ACADEMIC CALENDAR 1994 - 1995

Fall 1994

August 22 – August 26 (Monday – Friday) ................. Registration Activities
August 29 (Monday) ........................................... Classes Begin

September 2 (Friday) ........................................... No Evening Classes
September 3 – 5 (Saturday – Monday) ....................... Labor Day Weekend – No Classes
September 6 – 7 (Tuesday – Wednesday) ................. Religious Holiday – No Classes (Wed Eve. meets)
September 14 (Wednesday Evening) ......................... Religious Holiday – No Evening Classes
September 15 (Thursday) ...................................... Religious Holiday – No Classes

October 7 (Friday) .............................................. No Day Classes – Evening Classes Meet
October 10 (Monday) ........................................... Columbus Day – No Classes
October 11 (Tuesday) ........................................... Governance Meeting – No AM Classes
November 15 (Tuesday) ........................................ Governance Meeting – No PM / Evening Classes
November 23 - 27 (Wednesday – Sunday) .................. Thanksgiving Break – No Classes
December 17 (Saturday) ....................................... Last Day of Instruction
December 19 – 23 (Wednesday – Sunday) ................. Evaluation Period

Spring 1995

January 16 (Monday) .......................................... Martin Luther King Day
January 17 – 20 (Tuesday – Friday) ......................... Registration Activities
January 23 (Monday) .......................................... Classes Begin
February 20 (Monday) .......................................... Presidents Day – No Classes
February 21 (Tuesday) .......................................... Governance Meeting – No AM Classes
April 4 (Tuesday) ................................................ Governance Meeting – No PM / Evening Classes
April 10 – 16 (Monday – Saturday) ......................... Spring Recess – No Classes
May 9 (Tuesday) .................................................. Last Day of Instruction
May 10 – 16 (Wednesday – Tuesday) ....................... Evaluation Period
May 18 (Thursday) ............................................... Commencement / Grades Due

GENERAL INFORMATION

The State University of New York at Farmingdale is located on 380 acres in central Long Island. The College is easily accessible via the Long Island Expressway, the Northern and Southern State Parkways, and the Long Island Railroad. Established in 1912 to serve a largely agrarian community, the College now meets the needs of the region and New York State through its emphasis in the applied sciences and high technology. As Long Island's only four-year public college of technology, Farmingdale offers the bachelor of science, bachelor of technology, a comprehensive array of associate degree programs, as well as a wide range of non-credit and certificate programs, workshops and seminars.

SUNY Farmingdale is fully accredited by the Middle States Association of Colleges and Secondary Schools. At present, approximately 7,730 students are in attendance. Of those who enrolled in the fall of 1990 as first-time, full-time students, 80% remained in attendance at the conclusion of their first year. Approximately 35% of each freshman class in degree and certificate programs, complete graduation requirements in 3 years: 66% after 4 years; and 71% after 5 years. Of the students who do not return to pursue their studies to completion, many opt for full-time employment or transfer, particularly within the SUNY system.

Accreditation and State Education Department Registration

All curricula are registered by the New York State Education Department. Authorized to offer the baccalaureate degree to eligible holders of an appropriate associate degree, the College presently awards the bachelor's degree in Aeronautical Science-Professional Pilot, Aviation Management, Electrical Engineering Technology, Biomedical Engineering Technology, Industrial Technology-Facility Technology, Industrial Technology-Management of Technology, Manufacturing Engineering Technology, and Visual Communications. Additional upper division baccalaureate degree programs are pending New York State approval. Individuals interested in continuing their studies at the junior-senior-year levels should contact the Admissions Office for program availability. In addition, the College is approved for the purpose of awarding the degree of Associate in Science (A.S.) to graduates of Business Administration, Computer Information Systems, Computer Science, Criminal Justice, Dental Hygiene, Engineering Science, Food and Nutrition, Medical Laboratory Technology, and Nursing; the Associate in Arts (A.A.) to graduates of the Liberal Arts and Sciences curriculum, and the Associate in Applied Science (A.A.S.) to graduates of the degree granting career programs.

Accreditations:

- Middle States Association of Colleges and Secondary Schools
- New York State Education Department
- Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET)
- Commission on Dental Accreditation and Council on Postsecondary Accreditation and the U.S. Department of Education: Dental Hygiene
- Commission for the Accreditation of Allied Health Education Programs (CAAHEP): Dental Laboratory Technology
- National League of Nursing: Nursing
- Federal Aviation Administration: Aerospace Technology
- Mission of the College

The State University at Farmingdale is a unit within the State University of New York system offering a broad range of associate degree programs as well as bachelor degrees in the applied sciences and technologies. Within SUNY, Farmingdale has the distinct mission of serving the traditional and non-traditional student through a balanced combination of associate and upper division baccalaureate degree granting career programs.
programs; curricula awarding the bachelor's degree resem- bles in purpose those at polytechnic colleges. New tech- nologies needed for society's technical needs in liberal arts courses.

Affirmative Action / Equal Employment Opportunity (Faculty, Staff, Students)

SUNY College of Technology at Farmingdale

Statement of Compliance

The State University of New York at Farmingdale does not discriminate on the basis of race, color, creed, age, national origin, handicap, marital status, or status as a disabled vot- enent or Vietnam Era Veteran. Farmingdale is committed to the recruitment and employment of faculty or staff, or the operation of any of its programs and activities, as specified in federal and state laws and regulations. The designated coordinator for compliance with Title VI and VII of the Civil Rights Act of 1964 as amended, Title IX of the Education Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, as amended, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974 as amended, and Executive Order 11246 is Patricia Hill Williams, assistant to the president. She can be located during regular business hours at the president's office. Administration Building (telephone 516/420-2142).

Policy on Sexual Harassment

No one should be subjected to uninvited, unwelcome sexual overtures or conduct, either verbal or physical.

A university is a community of scholars where strong empha- sis is placed on self-employment and consideration for the lives and feelings of others. While there exists an atmop- here for freedom of expression, it must always be in con- junction with a responsibility to observe the rights of others. In such a setting, there is no place for conduct that diminishes, uses, or abuses another person. For these rea- sons, harassment of any kind is unacceptable at the College. A document on Policy and Procedures may be obtained at Orientation, from the Department Chairs, Directors, Deans, Counselors or the Affirmative Action Office.

Americans With Disabilities

Effective January 26, 1992, the State University of New York became bound by the Americans With Disabilities Acts. The statement for each program as required by the University is included.

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Undergraduate Instructional Programs

Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for certain awards. The following undergraduate programs have been registered by the State Education Department for the State University of New York at Farmingdale.

The Bachelor of Science Degree

The Bachelor of Science and Bachelor of Technology degrees are upper division programs accepting eligible can- didates to continue their studies at the junior-level. Graduates of all B.S. and B.Tech. programs are qualified for graduate study in their fields of specialization or to pursue their education at the graduate level.

The Associate Degree

The Associate in Arts (A.A.) and the Associate in Science (A.S.) programs are offered as the first two years of a traditional baccalaureate program.

The Associate in Applied Science (A.A.S.) programs were originally intended to be "career" rather than "transfer" pro- grams. However, growing numbers of students continue their education after completing one of the career programs pri- marily oriented to a specific occupation. Anyone considering enrollment in an A.A.S. degree program who is concerned about transition potential should see an admissions counselor.

The New York State Education Department has authorized the State University of New York at Farmingdale to award degrees in the following programs:

BACHELOR DEGREE PROGRAMS

Program Degree Granted HEGS COUD

Aeronautical Science - Professional Pilot B.S. 0293
Aviation Administration B.S. 0293
Electric Engineering Technology - B.Tech. 0293
Industrial Technology - Management B.S. 0293
Manufacturing Engineering - B.Tech. 0293
Visual Communications - B.Tech. 0293

ASSOCIATE DEGREE PROGRAMS

Advertising Art and Design A.A.S. 0510
Aerospace Technology A.A.S. 0302
Aerospace Technology Training A.A.S. 0304
Biomedical Engineering Technology A.A.S. 0306
Business Administration A.A.S./A.S. 0304
Computer Science A.S. 0301
Construction/Architectural Technology A.A.S. 0310
Criminal Justice - Law Enforcement A.S. 0306
Computer Technology A.A.S. 0301
Data Processing - Computer Information Technology A.A.S./A.S. 0301
Dental Hygiene A.S. 0303

Electrical Engineering - Technology, Electrical A.A.S. 0510
Engineering Science A.S. 0302
Food Service Administration A.A.S. 0502
Food Service Administration (Not to be confused with curriculum code required on SUNY application)

Liberal Arts and Sciences A.A. 0602
Mechanical Engineering Technology A.A.S. 0501
Medical Laboratory Technology A.A.S. 0605
Nursing A.S. 0293
Ornamental Horticulture A.A.S. 0502

Certificate Programs

Accounting A.A.S. 0502
Advertising Art A.S. 0502
Computer Information Systems A.A.S. 0502
Criminal Justice A.A.S. 0502
Data Processing A.A.S. 0502
Digital Electronics and Microprocessors A.A.S. 0502
Electronic Communications A.A.S. 0502
Management A.A.S. 0504
Manufacturing Methods A.A.S. 0504
Marketing A.A.S. 0504
Medical Laboratory Technology A.A.S. 0504
Mechanical Engineering Technology - Aircraft Maintenance A.A.S. 0502
Ornamental Horticulture A.A.S. 0502
Technical A.A.S. 0502

Each certificate program is approved by the State Education Department as a classroom and laboratory program in a specialized field. For prerequisites and college-level courses in the recommended sequence of study, refer to the certificate program outline under the sponsoring curriculum department.

A.A.S. - Associate in Applied Science
A.A. - Associate in Arts
A.S. - Associate in Science
B.Tech - Bachelor of Technology

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Department of College Studies

The Undeclared Major Program is offered through the Department of College Studies. The Undeclared Major Program is designed to accommodate students who meet admissions requirements to Farmingdale, but are undecided about a career direction and, therefore, a degree program at the College.

PATHWAYS, a one-year program enrichment program, is part of the Undeclared Major Program and is designed for students who need additional preparation in several academic areas in order to meet entrance requirements specific to specialized careers.

Students may remain as Undeclared Majors or Undeclared/Pathways for a maximum of two semesters.

ADMISSIONS INFORMATION

Admission to this College and to all other units of the State University of New York is based on the academic qualifications of the respective applicants and is made without regard to the race, color, creed, age, sex, sexual orientation, national origin, disability, handicap or veteran status of an individual.

Matriculation / Non-Matriculation

A matriculating student is one who has been officially accepted into a degree or certificate program and is making satisfactory academic progress.

A non-matriculating student is one who has not been accepted into a degree or certificate program.

Resident / Non-Resident Status

A student must have resided in the State of New York for a period of at least one year immediately preceding the time of his/her registration in order to be entitled to pay the in-state tuition rate. All other persons shall be considered as non-residents and are required to pay the out-of-state tuition rate. In cases of discrepancy, a student may be asked to supply documentation such as place of voter registration, telephone/electric bills and proof of principal residence.

Occasionally, extenuating circumstances warrant special consideration. Please call (516) 420-2141 for further information.

Student Immunization Policy

New York State Public Health Law 2165 requires all students attending colleges and universities within the State to show proof of immunization against smallpox, measles, mumps, and rubella (German measles). Students born on or after January 1, 1957, entering the College for the first time are required to provide proof of adequate immunization against these diseases. Proof must be approved by the Student Health Service located on the Farmingdale campus prior to the start of classes.

The following proofs are acceptable:

1. Physician proof of vaccine administered on or after the first birthday and after January, 1958. For measles, this must include two doses of live virus, mumps and rubella must just one dose each of their respective live vaccines administered after the first birthday.

2. Physician-documented history of having had measles.

3. Documented laboratory blood tests which prove existing immunity to any or all of these diseases.

Students not in compliance 30 days following the start of classes (45 days for students transferring from out-of-state or a foreign country) may not be permitted to continue classes, may be disenrolled from all classes, and will not be permitted to register for future semesters. Exemption may be granted where immunization would be detrimental to a student's health or where it is otherwise medically contraindicated, or for sincere religious beliefs.

Questions about this policy may be directed to the Student Health Service at (516) 420-2144; Fax (516) 420-2137.

Bachelor of Science Degree

General Admission Requirements

The Bachelor of Science degree in Aeronautical Science - Professional Pilot and in Aviation Administration are upper division programs. Candidates for admission must be graduates of an Associate degree program in Aerospace, Aviation, or a related field of study; or transferring sophomores who have successfully completed the first two years of a comparable aviation program. In addition, candidates must have earned:

- A minimum cumulative grade point average of 2.0 based on a 4.0 scale.
- Thirty (30) credits of coursework in aviation.
- Thirty-four (34) credits in General Education courses.

In addition to these General Admission Requirements, specific prerequisite courses may be required.

Bachelor of Technology Degree

General Admission Requirements

The Bachelor of Technology degrees are upper division programs. Candidates for admission must be graduates of an Associate degree program in Aerospace, Aviation, or a related field of study; or transferring sophomores who have successfully completed the first two years of a comparable aviation program. In addition, candidates must have earned:

- A minimum cumulative grade point average of 2.5 based on a 4.3 scale.
- Thirty (30) credits in a related discipline.
- Twenty-one (21) to twenty-eight (28) credits in General Education courses depending upon program of study.

In addition to these General Admission Requirements, specific prerequisite courses may be required. For these, see the specific curriculum page in this catalog.

Associate Degree

General Admission Requirements

In addition to the General Admission Requirements listed, specific high school level courses are required. These are shown under the catalog for each curriculum department elsewhere in this catalog.

Applicants must be graduates of approved four-year high schools, or hold a General Equivalency Diploma or its equivalent.

Applicants applying on the basis of their high school record must have satisfactorily completed the specific course requirements noted under each department listings. Additional courses may be required as deemed necessary by each academic department. Students may also qualify for admission who have career direction and, therefore, a degree program at the College.

The College encourages, but does not require, all applicants to take one of two entrance examinations: the Scholastic Aptitude Test (SAT) or the American College Testing Program (ACT). All submitted, scores transfer examinations, these examinations may be considered in selecting students for admission to the College for those purposes. These, and additional tests, may, at times, be required.

Application Procedures — Degrees

All United States citizens and permanent residents applying to a degree program must follow the State University of New York application procedure.

1. For New York State residents currently in high school, applications may be obtained from their Guidance Office or in case of individuals no longer in high school or for out-of-state residents, by writing to the Admissions Office, SUNY Farmingdale, Farmingdale, NY 11735.

2. All applicants are required to submit an official copy of their high school transcript. If a student has completed 11 or 12 years of school but has not attended a high school, they may be admitted by submitting an official transcript of their GED scores (if necessary). These should be mailed to the Application Processing Center, State University Plaza, Albany, NY 12246.

3. Students who attended any other college, full-time or part-time, must send an official transcript to the Admissions Office, SUNY Farmingdale, Farmingdale, NY 11735.

4. Holders of a High School Equivalency Diploma (GED) must send a copy of test scores to the Admissions Office.

5. Applicants may be requested to appear for a personal interview.

Admission Decisions

Admission to programs is on a "rolling" basis, admitting all qualified candidates to take one of two entrance examinations: the Scholastic Aptitude Test (SAT) or the American College Testing Program (ACT). When submitted, scores from these examinations may be considered in selecting students for admission to the College for those purposes. These, and additional tests, may, at times, be required.

Application Procedures/Certificates

Upon completion of twelve credits required in the certificate program, students may be awarded a General Equivalency Diploma (GED). If specific courses required for the certificate have been discontinued, other courses may be substituted with the approval of the Program Coordinator. Completion of a certificate program usually takes three to four years.

Earning a General Equivalency Diploma (GED)

Individuals who have earned a high school diploma may be issued a General Equivalency Diploma (GED) after successful completion of 24 college credits applicable to a specific degree. For further information, call the Admissions Office at (516) 420-2200.

Joint Admissions Program

Farmingdale students who successfully complete an Associate degree program for which there is a parallel Bachelor degree program, and who meet all other requirements, may continue their studies at the College's upper division level. Farmingdale graduates from programs for which there is no existing upper division parallel program, Joint Admission and Transfer Articulation agreements have been established with some area public and private institutions. In both instances, students continue their studies with junior-year status.

In addition to pursuing a series of courses after earning a General Equivalency Diploma (GED), students may be admitted as juniors into Farmingdale Bachelor degree programs.

Additional information about these agreements and Associate/Bachelor degree parallel programs at Farmingdale is available from the Admissions Office.

Change of Curriculum

Matriculated students who wish to change their program of study must file for matriculation approval in the new curriculum. Application forms are available from the Admissions Office.

Farmingdale students who successfully complete an Associate degree program for which there is a parallel Bachelor degree program, and who meet all other requirements, may continue their studies at the College's upper division level. To facilitate the transfer of Farmingdale graduates to other institutions, Joint Admission and Transfer Articulation agreements have been established with some area public and private institutions. In both instances, students continue their studies with junior-year status.

In addition to pursuing a series of courses after earning a General Equivalency Diploma (GED), students may be admitted as juniors into Farmingdale Bachelor degree programs.

Additional information about these agreements and Associate/Bachelor degree parallel programs at Farmingdale is available from the Admissions Office.
### Admission of Foreign Students

Students who wish to enroll in courses other than those offered by the College must submit an application to the Registrar's Office. Matriculated students who wish to withdraw from a course for which they have received a grade of "F" or "D" grades if a change in major is sought. Admission may be approved after one semester or one year, depending upon the ability to provide a feasible schedule. The application for admission must be accompanied by a true certification of the highest level of study completed. A copy of the notarized true translation of the high school diploma and other relevant documents should also be submitted. The application should be accompanied by a letter of recommendation from the principal of the secondary school attended. The application should be submitted to the Registrar's Office, SUNY Farmingdale, One College Circle, Farmingdale, NY 11735. The deadline for submission is January 15th of each year. The student will be notified of the decision within two weeks of submission. The student will be required to provide additional documentation as determined by the College's Admissions Office.

### Change of Program (Drop/Add)

Change of Program period takes place during the first two weeks of classes. The student may request the withdrawal of a course only within ten years after they have been accepted into matriculation. Withdrawal forms are available in the Registrar's Office. A student who wishes to withdraw from a course for which they have received a grade of "F" or "D" grades if a change in major is sought. Admission may be approved after one semester or one year, depending upon the ability to provide a feasible schedule. The application for admission must be accompanied by a true certification of the highest level of study completed. A copy of the notarized true translation of the high school diploma and other relevant documents should also be submitted. The application should be accompanied by a letter of recommendation from the principal of the secondary school attended. The application should be submitted to the Registrar's Office, SUNY Farmingdale, One College Circle, Farmingdale, NY 11735. The deadline for submission is January 15th of each year. The student will be notified of the decision within two weeks of submission. The student will be required to provide additional documentation as determined by the College's Admissions Office.

### Withdrawal from the College

Any student taking more than one course who wishes to withdraw from every course that they are enrolled in, must complete the withdrawal form and return it to the Registrar's Office for processing. The withdrawal must be completed within ten days after the last day of classes. The student will be required to provide a statement explaining the reason for the withdrawal. The student will be assigned an appropriate number of non-credit units (ncu) rather than college credit.
A student is advised to consult with the Department Chairperson when repeat of a failed course is contemplated. Credits, but not achievement points, will be applicable toward the degree for courses attempted but not passed at another college. A student repeats a course at this College, achievement points and credits will be applicable toward the degree. A student must have written approval of the Department Chairperson if a course is to be repeated in order to raise a grade. The most recent grade in the course becomes the official grade for the course.

Grade Changes/Incomplete
All grade changes must be completed within 30 days of the beginning of the semester following the one for which the grade was awarded. In cases where special consideration, a time extension may be requested, in writing, from the Registrar.

The grade "incomplete" ("I") is reported when, for some reason beyond the student's control, the student misses the final examination or portion of the required work of the course. No achievement points are awarded for an Incomplete. All Incomplete grades must be removed no later than 30 days after the beginning of the next semester. After that, they automatically become failures, unless the Registrar permits an extension of this period for good course. An Incomplete does not constitute successful completion of a prerequisite.

Probation
A student is permitted to be on academic probation for one semester. Failure to remove oneself from probation in accordance with the regulations at the end of the respective semester will result in academic dismissal.

Reinstatement
Reinstatement refers to the reversal by the Vice President for Academic Affairs of an academic suspension of an institution for the purpose of academic achievement. Any student who has been suspended for academic reasons may petition the appropriate campus administrative officer in writing for review of the decision. Supporting evidence, such as medical explanations or changes in grades, must be submitted in writing with the petition. The reinstatement officer may inform the student to resubmit the petition no later than 30 days after the original request. If the reinstatement officer determines the student to be in good standing at the College, the student is permitted to return to the regular academic program and not subject to academic suspension.

Residency Requirement
To be eligible for a degree, a minimum of thirty (30) credits shall be completed at the College. The specific courses which are to be taken in residence shall be determined by the student's curriculum department. Credits earned through advanced standing cannot be counted towards this residency requirement.

Preliminary Academic Deficiency Notification ("Early Warning System")
In keeping with the College's concern that all students be afforded every opportunity to reach their maximum potential, students are notified early each semester if their progress is less than "C." This "early warning" allows students sufficient time to meet with an advisor and develop a course of action aimed at improving their grades. A variety of support services are available to assist them as they move toward the completion of their academic goals.

Failing Grades/Repeating Courses
To qualify for graduation, a student must successfully complete all requirements for the curriculum. Therefore, a failure must be repeated in the event of special circumstances, an equivalent course may be permitted.

