 2 credits
Co-requisite: MAT 131 Analytic Geometry and Calculus I
The student gains skill in the basic use of drawing instruments and the ability to systematically analyze engineering problems. Basic drawing fundamentals and descriptive geometry principles are presented.

ENR 122 ENGINEERING GRAPHICS II 2 credits
Co-requisite: MAT 132 Analytic Geometry and Calculus II
Fundamentals are now applied to more advanced Engineering problems and principles. Presentation of information by means of graphs, nomographs, etc., analysis of data and curve fitting, solution of various designs required in mechanical, civil, electrical and chemical engineering.

ENR 211 UNIT OPERATIONS IN CHEMICAL ENGINEERING I 4 credits
Pre-requisite: MAT 112 Analytic Geometry and Calculus I, CHM 121-122 General Chemistry, Chemistry and Qualitative Analysis
The objective of this course is to develop the student's ability to use Unit Operations in design and operation of equipment. Fluid flow, heat transfer, evaporation, drying and filtration are covered. Stress is placed on using equipment after theoretical design background has been provided.

ENR 212 UNIT OPERATIONS IN CHEMICAL ENGINEERING II 4 credits
Pre-requisite: MAT 112 Analytic Geometry and Calculus I, CHM 121-122 General Chemistry, Chemistry and Qualitative Analysis
The objective of this course is to develop the student's ability to use Unit Operations in design and operation of equipment. Distillation, extraction, absorption, crystallization, mixing and comminution are covered. Stress is placed on using equipment after theoretical design background has been provided.

ENR 221 ENGINEERING MECHANICS I 4 credits
Pre-requisite: MAT 132 Analytic Geometry and Calculus II
Basic concepts for the study of force systems and Newtonian mechanics, trusses and frames, torsion and bending, friction, centroids and moments of inertia. Engineering examples are stressed to develop understanding and application skills.

ENR 222 ENGINEERING MECHANICS II 3 credits
Pre-requisite: MAT 132 Analytic Geometry and Calculus II
Stresses the study of bodies in motion, impulse and momentum, vibration and rotation, work and energy. Lagrangian methods are introduced. Engineering applications are stressed.

FRE 121 ELEMENTARY FRENCH I 3 credits
This course is intended for students with no previous knowledge of French, or for students who have had less than two years of high-school French. It includes systematic training in speaking, reading, and writing the French language. Laboratory work is required.

FRE 122 ELEMENTARY FRENCH II 3 credits
A continuation of FRE 121.

FRE 221 INTERMEDIATE FRENCH I 3 credits
Pre-requisite: FRE 121-122 Elementary French I and II or 2 years of French in secondary school
A continuation of principles established during the first year: review of grammar, reading and conversation. During both semesters emphasis is placed upon conversational activities, readings from selected literature, and original compositions. A laboratory period is required.

FRE 222 INTERMEDIATE FRENCH II 3 credits
Pre-requisite: FRE 121-122 Elementary French I and II or 2 years of French in secondary school
A continuation of FRE 221.

FRE 231 FRENCH CONVERSATION AND COMPOSITION I 3 credits
Pre-requisite: FRE 221-222 Intermediate French I and II or a minimum of three years of high school French
This advanced course provides intensive training in speaking and writing colloquial French. It includes oral and written reports and discussions based on readings of modern French literature.

FRE 232 FRENCH CONVERSATION AND COMPOSITION II 3 credits
Pre-requisite: FRE 221-222 Intermediate French I and II or a minimum of three years of high school French
A continuation of FRE 231.

GER 121 ELEMENTARY GERMAN I 3 credits
This course is designed for students who have had no previous studies in German. It is planned to lay the foundation for speaking, writing, and reading the language. Language laboratory work is required.

GER 122 ELEMENTARY GERMAN II 3 credits
Pre-requisite: GER 121 Elementary German I or equivalent
German 122 is a continuation of GER 121 with emphasis on vocabulary building, speaking, and reading the language. Language laboratory work is required, and the student is introduced to simple modern writings.

GER 221 INTERMEDIATE GERMAN I 3 credits
Pre-requisite: GER 121, 122 Elementary German I, II or two years of German in secondary school
This course provides for speaking and writing German based on the study of literary works by modern authors. A general review of grammar and treatment of pertinent grammatical problems is included. Laboratory work is required.

GER 222 INTERMEDIATE GERMAN II 3 credits
Pre-requisite: GER 221 Intermediate German I or equivalent
GER 222 is a continuation of GER 221 with emphasis on speaking the language, oral exercises, and vocabulary building.

GER 321 GERMAN CONVERSATION AND COMPOSITION I 3 credits
Pre-requisite: GER 221-222 Intermediate German I, II or a minimum of 3 years of German in secondary school
Systematic training in speaking and writing colloquial German, review of advanced grammar, treatment of special problems concerning diction and phonetics, free composition, discussion on a wide range of subjects, including a select number of works by modern authors.

GER 232 GERMAN CONVERSATION AND COMPOSITION II 3 credits
Pre-requisite: GER 231 German Conversation and Composition I
A continuation of GER 231.

HE 101 HEALTH 1 credit
Pertinent health topics are discussed: adjustment to college, family living, alcohol, narcotics, sex education, and other health concerns of college students and adults. Films and guest lecturers supplement material discussed in class and material in text.

HE 121 HEALTH EDUCATION 2 credits
In depth discussions of pertinent health-related topics: adjustment to college, family living, alcohol, narcotics, sex education and other health concerns of college students and adults. Written and oral assignments are given to assist students in their quest for clear understanding of the topics.

HIS 121 HISTORY OF WESTERN CIVILIZATION I 3 credits
After a brief introduction to the rise of Western Civilization in Greece and Rome, a detailed survey of the development of Western Civilization from the 13th century to 1815 is presented. Special consideration is given in this section to national, international, religious, economic and cultural developments culminating in the Age of Enlightenment and the French Revolution.

HIS 122 HISTORY OF WESTERN CIVILIZATION II 3 credits
Study of the rapid changes which have affected Europe and the world since the Congress of Vienna, the conflicts between states and the impact of new radical concepts in government and technology which transformed 19th Century Europe. Special attention is given to the problems of war and peace after 1914, the resulting political and economic instabilities which perplexed the western nations in the years 1914-42 and the decline since 1942 of the influence of western civilization on the new nations of Asia and Africa.

HIS 201 AMERICAN HISTORY 3 credits
This course is designed to give the student an understanding and an appreciation of the origin and growth of the American society. Political, social, economic and cultural developments will be reviewed ranging from the Puritan heritage to the "cold war." Special emphasis will be given to contemporary issues in public health.

HIS 221 UNITED STATES HISTORY I 3 credits
This course concentrates on such topics of major historical importance as the Puritan heritage, the American Revolution, the Constitution, Jacksonian Democracy, Manifest Destiny, and the Civil War to foster a deeper understanding of pre-Civil War America.

HIS 222 UNITED STATES HISTORY II 3 credits
Concentration on such topics of major historical importance as Reconstruction, Rise of Big Business, Progressive Movement, the World Wars, the New Deal and the "cold war" to foster a deeper understanding of post-Civil War America.

MAT 11 PRE-TECHNICAL MATHEMATICS I No credit
Basic topics in algebra as a review of high school mathematics which begins with the study of logic and of mathematical postulates. Theorems are then developed, and the semester concludes with the study of the rational number system. The nature of proof is emphasized throughout.

MAT 12 PRE-TECHNICAL MATHEMATICS II No credit
Topics in algebra are concluded, and a survey of the Geometries follows. The algebra covers polynomials, functions, the real numbers and quadratics. The geometry includes topics in the study of triangles, parallel lines, circles, area, formulas of the straight line. The trigonometry covers relations among the sides and angles of the right triangle.

MAT 101 FRESHMAN MATHEMATICS I 3 credits
Pre-requisite: 1 year of high school algebra
This course is designed to present a broad study of various concepts of college level mathematics. Included are logical foundations of the real number system and algebra, measurements, exponents and logarithms and the slide rule.

MAT 102 FRESHMAN MATHEMATICS II 3 credits
Pre-requisite: MAT 101 Freshman Mathematics I
This course is the completion of a one year sequence in mathematics for students planning only a single year of college-level mathematics. The semester covers functions, quadratic equations, variation, basic concepts of calculus, exponential logarithmic and trigonometric functions, permutations, combinations and probability.

MAT 111 COLLEGE ALGEBRA AND TRIGONOMETRY 4 credits
Pre-requisite: High school intermediate algebra and geometry or their equivalents
This course is designed to provide a foundation for continuing courses in mathematics and the physical sciences. Topics presented include number system, trigonometric exponential and logarithmic functions, solutions of equations, complex numbers, polynomial equations, matrices and determinants, sequences and series.

MAT 112 UNIFIED CALCULUS I 3 credits
Pre-requisite: MAT 111 College Algebra and Trigonometry or equivalent
This course is designed to provide the basics of calculus and the mathematical tools for evaluation of physical problems. It includes distance formula, slope, equations of conic sections, limits, tangent to a curve, derivative, related rates, curve sketching, maxima and minima problems, differentials, the indefinite integral, area under a curve, volumes, centroids and moment of inertia. It also includes derivatives of trigonometric, exponential, and logarithmic functions.

MAT 211 UNIFIED CALCULUS II 3 credits
Pre-requisite: MAT 112 Unified Calculus I or equivalent
A continuation of MAT 112, this course includes methods of integration, partial derivatives, double integrals, polar coordinates, empirical curve fitting expansion in series, and an introduction to differential equations and Laplace Transforms.

MAT 212 UNIFIED CALCULUS III 3 credits
Pre-requisite: MAT 211 Unified Calculus II or equivalent. Registration by permission of instructor.
This course is designed to pick up a number of the topics covered in an engineering calculus program but omitted in the MAT 111—MAT 211 sequence. Some additional topics in analytic geometry, hyperbolic functions, multiple integration, vectors and parametric equations are among the topics covered.

MAT 121 FINITE MATHEMATICS 3 credits
Pre-requisite: High school intermediate algebra or equivalent
This course is a modern (non-calculus oriented) treatment of several relevant areas of mathematics. Logic, set theory, (partitions) probability, vectors, matrices, linear algebra and elementary linear programming will be covered.

MAT 122 PROBABILITY AND STATISTICS 3 credits

Pre-requisite: MAT 121 Finite Mathematics or equivalent

This course develops the fundamental concepts of probability and statistics and their application to the real situation. Basic manipulation of these concepts is stressed. Topics included are permutation and combination, general theory of probability for finite ample spaces, measures of central value and variability, normal and binomial Poisson distributions, distribution of samples, and confidence interval estimates.

MAT 131 ANALYTIC GEOMETRY AND CALCULUS I 4 credits

Pre-requisite: Four years of high school mathematics or their equivalent

This course is designed to provide a foundation for further study in mathematics and physical sciences. The course includes the following: rectangular coordinates in a plane, functions and graphs, derivative of a function, properties of limits, derivatives of polynomial functions, rational functions and implicit relations, the chain rule for derivatives, the differentials, continuity, applications of the first and second derivative Rolle's Theorem, the Mean Value Theorem and extension, the indefinite integral with applications, differentiation and integration of sines and cosines, area under a curve, fundamental theorem and definite integral, applications of the definite integral.

MAT 132 ANALYTIC GEOMETRY AND CALCULUS II 4 credits

Pre-requisite: MAT 131 Analytic Geometry and Calculus I or equivalent

This course is a continuation of Analytic Geometry and Calculus I. It begins with a review of differentiation of sine x from which the transcendental functions are developed, both as derivatives and as integrals. Then methods of integration are introduced followed by determinants and linear equations, plane analytic geometry, and hyperbolic functions. The final topics are the polar coordinates, vectors, parametric equations and vectors in solid geometry.

MAT 231 ANALYTIC GEOMETRY AND CALCULUS III 3 credits

Pre-requisite: MAT 132 Analytic Geometry and Calculus II or equivalent

This course continues the study of calculus beginning with partial differentiation and multiple integrals and continuing with the study of infinite series, complex numbers and differential equations. Although touching lightly on each of these fields, it prepares the student for further study in more advanced courses.

MAT 232 DIFFERENTIAL EQUATIONS 3 credits

Pre-requisite: MAT 231 Analytic Geometry and Calculus III or equivalent (Three terms of Elementary Calculus)

First order equations, envelopes and singular solutions, linear equations of higher order, solution in series, applications to geometry and physics.

MKT 201 MARKETING I 3 credits

Pre-requisite: BUS 101 Business Organization and Management

This basic course is designed to present an overview of the marketing functions. These include buying, selling, transportation, storage, standardization. The overall effect is an environmental study of the interdependence of various marketing functions.

MKT 202 MARKETING II 3 credits

Pre-requisite: MKT 201 Marketing I

This course builds upon the principles set forth in MKT 201. Special emphasis is placed upon marketing policies and research. The case study approach is utilized to demonstrate practical application of the subject matter.

MKT 203 PRINCIPLES OF ADVERTISING 3 credits

Pre-requisite: BUS 101 Business Organization and Management

A study of the principles of advertising and the role of advertising in the field of business. The course traces advertising through its various steps from the initial need to its implementation in the marketplace.