The upper division core requirements for the baccalaureate degree candidate, in addition to the above, shall include:
- two English/humanities courses (6 credits),
- two social sciences courses (6 credits),
- two mathematics/science courses (6 credits).

Grade Changes/Incomplete
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Failing Grades/Repeating Courses
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Report of Grades/Transcripts

Approximately two weeks after the end of each semester a notification of grades is mailed to students having no outstanding financial obligations. When students are suspended or at any time during the semester if a student is not enrolled in courses or grades will appear on the student's transcript.

To obtain an official transcript, a written request by the student must accompany the transcript processing fee. Written requests for transcripts should be addressed to the Registrar, SUNY Farmingdale, Greenlawn Hall, Farmingdale, New York.

Student copies of transcripts will be provided at no cost to the student. Thereafter, a fee of $5.00 will be charged for each official transcript. The college requires payment in advance for all transcripts that are not free.

Transfer

A large percentage of Farmingdale students transfer successfully upon graduation. Of those choosing to continue their education at the baccalaureate level, many opt to remain within the State University of New York system while others seek entry to outside public and private colleges or universities on or off Long Island. The Board of Trustees of the State University of New York has established a transfer policy which guarantees graduates of two year colleges within the University an opportunity to continue their education on a full-time basis at the State University senior campuses. Graduates of two-year institutions in the State University of New York, when accepted in parallel programs in accredited senior campuses, are eligible to be accorded full junior standing and be given the opportunity to complete the requirements for a bachelor's degree within four additional semesters of full-time work.

Beyond this, SUNY Farmingdale has joined with numerous senior institutions—both public and private—to form "articulation agreements" by which these institutions guarantee acceptance of Farmingdale graduates who successfully complete certain criteria while in attendance. Students are urged to take advantage of these arrangements and arrange for a meeting with their academic department as soon as possible to make certain that they follow the prescribed program requirements.

Placement and Transfer Information

The Career Development Center issues an annual report on the placement and transfer status of graduates. This report has information about curriculum areas and schools to which graduates transferred, as well as places of employment and end types of jobs obtained. This report is available in the Career Development Center. For further information, contact the Career Development Center, Memorial Hall, room 117, or call (516) 420-2290 or 2163.

Attendance and Lateness

Each instructor shall determine the attendance and lateness policy for his class.

To maintain the highest quality of academic work, regular class attendance is necessary. Absence and/or lateness from class is considered serious matter and never excuses a student from his or her religious beliefs, to attend classes or to attend classes or to participate in any examination, study or work requirements on a particular day or days.

2. Any student in an institution of higher education who is unable to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.

3. It shall be the responsibility of the faculty and the administrative officials of each institution of higher education to make available to each student who is absent from school because of his/her religious beliefs, an examination, study or work requirement which he/she may have missed as a result of his/her absence on any particular day or days. No loss of any kind shall be charged by the institution for making available to the said student such equivalent opportunity.

4. If classes, examinations, study or work requirements are held on Friday after four o'clock pm on Saturday, Sunday, or a make-up class, examinations, study or work requirements shall be made available on other days, where it is possible and practicable to do so. No special classes shall be required. The student may make an examination, study or work requirements held on other days.

5. In effectuating the provisions of this section, it shall be the duty of the faculty and the administrative officials of each institution of higher education to make available to each student who is absent from school because of his/her religious beliefs, an examination, study or work requirement which he/she may have missed as a result of his/her absence on any particular day or days. No loss of any kind shall be charged to the student for these classes, examinations, study or work requirements held on other days.

6. Any student, who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section, shall be entitled to bring an action or proceeding in the supreme court of the county in which such institution of higher education is located for the enforcement of his/her rights under this section.

7. It shall be the responsibility of the administrative officials of each institution of higher education to give written notice to students of their rights under this section, informing them that each student is given the opportunity to make up any examination, study or work requirement which he or she may have missed because of such absence on any particular day or days. No loss of any kind shall be charged by the institution for making available to such student such equivalent opportunity.

8. As in this section, the term "institution of higher education" shall mean any institution of higher education, recognized and approved by the regents of the university and at any time during the semester if a student is not enrolled in courses or grades will appear on the student's transcript.
The Technology Transfer and Utilization Center was established to promote the transfer of research results, technologies and to make a proactive contribution to the region's economic growth. Its goals are to:

- Provide "out-reach" to small and mid-sized companies,
- Contribute to the region's economic growth.

The Center operates five days per week and provides its patrons with a comfortable, safe environment under the supervision of staff members highly qualified in early child care education. Call (516) 420-2125 for further information.

The Long Island Educational Opportunity Center (LIEOC)

The Long Island Educational Opportunity Center is designed to provide tuition-free, non-degree education for educationally and economically disadvantaged persons who are not attending secondary schools, and who are not eligible for admission to any course of study in the College. The Center also enrolls in Long Island Educational Opportunity Center programs for courses and programs.

The Long Island Educational Opportunity Center offers GED and college preparatory courses in communications skills, mathematics and science; English as a Second Language for the foreign-born; and vocational skills training and upgrading in business office skills; home care provider and related programs.

The Center serves the community through various public service programs such as work study or on-the-job training programs with local businesses and industry. It works with community agencies, local employers, and higher education institutions by serving people who desire academic upgrading or vocational skills development.

Computing Facilities

The College provides general computing facilities which are available to students, staff, faculty and administration. The College also provides a variety of specialized computing resources which simulate the technical work environments and processes. The College also provides hundreds of microcomputers in operation on the campus.

The College's computing system is a response to the need for each academic area to grow at a rapid pace, while still maintaining the flexibility needed to adapt to changing requirements.

The Bookstore

The Bookstore, operated by the Barnes and Noble Corporation, is located on campus for the convenience of the entire College community. The bookstore carries required and recommended textbooks, instructional materials, supplies, clothing, and sundry items. The bookstore is open Monday and Thursday from 9:00 a.m. to 7:00 p.m., Tuesday and Wednesday from 9:00 a.m. to 7:00 p.m., and Friday from 9:00 a.m. to 4:00 p.m. throughout the academic year. For the hours of operation during summer session and vacations, please call the Bookstore at (516) 249-3048 or 249-3163.

Extended hours are offered during registration and during the first week of classes.

Auxiliary Service Corporation

The Auxiliary Service Corporation (ASC) which operates on campus, with administrative offices located in Roosevelt Hall, is a not-for-profit educational corporation. The primary purpose of ASC is to establish, operate, manage, and promote educationally related services for the benefit of the College's faculty, students and staff in harmony with the educational mission and goals of the College.

The Auxiliary Service Corporation provides the following campus services throughout the academic year: food services for both commuting and resident students, faculty and staff; a bookstore operations; vending machines; laundry washer and dryer services; and photocopy services.

The Corporation directly provides various student services such as: biology vouchers; bowling vouchers; check cashing; computer皖o use; certification/verification of student work; cash disbursement; school meal services; ID replacement; lock and towel voucher; money orders; mail cards; student insurance; and student loans.

The Auxiliary Service Corporation as a fiduciary agent provides all the necessary accounting services for: Student Government Association; Evening College Student Association; College Union; Alumni Accounts; Alumni Association; and the Farmingdale Foundation.

SUNY Farmingdale Child Care Center, Inc.

The SUNY Farmingdale Child Care Center is a separately incorporated, not-for-profit organization which provides child care services to the children of faculty, staff, students and the community. The Center cares for children who range in age from eight weeks to five years.

Third Party Access to Educational Records

Except for "Directory Information" as previously defined, material contained in the student's educational records will not be released to a third party without the express, written consent of the student. Certification/Verification of a student's change of name and address is located in several campus buildings. Hardware resources available to students either on a free access basis, or as a charge for device usage. Instruction is provided in computer programming and also computer application software.

The Long Island Educational Opportunity Center offers GED and college preparatory courses in communications skills, mathematics and science; English as a Second Language for the foreign-born; and vocational skills training and upgrading in business office skills; home care provider and related programs.

Farmingdale College Foundation

The Farmingdale College Foundation is a not-for-profit corporation established to provide financial assistance to the College for projects not funded by the State Budget. Its board of directors is comprised of distinguished individuals and community leaders, as well as college representatives.

The Foundation supports on-campus programs; sponsors fund raising projects; and administers private gifts and endowments to support student scholarships, faculty development awards and campus enhancements.

The College currently offers the following intercollegiate sports: Men's Basketball, Men's and Women's Baseball, Men's and Women's Lacrosse, Men's and Women's Softball, Men's Tennis, Men's and Women's Track and Field, Men's and Women's Volleyball and Men's and Women's Wrestling.

For information, call the Athletic Director's office at: (516) 420-0003.
The Campus Police Department, located between the programs in crime prevention, personal safety and related and emergency services, the Police Department also offers. Pursuant to the Federal Crime Awareness and Campus Security Act of 1990, the Campus Police Department publishes annually "A Guide to Campus Safety and Security". For assistance, please call (516) 420-2111.

The Educational Opportunity Program is located in Memorial Hall, room 232. If you need further information, please call the E.O.P Office at (516) 420-2230.

Health Services
The College maintains a comprehensive Health Service to safeguard and promote the health of all students. The Health Service is conveniently located in the Simon Cohen Infirmary behind Memorial Hall. Staffed by physicians and New York State-registered nurses, health care is provided to students through physician/patient contact, diagnostic testing, and medications as prescribed. Health awareness and wellness are emphasized through prevention, outreach, health education, and ongoing statistical analysis. All students are encouraged to consult the nurse at the first indication of a medical problem or, in the case of an accident, however minimal.

Physician's Health Certificate
Submission of the school-mandated Physician's Health Certificate entitles students to use this valuable service. Information on the Physician's Health Certificate pertaining to the student's health is maintained in confidence; however, if the student requests so, the Physician's Certificate is part of the student's official record. Non-mandatory medical history, and treatment authorization is confidential and necessary to determine the most appropriate medical interventions for the student seeking treatment. This document includes requirements mandated under New York State Immunization Law. (See "Student Immunization Policy", page 4.)

For information regarding services during the academic year, call (516) 420-2009 or 420-2014.

Library
The Library, with seating for 800 students, supplements classroom instruction by providing access to audio-visual materials for assignment and recreational reading, reference, research, and independent study. The Library is open seven days a week during the academic year. Hours during the academic year are 8:00 a.m. to 10:00 p.m. on Monday through Thursday, 8:00 a.m. to 5:00 p.m. on Friday, 11:00 a.m. to 5:00 p.m. on Saturday, 9:00 a.m. to 5:00 p.m. on Sunday. Holiday, intercession, and summer hours are posted at the appropriate times.

Librarians provide reference services for the individual reader, prepare bibliographies for specific subject areas, and offer both classroom and individualized instruction in the use of the Library and proper research techniques. Open stacks permit browsing through the circulating collection of over 125,000 volumes. Students and faculty have access to materials in the library and the Library's interlibrary loan services. The SUNY Open Access Program, and a Research Loan Program. The Library has subscriptions to about 1,000 journals, including an extensive collection of microfilm. Access to these journals is provided by a network of computerized CD-ROM indexes and abstracts in addition to a wide variety of indexes and abstracts in paper form. A vertical file of over 8,000 pamphlets is kept current through continued professional revision.

Designated as a United States Depository for the Federal Government, the Library makes available approximately 300,000 government publications annually.

The Library also has a large collection of audio-visual materials, along with viewing and listening equipment. In addition, the Media Resources Department of the Library provides audio-visual equipment to day and evening classes. Assistance is also offered to the instructional staff in planning, creating, producing, and utilizing diverse teaching aids.

Orientation Services
Good beginnings are important and the Student Orientation Services Office will start the Farmingdale experience in a meaningful and enjoyable way. A major part of the College experience is in the classroom, but there is more to college than the academic environment and textbooks. The student orientation activities give valuable information about the College's essential services, and provide an opportunity to meet other new students and learn from presently enrolled students. Becoming a part of the campus community through orientation makes it easier to begin to enjoy a successful college experience.

On-going activities include seminars and programs to address student development issues and give information regarding the wide variety of educational opportunities both in and out of the classroom.

The Student Orientation Office is located in Sinclair Hall - telephone (516) 420-2709.

The Psychological Services Center, located in the James H. Sinclair Dining Hall, provides psychological counseling for all students and, free of cost and in a strictly confidential setting. Some of the services include: 1) individual and group psychotherapy for a wide range of personal, social, and familial problems; 2) study skills training, test anxiety management, and academic stress reduction; 3) special academic programs, including wide range of psychologically related workshops and health-oriented college clubs.

For further information and/or to schedule an appointment during day or evening hours, call (516) 420-2008 between 8:30 a.m. and 4:45 p.m.

Registrar's Office
The Office of the Registrar is located on the main floor of Greenley Hall. This Office is responsible for student registration, class scheduling, grade reports, processing for graduation and transcripts. For specific information relative to these activities see "Academic Information".

Residence Life
Approximately 700 students live on the Farmingdale campus in one of five residence halls. The Residence Life Program at Farmingdale provides a living-learning experience for all students. The goal of the residence program is to provide an on-campus student-centered living experience in a clean, safe, and stimulating environment. The Residence Halls are viewed as an extension of the classroom where learning, socialization, and maturing take place. The College community is conducive to fostering uniqueness and individuality as well as respect for the rights of others. All aspects of on-campus housing are coordinated by the Residence Life Office, located on the first floor of James H. Sinclair Hall. The Director of Residence Life provides overall supervision and direction to the Department and its staff and assumes other responsibilities within the College. In addition to the Director, the residence hall staff consists of an Associate Director for Staff and Programs, Housing Assignments and Management Coordinator, Facilities and Safety Coordinator, Office Secretary, Area Coordinators, and Social Workers for all buildings. All of these staff members are full-time professionals with advanced degrees and experience. In addition, student leaders called Resident Assistants (RA's) and Safety/Security Assistants (SSAs) live in the residence halls and provide assistance to the professional staff in helping residents adjust to campus community life.

The residence hall staff provides counseling, articulates and sets limits for acceptable behavior, and supports health, safety and cleanliness standards in accordance with residence hall campus policy. The professional and student staff develops educational, social, and cultural programs based upon the Wellness Model. The continued development of living/housing/housing options has enhanced the educational mission of our on-campus residence living. At present, living learning/housing theme options include the Honors Residence Hall, Alumni Hall Twenty-Three and Older Living Learning Center, Business, Technology, Health Sciences, Single Mother/Child Quality Time, Single Gender and Wellness residence halls. Special quiet floors and non-smoking options are also being developed.

The student Inter-Residence Council provides for student participation and promotes the educational mission of our on-campus residence living. At present, living learning/housing theme options include the Honors Residence Hall, Alumni Hall Twenty-Three and Older Living Learning Center, Business, Technology, Health Sciences, Single Mother/Child Quality Time, Single Gender and Wellness residence halls. Special quiet floors and non-smoking options are also being developed.

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Residence Hall Eligibility Policy

The following applies to all students living in the College residence halls.

1. In order to reside in the residence halls, a student must be a full-time, matriculated student in good academic standing. Academic dismissal from the student's academic program will also result in the revocation of the residence license. Readmission to an alternative academic program will not automatically qualify the student for readmission to the residence halls.

2. The Department of Residence Life recognizes the same academic criteria as published in the College catalog. To remain in the College residence halls, students must maintain at least the following academic averages:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Qualifying Average</th>
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</thead>
<tbody>
<tr>
<td>Associate degree</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.6 and above</td>
</tr>
<tr>
<td>2</td>
<td>1.8 and above</td>
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<tr>
<td>3</td>
<td>2.0 and above</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td></td>
</tr>
<tr>
<td>Semester</td>
<td>Qualifying Average</td>
</tr>
<tr>
<td></td>
<td>2.0 and above</td>
</tr>
</tbody>
</table>

Residence hall students must maintain their commitment to their studies and achieve the appropriate college credit average for their total semesters at the College, regardless of changing academic programs.

Student Services

The Office of Student Services provides educational counseling and support services to all students. These services include academic advisement and support for all academic endeavors.

The Office is open Monday through Thursday from 9:00 a.m. to 6:00 p.m. and Friday from 8:00 a.m. to 4:30 p.m. Please call (516) 420-2005 for further information or stop in to see us in Memorial Hall, 2nd Floor.

Tutoring Center

The Tutoring Center provides a variety of services in the area of learning skills. Tutoring is available both day and evening. These services include group tutoring sessions in all content areas and also support remedial work in the basic academic skills. The Center's facilities are open to students Monday — Thursday from 9:00 a.m. to 3:00 p.m. The Tutoring Center offers assistance to residence hall students who are not a resident of the halls and extends all the services of the Center to help students develop college-level academic skills available in test taking, studying, and note taking. The Tutoring Center provides computer assistance in a number of courses and also supports remedial work in the basic academic skills. The Center's facilities are open to students Monday — Thursday from 9:00 a.m. to 3:00 p.m.

The Math Center

The Mathematics Center provides support to students in all mathematics courses. Help is available by appointment or on a walk-in-basis, in Hale Hall, Room 209. The center also maintains a collection of a variety of topics and organizes student study groups. Assistance is given with graphing calculators such as the TI-84 and computer software. The Mathematics Center is always developing new programs to help students learn mathematics.

The Writing Center

The Writing Center provides assistance to students who are finding it difficult to prepare written materials for English and other courses. Help is available by appointment or on a walk-in-basis. In addition, students may use the word processors in the Writing Center to compose, revise and print their assignments. Staff members are available to assist students with the use of the word processors.

Veterans' Affairs

The Office of Veterans' Affairs is affiliated with the Registrar's Office. Located in Greenley Hall, it has been established to assist eligible veterans and their dependents and to receive benefits for veterans. The office is open Monday through Thursday from 8:00 a.m. to 4:30 p.m. Students should report to the Registrar's Office with a photostatic copy of their DD-214 Form. These eligibility to receive benefits must comply with the College's guidelines. Assistance is provided by the New York State Education Department, a copy of which is on file in the Office of Veterans' Affairs.

Veterans have completed more than one year of active military duty in the United States Armed Forces and are eligible to transfer credit for Physical Education. They should report to the Registrar's Office with a photostatic copy of their DD-214 Form.

Upon enrollment, veterans are eligible to receive a copy of the Veterans' Administration's Guide to College Life. This guide is available from the office of the Registrar.

Eligible veterans and/or their dependents must file an Attendance Report (Form B) monthly. Any changes in the status of the student must be reported to the Veterans Administration within thirty days. In compliance with this requirement, the College of Technology at Farmingdale monitors the training, progress and class attendance of all student veterans on a monthly basis.

A considerable effort is made to accommodate the needs of veteran students. For further information, contact the Office of Veterans' Affairs, Room 209, Hale Hall.

The Campus Activities Board provides a cultural, social, and recreational program for the campus community. The CAB sponsors events such as films, lectures, concerts, sporting events, and various novelty acts. All events are published in the entire student body by the activities calendar issued twice yearly. The total program of the Board is developed by students. Any student who is interested in scheduling activities and is planning and organizing events should contact the Activities Office in Room 116, Roosevelt Hall.

The College Union and Activities

The College Union is located in the Union building, adjacent to the main campus. The Union building offers a variety of facilities for student use. These facilities include a student lounge, a coffee shop, a gymnasium, a library, and a variety of recreational facilities.

The Union also offers a variety of student organizations, including the Student Government Association (SGA). The SGA is involved in a variety of activities, including the organization of events, the allocation of funds, and the representation of student interests to the College administration.

The SGA is also involved in the organization and planning of events, including the student socials, the student government meetings, and the student government elections. The SGA also provides opportunities for open recreation in the Flab Factory of the College Union and the physical education complex (Nold Hall), which includes a swimming pool and racquetball courts.

For further information, contact the College Union Office in Room 116, Roosevelt Hall, or call (516) 420-2103.

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For further information, contact the College Union Office in Room 116, Roosevelt Hall, or call (516) 420-2103.
Student Code of Conduct

SUNY Farmingdale, as an academic community, is committed to providing an environment in which living and learning can occur.

In order to function effectively and to provide an educational climate in which all may learn and to fulfill their academic pursuits and the educational objectives of the campus community, guidelines for defining individual rights and responsibilities must be articulated. The Student Code of Conduct is not for the purpose of duplicating public statutes but to maintain a quality of life that shares rights, privileges, responsibilities among its citizens.

The Student Code of Conduct is expected by all individuals and groups in the campus community. Violators of the Student Code of Conduct, local, state or federal statutes on campus, will not be tolerated and will be subject to the campus judicial process.

The Chief Administrative Official, on the basis of his designation and Campus Police to enforce all regulations and policies, license agreements, laws and codes on campus. Any individual violates the laws, Student Code of Conduct or campus policies, the President's designee will institute judicial proceedings against the offender or offenders.

SUNY Farmingdale reserves the right to exercise its authority for regulating the educational and other particular interests of the academic community. The judicial structure to deal with violations of the College's regulations and policies is not designed to seek or duplicate public court proceedings, but to assert its authority to protect its internal interests and community members. The philosophy of the judicial system on campus is one of education and deterrence. In general, each student must act to uphold the good name of the College, respect the dignity and rights of students, faculty, and administration and the public.

SUNY Farmingdale finds the following categories of violators extremely serious:

1. Physically assault or injure in any manner due to hazing by student organizations.
2. Discriminatory or bias-related acts of assault or abuse.
3. Rape, acquaintance (date) rape, sexual assault or sexual abuse.
4. Illegal drug sales and/or possession of illegal drugs.
5. False fire alarms or acts which undermine safety/security equipment or systems.
6. Possessing or introducing dangerous weapons (for example, knives, firearms, pellet guns, air pistoles, rifles, chucks, sticks, fireworks or explosives) to the campus.
7. Violations of the campus alcohol policy which result in injury damage to property, or undermine the safety and security of the campus.