MKT 204 PRINCIPLES OF RETAILING 3 credits

Pre-requisite: MKT 201 Marketing I

This course provides a detailed analysis of the retail establishment organization, management and merchandising principles. Pricing techniques, inventory systems, purchasing problems, consumer trends, and sources of supply are among the specific areas which are covered.

MKT 206 MARKETING MANAGEMENT SEMINAR 3 credits
Pre-requisite: BUS 101 Business Organization and Management, MKT 201 Marketing I, MKT 203 Principles of Advertising
This course enables the student to integrate his knowledge of the major areas of marketing and management, and to test his theoretical application on the solution and defense of selected case studies. The student's analysis of the problem situations is directed at the managerial level.

MUS 101 MUSIC APPRECIATION 2 credits
A course designed to develop an appreciation and understanding of great musical masterpieces and composers.

MUS 121 MUSIC HISTORY AND APPRECIATION 3 credits
A course in the understanding and appreciation of music from the historical point of view. Major periods studied include Classical, Baroque, Romantic, and Contemporary.

NUR 101 NURSING FUNDAMENTALS 8 credits
A basic course designed to help students understand the underlying principles of techniques common to all nursing and practice those techniques with selected patients in the clinical area. The techniques encompass skills required to interview, to plan daily care, to make pertinent nursing observations, to administer medications, and to practice aseptic technique.

NUR 102 NURSING OF MOTHERS AND CHILDREN 8 credits
Pre-requisite: NUR 101 Nursing Fundamentals
Nursing of mothers and children introduces the student to the essential knowledge and skills nurses require for competent planning and administration of technical nursing care of women during the maternity cycle, of their infants, and of sick children in hospitals. The student is oriented to theory that is requisite to the practice of comprehensive technical nursing of these individuals. Opportunity to observe, test and apply theoretical information in clinical nursing situations is provided. Laboratory experiences assist the student to develop manual skills necessary to implement nursing care plans for the above patient population.

NUR 201 NURSING OF ADULTS I 8 credits
Pre-requisite: NUR 101 Nursing Fundamentals
In this course students study the concept of dynamic equilibrium of mind and body, the interdependence of one system upon every other system within the body, and the effect of illness upon the patient and his family. Community agencies available for help are considered. Students care for patients having major problems in water and electroylte regulation, proliferation and maturation of cells, interference in hormonal regulation, transporting of material to and from cells, and maintenance and supply of oxygen and removal of carbon dioxide in a variety of settings. Emphasis is on interruption of developmental life patterns, appropriate nursing intervention, and the sequence of tasks in an emergency.

NUR 202 NURSING OF ADULTS II 8 credits
Pre-requisite: NUR 201 Nursing of Adults I
This course is a continuation of nursing of the adult patient having some degree of upset in equilibrium, the effect of disequilibrium on the patient and his family, and the community resources available for help. Students care for patients (in a variety of settings) including those having problems in inappropriate interpersonal relations, in neuromuscular regulation, and in the provision of cell nutrition. Emphasis is on the multifaceted role of the nurse in long-term care.

NUR 203 CONTEMPORARY NURSING PROBLEMS 2 credits
This course studies problems encountered by the staff nurse in contemporary nursing situations. Reference is made to the historical developments in nursing, legal aspects, and the role of the professional nursing organizations relative to the evolvement and handling of these situations. The nurse's role in the profession and in relation to other health disciplines is examined. Clinical experience is provided with the hospital nursing team and analytical seminars developed from these experiences.

PEd 101, 102, 103 PHYSICAL EDUCATION 1 credit
Emphasis is on instruction in a variety of activities that possess recreational value in later life. Most classes are individual or dual activities and are co-educational. Instruction is provided in Archery, Golf, Tennis, Modern Dance, Exercise and Fitness (W), Body Conditioning and Weight Training (M), plus many others.

PHI 121 PHILOSOPHY 3 credits
A study of the background, fundamental problems and developing types of philosophy as expressed in selected writings of major classical and modern philosophers of the Western Tradition.

PHI 122 LOGIC 3 credits
Elementary presentation of the basic tools of logic. The nature and purpose of definition are explored, concepts of truth discussed and the pitfalls of language are analyzed. The modern method of symbolism is employed throughout.

PHI 123 ETHICS 3 credits
An exposition and critical evaluation of the dominant moral philosophies of the Western World. Although attention is given to classical thinkers and their works, the major emphasis is on contemporary theories as presented in selected writings.

PHY 101 PRINCIPLES OF PHYSICS I 3 credits
Pre-requisite: High school algebra
Subject matter includes the principles of change and superposition. These are applied to basic concepts of kinematics and dynamics leading to the Newtonian model. The principles of conservation of momenta and energy are developed and applied to the concepts and principles of heat.

PHY 102 PRINCIPLES OF PHYSICS II 3 credits
Pre-requisite: PHY 101 Principles of Physics I
Continuing study of the concepts and principles underlying the behavior of individual and groups of material particles. Newton's Laws are applied to the study of simple harmonic motion, the mathematical pendulum, waves and vibrating bodies. Working models for study of sound, light and electro-magnetism are developed. The underlying principles of the quantum nature of matter are studied by means of atomic theory and the relativistic nature of matter is investigated by means of special relativity theory.

PHY 121 GENERAL PHYSICS I 4 credits
Pre-requisite: One year high school algebra
Co-requisite: Enrollment in college-level math course
General physics emphasizes problem-solving techniques, including principles of change and superposition. The development of the basic concepts of kinematics and dynamics leads to the Newtonian model. The conservation laws of momenta and energies are studied, and the model is applied to give concepts and principles of heat.

PHY 122 GENERAL PHYSICS II 4 credits
Pre-requisite: PHY 121 General Physics I or equivalent
Emphasizes problem-solving techniques. The basic concepts of electricity and magnetism are developed, leading to the Maxwell electro-dynamical model. Circuits and circuit theorems are studied, both D.C. and A.C. Concepts of geometrical and physical optics are developed and applied to various situations.

PHY 131 ENGINEERING PHYSICS I 4 credits
Co-requisite: MAT 131 Analytic Geometry and Calculus I or equivalent
The development of the basic concepts of kinematics and dynamics leading to the Newtonian model. Principles of change and superposition will be studied as well as the conservation laws of momenta and energies. The model is applied to study concepts of kinetic-molecular hypothesis and related heat phenomena.

PHY 132 ENGINEERING PHYSICS II 4 credits
Pre-requisite: PHY 131 Engineering Physics I, MAT 131 Analytic Geometry and Calculus I or equivalent
Co-requisite: MAT 132 Analytic Geometry and Calculus II or equivalent
The basic concepts of electricity and magnetism are developed using electron theory of matter. Field properties are developed leading to Maxwell electro-dynamical model in integral form. These principles are applied to solutions of D.C. and A.C. circuit problems.