For these categories of violations, the sanction will ordinarily be SUSPENSION from the institution for a specified period of time.

Guidelines

The following is a list of guidelines comprising the College's Code of Conduct.

1. Any student caught cheating or plagiarizing a report in an academic or extracurricular activity is subject to being suspended from school for a significant period of time.
2. New York State Law makes the falsification of any grade, certificate, honor student or any other permanent or semipermanent record or transcript of any student, a misdemeanor. Students knowingly falsifying information to the College by altering their transcripts or misrepresenting information on their applications to the College, so that the educational and social process is not disrupted. Any student reported to the Dean of Students for verbal abuse, sexual harassment, bias-related conduct, or using profane gestures, may be suspended.
3. No student or staff member should be threatened or forced to work on the College grounds. Physical abuse, ASSAULT of any kind, or conduct which threatens or endangers the health or safety of any student, staff or supporter member of the College is not acceptable behavior. A student whose presence constitutes a clear danger to himself or to the safety of others or property on campus, or an on-going threat to disrupting College activities, may be subject to an interim suspension prior to a disciplinary hearing within ten days.
4. Students are responsible for their own personal property. If a student is stealing property from a member of the community, and knowingly and without consent destroys, removes, uses, sells or misappropriates such property, the student will be suspended, subject to arrest, and will be required to make restitution.
5. The College facilities are for the purposes of educational, cultural, and social programs developed by the College community. A student or students entering a campus building or using College property without proper authority, or any student or students engaging in a disciplinary or suspension for a specified period of time and may also be subject to arrest.
6. University employees provide many services and functions to all students and other members of the University community so that the College can operate for the benefit of the students. Penalties for violation of these rules can include legal action, expulsion, suspension, or other actions.
7. To protect students and staff from bodily harm or damage to a building, the use and possession of firearms is prohibited. Any student possessing or causing the presence of any firearms or dangerous weapons, as posted on campus, is subject to arrest and/or expulsion. Students violating this rule will be required to make restitution.
8. Security and staff from bodily harm or damage to a building, the use and possession of firearms is prohibited. Any student possessing or causing the presence of any firearms or dangerous weapons, as posted on campus, is subject to arrest and/or expulsion. Students violating this rule will be required to make restitution.
9. The identification cards given to all matriculated and non-matriculated students are used to safeguard the College community from trespassers and unauthorized visitors. Failure to present proper identification University identification to a requesting employee in the performance of the employee's duties will cause the requesting employee in the performance of the employee's duties to take disciplinary or suspension actions.
10. Students violating this rule will receive a discipline or suspension.
11. College activities are ongoing and serve the interest of students, staff, faculty and local community. Obstruction or interference in such activities, or on campus premises by a student or students will mean disciplinary suspension or dismissal.
12. Fire alarms and heat sensors or fire fighting equipment in College buildings are for the protection of all students. Students are prohibited from interfering with these items that safeguard the total population from harm. Students found violating this rule can be indefinitely suspended from the residence halls or school pending a disciplinary hearing.
13. Students are prohibited from possessing on College-owned property and/or in the College vehicle, any alcohol, any ketamine, any blast materials, any other controlled substances, any disciplinary reprimand or be suspended for up to five days. Repeat offenders require a disciplinary hearing.
14. The possession, use, and/or selling of a controlled substance, a controlled substance, or a controlled substance is prohibited. Any student possessing, using, and/or selling said controlled substances will be subject to arrest and/or expulsion.
15. A motor vehicle on campus is a privilege which allows a student to attend classes and social events. All motor vehicles must be registered, licensed and insured. Any student possessing or causing the presence of any firearms or dangerous weapons, as posted on campus, is subject to arrest and/or expulsion. Students violating this rule can be indefinitely suspended from the residence halls or school pending a disciplinary hearing.
16. Since the College is on State property, the Rules and Regulations for the Maintenance of Public Order on State-owned or State-operated institutions, local campus rules and regulations. These rules pertain to public, injuries, hazing, destroy campus; personal injuries; vis-à-vis, violent; campus; disorderly conduct. Penalties for violation of these rules can include legal action, expulsion, suspension, or other actions.
17. To protect students and staff from bodily harm or damage to a building, the use and possession of firearms is prohibited. Any student possessing or causing the presence of any firearms or dangerous weapons, as posted on campus, is subject to arrest and/or expulsion. Students violating this rule will be required to make restitution.
18. To secure the safety of students and staff from bodily harm or damage to a building, the use and possession of firearms is prohibited. Any student possessing or causing the presence of any firearms or dangerous weapons, as posted on campus, is subject to arrest and/or expulsion. Students violating this rule will be required to make restitution.
19. The Dean of Students conducts a hearing with the student in whose case a violation is discovered. The charges are discussed; the findings are made. The Dean then reaches a decision and invokes one of the following sanctions:
   1. Disciplinary warning—a verbal statement from the Associate Vice President for Academic & Student Services or the Dean of Students. No record of a disciplinary warning shall be maintained.
2. Disciplinary Reprimand—a written statement from the Associate Vice President for Academic & Student Services or the Dean of Students expressing disapproval of conduct. A record of a disciplinary reprimand shall be maintained by the Vice President's Office for the period the reprimand is in effect. During that same period, the record may be introduced in subsequent disciplinary proceedings.

3. Social Probation—during the probationary period, a student is excluded from participation in extracurricular activities and may not represent the University as an athlete or in any office capacity. A record of a direction to make restitution shall be maintained in the Vice President's Office as long as the student is in attendance and may be introduced in subsequent disciplinary proceedings.

4. Restitution—a written direction to replace, repair or make specific compensation for property of the University, another person, or University-related property, which was damaged, destroyed, misused or stolen. A record of a direction to make restitution shall be maintained in the Vice President's Office as long as the student is in attendance and may be introduced in subsequent disciplinary proceedings.

5. Indefinite Suspension—a temporary measure to immediately remove students from classes, all activities and any other University privileges imposed by the Associate Vice President for Academic & Student Services or the Dean of Students pending a hearing. Indefinite suspension will be imposed only to insure the safety and well-being of members of the University community or University property or to insure the student's own physical or emotional safety and well-being.

6. Disciplinary Suspension—a termination of registration as a student for specified period of time. During the period of suspension, a student is excluded from classes and all other University privileges or activities. A record of disciplinary suspension is maintained as a permanent record in the Associate Vice President's Office, and a copy shall be placed in the student's file in a sealed envelope to be opened only if further disciplinary action arises. At the conclusion of the period of suspension, the student must apply for readmission through the Counseling Center.

7. Disciplinary Dismissal—a termination of registration of a student. If the student applies for readmission, he/she will not be permitted to return to the College. The disciplinary suspension is maintained as a permanent record in the student's personal file.

8. Substituted Sanction—a constructive and voluntary undertaking by a student which, by agreement of the student and the Dean of Students, shall be substituted for any of the above sanctions. A record of substituted sanctions shall be maintained in the Office of the Associate Vice President for Academic & Student Services. If the substituted sanction is not satisfactorily completed, the Dean of Students shall reinstate the original sanction.

Students have the right to petition the College's Hearing Appeals Committee for a review of the sanctions imposed by the Associate Vice President for Academic & Student Services or the Dean of Students.
FINANCES / TUITION AND FEES

Advance Deposits: (Day Only)
- Tuition $ 50.00
- Room $ 75.00

Tuition:
- N.Y.S. Resident $ 3,275.00 per academic semester
- Non-N.Y.S. Resident $ 5,275.00 per academic semester

Students taking 12 or more credits are considered full-time and must pay the standard tuition charge.

Dormitory —
- Double Occupancy $ 1,295.00 per semester
- Single Occupancy $ 1,495.00 per semester

** Required of all residence hall students; prices and prices subject to revision.

This coverage is required of all residence hall students.

The College reserves the right to change a $15.00 change of schedule fee after the official Drop/Add period has ended.

Credit-by-Evaluation — $ 200.00 per credit. If services of a consultant are required, a fee of $75.00 is charged.

In some courses additional costs to the student may be incurred because of field trips, special equipment, or for transportation to off-campus assignments.

Tuition and fees are subject to change without notice by action of the Farmingdale College Council and/or the SUNY Board of Trustees.

Total Estimated Budget

<table>
<thead>
<tr>
<th></th>
<th>Estimated expenses per academic year:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commuter</td>
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<tr>
<td></td>
<td>Resident</td>
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<tr>
<td>Tuition*</td>
<td>$ 2,650.00</td>
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<tr>
<td>Fees</td>
<td>$ 410.00 $ 560.00</td>
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<tr>
<td>Room and Board</td>
<td>$ 5,310.00 (Includes Deposits)</td>
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<tr>
<td></td>
<td>TOTALS $ 3,050.00 $ 8,531.00</td>
</tr>
</tbody>
</table>

*Non-N.Y.S. Resident Students — Additional $3,900.00

Fines and Fees:
- Identification Card Replacement $ 5.00
- Return Check Charge $ 20.00
- Transcripts Student copy Fee each official copy $.60
- Alumni Fee $ 12.50 per semester (optional)
- Vehicle Registration Fee (per vehicle) $ 11.00 per academic year -
- Parking Fine $ 20.00 per fine

Placement Testing Fee
- All entering freshmen are required to take a placement test in English, Mathematics and Reading. A fee of $25.00 is charged to cover the cost of this testing.

Telephone Service
- Telephone service is available in some residence hall facilities. Request for telephone service should be handled direct-
- ly with the New York Telephone Company.

Residence Hall Damage Deposit
- A Residence Hall and common area Damage Deposit is required from all College Housing residents to cover the cost of damages incurred as a result of student negligence or vandalism. No assessments are made against the stu-
- dent's deposit, the deposit will be refunded in full when the student withdraws from the residence hall. This deposit is payable at the time of registration.

Statement of Fiscal Responsibility
- Students who enroll in courses at the College after classes have begun assume not only the academic responsibility for material and coursework missed, but incur a FISCAL RESPONSIBILITY at the time of registration.
- Under the Policies of the State University of New York, students are not considered "officially registered" unless all applicable tuition and fees have been paid. It is expected that students will have paid their tuition and fees no later than the first day of classes. The College permits students to enroll in courses after this time with the understanding that, at the time the student submits their Registration System, the student is liable for all tuition and fees. Failure to submit payment, or not attending classes, will be held liable for all tuition and other charges.

Advisors
- The State University of New York, students who fail to meet their financial obligations:
  1. Deny future registrations
  2. Cancel current registrations
  3. Withhold transcripts and grade reports
  4. Withhold diplomas

Insurance
- All students are required to be covered by the SUNY International Student Accident insurance. An accident and health insurance policy covering most med-
- ical payments is mandatory for the welfare of the student.
- Accident Insurance is required for all full-time students.
- Health insurance is optional for commuting students but required for resident students.

Placement Testing Fee
- All entering freshmen are required to take a placement test in English, Mathematics and Reading. A fee of $25.00 is charged to cover the cost of this testing.

Room Charges
- Room charges cover the cost of a room on a seven-day or a seven-day plus meal ticket. In addition, a meal plan may be pur-
- chased on an optional basis by commuter students.

Student Activity Fee
- As stated in the policy of the Board of Trustees, this fee sup-
- ports student activities, including admission to home athletic contests and a subscription to the student newspaper, and the printing of the Islander (the student newspaper for day students). This fee includes weekend use of the pool and gymnasium facilities.

Telephone Service
- Telephone service is available in some residence hall facili-
- ties.

Insurance
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Refund Policy For Advance Deposits

Advance Tuition Deposit
Requests for refund of the Advance Tuition Deposit should be directed in writing to the College's Admissions Office on or before May 1 for the fall semester and November 1 for the spring semester. Refund requests received after these dates will be honored only for one of the following reasons:
1. Failure on the part of the accepted applicant to fulfill all admissions conditions as stated in the student's letter of acceptance.
2. Circumstances considered to be beyond the control of the applicant as judged by the Chief Administrative Officer of the College, or his designee, who is the chief fiscal officer.
3. Advance Deposits received for acceptances which are issued after April 1 or November 1, will be refundable providing such requests are received within 30 days after notification of acceptance and providing further, that such notification is received before the first day of classes in the term for which the Advance Deposit was made.

Advance Room Deposit
The Advance Room Deposits will be refunded in full if either of the following two conditions are met:
1. If the application for refund is made by June 15th or within 30 days after notification of acceptance, whichever is later.
2. If the application for refund is made later than as stated above, the refund will be granted only if:
   a. The student withdraws to enter Military Service.
   b. The student withdraws due to conditions beyond his/her control as certified and approved by the Chief Administrative Officer of the College.

Advance Deposit Refunds that are not requested within this time table will be refunded and will be forfeited to the State of New York.

Tuition: Tuition is refundable on a pro-rated basis during the first four weeks of classes according to the following schedule:

<table>
<thead>
<tr>
<th>Refund Policy For Canceled Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The College takes responsibility to see that any student who is enrolled in a course that is subsequently canceled by the college will receive a full refund of all appropriate tuition and fees.</td>
</tr>
</tbody>
</table>

Refund Policy Before Classes Begin
Students who elect to cancel their schedule up through the last business day before classes begin must notify the College in writing of their intention. The College will process a refund for all appropriate tuition and fees.

Refund Policy After Classes Begin
Once classes begin, students are considered fully responsible for the tuition and fees resulting from registering for classes. This means that at the time of enrollment, the student is fully liable for all tuition and fees. Failure to submit payment, stopping payment on a check, or not attending does not absolve students of this fiscal responsibility. If students subsequently decide to withdraw from a course or from the College, they must do so officially by completing the necessary forms. Your liability to the College will be determined by the refund schedule applicable at the time the withdrawal process is completed. The refund schedule for the individual fees is as follows:

Title IV Refund Policy
The Higher Education Amendments of 1992 require campuses participating in Title IV Federal student financial assistance programs to have in place a special refund policy for all recipients of such aid who are attending the institution (in this case, any SUNY institution) for the first time. Accordingly, the College has adopted a policy which provides applicable charges under a separate schedule for students in their first semester of attendance who are recipients of such aid. Under the pro rata policy, applicable charges are prorated through 60% of the enrollment period; e.g., for a fifteen-week semester, students withdrawing after the ninth week are not entitled to any refund. This result is compared against SUNY's regular refund schedule for the same week, and whichever schedule provides the higher refund will be used (this will generally apply only during the first week, when the regular schedule provides for a 100% refund). The refund will be reduced by the lesser of 5% of applicable charges or $100, and all outstanding loan balances and awards under Federal student assistance programs will be credited before returning any funds to the student.
In order to be considered for federal financial aid, a student must:

1. File the Free Application for Federal Student Aid to the Federal Student Aid Programs. It is located in Room 187, Whitman Hall.

2. Study in an approved graduate fellowship program or in a rehabilitation training program for the disabled.

3. For a period of up to three years for economic hardship or inability to find full-time employment.

Parent Loan for Undergraduate Students (PLUS)

PLUS enables either natural or adoptive parents of dependent students to borrow up to the cost of education minus financial aid for each academic year in order to help meet the costs of education for the student.

Parent Loan Application Procedures:

Applicants must file the Free Application for Federal Student Aid, a loan application obtained from a lender and Farmingdale Financial Aid Application obtained from the Financial Aid Office, Room 187, Whitman Hall.

Eligibility: Applicants must be in attendance at least half-time; in good academic standing, and maintaining satisfactory progress toward their degree.

Federal Stafford Loan

This loan program is available through various lending institutions. Applicants must file the Free Application for Federal Student Aid, a loan application obtained from a lender and Farmingdale Financial Aid Application obtained from the Financial Aid Office, Room 187, Whitman Hall.

Eligibility: Applicants must be in attendance at least half-time; in good academic standing, and maintaining satisfactory progress toward their degree.

For periods of enrollment after beginning on or after October 1, 1992, students can get a Stafford Loan regardless of financial need.

Amount per year: A student who is a first year undergraduate may borrow up to $2,625 per academic year. A student who has successfully completed the first year of an undergraduate degree may borrow up to $3,500 per academic year. A student who has successfully completed the two years of a degree may borrow up to $5,500 per academic year. A loan may never exceed the cost of education minus other financial aid.

Deferments are available for:

1. At least half-time study at a postsecondary school.
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For periods of enrollment after beginning on or after October 1, 1992, students can get a Stafford Loan regardless of financial need.
New York State Grants and Scholarships

Tuition Assistance Program (TAP)

Award: ($380 to $2,600 per year). All full-time matriculated students who are New York State residents and whose family New York State net taxable income was within the allowable limits for the preceding year, are eligible for outright grants through this program. Students must file the Free Application for Federal Student Aid and the Tuition Assistance Program application.

If a Certificate of Award is received prior to registration, it may be used as credit. Therefore, prompt filing of this application is recommended. Renewal is dependent upon meeting the program pursuit and academic standards established by the State University of New York and filing of the TAP application each year.

New York State Aid for Part-Time Study Program (APTS)

Applicants must be undergraduate New York State residents who are enrolled for 3 to 11 credits in a semester.

A student must be a matriculated student in good academic standing prior to applying for APTS. If the student was claimed or was eligible to be claimed as a tax dependent on the parent's income tax, the student's net taxable income is subject to the mandatory student activity fee, short-term emergency loans under the Joint Administration of the Student Activities Office and the Auxiliary Service Corporation. These loans are available to day and evening students. Applications for such loans are available at the Auxiliary Service Corporation Office, Whittam Hall, and may be granted once per semester in amounts up to $500. Loans are subject to the current Student Government Association guidelines. No loans will be approved for disbursement within four weeks of the end of a semester.

Financial Aid Policies

1. The Financial Aid Office reserves the right to request additional information from students and parents if warranted.
2. Financial aid is not available for foreign students studying at SUNY at Farmingdale.
3. Students are expected to apply for aid from all sources (e.g. Pell Grant, Tuition Assistance Program, Veterans Administration, etc.) as these sources will be considered in determining eligibility for campus controlled aid and the Stafford Loan.
4. In order to receive aid, a student must maintain enrollment each semester in a course of study leading to a degree. Adjustments in financial aid will be made for any student who changes enrollment status.
5. In order to receive financial aid at Farmingdale, a student cannot be in default on a National Direct Deferrable Stafford Loan or Perkins Loan, cannot owe a refund on a Pell Grant Supplemental Educational Opportunity Grant, or be a State Student Incentive Grant recipient.
6. Financial Aid Program Pursuit and Academic Progress: Federal and New York State legislation mandate that all students receiving financial assistance must meet institutionally defined standards of academic progress and program pursuit in order to receive federal and/or state assistance.

Satisfactory Academic Progress for Financial Aid

In order to continue to receive financial assistance in the subsequent semester, if eligible, a student must meet the academic guidelines described on the charts below.
Academic Standards for New York State Programs

During each term of study in the first year for which an award is received, a student must complete at least 50% of a minimum full-time credit load. This means that at least nine credits each semester must be completed during the first year of New York State support. During each term of study in the second year for which an award is received, a student must complete at least 75% of a minimum full-time credit load. This means that at least twelve credits each semester must be completed during the second year of New York State support. During each subsequent term of study for which an award is being received, a student must complete at least 100% of a minimum full-time credit load. This means that at least twelve credits each semester must be completed following the second year of New York State support.

In addition, a student must meet the minimum academic progress standards described on the charts on page 20.

Associate Degree

Before being certified for this payment:

<table>
<thead>
<tr>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Fourth</th>
<th>Fifth</th>
<th>Sixth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>2nd</td>
<td>3rd</td>
<td>4th</td>
<td>5th</td>
<td>6th</td>
</tr>
</tbody>
</table>

A student must have completed at least these many credits:

- 0 credits
- 3 credits
- 8 credits
- 17 credits
- 23 credits
- 30 credits
- 45 credits
- 50 credits

A student must have completed at least these many credits:

- Undergraduate Average:
  - 0.0
  - 1.6
  - 1.7

Baccalaureate Degree

Before being certified for this payment:

<table>
<thead>
<tr>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Fourth</th>
<th>Fifth</th>
<th>Sixth</th>
<th>Seventh</th>
<th>Eighth</th>
<th>Ninth</th>
<th>Tenth</th>
</tr>
</thead>
<tbody>
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<td>1st</td>
<td>2nd</td>
<td>3rd</td>
<td>4th</td>
<td>5th</td>
<td>6th</td>
<td>7th</td>
<td>8th</td>
<td>9th</td>
<td>10th</td>
</tr>
</tbody>
</table>

A student must have completed at least these many credits:

- 0 credits
- 3 credits
- 8 credits
- 17 credits
- 23 credits
- 30 credits
- 45 credits
- 50 credits

A student must have completed at least these many credits:

- Undergraduate Average:
  - 0.0
  - 1.6
  - 1.7

Satisfactory Academic Progress

Title IV Program:

All credits attempted, whether or not the student ever received financial aid, must be evaluated in order to determine if a student is eligible for financial aid in subsequent semesters. Non-credit coursework will be evaluated according to the College standards. A student who fails to meet the financial aid progress standards but who is permitted to remain in school will be allowed one semester of financial aid probation. Only one semester of financial aid probation can be granted a student, whether or not the student received financial aid during his/her semester of probation.

At the end of the probation semester, the academic record will be reviewed to determine if the student has reached the required standard in order to be eligible for federal assistance in subsequent semesters.

Notes:

1. If the student fails to meet the Social Science elective requirement of two English, Humanities, two social sciences and two mathematics, the student must take English, Humanities, two social sciences and two mathematics. Of these, four must be 200-level or above and two must be 200-level or above or have a college level background in social science.

2. Farmingdale Aerospace Technology students anticipating this program should take ECO 186 as their Social Science elective in their sophomore year.

Aeronautical Science — Professional Pilot

Bachelor of Science Degree

Admission Requirements:

1. 3 credits of General Education coursework to include 1 semester of Calculus, 2 semesters of College Physics, 30 credits of coursework in aviation; FAA Private Pilot License (See page 4 for General Requirements).

Professor Paul Baumann, Chairperson

The Bachelor of Science degree program in Aeronautical Science — Professional Pilot offers a balance of flight theory, laboratory work, and general education courses designed to prepare students for aircrew positions in the aviation industry. The program is structured to enable students to attain at least the FAA Commercial Pilot License with Instrument Rating and a Certified Flight Instructor Rating. These ratings will enable graduates to obtain employment as a flight instructor or copilot in local flight schools, air taxi, or charter operations. Later, as his or her flight experience increases; coupled with the broad-based undergraduate study in the humanities and social sciences, graduates will be qualified for aircrew employment in the airline industry at various major, national, and large and small regional carriers.

In addition, students in this program will be required to have a 3.0 overall GPA.

Program of Study

Liberal Arts & Sciences (30 Credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO 156 Principles of Econ. (Macroeconomics)</td>
<td>3</td>
</tr>
<tr>
<td>ECO 157 Principles of Econ. (Microeconomics)</td>
<td>3</td>
</tr>
<tr>
<td>PSY 331 Industrial/Organizational Psych</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Science Electives (see note #1)</td>
<td>21</td>
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Required:

<table>
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<tr>
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<tbody>
<tr>
<td>ECO 258 Labor Econ. &amp; Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>BUS 301 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 302 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303 Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>PSY 331 Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Science Electives (see note #1 and #2)</td>
<td>21</td>
</tr>
</tbody>
</table>

Aeronautical Science — Flight Training (10 Credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST 319 Air Carrier Operations</td>
<td>3</td>
</tr>
<tr>
<td>AST 404 Corporate &amp; Business Aviation</td>
<td>3</td>
</tr>
<tr>
<td>AST 401 Aviation Economics</td>
<td>3</td>
</tr>
<tr>
<td>AST 402 Aviation Law</td>
<td>3</td>
</tr>
<tr>
<td>AST 407 Principles of Flight Instruction</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 61

Notes:

1. All of the seven Arts & Science electives must meet the Upper Division Core Requirement consisting of two English, Humanities, two Social Sciences and two Mathematics. Of these, four must be 200-level or above and two must be 200-level or above or have a college level background in social science.

2. Farmingdale Aerospace Technology students anticipating this program should take ECO 186 as their Social Science elective in their sophomore year.

Aeronautical Science — Professional Pilot

Bachelor of Science Degree

Admission Requirements:

1. 30 credits of General Education coursework to include 1 semester of Calculus, 2 semesters of College Physics, 30 credits of coursework in aviation; FAA Private Pilot License (See page 4 for General Requirements).

Professor Paul Baumann, Chairperson

The Bachelor of Science degree program in Aeronautical Science — Professional Pilot offers a balance of flight theory, laboratory work, and general education courses designed to prepare students for aircrew positions in the aviation industry. The program is structured to enable students to attain at least the FAA Commercial Pilot License with Instrument Rating and a Certified Flight Instructor Rating. These ratings will enable graduates to obtain employment as a flight instructor or copilot in local flight schools, air taxi, or charter operations. Later, as his or her flight experience increases; coupled with the broad-based undergraduate study in the humanities and social sciences, graduates will be qualified for aircrew employment in the airline industry at various major, national, and large and small regional carriers.

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2. Farmingdale Aerospace Technology students anticipating this program should take ECO 186 as their Social Science elective in their sophomore year.

Aviation Administration

Bachelor of Science Degree

Admission Requirements:

1. 30 credits of General Education coursework to include 1 semester of Calculus, 2 semesters of College Physics, 30 credits of coursework in aviation; FAA Private Pilot License (See page 4 for General Requirements).

Professor Paul Baumann, Chairperson

The Bachelor of Science degree program in Aviation Administration prepares graduates for entry level administrative/management positions throughout the three major segments of the aviation industry: manufacturing, the airline, and general aviation. Graduates in such representative job titles as: public relations, industrial relations, passenger service agent, sales representative, assistant airport management and FBO (fixed based operator) manager. This is an upper division offering designed to build upon a two year college level background in aviation.

With the approach of the 21st Century, we are bearing witness to major shifts at all levels throughout the aviation industry. Change after an era of technological advances in aviation equipment and systems, combined with the highly complex and intricate configurations contemplated within a national systems plan, are creating a demand for men and women who possess an expertise and understanding unique to the industry. Advanced levels of education are required of those persons looking to assume an integral role in maintaining an air travel system that will be a leader within a global network.

The academic content of the program involves 18 credits in aviation-related coursework, 12 credits in business and data processing coursework, and the remaining 30 credits in prescribed and elective liberal arts and science courses, covering the humanities, social and physical sciences, and mathematics. Coursework is geared toward the development of technical managers who will have administrative expertise in the air transportation industry. Graduates will have access to over fifteen aviation industry-related job titles. The program's scope is sufficiently broad to graduate students as a logical step in their careers.

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<tbody>
<tr>
<td>ECO 156 Principles of Econ. (Macroeconomics)</td>
<td>3</td>
</tr>
<tr>
<td>ECO 157 Principles of Econ. (Microeconomics)</td>
<td>3</td>
</tr>
<tr>
<td>PSY 331 Industrial/Organizational Psych</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Science Electives (see note #1)</td>
<td>21</td>
</tr>
</tbody>
</table>

Required:

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECO 258 Labor Econ. &amp; Labor Relations</td>
<td>3</td>
</tr>
<tr>
<td>BUS 301 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 302 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303 Business Elective</td>
<td>3</td>
</tr>
<tr>
<td>PSY 331 Industrial/Organizational Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Arts &amp; Science Electives (see note #1 and #2)</td>
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Support Courses (12 Credits)

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<th>Course</th>
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<tr>
<td>DPR 501 Systems Analysis &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>BUS 301 Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 302 Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>BUS 303 Business Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 60
Upper Division Course Descriptions

AST 300 Cross Country Flight
This course provides the student with 30 hours of cross country flight experience in order to meet a portion of the Instrument Rating requirements.
Prerequisites: AST 214, AST 215 and must hold a U.S. F.A.A. Private Pilot License.
(3, 0) 4 credits

AST 301 Government in Aviation
A study of the regulatory functions of Government in the field of aviation to include the DOT and FAA, legislative acts and proposals and their impact on safety, economy, public interest, and national defense.
(3, 0) 2 credits

AST 307 Advanced Navigation and ATC Procedures
This course serves as the capstone of the four flight theory courses AST 100, AST 205, AST 213 and AST 307. At the successful completion of this course, the student will be prepared to sit for the FAA Instrument Written Exam. Topics include enroute and approach charts interpretation, landing and operational minima, FAR Part 121 covered in detail.
(3, 0) 2 credits

AST 402 Aviation Law
Overview of fundamental Aviation Law, Federal and State regulations and criminal statutes. Topics include environment law impact, product liability, airport land acquisition, leases and contracts. Liability issues are reviewed.
Prerequisite: AST 301
(3, 0) 3 credits

AST 404 Personnel and Business Aviation
Study of the functions, administration, maintenance and financial functions of a corporate flight department. The FBO and small air service business will also be covered including applications in aerial photography and spraying, aircraft sales and financing.
Prerequisite: AST 301
(3, 0) 3 credits

AST 405 Air Cargo Operations
A history and overview of present and future trends in the air cargo industry. Types of air cargo, handling devices, cargo aircraft and regulations and training will also be discussed.
Prerequisite: AST 301
(3, 0) 3 credits

AST 407 Principles of Flight Instruection
A review of all aspects of the teaching of primary training leading to solo and private pilot license through the flight instructor rating. Topics will include the psychological foundation of learning, the application of learning blocks to flight training through the various levels and the methods of preparation for the applicable FAA written and flight tests. At the successful completion of this course the student will be prepared to sit for the FAA Instructor - Apprentice written exam.
Prerequisite: AST 301
(3, 0) 3 credits

AST 411 Advanced Flight III
This course covers the advanced visual flight skills necessary to complete the commercial flight (single engine) license. In addition to the aerobatic flight, flight at slow stows airspeeds, maximum performance maneuvers, emergency operations and other maneuvers required for the Private Pilot License.
Prerequisite: AST 312 and must hold a U.S. F.A.A. Private Pilot License.
(3, 0) 2 credits

AST 412 Advanced Flight IV
This course reviews the various flight maneuvers and skills needed by the private and commercial pilot student. In addition, fundamentals of instruction, aircraft documents logbook and certificate endorsement are included. In addition both the four flight theory instructors are covered. At the conclusion of this course, the student should obtain his Flight Instructor-Appraiser Written Test prior to or concurrent with this course.
(0, 4) 2 credits

AST 319 Air Carrier Operations
Covers the various functions within an airline operation with emphasis on the relationship between flight crew, dispatch, ground handling, and maintenance. FAR Part 121 covered in detail.
(3, 0) 2 credits

AST 3401 Aviation Economics
This course covers the economic history of the air carrier industry from 1911 to the present. The historical development of aviation since 1976 are discussed as the transition from regulation to deregulation - 1978 to the present. Marketing and financial practices as they are affected by deregulation are covered as well.
Prerequisites: ECO 156, BUS 302, AST 301, AST 319
(3, 0) 3 credits

Electric Engineering Technology

Bachelor of Technology Degree (Day/Evening)
Admission Requirements:
28 credits of General Education coursework; 30 credits in Technical Engineering or Technology coursework.
(See page 4 for General Requirements.)

Professor Socccles Thanasias, Chairperson
The Bachelor of Technology degree program in Electrical Engineering Technology is designed to meet the transfer and continuing education needs of associate degree graduates, as well as to ease the growing needs of high technology industries. This program builds upon the foundation provided by associate degree programs in related disciplines and is geared toward applying current engineering technology methods to technical problems.
Approximately two-thirds of this upper division program consists of required courses in Networks and Systems, Digital Design and Microprocessors, Electronics and Communications. The remaining third of the program includes courses in physics, mathematics, technical writing, speech and other electives.
Graduates, known as engineering technologists, are well prepared to fill the wide range of engineering technology positions that are available in the electronics manufacturing, automated testing, quality control, technical sales, services and manufacturing environments.

Program of Study

Hours per
Week
Credit
Fifth Semester
EET 311 Network Analysis 3 3 3
EET 316 Digital Design 3 3 3
EET 317 Industrial Electronics 3 3 3
EGL 310 Technical Writing 3 0 3
MTH 321 Applied Calculus 3 0 3
15 8 18

Sixth Semester
EET 325 Amplifier Design 3 3 3
EET 426 Digital Communications 3 3 3
EET 427 Signal Processing 3 3 3
MTH 322 Advanced Mathematical Analysis 3 3 3
Social Science Elective* 3 0 3
15 6 17

Eighth Semester
EET 423 Control System II 3 3 3
MTH 246 Linear Algebra 3 3 3
EET 414 Transmission Lines 3 3 3
EET 418 Microprocessor Interfacing and Control 3 3 3
PHY 332 Electromagnetic Theory 3 3 2
14 9 17

Total Credits: 69
*Elective choices require Department approval; generally, they must be of 300 level or above and must not duplicate other course work.

Part-Time Program

Standard Four Year Sequence* for Students Beginning in the Fall Semester

The following schedule is to be used only as a general guide. Every student admitted to this upper division program must meet with a faculty advisor to determine his/her specific needs, requirements, and appropriate course sequence. For example, students who have completed MTH 150 and MTH 151 at the college or a substitute, MTH 220 or MTH 221/222 for the MTH 220 are elective choices. In addition, all elective choices require special Department approval.

Fall
MTH 321, EET 316, ETE 322, EFL 310
EGL 310, MTH 321, EET 325, EET 327

Summer
EET 311, EET 316, EET 325, EET 327

Fall
MTH 321, EET 325, PHY 323
EET 426, EET 428

Spring
EET 311, EET 316, EET 325, EET 327

*This represents the four-year sequence; a five-year as well as a seven-year sequence are also available. Interested students should see a counselor.

Upper Division Course Descriptions

EET 311 Network Analysis
A calculus based network analysis course that introduces the student to Laplace transforms in the analysis of both active and passive lumped parameter time-invariant linear networks. Topics covered include Mesh and Node analysis using nodal and loop current formulations, the network theorems; Impedance and the modulus of initial conditions; transfer functions; poles and zeros; impulse and step response, system stability and time domain response. The sinusoidal steady state (AC) Phasor transformer...
software for both time domain and frequency domain analy-
mation and its relation to the Laplace transform, power in AC
included. The laboratory utilizes MS-DOS based computer
for both time domain and frequency domain analy-
sis and simulation of electric networks.
Prerequisites: EET 232 or equivalent and Department
Prerequisite Corequisite: MTH 321 (3, 2) 4 credits

EET 316 Digital Design
Introduction to digital design. Designs will use Programmable
Logic whenever possible. Extensive use of manufactur-
ning, Digital Logic- Design.
Prerequisites: EET 233 or equivalent and Department
Prerequisites: EET 233 or equivalent and Department
Prerequisites: EET 233 or equivalent and Department
Prerequisites: EET 311 or equivalent with Department
approval (3, 2) 4 credits

EET 327 Automated Testing and Signal Processing
A course on the use of programmable instrumentation for
practical applications. Topics covered include: signal genera-
tion, measurement, signal processing, and data acquisi-
tion. Formal and informal laboratory reports are required.
Prerequisites: EET 311, MTH 311 and Department approval
(3, 2) 4 credits

EET 392 Electrical Circuits
An accelerated course in network analysis for junior-level
Manufacturing Engineering Technology students. Topics cov-
ed include: Electromagnetics, Ohm's law, Power factor,
Electric networks, Kirchoff's laws, voltage and current
wave forms and their parameters, resistive devices and phys-
ical characteristics of various materials, analysis of circuits,
parallel and series-parallel resistive circuits. Simple arma-
ments, voltmeters, ammeters, Superposition, Thevenin's
Theorem, Energy of fields and potential, direct current di-
rect-current switching circuits and transient, magnetic fields
and inductance, simple R-L switching circuits, transient
response of R-L-C circuits under sinusoidal steady state
conditions, phasors and complex numbers, impedance,
Admittance, impedance, tuned circuits, filters and frequency
response, A.C. power calculations: average, apparent and
reactive power, time domain pulse response, frequency
response, and stability considerations for discrete-time sys-
tems; design of time-invariant infinite impulse response dig-
tial filters; the bilinear transform and its use in the fre-
quency domain design of digital filters. Formal laboratory
reports are required. The laboratory is used to demonstra-
t the analysis/design concepts covered, and makes
considerable use of available microcomputer soft-
ware programmable instrumentation. Both formal and informal
laboratory reports are required.
Prerequisites: EET 311 MTH 321 and Department approval
(3, 2) 4 credits

EET 415 Control Systems
The analysis of linear time-invariant feedback control sys-
tems. Topics covered include: state-space and transfer func-
tion representations of linear systems, the use of state-
flow graphs, state equations, state diagrams, and transfer
function transfer functions to describe continuous-data control
systems; the transient response of such systems and the use of propor-
tional-, integral-, and/or derivative feedback; the use of con-
structed and frequency plane plots for the frequency domain analysis of
such systems; absolute and relative stability considerations
using the Hurwitz-Hurwitz, Nyquist, and Gain-Phase-mar-
gins. Extensive use of software to demonstrate and/or extend the
The laboratory is used to demonstrate the analysis and
design concepts covered, as well as to introduce the student
to relay and microprocessor based controllers and their appli-
cation to electro-pneumatic control systems. Both formal and informal
laboratory reports are required.
Prerequisites: Control Systems I, MTH 322, and Department
Prerequisite Corequisite: MTH 245 (3, 3) 4 credits

EET 426 Digital Communications
An introduction to digital communications systems. Topics cov-
ed include: the sampling theorem; PCM systems; syn-
chronization techniques; noise analysis and reduction; FSK;
PSK; shift errors; hamming codes; and an introduction to fiber
coptics systems.
Prerequisites: EET 235 or equivalent and Department
Prerequisite Corequisite: EET 327 (3, 3) 4 credits

EET 429 Advanced Microprocessors
A continuation of EET 418. Advanced topics associated with the
IBM-PC including: Floating point processor; interrupts
and automatic routing; comparison of PC board to schematic
principles of operation, devices and their applications, digital
Design, and digital electronics. The laboratory portion of this
course is used to demonstrate and/or apply the concepts dis-
cussed in lectures. Formal and informal laboratory reports are
required. The student and a faculty member who shall act as
Project Advisor. Registration requires Department approval of
a formal written proposal submitted by the student with an
accompanying evaluation of the faculty member who has agreed to act as Project Advisor. This proposal must be sub-

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SUNY Farmingdale • 1994-1995 College Catalog
Bachelor of Technology Degree

Admission Requirements:
- 24 credits of General Education coursework to include at least 1 semester of Calculus* and 1 semester of College Physics*; 30 credits of curriculum coursework. (See page 4 for General Requirements.)
- * If not already taken as part of the associate degree, this course must be taken within the first year.

Dr. Daniel S. Marrone, Director

Administered jointly by the Schools of Business and Engineering Technologies, this Bachelor of Technology degree program is interdisciplinary with courses in production and inventory management, manufacturing engineering technology, business administration, and arts and sciences. The major emphasis, as well as the subtitle of the program, is the "Management of Technology." The program's objective is to prepare technical management-oriented professionals for employment in business, manufacturing and service industries, health care, and government.

Students are instructed in the application of the most effective management techniques as advanced by organizations such as the American Production and Inventory Control Society, American Society for Quality Control, American Institute for Manufacturing Systems, and the American Management Association. These techniques include manufacturing, just-in-time production, computer-aided manufacturing statistical quality control, and cost management systems. Courses in international trade and finance are also part of the program.

Students may be admitted to the Industrial Technology (Management of Technology) program with associate degrees or two years of successfully completed college coursework in any discipline. Those students without prior engineering technology coursework will take Technology Concepts for Managers and Manufacturing Concepts for Managers. Students without two courses of prior college accounting must take Financial Accounting and Management Accounting. All students are required to take the Senior Project which provides an opportunity to work on projects with local manufacturing and service firms.

Typical Employment Opportunities

Director of Facility Management
Facility Manager
Director of Physical Plant
Facilities Maintenance Manager
Commissioner of Public Works
Vice President for Facilities Engineering
Superintendent of Buildings and Grounds
Plant Engineer

Industrial Technology — Management of Technology

Bachelor of Technology Degree

Admission Requirements:
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Typical Employment Opportunities

Director of Facility Management
Facility Manager
Director of Physical Plant
Facilities Maintenance Manager
Commissioner of Public Works
Vice President for Facilities Engineering
Superintendent of Buildings and Grounds
Plant Engineer

Industrial Technology —

Facility Management Technology

Bachelor of Technology Degree

Admission Requirements:
- 24 credits of General Education coursework to include at least 1 semester of Calculus* and 1 semester of College Physics*; 30 credits of curriculum coursework. (See page 4 for General Requirements.)
- * If not already taken as part of the associate degree, this course must be taken within the first year.

Professor John Tiedemann, Director

This is a junior and senior level program offered by the Department of Mechanical Engineering Technology. Students may matriculate on a full- or part-time basis.

The Bachelor of Technology degree program in Facility Management Technology is designed to meet the transfer and continuing education needs of Associate degree graduates (or transferring sophomores from a related program of study), as well as to serve the growing need for technically competent facility managers.

The classical functions of facility management such as space planning; structural maintenance; electrical, heating and cooling system operations and maintenance have been expanded in recent years. Today, these positions encompass electronic security and fire protection, occupational safety and health, environmental issues, energy management, and compliance with ever-expanding construction codes for building occupancy by the general public, including persons with disabilities. The addition of complex technical functions has resulted in a growing demand for facility managers familiar with computer hardware and software that provide quick access to information regarding energy-dependent systems, security, fire, budgeting, and personnel. The facility manager must possess the capability to train employees in many high-technology areas. Since it is not uncommon for the budget of the facility manager to exceed 25% to 35% of the total facility operating budget, this position is often at the top management level within an organization.