PHY 231 ENGINEERING PHYSICS III 4 credits
Pre-requisite: PHY 132 Engineering Physics II and MAT 132 Analytic Geometry and Calculus II or one year of integral and differential calculus
The basic concepts of wave motion, acoustics and optics are studied, including nature and propagation of sound and light, laws of reflection and refraction, lenses and optical instruments, interference and diffraction, polarization, the quantum theory of radiation and the nature of x-radiation.

PHY 232 ENGINEERING PHYSICS IV — 4 credits
Pre-requisite: PHY 231 Engineering Physics III and MAT 132 Analytic Geometry and Calculus II or one year integral and differential calculus
The concepts of special relativity are studied, followed by the Rutherford-Bohr atomic model, quantum optics, radioactivity nuclear energy and fundamental particles.

POS 221 AMERICAN GOVERNMENT — 3 credits
A detailed examination of the organization, powers, and procedures of national, state, and local governments is presented, with coverage of such topics as the role of political parties and of interest groups, and the relation of the individual to government.

POS 222 COMPARATIVE GOVERNMENT — 3 credits
The political systems of the major world powers are discussed in this course. In considering each country, political institutions are viewed against their economic and social backgrounds. Frequent comparisons are drawn between the American federal government and the foreign governments considered in this course.

PRT 11-12 TECHNICAL CALCULATION I AND II — No credit
The classes consist of supplementary instruction to support the science courses taken by Pre-Technical students. Problems in mathematics and related topics are discussed from their applications in science.

PRT 13-14 COUNSELING SEMINAR — No credit
This course consists of counseling seminars in which all types of problems are discussed, from personal to the most general, relating to school work. Many speakers are invited to the seminars from various scientific fields and from within the College. In addition a number of field trips are arranged. These are visits to nearby industries which use the technologies for which the Pre-Technical students can be educated at Middlesex County College.

PSY 101 INTRODUCTION TO PSYCHOLOGY — 3 credits
A survey of selected topics in psychology: intelligence, personality, emotions, heredity and environment, learning and motivation, memory and problem solving, physiological factors in behavior and measurement and individual differences.

PSY 121 PSYCHOLOGY I — 3 credits
This first course is designed to help the student gain a better understanding of human behavior. Some of the topics developed are the scientific method, sensation, perception, emotion, motivation, learning, memory, measured intelligence, reflective thought, and personality formation.

PSY 122 PSYCHOLOGY II — 3 credits
Pre-requisite: PSY 121 Psychology I or equivalent
This course concentrates on helping students to achieve insights into human behavior from pre-natal development to maturity. Physical, intellectual, emotional, and social behavior are studied; behavior characteristics at different age levels and individual differences are considered.

PSY 221 PSYCHOLOGY OF ADJUSTMENT — 3 credits
Pre-requisite: PSY 121-122 Psychology I and Psychology II or SOC 121-122 Sociology I and Sociology II or equivalent
This course concentrates on the adult normal personality via material drawn from the social, clinical, and experimental fields of psychology. The relationship between personality development and social structure is stressed.

PSY 222 SOCIAL PSYCHOLOGY — 3 credits
Pre-requisite: SOC 121-122 Sociology I and Sociology II and/or Psychology 121-122 Psychology I and Psychology II
A study of the behavior and development of the individual in society, of the functions of social attitudes, social behavior and social awareness in individuals. Psychological factors in group conflict and group solidarity are explored.

SCI 11 PHYSICAL SCIENCE — No credit
Introductory course of a two-semester sequence in the pre-technical curriculum. The basic concepts of kinematics and dynamics leading to the development of the Newtonian model, the conservation laws of momenta and energy, and their application to the concepts and principles of heat are studied.

SCI 12 PHYSICAL SCIENCE — No credit

Pre-requisite: SCI 11 Physical Science or equivalent

The origins of atomic theory in physics and chemistry are followed up to the development of the kinetic theory of matter and heat. The field concepts in electricity and magnetism lead to Maxwell's Electrodynamic Model. The quantum properties of light and matter are studied along with some recent development on the ideas of the nucleus.

SCI 101 PHYSICAL SCIENCE — 4 credits

A one-semester course which deals with the basic concepts and principles of physics and chemistry and leads into a survey of organic and physiological chemistry.

SCI 201 LABORATORY TECHNIQUES — 4 credits

Pre-requisite: BIO 123-124 General Biology, CHM 102 Principles of Chemistry II

A study of the techniques employed in the determination of bodily fluids. The determination of physiological constants employing modern techniques.

SCI 202 LABORATORY INSTRUMENTATION — 4 credits

Pre-requisite: SCI 201 Laboratory Techniques

A classic presentation of the interaction of light and matter-spectorscopy. An analysis of chromatographic, electrophoretic, and fluorescent techniques.

SCI 203 NATURAL SCIENCE — 3 credits

A survey of the physical and life sciences.

SES 101 TYPEWRITING I — 2 credits

The basic techniques of touch typewriting, including a thorough knowledge of the keyboard and the care and operation of the electric typewriter. The lessons include drills to develop accuracy, rhythm, and speed; typing from different kinds of copy; and techniques such as centering, correcting errors, and using carbons.

SES 102 TYPEWRITING II — 2 credits

Pre-requisite: SES 101 Typewriting I, or satisfactory completion of requirements by examination

A continuation of typing for speed and accuracy; more complex letters, business forms, complex tabulation, manuscripts, legal work and reports. Individual drills are introduced. A knowledge of the proof-reader's symbols and of rough draft corrections is required. The general objective is to extend the student's typing power and his ability to apply the skill to typing assignments.

SES 103 SHORTHAND I — 3 credits

The theory principles of the Gregg Diamond Jubilee Shorthand system are presented to lay a foundation for the development of the dictation and transcription skills.

SES 104 SHORTHAND II — 2 credits

Pre-requisite: SES 103 Shortland I, SES 101 Typewriting I

This course is designed to reinforce the fundamental principles in Gregg Diamond Jubilee Shorthand and to develop word-building power, phrasing skill, and transcription skill. Emphasis is placed on increasing shorthand speed.

SES 105 DEVELOPMENTAL TYPEWRITING — 1 credit

Not Open to Secretarial Science Students

The purpose of this course is to aid the student in developing the routine typing techniques necessary for the preparations of manuscript and straight copy. A review of other applications is included.