Typical Employment Opportunities

Director of Facility Management
Facility Manager
Director of Physical Plant
Facilities Maintenance Manager
Commissioner of Public Works
Vice President for Facilities Engineering
Superintendent of Buildings and Grounds
Plant Engineer

Program of Study

Industrial Technology Common Core (33 credits)

Liberal Arts & Sciences (27 Credits)
- Mathematics or Science electives 9
- English, Humanities or Speech electives 12
- Social Science electives 6

ECO 321 Engineering Economics
ECO 340 International Trade
ECO 341 International Finance
PSY 351 Industrial Organizational Psychology

Support Courses (6 credits)

IND 301 Integrated Resource Management 3
- IND 301 plus either MET 310 or BUS 302 3

MET 310 Technology Concepts for Managers (for students entering from non-technology programs)
BUS 301 Financial Accounting (for students without two prior semesters of accounting)

Facility Management Technology Track (30 credits)

Required Courses (21 credits)
- either IND 307 or BUS 302 3
- IND 307 Facility Technology Concepts (for students entering from non-technology programs)
- BUS 302 Managerial Accounting (for students without two prior semesters of accounting)
- IND 309 Security and Fire Protection Systems 3
- IND 402 Facility Maintenance Management 3
- IND 403 Electrical Systems 3
- IND 404 Facility Structures, Process and Design 3
- IND 405 Heating, Ventilating, Air Conditioning Systems 3
- IND 406 Energy Management 3
- IND 410 Senior Project 3
- BUS 311 Organizational Behavior 3
- DPR 300 Management Information Systems 3
- IND 303 Manufacturing Resource Planning 3
- IND 308 Occupational Safety 3
- IND 310 Industrial Hygiene 3
- IND 401 Quality Management Issues 3
- IND 407 Security Management 3
- IND 410 Senior Project 3

Other BUS, DPR, IND courses (for students entering from non-technology programs)

Total Credits 63

Management of Technology (30 credits)

Required Courses (15 credits)
- IND 302 Manufacturing Resource Planning 3
- IND 410 or MET 410 Senior Project 3
- plus either MET 311 or BUS 302 3
- MET 311 Manufacturing Concepts for Managers (for students entering from non-technology programs)
- BUS 302 Managerial Accounting (for students without two prior semesters of accounting)
- MET 408 Computer Integrated Manufacturing 3
- MET 409 Statistical Quality Control 3

Total Credits 63

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BUS 311 Organizational Behavior
BUS 330 Cost Management Systems
BUS 322 International Management

(15 credits) by advisement:

Elective Courses

DPR 360 Advanced Database
IND 401 Quality Management Issues

Technology Program. The course provides a conceptual foundation for more advanced study within the Industrial Society Certified in Integrated Resource Management. One of three courses that cover the American Production and Inventory Control Society bodies of knowledge in the discipline of integrated resource management and their application to a facility.

IND 307 Facility Technology Concepts

The objective of this course is to present to students, from non-technology programs, a survey of the technology concepts required to develop the foundation necessary for more advanced courses in the program. The course covers topics such as hydraulics, the flow of fluids, heat concepts, changes in state, electrical concepts, electric circuits, control systems, and their application to a facility.

(3.0) 3 credits

Indoor lighting, air, ventilation, and air-conditioning systems. The course covers various utility rate structures, power reduction, wholesaling and rebates. It will also review various energy alternatives such as purchased steam, conservation and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (3.0) 3 credits

IND 406 Energy Management

The course encourages students to probe the phenomenon of risk to discover ways to reinforce a facility’s resistance to threats and thus loss. A process of analyzing security problems and their relationship to the facility. An approach of looking at all threats and developing an overview of the components of a building structure, its environment. Analysis of solvents, particulates, non-ionizing radiation, temperature extremes, biological hazards, and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (3.0) 3 credits

IND 407 Security Management

The course encourages students to probe the phenomenon of risk to discover ways to reinforce a facility’s resistance to threats and thus loss. A process of analyzing security problems and their relationship to the facility. An approach of looking at all threats and developing an overview of the components of a building structure, its environment. Analysis of solvents, particulates, non-ionizing radiation, temperature extremes, biological hazards, and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (3.0) 3 credits

IND 405 Heating, Ventilating, & Air Conditioning Systems

The objective of this course is to present a comprehensive overview of the components of a building structure, its environment. Analysis of solvents, particulates, non-ionizing radiation, temperature extremes, biological hazards, and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (3.0) 3 credits

IND 403 Electrical Systems

The objective of this course is to present a comprehensive overview of the components of a building structure, its environment. Analysis of solvents, particulates, non-ionizing radiation, temperature extremes, biological hazards, and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (3.0) 3 credits

IND 404 Facility Structures, Process and Design

The objective of this course is to present a comprehensive overview of the components of a building structure, its environment. Analysis of solvents, particulates, non-ionizing radiation, temperature extremes, biological hazards, and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (3.0) 3 credits

IND 410 Senior Project

Indoor lighting, air, ventilation, and air-conditioning systems. The course covers various utility rate structures, power reduction, wholesaling and rebates. It will also review various energy alternatives such as purchased steam, conservation and solar systems. It will cover life cycle costing and various energy conservation programs. In addition such items as the intelligent building, load management and various miscellaneous means to increase efficiency will be covered. In addition energy conservation will be covered with respect to its effect on indoor air quality and other environmental issues.

Prerequisite: IND 407 Facility Technology Concepts (1.0) 3 credits

(For description of other courses offered, see specific departments.)
Technical Engineering or Engineering Technology courses. This is a junior-senior-level program offered by the Department also has a modern machine tool laboratory containing manual and automated industrial equipment. There is a required senior project course during the last semester that is an integrating or capstone experience, drawing together major elements of the design and manufacturing process.

The College's Bachelor of Technology program in Manufacturing Engineering Technology is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TACABET).

Program of Study

- **Fifth Semester**
  - GPH 300 Computer Aided Design 3 credits
  - MET 306 Applied Fluid Power 3 credits
  - CHM 324 Introduction to the Chemistry of Materials 3 credits
  - MTH 321 Applied Calculus 3 credits
  - EET 392 Electrical Circuits 3 credits

- **Sixth Semester**
  - MET 305 Tooling for Composites 3 credits
  - MET 307 Control Systems 3 credits
  - MET 351 Computer Aided Manufacturing (CAM) 3 credits
  - EET 392 Electrical Circuits 3 credits
  - EET 393 Introduction to Electrical Control Systems 3 credits

**Upper Division Course Descriptions**

**MET 305 Tooling for Composites**
A theory and laboratory course covering an introduction to advanced composites and design of production tools. Some included topics are: vacuum fixtures, lay up technology, composite tooling, and press tooling. Drawings will be assigned to be done both on the drafting board and on the College’s computer graphics equipment.

**Prerequisite: MET 207**

**MET 307 Fluid Power**
The objective of this course is to present the basic principles of fluid mechanics and the application of those principles to practical, applied problems. Primary emphasis is on the topics of fluid statics, flow of fluids in piping systems, flow measurement, and forces developed by fluids in motion. The course is directed to anyone in a technical field where the ability to apply the principles of fluid mechanics is desirable.

**Prerequisite: PHY 139**

**MET 307 Control Systems**
The objective of this course is to present a comprehensive, concise and modern treatment of the fundamental principles of feedback and linear control system theory and practice. The theory part of the course considers the conceptual framework and terminology of feedback and control systems, methods of determining the stability of linear systems, transfer functions, block diagrams and signal flow graphs. Laboratory exercises demonstrate the fundamental behavior of pneumatic, electrohydraulic, and electronic systems. Special topics include the development and testing of control system control.

**Prerequisites: MET 300, EET 302**

**MET 310 Technology Concepts for Managers**
The objective of this course is to present a comprehensive and modern treatment of the fundamental principles of manufacturing to students who plan to become managers of manufacturing enterprises. This primary area covered in this course is quality control, control systems, numerical control, computer aided manufacturing (CAM) and robotics. Laboratory exercises will be assigned to students to provide hands-on experience with the concepts being covered.

**Prerequisite: MET 310**

**MET 351 Computer Aided Manufacturing (CAM)**
This is a theory and laboratory course covering Computer Aided Manufacturing (CAM) techniques. Two CAM systems will be studied: advanced AFT language programming, and computer graphics NC programming. Students will be required to produce NC part programs on both systems using the College’s computers. Programs will be processed to produce G-Code which will then be loaded into a CNC machine to manufacture a part.

**Prerequisite: MET 251**

**MET 405 Dynamics**
The motions of a particle and its associated forces and accelerations will be analyzed. The analytic techniques will include conservation of energy, impulse, momentum and work methods. D’Alembert’s Principle, rotational dynamics, and critical shaft speeds will be studied. Students will develop computer software for selected topics.

**Prerequisites: MET 106, PHY 136C, MET 109 and completion of Departmental mathematics requirements.**

**MET 406 Electronic Packaging Applications**
This is a theory and laboratory course covering an introduction to electronic packaging with the layout drawings of analog and digital schematics. Also included in the course is application of thermal, radio frequency, electromagnetics, shock and vibration effects. Students’ designs will be drawn on the College’s computer graphics equipment.

**Prerequisites: MET 207 and EET 302**
MET 407 Kinematics
This course covers the study of the generation and control of motion in the components of machines. Both graphical and analytical methods for the solution of motion problems will be considered. Topics included are arc and revolute vector mathematics, laws of motion, linkages, velocity, acceleration, cams, gears, and three dimensional mechanisms.
Prerequisites: PHY 135, MET 109, and completion of Departmental mathematics requirements.
(2, 3, 4) 4 credits

MET 408 Computer Integrated Manufacturing (CIM)
In this course, the concept of Computer Integrated Manufacturing (CIM) as applied to modern manufacturing will be studied. The areas of design (CAD), manufacturing (CAM) and material resources planning (MRP) on computers will be emphasized. Students will gain hands-on experience using the College's CAD/CAM and MRP computer systems and software. Students will also study the management component of CIM using business planning software.
Prerequisites: GPH 300, MET 109
(2, 3) 3 credits

MET 409 Statistical Quality Control
Students will be introduced to the techniques for determining the quality of mass manufactured products by means of statistical analysis. State-of-the-art computer programs will be used to generate and analyze process control charts and histograms, plus continuous variables, and attribute control charts. Tests for special causes and capability analysis of a process will be addressed. Prediction of the probable percentage defective in a monitored process as well as the producer's and consumer's risk will be evaluated. Students will learn to define the Acceptance Quality Level (AQL) and the military sampling plans (MIL Standard).
Prerequisites: MET 109 and MET 252
(2, 3) 3 credits

MET 410 Senior Project
An independent investigation of a technical problem of interest to both the student and a faculty member who shall act as Project Advisor. The problem solved will utilize skills and knowledge acquired in earlier MET courses. Required for graduation from the Bachelor of Technology program in Manufacturing Engineering Technology.
Prerequisites: Department approval.
(1, 3, 3) 3 credits

MET 411 Applied Heat Transfer
This course will provide students with a basic understanding of problems of heat transfer. The fundamental laws of conduction, convection, and radiation are studied using analytical and graphical methods. Graphical and empirical solutions and applications to industrial problems will also be covered plus special topics in heat exchangers, heat pipes, and industrial furnaces.
Prerequisites: MET 306 and completion of Departmental mathematics requirements.
(3, 3, 3) 3 credits

MET 412 Robotics
Students will be introduced to robotics from both a theoretical and practical aspect. Different types of robots and their applications in industry will be covered. Additional topics included are motor control and coordination of mechanical, robot programming, the use of robots in an integrated manufacturing system, cell, and practice in robot vision systems. Hands-on experience on actual working robots and the application of the theory will be provided in the laboratory.
Prerequisites: MET 307, EET 393, MET 405 and MET 407
(3, 3, 3) 3 credits

Visual Communications
Bachelor of Technology Degree
(3, Evening) 12 credits
Admission Requirements:
21 credits of General Education coursework; 42 credits of coursework in the art discipline; presentation of a portfolio; personal interview; fee. (See page 4 for General Requirements.)

Professor William J. Steedle, Chairperson

In the high-tech industry of advertising art & visual communication, the traditional values of art and design are finely balanced with computer technology— all focused on meeting the changing needs of a growing industry. This challenge is being resolved by balancing traditional art & design values, and their applications, with the latest computer technology. The Visual Communications program blends and balances these curriculum goals to benefit both the student and the industry.

An Associate Degree program in Advertising Art and Design, or related field of study from an accredited institution, serves as the foundation for this program. In the second two years, the Visual Communications upper division program builds upon this foundation, continuing the tradition of conceptualization in design, drawing and support areas while expanding into areas of Computer Graphics. The experience is "hands on" using state-of-the-art equipment. Areas of application include design, drawing, layout, graphics, television and photography. In so doing, the basic fundamentals find new and creative expression in the computer technology. The program also develops high-level skills in written and spoken communication through electives in English, general studies and business, promoting the artistic, technical, communication, and business skills necessary for success.

The Art Department's Technology Center features the latest technology and software reflecting the industry's needs. This provides full-time degree students at both the associate and baccalaureate levels access to the latest technology. The Department of Art Gallery provides the faculty, students, staff, and the general public, an additional opportunity to experience a variety of quality commercial art exhibitions.

Program of Study
Liberal Arts & Sciences (21 Credits)

Credits
English or Humanities...9
Social Science......6
Mathematics or Science....6

Support Courses (6 credits)
Business........6

Required Courses (27 credits)
AAT 305 Advanced Color and Design...3
AAT 306 Figure Drawing II...3
AAT 330 Typography...2
AAT 332 Introduction to Computer Graphics...3
AAT 333 Color and Design (Computer)...3
AAT 334 Layout II (Computer)...3
AAT 405 Layout IV...3
AAT 406 Production II...3
AAT 410 Senior Project/Thesis...3
ART 302 Art History: Survey of American Art...3

Advertising Art/ Humanities Electives (10 credits)
AAT 410 Airbrush Illustration...3
AAT 430 Photoshop I...3
AAT 432 Children's Book Illustration...3
AAT 434 Computer Animation and Effects...3
AAT 425 Electronic Typographical Design...3

Total Credits 64

Upper Division Course Descriptions
AAT 305 Advanced Color and Design
A study of the implications of color, its manipulations to suit the needs of the designer, and the human perception to color. A series of color problems to sensitize students to the inter- action of color and the color phenomena, graphic applications of color, including its hue, value and intensity to all the major elements of design, through a series of hands-on-projects relating to problems in the field of design and visual arts.
(2, 3) 3 credits

AAT 306 Figure Drawing II
This course provides a step-by-step instruction in the develop- ment of seeing and drawing the human form as it moves through space and relates to the two-dimensional picture plane. The figure is studied from the following aspects: posture, line, development of volume/form, value, cast light and shade, contrasts of size, shape, light and dark, drama, over-all impact of a drawing, negative space and composition.
(2, 3) 3 credits

AAT 308 Graphic Design I
The problems and solutions introduced in Graphic Design I will be continued and expanded through the use of more diversified and advanced visualizing and graphic techniques using color, mood, and portfolio quality finishes.
(1, 3) 3 credits

AAT 410 Airbrush Illustration
The course will explore advanced problems and techniques in Airbrush Illustration, including brushes, dyes, color, etc., with emphasis placed on creative illustrations and technical rendering techniques.
(2, 3) 3 credits

AAT 432 Children's Book Illustration
This course incorporates the stages in the building of a chil- dren's book, including the production process used for publication. Attention is given to type, style, layout and copy- fitting. Students are developed with emphasis on composition, style and mood appropriate to the various age groups.
(1, 3) 2 credits

AAT 434 Photography III—Color Photography
The development of the three primary colors, their scientific perception of color. De/room skills will be developed encompassing the various aspects of color photography, including color reversal (transparencies) and type C color negative process. Color skills will be applied in a variety of photograpic projects.
(1, 3) 2 credits

AAT 430 Typography I
A survey of Typographic History, from Gutenberg to digital typographic. The student calculates, sketches, specifies and sets type to suit typical commercial needs.
(3, 3) 3 credits

AAT 332 Introduction to Computer Graphics
A hands-on approach to the rapidly expanding use of the computer to create graphic images. Lectures and extensive laboratory sessions with print and draw software will introduce the student to the theoretical principles and techniques with specific applications in the commercial art field.
(2, 3) 3 credits

AAT 333 Color and Design
The course will familiarize the student with the operation of a color graphics computer, reinforcing the basic understanding of color theory through the study of the computer's potential for creative design through space, variety and knowledgable selection.
(2, 3) 3 credits

AAT 334 Layout III
With an emphasis on the computer as a tool in the studio environment, the student will learn to apply layout skills to the electronic medium. Using the computer monitor as a "drawing board," the student will learn to visualize and layout his/her work electronically. Computer laboratory sessions will explore the potential for developing ideas from a layout, through page makeup, to final mechanical, all using the computer.
(2, 3) 3 credits

AAT 335 Presentation Graphics
Through laboratory sessions using state-of-the-art software, students will be taught to design clear and concise business and graphic visuals. The use of color and contrast, graphic shapes and typography will be emphasized. Each student presentation will evolve from raw data/copy to outline, design, layout and final production.
(2, 3) 3 credits

AAT 339 Electronic Illustration II
The course will explore advanced applications of electronic illustration techniques for black and white as well as color graphic design projects. There will be emphasis on the use of effective typographical design and color theory concepts, and the influence of state-of- the-art graphical design elements.
(1, 3) 2 credits

AAT 405 Layout IV
Students will be asked to deal with advanced rendering techni- ques and methods of layout visualization. The computer will be used to solve more advanced problems in advertising and editorial layout. The course will blend the traditional and electronic methods of the layout art.
(2, 3) 3 credits

SUNY Farmingdale • 1994-1995 College Catalog
Advertising Art and Design

Associate in Applied Science Degree  (Day/Evening)

Admission Requirements:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>1 unit</td>
<td>Portfolios will be reviewed and a test in an aptitude and ability is required.</td>
</tr>
</tbody>
</table>

Professor William J. Steedie, Chairperson

The field of advertising art and design provides challenging career opportunities for individuals with creative and artistic abilities. The graphic design business is based upon the ability of specialists to consult with industry and to produce effective communication in a variety of media. In this capacity, the visual arts play a vital role in the dissemination of information via newspapers, magazines, direct mail, display, television and outdoor advertising. Graphic artists are employed in advertising agencies, art studios, art departments of large companies and corporations, publishing and printing firms, television and motion picture studios, and a variety of other business organizations.

Artists are involved in many phases of the creative development including designing and execution of magazine and newspaper advertisements, brochures, and direct mail advertising; graphic design for television; technical and industrial art; illustration for books, newspapers and magazines; and typography.

The curriculum at Farmingdale is structured to develop the skills and knowledge that are essential for the beginning graphic artist and to provide a foundation of competence to ensure successful advancement in the field. Emphasis is placed on layout and design, drawing, and the preparation of art for the various methods of reproduction in the graphics arts. Computer graphics continues to have a dramatic impact on the way images are created. Four new computer electives complement existing courses with a computer emphasis, providing hands-on practical experience, thus giving graduates a competitive edge in a changing job market. Projects completed in the course of study are designed to provide a portfolio of samples assisting graduates to secure employment in the field.

The instructors are active professionals and experienced educators, collectively covering a wide range of expertise and areas of specialization within the field. This assures an especially valuable educational experience.

Students wishing to complete a course of study beyond the Associates Degree level may apply for admission into the Department's Visual Communications Baccalaureate Degree program. This advanced program provides additional educational and career opportunities.

Typical Employment Opportunities

Graphic Designer
Assistant Art Director
Layout Artist
Illustrator

Technical Illustrator
Photo Retoucher
Production Artist
Publication Designer

Program of Study

<table>
<thead>
<tr>
<th>Hours per</th>
<th>Credit</th>
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Second Semester

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Total Credits: 64

Typical Employment Opportunities

Graphic Designer
Assistant Art Director
Layout Artist
Illustrator

Technical Illustrator
Photo Retoucher
Production Artist
Publication Designer
Part-Time Program

A minimum of 63 credits is required

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<td>AAD 203 Advertising Layout II .......</td>
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<td>AAD 117 Figure Drawing ................</td>
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<td>AAD 119 Photography ........................</td>
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Electives

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Advertising Art and Design Certificate Program

A minimum of 35 credits required

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<td>AAD 117 Figure Drawing</td>
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<td>AAD 217 Merchandise Illustration</td>
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<td>AAD 259 Photography II</td>
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<td>AAD 261 Computer Art</td>
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<tr>
<th>Course Descriptions</th>
<th>Credits</th>
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<tr>
<td>AAD 105 Design Fundamentals</td>
<td>An introduction to the fundamental principles of design. Exploration, in a variety of media, of the theories of utilization of line, form, texture, color, and value in visual expression. (1, 2) 2 credits</td>
</tr>
<tr>
<td>AAD 107 Drawing Fundamentals</td>
<td>The principles of drawing — freehand perspective, light and shade, and pictorial composition — applied to both natural and fabricated subjects. The development of technique in black and white media. (2, 3) 3 credits</td>
</tr>
<tr>
<td>AAD 108 Mechanical Art</td>
<td>The use of drawing instruments applied to advertising art. The drawing of geometric figures, charts and graphs, trademarks, Mechanical representation. (1, 2) 2 credits</td>
</tr>
<tr>
<td>AAD 109 Lettering</td>
<td>An introduction to the basic letter forms and the modern letter styles used in advertising. A study of typography including type recognition and selection and its utilization as an element of design. The rendering of comprehensives, and finished letter forms in the media of the contemporary advertising artist. (2, 3) 3 credits</td>
</tr>
<tr>
<td>AAD 113 Advertising Layout I</td>
<td>The execution of rough and comprehensive layouts for newspaper and magazine ads. Emphasis upon the development of skills in indicating type illustration with contemporary media. (2, 3) 3 credits</td>
</tr>
<tr>
<td>AAD 117 Figure Drawing</td>
<td>Drawing of the nude and clothed figure. Emphasis on the relationship of the garment to the underlying figure. The rapid portrayal of figures in contemporary media for advertising. (2, 3) 3 credits</td>
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<tr>
<td>AAD 119 Photography I</td>
<td>An introduction to the principles of black and white photography. The course will include the use of the camera, film processing and printing. Design and composition will be stressed. (1, 2, 3) 2 credits</td>
</tr>
<tr>
<td>AAD 203 Advertising Layout II</td>
<td>Advanced problems in advertising and editorial layout, in both black and white color. Emphasis upon the latest techniques of type and figure indication utilizing contemporary media. Professional procedures in making comprehensive layouts, including discussion of production techniques. (1, 2) 2 credits</td>
</tr>
<tr>
<td>AAD 211 Airbrush/Photo Retouching</td>
<td>The use of the airbrush in rendering typical illustrations in black-and-white photographic prints of merchandise for advertising reproduction. (4, 2) 4 credits</td>
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<tr>
<td>AAD 214 Advertising Production I</td>
<td>A study of the reproduction processes used in the graphic arts and of the techniques of the preparation of artwork utilized by these processes. The making of paste-ups and mechanicals. The preparation of illustrations for line and half-tone reproduction. Color pre-soporation. (2, 3) 3 credits</td>
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### Aerospace Technology

#### Associate in Applied Science Degree

**Day Program Requirements:**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
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<td>Optional, Math 1, 2 required.</td>
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<tr>
<td>Science</td>
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</tbody>
</table>

*Professor Paul Baumann, Chairperson*

Aviation constitutes an industry that requires large organizations staffed by highly skilled technicians for positions in flight control, air carrier operations, airport management, and related governmental activities.