SES 201 TYPEWRITING III — 2 credits

Pre-requisite: SES 102 Typewriting II

This course provides for the professional development needed for building skill to increase production in typing forms, tabulating, letter-writing and working with various statistical and legal problems. At the conclusion of the course a final inventory will be made in the areas of correspondence, business forms, tabulation, report typing, and paragraph copy. In addition the examination will be a standardized test used on a national level.

SES 202 SHORTHAND III — 2 credits

Pre-requisite: SES 104 Shorthand II, SES 102 Typewriting III

It is the objective of this course to provide adequate materials and effective practice procedures to meet the vocational needs of students in developing their stenographic skills to a marketable level.

SES 204 SHORTHAND IV 2 credits
Pre-requisite: SES 203 Shorthand III, SES 201 Typewriting III
This course provides activities which will enable the student to attain a highly-developed vocational stenographic competency.

SES 211 SECRETARIAL PROCEDURES I 3 credits
Pre-requisite: SES 102 Typewriting II, SES 104 Shorthand II
Translates shorthand and typing skills and their related subjects into actual office duties —the setting up and maintaining of files, developing telephone techniques, editing routine letters, making appointments, handling mail, etc. The efficient care of the office, work habits, and business ethics are introduced. Continued skill and speed in shorthand and typing are stressed with their application to shorthand duties.

SES 212 SECRETARIAL PROCEDURES II 3 credits
Pre-requisite: SES 201 Typewriting III, SES 203 Shorthand III, SES 211 Secretarial Procedures I
Continued development of shorthand and typing skills into office duties. The arranging of meetings and conferences, supervisory techniques, legal, medical, insurance terminology and the setting up of a secretary's notebook are presented. Speakers from the field supplement the course.

SOC 101 SOCIAL SCIENCE 3 credits
This single semester course explores contemporary American society from the viewpoints of the major social science areas: cultural anthropology, social pyschology, sociology, economics, and political science. Significant institutions and the forces which have shaped them are examined. Trends in American life since World War II, the interaction of government and the economy, and the increased importance of world affairs comprise a few of the salient themes.

SOC 121 SOCIOLOGY I 3 credits
Major social processes such as culture, associations, status, stratification, mobility, socialization, population, ecology, and collective behavior are analyzed. Emphasis is centered on contemporary America with the utilization of other cultures for comparison purposes.

SOC 122 SOCIOLOGY II 3 credits
Pre-requisite: SOC 121 Sociology I
Detailed analysis of current sociological research in the fields of family life, crime and delinquency, urban life, the mass media, minorities, political and economic patterns, and other pertinent matters. The concepts developed in Sociology I are explained further in each of the foregoing contexts.

SOC 173 BASIC CONCEPTS OF SOCIOLOGY 3 credits
Introduction to the basic concepts of sociology including culture, social organization, stratification, psychological factors in social behavior, personality, group relationships, family, population, education and religion. Throughout the term the course considers the impact of science and technological change in these areas.

SOC 174 SEMINAR IN CONTEMPORARY SOCIETY 3 credits
Pre-requisite: SOC 173 Basic Concepts of Sociology
A study of the major problems of contemporary society with emphasis on the changing roles of women. Introduction to the principles of economics stressing the growth of urban industrial society, production, distribution, economic systems and philosophies, the consumer, government and its functions.

SOC 221 ANTHROPOLOGY 3 credits
This course combines physical and cultural anthropology. It details the biological characteristics of man and his behavior patterns learned in many different contexts and in a variety of human societies. The races of mankind are analyzed.

SPA 121 ELEMENTARY SPANISH I 3 credits
A course for students with little or no background in Spanish. Use of integrated materials enables the student to acquire and employ the fundamentals of reading, writing and speaking the language. Required laboratory attendance.

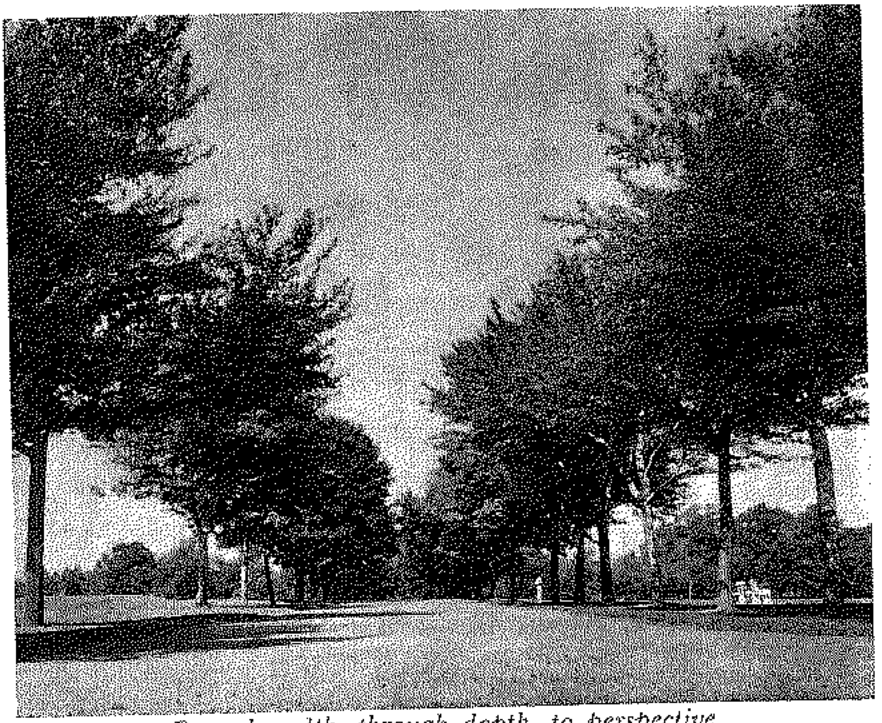
SPA 122 ELEMENTARY SPANISH II 3 credits
A continuation of SPA 121.

SPA 221 INTERMEDIATE SPANISH I 3 credits
Pre-requisite: SPA 121-122 Elementary Spanish I and II or equivalent (two years of high school Spanish)
General review of grammar and basic fundamentals. Conversation is stressed and works fom typical Spanish authors are read along with excerpts dealing with Hispanic civilization. Required laboratory attendance.

SPA 222 INTERMEDIATE SPANISH II 3 credits
A continuation of SPA 221.

SPA 231 SPANISH COMPOSITION AND CONVERSATION I 3 credits
Pre-requisite: SPA 221-222 Intermediate Spanish I and II or equivalent (three or more years of high school Spanish)
An intensive study of advanced Spanish grammar specializing in analysis of grammatical and syntactical structures of modern Spanish. Selections from contemporary Spanish and Latin American authors are analyzed according to new linguistic methods. Emphasis is also given to special problems of English-speaking students. Course is conducted mainly in Spanish.