This curriculum addresses the essential elements that are involved in this highly diversified industry. The program is continually revised to include the latest technical and operational developments as affected by this industry.

The flight portion of the Aerospace program is unique. The College maintains a fleet of nine single-engine aircraft, five GAT-1 full-motion flight simulators, and three ATC 710 digital simulators. Faculty holding the FAA Certified Flight Instructor ratings provide flight and ground training. A number of qualified students may be selected for flight training and become eligible for the private pilot license. A nominal fee is levied by the College.

Graduates of the program may continue their studies in the baccalaureate degree programs in Aviation Administration or Aeronautical Science-Professional Pilot. (See Bachelor of Science Programs, page 34).

#### Typical Employment Opportunities

- Airways Operations Specialist (Air Manager)
- Airliner Operations (Aircraft Operations)
- Maintenance Flight Dispatcher

#### Program of Study

<table>
<thead>
<tr>
<th>Course Descriptions</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
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<tr>
<td>EGL 101 Composition: Rhetoric</td>
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<td>MTH 100 College Algebra</td>
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<td>DPR 191 Microcomputers and their Applications</td>
<td>3</td>
<td>3</td>
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<tr>
<td>AST 102 Aviation History</td>
<td>3</td>
<td>3</td>
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<tr>
<td>AST 100 General Aeronautics</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>AST 114 Introduction to Flight I**</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PED</td>
<td>Physical Education Elective</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</tr>
</tbody>
</table>

*** Only open to qualified students who receive permission of the Department Chairperson. Students must provide their own transportation to the Flight Line.***

*See "Testing under "Academic Information."*

*Lab is optional with permission of Chairperson*

#### Course Descriptions

**AST 100 General Aeronautics**

An introductory course covering the aeronautical knowledge essential to private pilots. Course will include FAA requirements for Basic Ground School in Federal Air Regulations; air navigation including radio navigation; meteorology; general service-aircraft and engines; safety practices and procedures. (3, 0) 3 credits

**AST 102 Aviation History**

History of aviation with emphasis on the industry, governmental regulations thereof and opportunities in the field. An overview of flight fundamentals, navigation and meteorology pertaining to flight is also included. This course provides a general description of the events of flight starting with the early achievements and progressing through the various milestones to the present age. (3, 0) 3 credits

**AST 103 Airport Planning and Operation**

Those features which make up an airport, including an introductory identification of navigational aids found at airports. Classification of airports and an understanding of the relationship between airplane performance and airport design problems. Study of the growth of air transportation so that the student will have an understanding of the various phases of airport planning and operating an airport. (3, 0) 3 credits

**AST 114 Introduction to Flight I**

Orientation to the flight environment. The student will receive approximately five hours of flight instruction. Objectives include giving the student sufficient flight experience to determine aptitude for further training. (0, 0) 1 credit

**AST 115 Introduction to Flight II**

Preparation of the student pilot to safely conduct solo flight operations in an airplane. Introductory flight maneuvers are emphasized as an pertinent operational regulations and procedures. At the conclusion of the course, the student will have soloed an airplane. Prerequisites: AST 100, AST 114, FAA Private Pilot Written Examination passed. Students with prior solo flight hours not eligible. (1, 2) 3 credits

**AST 118 Systems/Structures**

A study of various aircraft systems and structures, flight controls, hydraulics, pneumatics, electrical, fuel, fire, ice and rain protection. Weight and balance included. (0, 0) 3 credits

**AST 201 Electronic Navalos**

Radio waves and their behavior, international radio frequency spectrum including radio frequencies and their use; ground facilities; principles of operation; airways navigation and use as aids to navigation and communications; use of appropriate publications such as a FAR, AIM and charts with regard to checks, inspections and determination of frequencies to use; radio and navigation terminology. (3, 0) 3 credits

**AST 202 Airplane Power Plants**

Theory and principles of operation of aircraft reciprocating engines, engine disassembly, assembly, carburetion, ignition systems, lubrication systems, and propellers. (3, 0) 3 credits

**AST 204 FAA Regulations and Air Traffic Control**

Radio aids to navigation, radio frequency and procedures. Use of publicational flight information manuals, airport guide radio facility, approach and terminal area charts. Prerequisite: AST 213 (3, 0) 3 credits

**AST 207 Jet Propulsion**

Basic theory of the operation of jet engines. Classifications, identification, jet thrust, augmentation, centrifugal flow, axial flow, turbo props, turbofans and after burners. Prerequisite: AST 202 (3, 0) 3 credits

**AST 208 Meteorology**

Fundamental physical concepts of meteorology. Mesoscale and microscale instruments and observations, weather sequence and synoptic chart interpretation. Air masses, fronts, formation and dissipation, aircraft icing, and thunderstorms. Prerequisite: AST 100 (3, 0) 3 credits

**AST 209 Aerosodynamics and Aircraft Performance**

Subsonic aircraft lift and drag theory. Finite wing theory. Drag polar. Aircraft performance to include straight and level, turn, climb and landing, stall, climb and glide, range and endurance. Aircraft axes and motion, aircraft static and dynamic stability and control. Introduction to supersonic aerosdynamics and high-speed flight. GAT 1 simulator (LINK Trainer) will be used to demonstrate aircraft motion, handling and performance characteristics. Prerequisites: AST 100, AST 204 (3, 0) 4 credits

**AST 210 Flight Test**

Introduction to flight test—pre and post-flight orientation on aircraft control equipment of aerodynamics function and aerial observing. Aircraft to be used, Cessna 172. (3, 0) 3 credits

**AST 211 Aircraft Powerplants**

Theory and principles of operation of aircraft reciprocating engines and their subsystems such as carburetion, ignition, lubrication and propulsion. The laboratory portion involves disassembly, measurement, instrumentation and assembly of representative aircraft engines. Theory of operation of jet engines to include the classification and identification of turbojets, turboprop, ramjet, rockets and their internal parts and subsystems. (3, 0) 3 credits

**AST 251 Aerolab (Flight Line)**

Introduction to flight—pre and post-flight orientation on aircraft control equipment of aerodynamics function and aerial observing. Aircraft to be used, Cessna 172. (3, 0) 3 credits

**AST 252 Aeronautical Engineering**

Basic flight maneuvers—elementary map reading and explanation of basic navigational principles. Prerequisites: (3, 0) 3 credits

*See "Testing under "Academic Information."*
Aircraft Maintenance —
Mechanical Technology

Associate in Applied Science Degree

Admission Requirements:

Mathematics
2 units Sequential (Integrated) Math 1, 2 required. (Elementary Algebra and either Plane Geometry or Intermediate Algebra)

Science
1 unit (articulation with associated labatory recommended.)

Professor Paul Basmann, Chairperson
Professor Louis A. Scalla, Coordinator

The A.A.S. degree program in Aircraft Maintenance Technology is jointly sponsored by SUNY Farmingdale and Suffolk County BOCES III — Air Agency III-33, a Federal Aviation Administration approved FARPart 147 Aircraft Maintenance Technician School.

The A.A.S. degree program consists of 40 Aircraft Maintenance Technology credits and 32 General Education credits. All Aircraft Maintenance Technology courses are taught by BOCES III at the Aerospace Educational Center located at Republic Airport, one and one-half miles from the SUNY Farmingdale campus. Students are required to provide their own transportation to Republic Airport. All General Education courses are offered on the Farmingdale campus.

Upon successful completion of the A.A.S. program, students are eligible to take the Federal Aviation Administration Airframe and Powerplant License Examinations. Students who hold an FAA Airframe and/or Powerplant license are eligible to receive college credit for the Aircraft Maintenance Technology courses correctly completed.

AMT 95: Airframe and Powerplant Mechanics

Course Credits

EGL 101 Composition: Rhetoric
EGL 102 Composition: Rhetoric
MTH 129 Technical Math A*
MTH 130 Technical Calculus A
PHY 105 Technical Physics I
PHY 135 College Physics I
PHY 106 Technical Physics II
PHY 136 College Physics II

Social Science Electives

Physical Education Elective

NOTE: Choose one 3 credit course listed below.

Humanities Elective

(art, literature, philosophy, foreign languages, drama, history) or

DPR 191R Introduction to Computers

EGL 205R Technical Communications

EGL 310R Technical Writing or

Elective: (AST 100R or AST 102R) 3

Course Descriptions

Total Credits: 72

* See "Testing" under "Academic Information"

Course Descriptions

AMT 095 Airframe and Powerplant Mechanics

Course Credits

AMT 095 Airframe and Powerplant Mechanics

AMT 100 General Maintenance Practices

AMT 130 Basic Aircraft Structures and Electricity

AMT 211 Propulsion Systems I

AMT 212 Propulsion Systems II

AMT 213 Propulsion Systems II

AMT 214 Propulsion Reliability and Maintainability

AMT 221 Aircraft Structures I

AMT 222 Aircraft Structures II

AMT 223 Aircraft Structures II

AMT 224 Aircraft Structures II

Total Credits: 40

AMT 130 Basic Aircraft Structures and Electricity

An introduction into basic electrical concepts of aircraft electrical, electronic, and pneumatic systems. The methods of ice and rain control, corrosion control techniques, and environmental control systems are studied.

Prerequisites: AMT 130 and AMT 131

AMT 131 Basic Aircraft Structures and Electricity

The study and inspection of the structural characteristics and methods of fabrication of aircraft components. The techniques and procedures of rigging and welding on aircraft are demonstrated.

Prerequisites: AMT 130 and AMT 131

Total Credits: 8

AMT 212 Propulsion Systems II

A detailed study of the aircraft propulsion systems and their installation. The operational components used in hydraulic and pneumatic systems. The methods of ice and rain control used in modern aircraft is included.

Prerequisites: AMT 130 and AMT 131

Total Credits: 4

AMT 213 Propulsion Systems II

A detailed study of aircraft electrical power systems and their installation. The operational components used in hydraulic and pneumatic systems. The methods of ice and rain control used in modern aircraft is included.

Prerequisites: AMT 130 and AMT 131

Total Credits: 8

AMT 214 Propulsion Reliability and Maintainability

A detailed study of the various maintenance publications pertinent to maintenance and federal regulations. Emphasis is placed on proper operation, inspection, testing, and maintenance of propulsion systems. A detailed study is made of turbine and engine electrical systems.

Prerequisites: AMT 130 and AMT 131

Total Credits: 4

AMT 221 Aircraft Structures I

AMT 222 Aircraft Structures II

AMT 223 Aircraft Structures II

AMT 224 Aircraft Structures II

Total Credits: 12

AIC 141 Basic Aircraft Structures and Electricity

A study of the airframe structures of modern aircraft and their basic design and composition. Emphasis is placed in the use of aircraft hardware familiarization in measurement techniques and material properties.

Prerequisites: AMT 130 and AMT 131

Total Credits: 4
**AMT 211 Propulsion Theory**
A detailed study is made of reciprocating engines. The theory of internal combustion engines as applied to specific powerplants. Operations technologies associated with and maintenance and overhaul techniques are stressed.
Prerequisites: AMT 130 and AMT 131
(1.5, 6.5) 4 credits

**AMT 212 Propulsion Systems I**
The related systems needed for cooling, lubrication, and emissions are studied. The propeller and its operational concepts are studied. The component and system maintenance repairs are included.
Prerequisites: AMT 130 and AMT 131
(1.5, 6.5) 4 credits

**AMT 213 Propulsion Systems II**
A detailed study is made of the powerplants systems of fuel control and management. The powerplant ignition and instrumentation systems are studied.
Prerequisites: AMT 130 and AMT 131
(0, 13) 4 credits

**AMT 214 Propulsion Reliability and Maintainability**
A detailed study is made of the various maintenance publications, maintenance methods and federal regulations. Emphasis is placed on proper operation, inspection and protection of powerplant systems. A detailed study is made of turbine and engine electrical systems.
Prerequisites: AMT 130 and AMT 131
(2, 6) 4 credits

**AMT 221 Structures I**
The study and inspection of the structural characteristics and methods of fabrication of wood, steel, and finishes used in the construction of aircraft. The techniques and procedures of rigging and welding on aircraft are demonstrated.
Prerequisites: AMT 130 and AMT 131
(1, 7) 4 credits

**AMT 222 Aircraft Systems I**
A detailed study of aircraft electrical power systems and their installation. The operational components used in hydraulic and pneumatic systems. The methods of ice and rain control used in modern aircraft is included.
Prerequisites: AMT 130 and AMT 131
(1, 6) 4 credits

**AMT 223 Aircraft Structures II**
The modern materials, service and repair of sheet metal and composite structures are developed and practical application of techniques is demonstrated. The study of fuel storage and distribution systems used in aircraft.
Prerequisites: AMT 130 and AMT 131
(4, 11) 4 credits

**AMT 224 Aircraft Systems II**
A study of landing gear structures and operation including maintenance, inspection and repair. Design and function of the retraction systems. The theory and operation of navigation-communication systems and fire systems are studied. The methods of controlling cabin atmosphere are studied.
Prerequisites: AMT 130 and AMT 131
(2, 4) 4 credits

**Anthropology**
Anthropology deals with the study of cross cultures (many of which are pre-literate), human evolution, archaeology and linguistics. Many courses are offered to expose students to general anthropological questions and to specific cultures. Anthropology is concerned with similarities as well as differences in the world's human populations.

**College Courses**

**ANT 100 Introduction to Anthropology**
Prerequisites: AMT 130 and AMT 131
(3, 0) 3 credits

**ANT 110 Socio-Cultural Anthropology**
Prerequisites: AMT 130 and AMT 131
(1, 8) 4 credits

**ANT 211 Caribbean Cultures**
Prerequisites: AMT 130 and AMT 131
(1, 6) 4 credits

**Applied Mathematics**
Prerequisites: AMT 130 and AMT 131
(1, 6) 4 credits

**Art**
(See Humanities Department)

**Automotive Engineering Technology**
Associate in Applied Science Degree

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
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<tbody>
<tr>
<td>Automotive Engine Design</td>
<td>2</td>
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<tr>
<td>Automotive Engine Theory</td>
<td>2</td>
</tr>
<tr>
<td>Automotive Electrical Systems</td>
<td>2</td>
</tr>
<tr>
<td>Automotive Fluid Power Systems</td>
<td>2</td>
</tr>
<tr>
<td>Automotive Theory of Machines</td>
<td>2</td>
</tr>
<tr>
<td>Automotive Transmission Design</td>
<td>2</td>
</tr>
<tr>
<td>Diesel Engine Theory</td>
<td>2</td>
</tr>
<tr>
<td>Electricity and Magnetism</td>
<td>2</td>
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<tr>
<td>Electronics</td>
<td>2</td>
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<tr>
<td>Fuels and Lubricants</td>
<td>2</td>
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<tr>
<td>General Physics</td>
<td>2</td>
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<tr>
<td>Heat Transfer</td>
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<tr>
<td>Manufacturing Processes</td>
<td>2</td>
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<tr>
<td>Mechanical Engineering</td>
<td>2</td>
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<tr>
<td>Mechanics of Materials</td>
<td>2</td>
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<tr>
<td>Materials Science</td>
<td>2</td>
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<tr>
<td>Thermodynamics</td>
<td>2</td>
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</table>

**Admission Requirements:**
1. A high school diploma or equivalent.
2. A minimum GPA of 2.0 on a 4.0 scale.
3. The completion of specific high school courses in mathematics, English, and science.

**Automotive Service Technician**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Automotive Electrical Systems</td>
<td>2</td>
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<tr>
<td>Automotive Fluid Power Systems</td>
<td>2</td>
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<tr>
<td>Automotive Theory of Machines</td>
<td>2</td>
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<tr>
<td>Diesel Engine Theory</td>
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<td>Electricity and Magnetism</td>
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<tr>
<td>Thermodynamics</td>
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**Third Semester**

**AET 202 Engineering Materials II, Manufacturing Processes**
(3, 4) 7 credits

**AET 208 Automotive Electrical Applications**
(2, 3) 5 credits

**AET 210 Engine Measurements**
(2, 3) 5 credits

**PHY 100 Physical Science II**
(2, 4) 6 credits

**PHY 136 College Physics II Theory**
(2, 4) 6 credits

**Fourth Semester**

**AET 213 Project Seminar**
(2, 0) 2 credits

**AET 215 Diesel Engines**
(2, 2) 4 credits

**AET 217 Applied Mechanics**
(2, 2) 4 credits

**AET 255 Automotive Electronics and Computerized Controls**
(2, 3) 5 credits

**AET 257 Automatic Transmissions**
(2, 2) 4 credits

**Total Credits:** 28

**Course Descriptions**

**AET 102 Mechanical Equipment—Car & Truck Systems**
A through-laboratory course designed to teach basic understanding of the design and operation of automotive chassis and suspension systems. Topics will include a study of the vehicle frame, suspension, steering and braking systems. Emphasis is placed on the analysis of the vehicle's systems during operation. Related laboratory activities and demonstrations are included.
(2, 4) 3 credits

**AET 103 Mechanical Equipment—Engineering Design**
A through-laboratory course designed to provide a thorough understanding of the design and operation of automotive chassis and suspension systems. Topics will include a study of the vehicle frame, suspension, steering and braking systems. Emphasis is placed on the analysis of the vehicle's systems during operation. Related laboratory activities and demonstrations are included.
(2, 4) 3 credits

**AET 104 Combustion Engine Theory**
This is a theory/laboratory course designed to introduce the student to basic heat engine types, their physical configurations and various engine operating cycles. Analytical pressure-volume diagrams are utilized to illustrate the effects of engine geometry and design on performance and combustion requirements. Engine performance parameters are analyzed, utilizing individual and group problem solving techniques.
(2, 4) 3 credits

**AET 105 Fuel Systems—SI Engines**
This is a theory/laboratory course designed to provide a thorough understanding of the design and operation of automotive chassis and suspension systems. Topics will include a study of the vehicle frame, suspension, steering and braking systems. Emphasis is placed on the analysis of the vehicle's systems during operation. Related laboratory activities and demonstrations are included.
(1, 2) 2 credits

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AET 108 Automotive Electrical Principles
This is an automotive theory course designed to introduce students to basic automotive-oriented electrical principles as they relate to both A.C. and D.C. systems. This course includes the theoretical and practical aspects of automotive electrical systems. Related demonstrations and problem-solving activities are included.

(2, 2) 2 credits

AET 150 Automotive Computer Applications
This is a theory/laboratory course designed to intro- duce the student to basic computer utilization and programming. Topics include basic computer operations, computer instruction in and development of basic programming. Students will be required to develop basic programs for technical automotive problem solving and practical automotive applications. Extensive use of computer laboratory will be required.

(1, 2) 3 credits

AET 206 Engineering Materials and Manufacturing Processes
This is a theory/laboratory course designed to introduce the student to basic engineering materials and manufacturing processes. Topics include: metals, plastics, composites, properties, phase transformation and heat treatment of metals, inspection and testing techniques of automotive engineering materials. Additional topics will include: welding and metal forming, machining and joining processes. Related laboratory activities include projects and experiments with technical reports.

(3, 3) 4 credits

AET 255 Automotive Electronics and Computerized Controls
This is a theory/laboratory course designed to introduce the student to the fundamental principles of applied electronics and computerized control systems. The course includes computerized fuel and emission control systems, with emphasis on the diagnosis of basic engine malfunctions. The student will also analyze the principles and operation of feedback systems. Additional topics include: identification of automatic transmissions, troubleshooting of controls, and testing of automatic transmissions. Topics covered include applications of the principles of feedback to aircraft, gear systems, hydraulic, manual controls and application devices. The powerflow within selected automatic transmissions is analyzed and supported with related laboratory activities.

(2, 2) 3 credits

AET 217 Applied Mechanics
This is a theory/laboratory course designed to introduce the student to the fundamental principles of applied engineering mechanics. Topics include forces, couples, equilibrium, friction, kinematics of rectilinear and rotational motion, work, energy and power. Principles and applications of hydraulics are also discussed. Related laboratory and problem-solving activities are included.

(2, 3) 3 credits

AET 213 Project Seminar
This course is designed to provide the student with the challenge of an independent project. Requirements will include the compilation of an extensive faculty approved research/construction project. This project must be related to the automotive field. The student is responsible for the original project concept, which must be supported by preliminary, progress and final technical reports. A video-taped oral presentation is also required.

(2, 3) 4 credits

AET 215 Diesel Engines
This is a theory/laboratory course designed to provide a thorough understanding of diesel basic engines. Topics include the study of current high-pressure diesel fuel-injection systems and the diesel engine combustion process with respect to fuel injection and combustion chamber design. Specific examination of design and performance characteristics of diesel engine air induction, scavenging supercharging and turbo-charging systems will be covered. Students will also analyze engine governing methods and devices necessary for control, as well as current methods and devices utilized in solving common diesel engine starting problems. Conjugation systems, including diesel, gas, turbine, and steam will be examined. Related laboratory activities and experiments are included.

(3, 4) 4 credits

AET 216 Engineering Measurements
This is a theory/laboratory course designed to provide an understanding of engineering measurements theory, methods and devices utilized in today's technology. Topics will include examination of industrial methods of testing, analysis and reporting in the areas of pressure, temperature, speed, time and velocity, fluid flow and exhaust emissions and the testing of common fuels and lubricants. Also included is the evaluation of a series of engine performance test results and their resulting data, including computer programmed computation and graphical analysis of the completed testing, as presented in a student produced technical paper. Topical engineering measurement instruments and devices will be introduced and utilized in laboratory support of this course.

(2, 3) 3 credits

AET 218 Machine Tools and
Computerized Controls
This is a theory/laboratory course designed to introduce the student to the fundamental principles of applied engineering mechanics. Topics include forces, couples, equilibrium, friction, kinematics of rectilinear and rotational motion, work, energy and power. Principles and applications of hydraulics are also discussed. Related laboratory and problem-solving activities are included.

This course is designed to provide the student with the challenge of an independent project. Requirements will include the compilation of an extensive faculty approved research/construction project. This project must be related to the automotive field. The student is responsible for the original project concept, which must be supported by preliminary, progress and final technical reports. A video-taped oral presentation is also required.

(2, 3) 3 credits

Biology Department

Dr. Charles Adams, Chairperson

The Biology Department meets the educational needs of stu- dents at the College by offering undergraduate and graduate curricula. The major theme will embrace the integrative pathways and regulatory mechanisms which reflect holistic concepts. In the laboratory, human skeletons, models, slides, physiological demonstrations and a collection of insects, plant disease and animal pests, diseases and injuries are required. Control measures and the proper equipment. A collection of insects, plant diseases, and injuries is required.

(2, 3) 3 credits

AET 108 Engineering Measurements
This is a theory/laboratory course designed to provide an understanding of engineering measurements theory, methods and devices utilized in today's technology. Topics will include examination of industrial methods of testing, analysis and reporting in the areas of pressure, temperature, speed, time and velocity, fluid flow and exhaust emissions and the testing of common fuels and lubricants. Also included is the evaluation of a series of engine performance test results and their resulting data, including computer programmed computation and graphical analysis of the completed testing, as presented in a student produced technical paper. Topical engineering measurement instruments and devices will be introduced and utilized in laboratory support of this course.

(2, 3) 3 credits

AET 217 Applied Mechanics
This is a theory/laboratory course designed to introduce the student to the fundamental principles of applied engineering mechanics. Topics include forces, couples, equilibrium, friction, kinematics of rectilinear and rotational motion, work, energy and power. Principles and applications of hydraulics are also discussed. Related laboratory and problem-solving activities are included.

(2, 3) 3 credits

BIO 108 Entomology
The nature, structure, growth, habits, and injurious effects of insects and arthropods is included. The identification of common plant pests, diseases and injuries in the field. Field measures and pest control is required.

(2, 0) 2 credits

BIO 130 Biological Principles I
The study of biological development and processes primarily at the cellular level. The chemical basis for cellular composition and metabolic processes of photosynthesis and respiration are examined. The functioning of protozoa and animal cells is studied in detail, and cell division is considered in terms of reproduction and growth. Attention is given to major aspects of genetics. A survey of microbial groups is included. Cell division is considered in terms of reproduction and growth. Attention is given to major aspects of genetics. A survey of microbial groups is included.

(3, 4) 4 credits FALL and SPRING, DAY and EVENING

BIO 131 Biological Principles II
The study of biological development and processes primarily at the organismic level, including consideration of evolution, artificial selection, domestication, the identification of common plant pests, diseases and injuries in the field. Field measures and pest control is required. Invertebrates and vertebrates are studied on a comparative basis.

Prequisite: BIO 130 (3, 4) 4 credits FALL and SPRING, DAY and EVENING

BIO 135 Introduction to Oceanography
The geologic, chemical, physical and biological aspects of the ocean environment and its relationship to man are stressed with special consideration of coastal processes on Long Island. Some field study and testing procedures are included in the laboratory.

(2, 3) 3 credits

BIO 140 Bioethics
This course will cover ethical issues raised as a result of modern advances in biotechnology which directly affect the quality and quality of human life. The course will focus on specific applications and certain defined areas of human biology, such as human reproduction and genetics, these applicable systems and others will be covered extensively along with attendant ethical questions.

(3, 0) 3 credits

BIO 147 Heredity in Humans
A course that provides the non-science student with a good knowledge of human heredity, including a basic understanding of the common genetic disorders. Areas of current student interest, such as amniocentesis, cloning, recombinant DNA, and the role of heredity and the environment in cancer are also discussed.

(2, 2) 3 credits

BIO 150 Psychobiology
The biological basis of human behavior. This course deals with the aspects of human physiology which can be manipulated by biological stresses (dyes, pain, pollution, tension, fear, anger, stress, hunger, chromosomal abnormalities, endocrinology, etc.) and which can precipitate physiological responses.

(3, 0) 3 credits

BIO 155 Basics of Human Anatomy
A one semester lecture course in human physiology, con- cerning those aspects of human function which can be man- aged, diagnosed and treated with medical devices. The ner- vous system, cardiovascular system, respiratory system and urinary system will be emphasized. The physiological effects of radiation on biological and pathological phenomena will also be topics of discussion.

Prerequisite: High school biology or college biology

BIO 166 Principles of Human Anatomy and Physiology
This course will survey the major physiological and morphological relationships of the body organ systems. The major theme will embrace the integrative pathways and regu- latory processes which reflect holistic concepts. In the laboratory, human skeletons, models, slides, physiological demon- strations and a cat dissection will be utilized to strengthen and support the understandings of structure and function.

Prerequisite: High school or College Biology with laboratory or BIO 197

FALL and SPRING, DAY and EVENING

BIO 170 Human Anatomy and Physiology
An inquiry into the biochemical and physiological fundamen- tals of human structure and function will be stressed from a holistic point of view. In the first semester, the theme will focus on the generation of life and the principles of body framework, movement, and innervation. The identification of common plant pests, diseases and injuries in the field. Field measures and pest control is required. Invertebrates and vertebrates are studied on a comparative basis.

Prerequisite: High school or College Biology with laboratory or BIO 197

FALL and SPRING, DAY and EVENING

BIO 180 Cell and Molecular Biology
The nature, structure, growth, habits, and injurious effects of insects and arthropods is included. The identification of common plant pests, diseases and injuries in the field. Field measures and pest control is required. Invertebrates and vertebrates are studied on a comparative basis.

Prequisite: BIO 130 (3, 4) 4 credits FALL and SPRING, DAY and EVENING

BIO 135 Principles of Human Anatomy
An introduction to the respective systems which make up the human body. An introduction to the respective systems which make up the human body. The nature, structure, growth, habits, and injurious effects of insects and arthropods is included. The identification of common plant pests, diseases and injuries in the field. Field measures and pest control is required. Invertebrates and vertebrates are studied on a comparative basis.

Prerequisite: BIO 130 (3, 4) 4 credits FALL and SPRING, DAY and EVENING

BIO 135 Introduction to Oceanography
The geologic, chemical, physical and biological aspects of the ocean environment and its relationship to man are stressed with special consideration of coastal processes on Long Island. Some field study and testing procedures are included in the laboratory.

(2, 3) 3 credits

BIO 135 Introduction to Oceanography
The geologic, chemical, physical and biological aspects of the ocean environment and its relationship to man are stressed with special consideration of coastal processes on Long Island. Some field study and testing procedures are included in the laboratory.

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BIO 135 Introduction to Oceanography
The geologic, chemical, physical and biological aspects of the ocean environment and its relationship to man are stressed with special consideration of coastal processes on Long Island. Some field study and testing procedures are included in the laboratory.

(2, 3) 3 credits

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BIO 191 General Biology
A survey of life in the prehistoric man, structural and behavioral evolution, functional characteristics, and relationship to the natural world. The laboratory exercises involve investigations of the life processes by utilizing basic research tools. Here, animal forms are emphasized, with specimens ranging from live protozoa and plants to preserved frogs. (2, 2) 3 credits FALL, SPRING, DAY and EVENING.

BIO 193 Biology II (Zoology)
An introduction to animal biology covering fundamental characteristics, physiology, development, taxonomy, and evolution. For Liberal Arts students who intend to specialize in biological sciences as well as science majors. (3, 3) 4 credits FALL, SPRING, DAY and EVENING.

BIO 195 Botany
A study of plants with particular reference to seed plants; morphology, anatomy, physiology, reproduction and genetics of plants. (2, 2) 3 credits.

BIO 196 Field Ecology
This course offers a field approach to biology by utilizing action-oriented, indoor and outdoor investigations. Emphasis is placed on field trips and developing the experience working with natural materials and experimenting with living organisms. Special attention is given to the use, interpretation, and appreciation of the natural world for the recreational and educational purposes. The course is designed for non-science majors. (2, 2) 3 credits.

BIO 197 Topics in Human Biology
The course will include an introduction to the themes of Anatomy and Physiology. The second semester will continue the themes of Anatomy and Physiology and apply them to modern aspects of human biology. (3, 3) 4 credits FALL and SPRING, DAY and EVENING.

BIO 203 Biological Instrumentation
Prerequisite: BIO 203, or permission of instructor. Introduction of new bioanalytical methods along with applications of preconcentration, sample manipulation, and knowledge of instrumentation. (2, 2) 4 credits SPRING, FALL, DAY and EVENING.

BIO 204 Introduction to Microbiology
A survey of the microorganisms focusing on their anatomy and physiology and their applications to various fields of biology. Emphasis is placed on the role of microorganisms in the control of food spoilage and safety factors are all incorporated into the lab exercises. The qualifications of a biotechnologist are reviewed in light of career opportunities. Prerequisite: BIO 201 or permission of instructor. (3, 3) 3 credits FALL and SPRING, DAY and EVENING.

BIO 209 Environmental Microbiology
This course will investigate the effects of high altitude (hypo- baric) and hypothermia on microbial populations. A focus on research will be made on the influence of re- segregation and recombination, epistasis, incomplete domi- nance, sex-linked inheritance, chromosome mapping, chromo- somal aberrations, determination of sex, molecular genetics, mutations, development and population genetics and cytoplasmic inheritance. Laboratory studies cover the techni- ques used in genetic research, clinical tests, and the pro- duction and identification of human karyotypes. Prerequisite: 1 year of college biology or permission of instructor. (3, 3) 4 credits.

BIO 214 Microbiology
Principles and methods of micro-organism and their applications to various fields of biology. Emphasis is placed on the role of microorganisms in the control of food spoilage and safety factors are all incorporated into the lab exercises. The qualifications of a biotechnologist are reviewed in light of career opportunities. Prerequisite: BIO 201 or permission of instructor. (3, 3) 4 credits SPRING, FALL, DAY and EVENING.

BIO 215 General Microbiology
Principles and methods of micro-organism and their applications to various fields of biology. Emphasis is placed on the role of microorganisms in the control of food spoilage and safety factors are all incorporated into the lab exercises. The qualifications of a biotechnologist are reviewed in light of career opportunities. Prerequisite: BIO 201 or permission of instructor. (3, 3) 4 credits SPRING, FALL, DAY and EVENING.

BIO 223 Principles of Ecology
This course will deal with the relationship between mind and body, consciousness, human behavior and personality. The course will explore the psychologic consequences of hypnosis, phase-lymph and skin-propagation techniques. Prerequisite: BIO 192 or equivalent college Biology Rotations (2, 2) 3 credits SPRING, FALL, DAY and EVENING.

BIO 225 Parasitology
A continuation of BIO 214 comprising selected topics of mod- ern microbiology. Discussions include genetic engineering and recombination techniques, microbial physiology, and cultivation of bacterial, antibiotics. Modern problems of public health, and the use of radiology techniques in diagnosis. Independent experimental work is encouraged in the laboratory with emphasis on the instrumentation and methodology used in modern microbiology, and research process. Prerequisite: BIO 214 (3, 3) 4 credits SPRING, FALL, DAY and EVENING.

BIO 237 Advanced Microbiology
A study of the essentials of general mammalian histology and histopathology. A study of the histological structure and function of representatives of the major phyla as well as their role in human medicine. Prerequisite: BIO 199 or BIO 191 or BIO 193 or permission of instructor. (3, 3) 3 credits.

BIO 243 Oral Histology and Embryology
This course examines the oral tissues and includes the hard palate, soft palate, tongue, lip, salivary glands and tonsils. Emphasis is on the development of the face, the oral cavity and, in specific, the teeth and its supporting structures. (2, 2) 4 credits SPRING, FALL, DAY and EVENING.

BIO 246 Histological Techniques and Analysis
Prerequisite: BIO 190 or 193 and CHM 140 or equivalent (2, 2) 3 credits SPRING, FALL, DAY and EVENING.

BIO 247 Genetics
A survey of basic genetics, principles of heredity, the nature of the genetic material, and the role of chromosomes in meiosis and sexual reproduction. An introduction to basic concepts in genetics such as Mendel's principles, linkage, sex-linked inheritance, chromosome mapping, chromosomal aberrations, determination of sex, molecular genetics, mutations, development and population genetics and cytoplasmic inheritance. Laboratory studies cover the techni- ques used in genetic research, clinical tests, and the pro- duction and identification of human karyotypes. Prerequisite: 1 year of college biology or permission of instructor. (3, 3) 4 credits.

BIO 248 Histological Techniques
A study of the methods of preparing animal tissues for histological examination. Emphasis will be on obtaining tissue samples, embedding tissues, cutting and mounting of a section. Permanent mounts are prepared. Prerequisite: BIO 245 or taken concurrently with BIO 246 or permission of instructor. (2, 3) 4 credits.

BIO 250 Parasitology
An introduction to parasites of humans and domestic animals with an emphasis on identification, classification, etiology, life histories and the principles of parasitism. Prerequisite: BIO 193 or permission of instructor. (2, 3) 4 credits SPRING, FALL, DAY and EVENING.

BIO 256 Environmental Sampling and Analysis
Methods and techniques for sampling water, land, and air environments will be emphasized. Laboratory procedures will involve the analysis of both chemical and biological parameters, including wastewater analysis, using New York State approved methodology. Vegetative transect and beach contouring will also be included. Data presentation and report writing will be emphasized. Field trips and study will be an integral and required part of this course. Discussion of envir- onmental laws and impact statements will be included. Prerequisite: One semester of college Biology with a labora- tory; and one semester of college chemistry with a laboratory (2, 3) 3 credits.

BIO 290 Environmental Science II
Methods of greenhouse pest and disease control, including identification of major families of pests, biological control, principles of cultural and chemical control, and a survey of pests and diseases associated with economically important greenhouse crops. Prerequisite: BIO 108 Recommended: BIO 192 or equivalent college Biology Rotation (2, 2) 3 credits.

BIO 293 Animal Microbiology
Emphasis on the primary isolation, characterization and ident- ification of bacteria, yeasts and fungi. Virulence testing of laboratory cultures by standardized animal inoculation techniques; determination of the immunogenicity of vaccines and antigenic materials by serological titration methods. Anaerobic culture methods, veter- inary mycological methods, phage-lymph and viral propaga- tion techniques will be included. Prerequisite: BIO 190 or 193 and CHM 140 or equivalent.

BIO 299 Astrophysics
The course will explore the effects of high altitude (hypo- baric) and hypothermia on microbial populations. A focus on research will be made on the influence of re- segregation and recombination, epistasis, incomplete domi- nance, sex-linked inheritance, chromosome mapping, chromo- somal aberrations, determination of sex, molecular genetics, mutations, development and population genetics and cytoplasmic inheritance. Laboratory studies cover the techni- ques used in genetic research, clinical tests, and the pro- duction and identification of human karyotypes. Prerequisite: 1 year of college biology or permission of instructor. (3, 3) 4 credits.

BIO 307 Animal Histology
A study of the essentials of general mammalian histology and histopathology. A study of the histological structure and function of representatives of the major phyla as well as their role in human medicine. Prerequisite: BIO 199 or BIO 191 or BIO 193 or permission of instructor. (3, 3) 3 credits.

BIO 309 Aerospace Physiology
This course will deal with the relationship between mind and body, consciousness, human behavior and personality. The course will explore the psychologic consequences of hypnosis, phase-lymph and skin-propagation techniques. Prerequisite: BIO 192 or equivalent college Biology Rotations (2, 2) 3 credits SPRING, FALL, DAY and EVENING.

BIO 310 Physical Anthropology
The role of microbes as causative agents of disease in human hosts; the morphological characterization of bacterial species impor- tant as disease-causing agents and food-spoilage organisms. Emphasis on the role of water-borne diseases and applied sanitary practices for their effective control. Antimicrobial methods including physical, chemical and antibiotic agents. Applied methods involving analytical procedures for air, water, soil, milk, dairy products and foods and the demon- stration of the normal microflora found in these materials. Prerequisite: 1 semester of college chemistry and col- lege biology with a laboratory. (3, 3) 4 credits FALL, SPRING, DAY and EVENING.

BIO 313 Oriental Parasitology
The course will cover the parasitology of the oral cavity. Emphasis will be on obtaining tissue samples, embedding tissues, cutting and mounting of a section. Permanent mounts are prepared. Prerequisite: BIO 245 or taken concurrently with BIO 246 or permission of instructor. (2, 3) 4 credits.

BIO 325 Environmental Science II
The course will continue the emphasis on parasites of humans and domestic animals with an emphasis on identification, classification, etiology, life histories and the principles of parasitism. Prerequisite: BIO 193 or permission of instructor. (2, 3) 4 credits.
Biomedical Engineering Technology

Associate in Applied Science Degree

Admission Requirements:

Subject Units Remarks
Mathematics 2 units

- SequENTIAL (Integrated) Math 1, 2 required. (Elementary Algebra and Intermediate Algebra)
- Pre-algebra required

Science 1 unit

- A science course with associated laboratory required; Chemistry or Physics recommended.

Professor B.J. Morgan, Coordinator

During the past twenty years, the health care field has become increasingly dependent upon medical devices to improve the quality of health. Technological advances in aerospace, defense and consumer fields have been matched in the medical field, and modern sophisticated equipment can be found throughout the medical establishment. This has led to a demand for well-trained individuals to insure that this equipment is safe and effective. Hospital accreditation guidelines and government regulations relating to medical devices have also increased the demand for this specialty.

The AAS degree program, one of seven such accredited programs in the country, prepares students to work in the health care field as Biomedical Equipment Technicians. Some graduates elect to continue their education at a four-year institution (including SUNY Farmingdale for the Bachelor of Technology in Electrical Engineering Technology); or to work in allied fields, such as Electronics Technology.

Balanced course work in electricity and electronics, chemistry, instrumentation, physics, and physiology, as well as biomedical engineering technology, provides the student with the necessary foundation for a lifelong career in this rewarding and growing field.

This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology *See "Testing" under "Academic Information"

1 Offered by the Department of Electrical Engineering Technology - Prof. B. Thanassas, Chairperson

Typical Employment Opportunities

Biomedical Equipment Technician

- Field Service Technician
- Technician

Hospital Biomedical Technician

- Representative
- Technician

Shared Services Technician

- Technician

Program of Study

Hours per Week Credit Hours
First Semester Class Lab

EET 111 Electric Circuits I 3 (2) ...4
EET 117 Basic Electronics 3 3 3
EET 110 Computer Applications 2 2 2
EGL 101 Composition: Rhetoric 3 3 3
EET 202 Medical Instrumentation I 3 3 3
CHM 140 Intro to General, Organic & Biochemistry 3 3 3
BIO 165 Basics of Human Function 3 3 3
Arts / Science Elective + 0 3 0

Second Semester

EET 113 Electric Circuits II 3 (2) ...4
EET 117 Basic Electronics 3 3 3
EET 202 Medical Instrumentation I 3 3 3
CHM 140 Intro to General, Organic & Biochemistry 3 3 3
BIO 165 Basics of Human Function 3 3 3
Arts / Science Elective + 0 3 0

Third Semester

EET 223 Digital Electronics 3 3 3
BME 202 Medical Instrumentation II 3 3 3
BME 254 Electronic Health Care Systems 3 3 3
PHY 135 College Physics I 3 3 3
Arts / Science Elective + 0 3 0

Fourth Semester

EET 251 Microprocessors 3 3 3
BME 203 Medical Instrumentation III 3 3 3
BME 254 Electronic Health Care Systems 3 3 3
PHY 135 College Physics I 3 3 3
Arts / Science Elective + 0 3 0

Total Credits Required: 72

-- 3 credits in Social Science required

Course Descriptions

BME 202 Medical Instrumentation I

An introduction to the principles of operation and the clinical application of medical instrumentation. Equipment is placed on the electronic principles used in health devices including amplifiers, signal conditioning and power supplies. The integration of physics, chemistry, electronics and medicine in medical devices is examined. Hospital organization and the legal aspects of medical device repair are studied. Laboratory work includes experiments in electronics; medical equipment operation, preventive maintenance and repair.

Prerequisites: EET 101, EET 107, EET 108

Concurrent: BIO 165

BME 202 Medical Instrumentation II

A continuation of Medical Instrumentation I. Emphasis is placed on the operation of more sophisticated medical devices and systems; particularly those which are computer or microprocessor based. Laboratory work includes inspection and repair procedures for various types of equipment similar to that commonly found in operating rooms, intensive care units, clinical laboratories and various clinical diagnostic units.