SPA 232 SPANISH COMPOSITION AND CONSERVATION II 3 credits
A continuation of SPA 231.



From breadth, through depth, to perspective

CO-CURRICULAR ACTIVITIES

The College recognizes the fact that student experiences outside the classroom are important to the overall development of the student. For this reason the College supports a strong co-curricular program as a complement to the academic program. A variety of activities has been planned to reflect the diversification of student interest and to provide an opportunity to develop talent, leadership ability and a sense of social responsibility.

Student Senate

The heart of the co-curricular activities is the elected student senate. The student governing body is responsible for promoting, coordinating and financing student activities. The Senate acts as a sounding board for student opinions on campus.

INTERCOLLEGIATE ATHLETICS

As a member of Region XV of the National Junior College Athletic Association, Middlesex County College offers intercollegiate competition in eight varsity sports. Teams providing competition are from Pennsylvania, New York, Maryland, Delaware, Connecticut and New Jersey.

The varsity sports are:

Fall—Cross Country	Winter—Basketball	Spring—Baseball
Soccer	Bowling	Golf
	Wrestling	Tennis

MCC students are admitted free to regularly-scheduled home contests on presentation of the student identification card. Students are encouraged to support MCC teams and to exemplify good sportsmanship at all times.

MEN'S INTRAMURAL SPORTS

The aim of the Men's Intramural Sports Program is to provide every male student with an opportunity to participate in an organized recreational or competitive sports activity as regularly as his interest and time will permit.

An Intramural Council decides the specific activities to be offered. Student interest and available facilities are important in the consideration of activities.

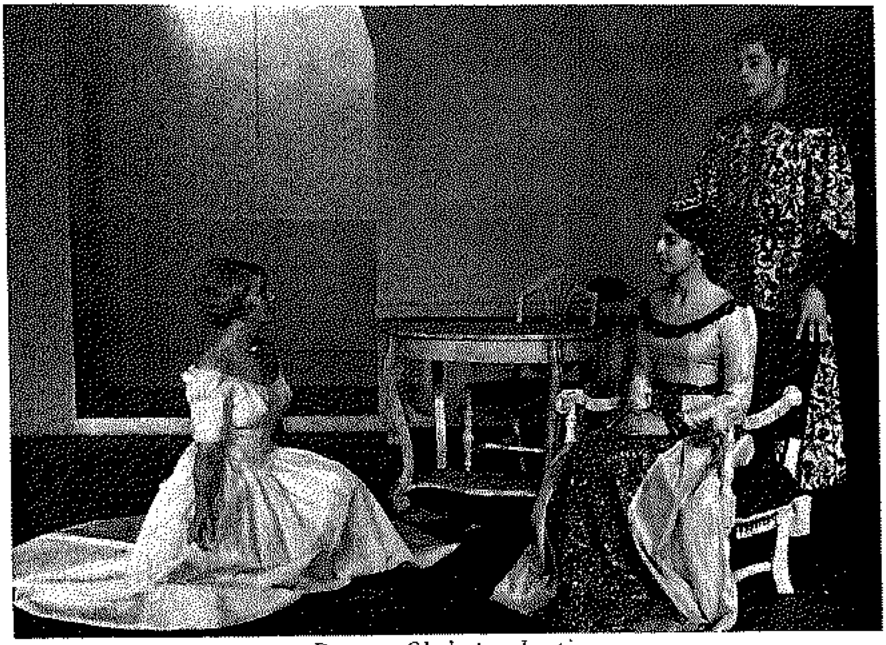
WOMEN'S RECREATIONAL ASSOCIATION

A Women's Recreational Association will begin functioning in September 1967. A variety of activities will be offered depending upon interest of the members. Membership in the WRA will be open to all women students of the College.

The WRA and Men's Intramural Council will work together in offering several co-educational sports activities.

INFORMAL ATHLETIC ACTIVITIES

Students are encouraged to participate in informal athletic activities during free hours and may borrow equipment upon presentation of their identification cards at the equipment room in the physical educational building.



Drama Club production

Basketball team in practice

FACULTY-STUDENT ASSOCIATION

This is a non-profit corporation incorporated under the laws of New Jersey. Faculty and students participate in its management. Its purpose is to promote cultural interests and social relations among the students and faculty of the College. The Association operates the College Book Store.

BOOK STORE

The College Book Store is operated by the Faculty-Student Association for the benefit of the students. Required textbooks and supplies can be purchased here.

ATTENDANCE

Since the faculty of the College believes that achievement of the objectives of the various courses is the prime concern of both student and teacher, regular class attendance is considered essential. When attendance is less than regular the student's accomplishments are likely to suffer. Therefore, students are expected to observe the following regulations.

1. *Attendance*—Every student is expected to attend all sessions of classes and laboratory work for which he is registered, and all absences will be recorded. More than three contact hours of absence from any course may be considered valid reason for dismissal or other disciplinary action.

   a. *Illness*—Students experiencing an illness resulting in absence from class for two or more days should report such illness to the College Nurse.

   b. *College Activities*—Students must obtain an absence approval certificate from faculty advisors concerned whenever possible prior to the absence.

   c. *Personal Business*—In case of illness or death in the family, summonses, religious holidays, students must obtain an absence approval certificate from a representative of the Student Personnel Services Division whenever possible prior to absence.

Since students are accountable for all required work, and an absence does not relieve them from making up any work missed, each student must assume the responsibility for conferring with his instructors concerning any makeup work prior to or immediately following an absence.

2. *Tardiness*—Students are considered tardy if they are not at their assigned places at the beginning of classes. Because of the disruptive nature of tardiness, the individual instructor will deal with the offenders in whatever manner he feels appropriate.

HEALTH SERVICES

The Health Service Clinic is located in North Hall, and a registered nurse is on duty while the day college is in session. This service is intended to prevent or minimize illness and to encourage proper health habits.

Student Insurance or College Health and Accident Insurance

All students are required to participate in the student medical-accident insurance policy or show proof of having medical-accident insurance coverage. All claims for coverage are made through the Health Service as follows:

Any medical illness that prevents a student from attending his classes should be reported. If an accident should occur it is most important that the following steps be taken:

1. Report any injury to the instructor in charge.
2. In case of severe injury the instructor will call the nurse.
3. If the College Nurse is not available, the instructor will call an ambulance service.
4. Report all injuries incurred within the College and outside of the College to the College Nurse. Certain forms must be completed immediately after an accident occurs. Obtain these forms from the College Nurse located in the Clinic, North Hall. Read the insurance instructions carefully. Failure to understand them or to send in necessary reports may lead to forfeiture of benefits to which a student is entitled.

Additional Services For Faculty and Staff

Academic and non-academic personnel are offered first-aid treatment, and advisory service.

All injuries sustained while at work for the college should be reported to, or seen at, the Health Service Clinic prior to referral to the family doctor, specialist, or hospital, should the case require such referral.

Workmens Compensation accident claims are made through the Heatlh Service.

SELECTIVE SERVICE (MEN ONLY)

Selective Service status has an important bearing on the college career of each male student. A student who has been admitted to the college may prepare the Selective Service form SSS 104, "Request for Undergraduate Student Deferment," and submit it to his local draft board. The forms are available from local boards or from the College Registrar.

After the Fall registration the Registrar will forward form SSS 109, "College Student Certification," to the local draft board for each student who has previously registered with Selective Service and who *requests* such certification. If a student completes his Selective Service registration after college begins, he should notify the Registrar's Office at once. It is the student's responsibility to see that the college has the information regarding his Selective Service classification if he wishes the draft board to be notified.

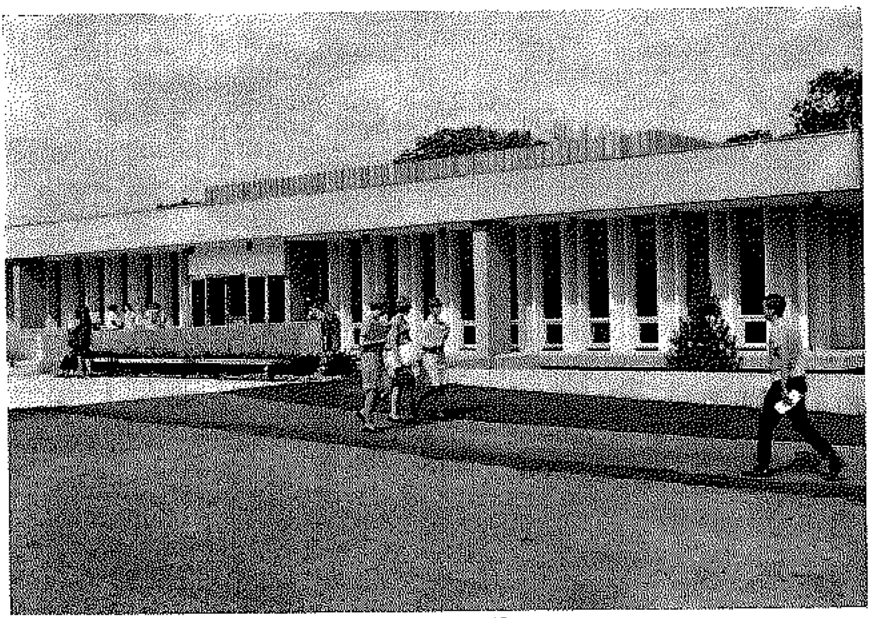
LIBRARY

The College Library, now located in the new permanent building (the first stage of which was completed in September, 1967) has a collection of approximately 10,000 volumes arranged in open stacks for ready availability. These books have been carefully selected to fulfill course requirements and to provide enrichment. There is a basic collection of reference books which includes bibliographies and indexes. The Library subscribes to over 250 periodicals including technical journals, foreign magazines and a number of out-of-town and local newspapers, and a pamphlet file on a variety of subjects is available. Gifts of books and periodicals from interested donors in the community have increased the holdings. Through cooperative inter-library loan programs, book collections of other academic libraries in New Jersey and of the State Library in Trenton are available to students and faculty, thereby enriching the Library resources.

In addition, the Library provides as part of its collection not only recordings, tapes and microfilm, but also the machines on which to use these materials. The college audio-visual center is located on the lower floor of the building.

The professional library staff provides individual instruction to the student in the use of the library as the need arises. Group instruction is also available.

The first stage of the new library building has a seating capacity of 412 students and includes individual study carrels, conference and group study rooms, sound-proof typing cubicles, A-V rooms and lounges. It will house some 60,000 volumes plus all related library and audio-visual materials.



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M.A., New York University

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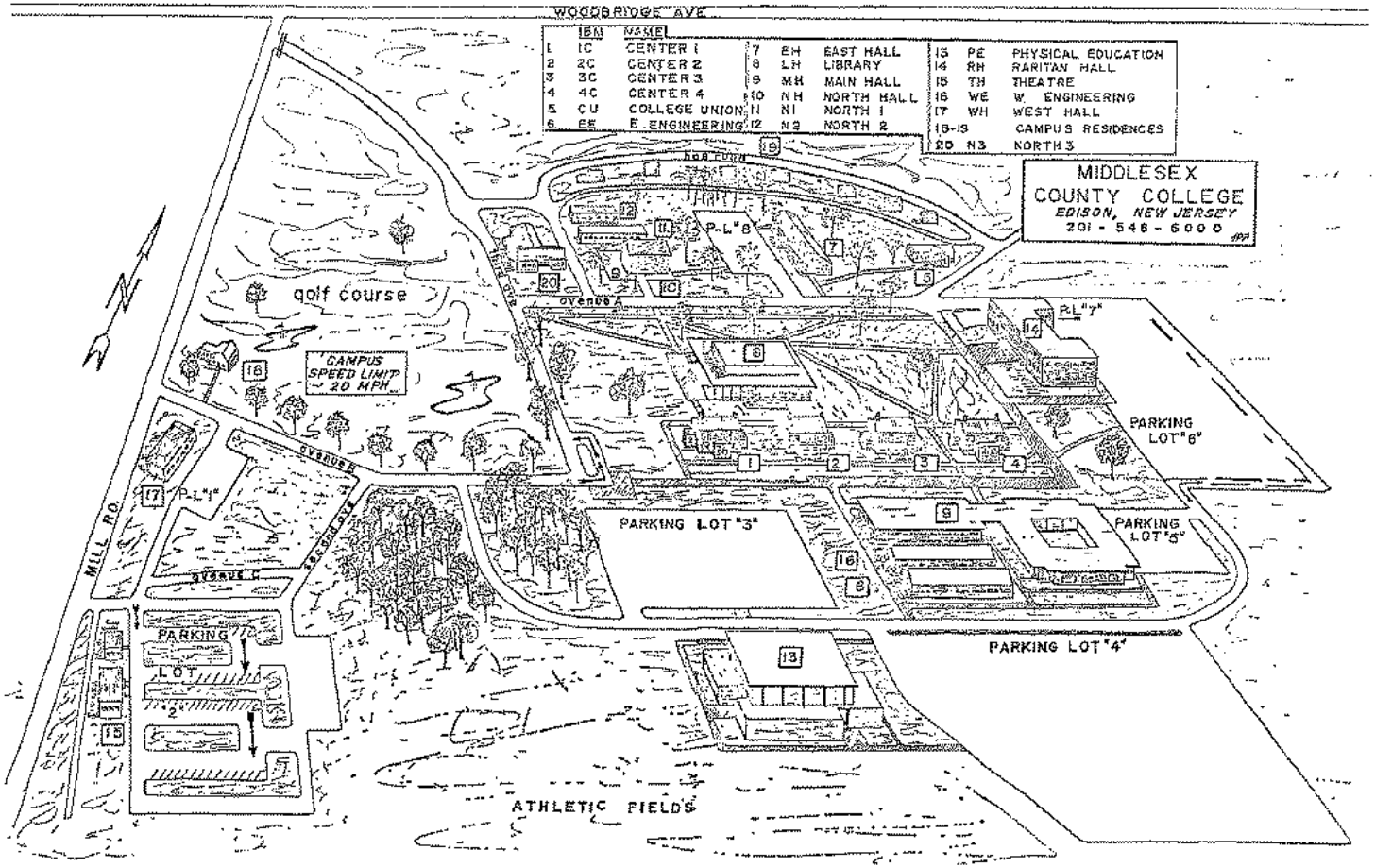
Szoke, Albert ..... Custodian
Tindall, Edward C. ..... Maintenance Mechanic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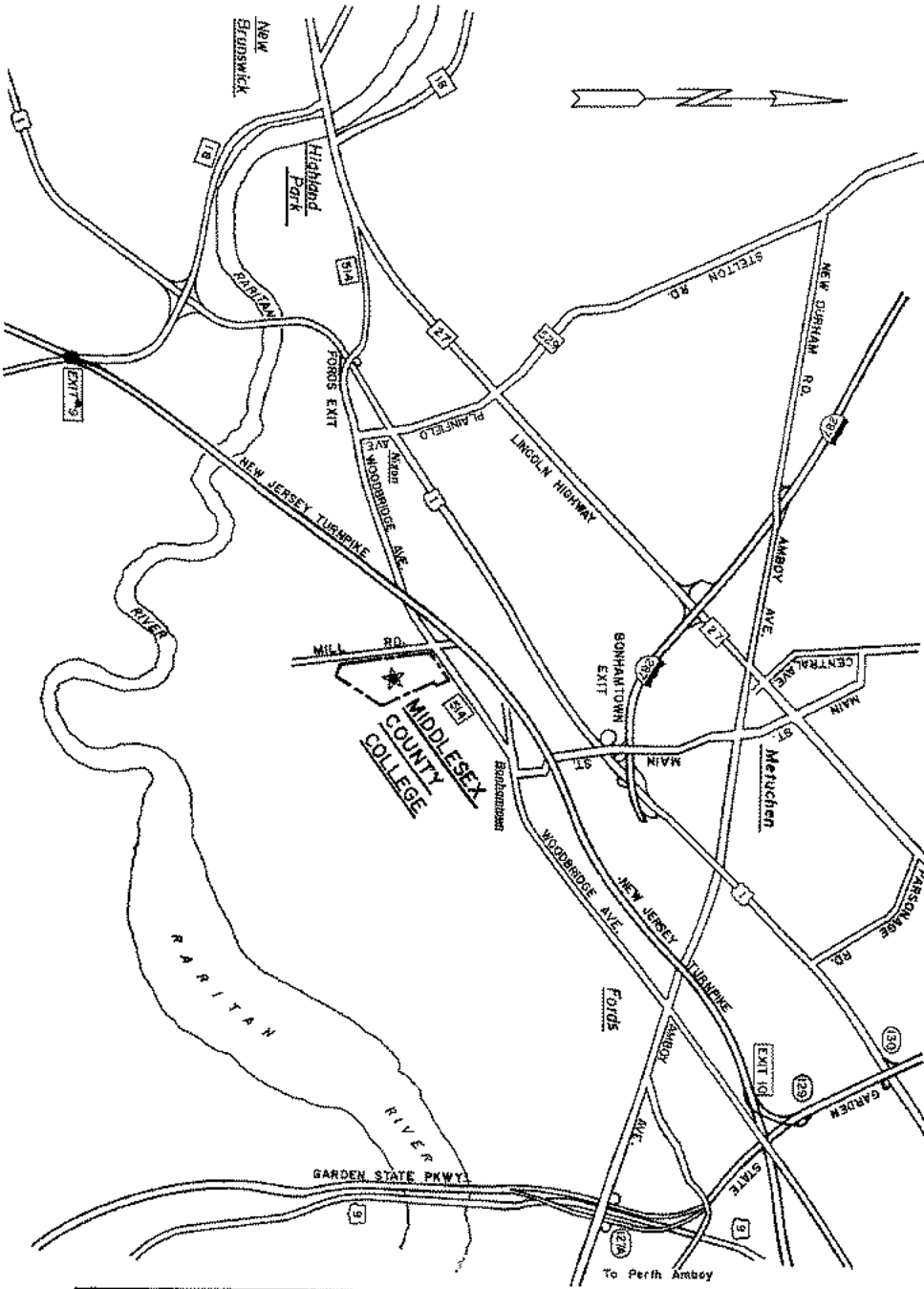
3 3C CENTER 3
4 4C CENTER 4
5 CU COLLEGE UNION
6 EE E. ENGINEERING
7 EH EAST HALL
8 LH LIBRARY
9 MH MAIN HALL
10 NH NORTH HALL
11 N1 NORTH 1
12 N2 NORTH 2
13 PE PHYSICAL EDUCATION
14 RH RARITAN HALL
15 TH THEATRE
16 WE W. ENGINEERING
17 WH WEST HALL
18-19 CAMPUS RESIDENCES
20 N3 NORTH 3
MIDDLESEX COUNTY COLLEGE
EDISON, NEW JERSEY
201 - 546 - 6000
golf course
CAMPUS SPEED LIMIT - 20 MPH
MILL RD.
AVENUE A
AVENUE B
AVENUE C
AVENUE D
AVENUE E
P-L "8"
P-L "7"
P-L "1"
PARKING LOT "6"
PARKING LOT "3"
PARKING LOT "5"
PARKING LOT "4"
PARKING LOT
ATHLETIC FIELDS



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HIGHWAY	NORTHBOUND	SOUTHBOUND
(1)	FORDS EXIT	BONHAMTOWN EXIT
(287)		BONHAMTOWN EXIT
N.J. TURNPIKE	EXIT 9	EXIT 9
GARDEN STATE PKWY.	(127A)	(130)

Approaches to
MIDDLESEX COUNTY COLLEGE
Edison, New Jersey

8-21-66 DHT

Approx. scale in miles

BLANK