Prerequisites: BME 201

Concurrent: EET 251

BME 254 Electronic Health Care Systems

(Intermediate Level)

Application of the principles learned in BME 202 and BME 203. Students work in a local hospital under the direct supervision of an experienced BME or Clinical Engineer. Emphasis is on the use of principles learned in lecture and laboratory to actual clinical situations.

Prerequisites: BME 201, BME 202

Concurrent: BME 203

Associate in Business Administration

Admission Requirements:

Subject Units Remarks
Mathematics 1 unit

- SequENTIAL (Integrated) Math 1 required. (Elementary Algebra)

Professor Margaret Porcillo, Acting Chairperson

Two degree programs are offered by the Business Administration Department, namely, an Associate in Science (A.S.) and an Associate in Applied Science (A.A.S.).

The A.S. degree program is designed for students planning to pursue their baccalaureate degree at a four-year college either on a full-time or part-time basis after graduating from Farmingdale. More courses in the Arts and Science areas are required which closely parallel typical programs at four-year colleges.

The A.A.S. degree program is designed for students planning to enter the business field upon graduation. Emphasis is placed on more business courses during the two years so as to prepare students to assume positions of responsibility in business and industry. Graduates find that the broad background of this program provides excellent preparation for the small business enterprise.

Graduates entering large corporations secure initial employment in such areas as production, personnel, auditing, accounting, selling, purchasing and advertising.

Both programs are identical for the first year. Through consultation with the Department Chairperson, or department faculty, a determination is made as to which degree program the student is to pursue. In the third and fourth semesters, students in each program select electives from the options of Accounting, Management, or Marketing. Sometimes a student is undecided as to which option is preferred. In such cases, electives are not mandated and the student has the freedom to make selections from any or all options. This affords the individual an opportunity for exploration before firming up career objectives.

For transfer students to this Department, a maximum of 15 transfer credits in business courses will be accepted. Transfer credits can be applied to any business courses required in either the A.S. or A.A.S. program, as long as they are 60 credits or more.

A.A.S. and A.S. Degree Programs

Program of Study

(For the first two semesters are the same for A.A.S. and A.S.)

Hours per Week Class Lab. Credit Hours
First Semester

EGL 101 Composition: Rhetoric 3 0 3
BUS 101 Accounting I 3 0 3
BUS 111 Business Organization 3 0 3
ECO 156 Principles of Economics (Micro) 3 0 3
PSY 131 Introductory Psychology 3 0 3
Physical Education Elective - 2 0 2

15 2 16

Second Semester

BUS 211 Principles of Management 3 0 3
BUS 102 Accounting II 3 0 3
BUS 131 Marketing Principles 3 0 3
MTH 102 Finite Math I or MTH 109 College Algebra 3 0 3
ECO 157 Principles of Economics (Macro) 3 0 3
BUS 203 Accounting Applications for Multicomputers 3 0 3

Total Credits: 66-68

* Student will select from business elective offerings in consultation with the Department or faculty advisor.

** MTH 141 (MTH 102 or MTH 109) or MTH 130 will not satisfy this requirement.
The following list of elective courses indicates whether the course pertains to Marketing, Management or Accounting. Many courses are directly related to more than one area.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Area(s)</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 202</td>
<td>Accounting II</td>
<td>M, Mg</td>
<td>3</td>
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<tr>
<td>BUS 101</td>
<td>Accounting I</td>
<td>A, Mg</td>
<td>3</td>
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<tr>
<td>BUS 271</td>
<td>Intermediate Accounting I</td>
<td>A</td>
<td>3</td>
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<tr>
<td>BUS 273</td>
<td>Cost Accounting</td>
<td>A, Mg</td>
<td>3</td>
</tr>
<tr>
<td>BUS 291</td>
<td>Investments</td>
<td>A, Mg</td>
<td>3</td>
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<tr>
<td>BUS 265</td>
<td>Office Management</td>
<td>A</td>
<td>3</td>
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<tr>
<td>BUS 111</td>
<td>Business Organization and Management</td>
<td>A, Mg</td>
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<tr>
<td>BUS 121</td>
<td>Business Mathematics</td>
<td>A</td>
<td>3</td>
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<tr>
<td>BUS 256</td>
<td>Sales Management</td>
<td>M</td>
<td>3</td>
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<tr>
<td>BUS 255</td>
<td>Management</td>
<td>M</td>
<td>3</td>
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<tr>
<td>BUS 297</td>
<td>Principles of Insurance</td>
<td>A, Mg</td>
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<tr>
<td>BUS 211</td>
<td>Principles of Management</td>
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<tr>
<td>BUS 202</td>
<td>Business Law I</td>
<td>A</td>
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<tr>
<td>BUS 251</td>
<td>Retailing</td>
<td>M, Mg</td>
<td>3</td>
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<tr>
<td>BUS 259</td>
<td>Public Relations</td>
<td>M, Mg</td>
<td>3</td>
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<tr>
<td>BUS 272</td>
<td>Business Administration</td>
<td>A, Mg</td>
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<tr>
<td>BUS 269</td>
<td>Personnel/Human Resources Management</td>
<td>A</td>
<td>3</td>
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<tr>
<td>BUS 277</td>
<td>Business Organization</td>
<td>A</td>
<td>3</td>
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<tr>
<td>BUS 250</td>
<td>Public Relations</td>
<td>M, Mg</td>
<td>3</td>
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<tr>
<td>BUS 225</td>
<td>Sales Management</td>
<td>M, Mg</td>
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**Group II—Business Administration**

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<th>Course Code</th>
<th>Course Title</th>
<th>Area(s)</th>
<th>Credits</th>
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<tr>
<td>BUS 200</td>
<td>Accounting Applications for Microcomputers</td>
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<tr>
<td>BUS 131</td>
<td>Marketing Principles</td>
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<tr>
<td>BUS 201</td>
<td>Honors Finance</td>
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<tr>
<td>BUS 230</td>
<td>Business Communications</td>
<td>A, Mg</td>
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<tr>
<td>BUS 221</td>
<td>Principles of Management</td>
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<tr>
<td>BUS 237</td>
<td>Accounting Principles</td>
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<td>BUS 255</td>
<td>Industrial Marketing</td>
<td>A</td>
<td>3</td>
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<tr>
<td>BUS 273</td>
<td>Cost Accounting</td>
<td>A</td>
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<td>BUS 211</td>
<td>Principles of Management</td>
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<tr>
<td>BUS 210</td>
<td>Accounting II</td>
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<tr>
<td>BUS 230</td>
<td>Accounting Applications for Microcomputers</td>
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<tr>
<td>BUS 255</td>
<td>Management</td>
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<td>BUS 210</td>
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**Course Descriptions**

The Business Administration Department offers honors designated courses on both the Freshman and Sophomore levels. The honors courses are intended to provide enriched course content for the more motivated student. Students pursuing honors work will have honors designation on their transcript for that course. Students completing at least 12 credits of Honors designated courses with a minimum grade of 3.0 in each Honors course will receive a Department Honors Certificate. Students completing at least 36 credits will be eligible for the Business Administration Certificate Program.

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BUS 233 Labor Grievance — Arbitration* To acquaint students with practical aspects of labor relations, covering major labor legislation and its impact on labor relations. Study and individual research on certain laws for class presentation will be required. Mandatory class participation; students will be conducted on a workshop basis. (3, 0) 3 credits

BUS 250 Consumer Behavior This course is designed to provide the student with a basic understanding of the consumer's behavior in the marketplace. It emphasizes the central role of the consumer in determining the fate of a firm's marketing effort. The course examines the contributions of the behavioral sciences to the evolving principles of consumer behavior. The course also explores how marketers are using these principles to influence consumer decisions. Prerequisite: BUS 131 (3, 0) 3 credits

BUS 256 Sales Management* This course emphasizes the creative selling techniques used by delivering sales presentations. The major problems of sales management in the distribution process are discussed by delivering sales presentations. (3, 0) 3 credits

BUS 257 Advertising Principles The fundamentals: principles, techniques, and procedures used in modern advertising. Copywriting, selection of media, layout and design, and the role of the advertising agency and the planning of an advertising campaign. Prerequisite: BUS 131 or Department approval (3, 0) 3 credits

BUS 259 Public Relations* Principles and practices of building good public relations between employer and employees, stockholders, consumers, suppliers and the press. The development of public relations as a top-management function. (3, 0) 3 credits

BUS 260 Business Statistics Formulation of decision problems and the use of data which serves as a basis for deciding upon a rational course of action. Statistical populations, decision-parameters, sample selection, probability theory, sampling distribution, risk, error, bias, and control charts. (3, 0) 3 credits

BUS 265 Industrial Purchasing* The principles and techniques of purchasing as they apply in actual practice today. The purchasing area will be treated as a separate functional segment in the business organization. Constructive aspects of purchasing with emphasis on long-term contracts and profit-making opportunities. (3, 0) 3 credits

BUS 269 Supervision* Skills in the techniques used in supervising people in business and industry, including duties and responsibilities of managers; relationships of work satisfaction, personality and productivity. (3, 0) 3 credits

BUS 271 Intermediate Accounting II A continuation of the study of the principles related to financial accounting topics and a study of recent developments in financial accounting required by the Financial Accounting Standards Board. Topics include the following: development of accounting standards; nature of the conceptual framework; assumptions and principles; review of the accounting profession continued study of the Income Statement, Balance Sheet and Statement of Cash Flows; tax value of money; cash and receivables, inventories; acquisition and disposal of property, plant and equipment; depreciation and depletion; intangible assets; long-term investment in Equity Securities and other assets. Prerequisite: BUS 101, 102 (3, 0) 3 credits

BUS 272 Cost Accounting* Principles of cost accounting applied to manufacturing industries. The use of cost data and procedures under job order, process cost and standard cost accounting systems as a tool of management. Prerequisite: BUS 101, 102 (3, 0) 3 credits

BUS 275 Principles of Taxes* This course covers fundamental principles of income taxation under the Internal Revenue Code, mid-rated regulatory court cases. Tax treatment of the individual is stressed, with emphasis on tax status, items of income included or exempted from gross income, adjustments to taxable income, and realization and recognition of capital gains and losses. Corporate, partnership and estate taxes are also covered. Students are taught to identify tax problems, and gain the skills necessary to solve those problems. (3, 0) 3 credits

BUS 280 International Business This course will cover the rapid growth of international business and major proliferation of multinational firms. Topics include the nature of international business and its historical development of global markets and marketing. (3, 0) 3 credits

BUS 291 Investments Examination of financial literature and facilities available as guides to the proper selection of security. The approach is designed for the individual, including a logical portfolio commonwealth with the financial resources of the individual. (3, 0) 3 credits

BUS 292 Business Law II A continuation of BUS 202 Business Law I with application of knowledge to sales, personal property, bankruptcy, securities, device contracts, partnerships, corporations, real estate, bankruptcy, and personal business. Prerequisite: BUS 202 or Department approval (3, 0) 3 credits

BUS 297 Principles of Insurance General principles, specific legal doctrines and common policy provisions relating to life, property, and casualty insurance; analysis of types of coverage available for the protection of assets and income on labor and business. (3, 0) 3 credits
BUS 298 Real Estate Law I
This is the first half of a two-semester Real Estate Law course offered to familiarize the layperson, investor, prospective real estate salesperson, and real estate broker with the real estate field. Successful completion of BUS 298 complies with Department of State requirements to take licensing test for salespersons. Successful completion of both BUS 298 and BUS 299 meets the requirements to take licensing test for real estate broker. Applicants must complete BUS 298 in order to be eligible to take BUS 299.

Prerequisite: BUS 298
3 credits

BUS 299 Real Estate Law II
This is the second half of a two-semester Real Estate Law course offered to familiarize the layperson, investor, prospective real estate salesperson, and real estate broker with the real estate field. Successful completion of BUS 298 complies with Department of State requirements to take licensing test for salespersons. Successful completion of both BUS 298 and BUS 299 meets the requirements to take licensing test for real estate broker. Applicants must complete BUS 298 in order to be eligible to take BUS 299.

Prerequisite: BUS 298
3 credits

BUS 301 Financial Accounting
This upper-division introductory course presents the fundamentals of financial accounting. The course is intended for students who have not previously completed accounting coursework at the collegiate level. It is open to students who have taken BUS 101, BUS 102, or equivalent courses.

Prerequisite: Junior or senior level standing.
3 credits

BUS 302 Managerial Accounting
This upper-division introductory course presents the fundamentals of managerial accounting. The course is intended for students without prior accounting and is open to students who have taken BUS 101, BUS 102, or equivalent courses.

Prerequisite: Junior or senior level standing.
3 credits

BUS 311 Organizational Behavior
This upper-division course presents the concepts of organizational behavior and structure as well as topics relating to motivation,领导 and process groups: group communication and dynamics; decision making; causes and resolutions of organizational conflicts; and factors pertaining to influence, power, and politics in organizations.

Prerequisite: BUS 211 or PSY 100/PSY 131
3 credits

BUS 320 International Marketing and Global Markets
This course will examine the method by which manufacturing products are introduced in international markets. Emphasis will be placed on the marketing of sophisticated, industrial products and marketing engineering product lines. Topics will include foreign market surveys and market research, joint ventures and establishing an overseas marketing and sales operations.

This course will involve actual student assignments in conjunction with the Small Business Development Center in determining the expansion of regionally produced manufacturing products into global markets.

Prerequisite: BUS 131
3 credits

BUS 321 International Law
This course studies the basic concepts and processes of the international legal system. The interaction of state, federal, and international law as well as the relationship of international law and the American legal system are explained. Particular attention is given to current problems faced by transnational and multinational political, social, economic, and technological forces influencing the evolution of international law.

Prerequisite: Junior or senior level standing.
3 credits

BUS 322 International Management
This course will examine the critical issues and practices of international management. Emphasis will be placed on the management of multinational corporations and worldwide developments. Topics will include planning, political risk, organizing, decision-making, and controlling as pertaining to international management and operations. Students will study human resource/personnel issues concerning selection and repatriation, communication skills, and labor relations in a global context. Ethics and social responsibility as well as future trends of international management will be explored. The course will include student assignments and case studies examining the issues affecting small businesses expanding operations into foreign markets.

3 credits

BUS 330 Cost Management Systems
This upper-level course pertains to the key elements of cost management systems of manufacturing and service organizations. Topics covered include: using cost drivers and activity-based costing eliminating non-value-added activities; costing product (service) life cycles; and justifying capital expenditures for computer integrated manufacturing systems.

Prerequisite: Two semesters of accounting
3 credits

Chemistry Department

Dr. Wesharat Purandare, Chairperson

The Chemistry Department offers courses to students who are planning to enter a baccalaureate program and/or to those who wish to pursue more immediate employment.

A program which includes an emphasis in chemistry would be applicable to the following career areas: chemistry, chemical engineering, medical laboratory technology, physics, biology, veterinary medicine, forensic science, and other professions which require a foundation in science.

A one semester course in chemistry which is designed to be translatable to a baccalaureate program, may be taken under the auspices of either the Engineering Science or Liberal Arts and Sciences Department (consult the specific departments for details).

In its supportive role, the Chemistry Department offers courses to students enrolled in the following areas (consult the department for details): Biomedical Engineering Technology, Business Administration, Computer Science, Dental Hygiene, Engineering Technology (upper division), Horticulture, Office Management, Veterinary Science Technology, and Undecided Major/Pathways.

Course Descriptions
Please Note: Both theory and laboratory components must be completed simultaneously in order to receive credit for any chemistry course.

CHM 090 Introduction to Chemistry
A one semester survey of the fundamentals of chemistry, including laboratory. This course is specifically designed for those whose backgrounds do not include a high school chemistry experience.

Prerequisite: high school Sequential (Integrated) Math I
3 credits

CHM 111 Chemistry and the Public Interest
A one semester course, designed for non-science majors, that will develop an understanding of and appreciation for the methods of chemistry and its role in today's scientifically sophisticated society. This course assumes no previous science background and will concern itself with the history and philosophy of science and the scientific method, the nature of substances, energy problems, biochemistry, foods and drugs and pollution.

Prerequisite: high school Sequential (Integrated) Math I
3 credits

CHM 112 Chemistry and the Public Interest Laboratory
A one semester laboratory course for non-science majors designed to provide students with experience in the methods of chemistry. Students will investigate the properties of substances, perform chemical analysis and substance identification, synthesize a drug and a natural product, and test manufacturers' claims for consumer products.

Prerequisite: high school Sequential (Integrated) Math I
1 credit

CHM 117 Science: Discovery and Progress
A one semester course designed for non-science majors which acquaints the student with the principles of science. The course traces the evolution of modern technology from a chemical perspective. The application of the scientific method in helping to solve the problems of mankind is discussed.

Prerequisite: CHM 150 or equivalent
3 credits

CHM 118 Science: Discovery and Progress Laboratory
A one semester laboratory course for non-science majors designed to provide students with experience in the methods of science. Students will investigate the physical and qualitative properties of substances, the laws of nature, and applications of scientific principles that relate to technology.

1 credit

CHM 120 Chemistry
A one semester course in applied general chemistry with laboratory designed for students who have previous chemistry background.

Prerequisite: high school Sequential (Integrated) Math I
3 credits

CHM 124 Principles of Chemistry
A one semester course in general chemistry, primarily designed for students planning careers as technicians. Emphasis is placed on qualitative applications of chemical concepts. Topics include: measurement, matter and energy, nomenclature, chemical arithmetic, chemical equations, the states of matter, solutions, equilibrium, kinetics, atomic structure and bonding.

Prerequisite: high school Sequential (Integrated) Math I
3 credits

CHM 140 Introduction to General, Organic & Biochemistry
A one semester course with laboratory designed primarily for Dental Hygiene and Mortuary Science students. Basic principles of organic and biochemistry are covered with emphasis on their applications to health science. Topics include measurement, states of matter, bonding theory, solutions, acids, buffers and pH, and the structure and function of carbohydrates, lipids, sterols, amino acids and proteins and a molecular approach to enzymatic action, digestion, metabolism and nutrition.

Prerequisite: high school Sequential (Integrated) Math I and high school chemistry
4 credits

CHM 150 College Chemistry I
The first part of a two semester sequence in general and inorganic chemistry for students lacking a strong science/math background. This is a transferable chemistry course with laboratory and will consider the quantitative and qualitative aspects of scientific measurement, states of matter, the nature of gases, liquids and solids, atomic theory, chemical bonding, molecular structure and properties, stoichiometry, kinetics and theories of acids and bases.

Prerequisite: high school Sequential (Integrated) Math I and high school chemistry
4 credits

CHM 151 College Chemistry II
A continuation of College Chemistry I. This course includes topics in analytical chemistry, and quantitative aspects of scientific measurement. Emphasis will be placed on the chemical properties of elements, compounds, and mixtures, and the use of scientific methods and techniques in the chemical sciences.

Prerequisite: CHM 150 or equivalent
3 credits
The first part of a two semester physical/inorganic sequence. Emphasis is strongly theoretical and quantitative. CHM 155 General Chemistry II is a continuation of CHM 154, including laboratory. Topics include: acids and bases, chemical equilibrium, ionization constants, electrochemistry, thermodynamics, hybrid atomic orbitals, molecular orbitals, and chemical kinetics. Corequisite: MTH 105 recommended.

CHM 280 General Chemistry I
A one semester biochemistry course designed primarily for medical laboratory technicians, animal laboratory technicians, and biological laboratory technicians. The fundamentals of important carbohydrates, lipids, amino acids, proteins, and nucleic acids are studied. Metabolic pathways and their interactions, such as glycolysis, TCA, electron transport system, tautomer, and beta-oxidation are also discussed. Emphasis is also placed on chemical tests for important biochemical substances. Important enzymes, cofactors, and vitamins are presented. Laboratory work includes some clinical applications of the above topics. Prerequisite: CHM 160 or CHM 271.

CHM 282 Applied Chemical Instrumentation
This course is laboratory oriented. The student will be introduced to the theory and practice of modern chemical instrumentation, including, but not limited to: GC, UV, IR, NMR, Electrophoresis, HPLC, Polarimetry and pH. Data treatment including Graphing Techniques, Statistical Analysis and Scientific Report Writing will be covered.

CHM 285 Physiological Chemistry
This course consists of the discussion of carbohydrate, protein and lipid metabolism, chemistry of liver, kidney and respiratory functions, role of enzymes, vitamins and hormones, monitoring of therapeutic drugs, and drug interactions and toxicities. The laboratory experience focuses on methodologies and interpretation of diagnostic tests.

CHM 322 Introduction to the Chemistry of Materials
This course is designed to be a continuation of CHM 270, Critical Reading, and includes an independent course, with further development of reading and study skills as needed. Areas of emphasis will be remembering information, test-taking strategies, organizing data, interpreting and responding to the author's message, vocabulary and comprehension development.

Civil Engineering Technology
(See Construction Engineering Technology)

SUNY Farmingdale • 1994-1995 College Catalog
Associate in Applied Science Degree in Computer Information Systems

Admission Requirements:

- A minimum of 2.0 GPA in Data Processing courses, including those in their stead.
- Acceptable Data Processing electives should be chosen from among DPR 145, DPR 196, DPR 266, DPR 270 and DPR 255 (or DPR 215).

A.A.S. Degree

Program of Study

<table>
<thead>
<tr>
<th>Hours per Week</th>
<th>Credit</th>
<th>First Semester</th>
<th>Class Lab. Hours</th>
</tr>
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<tbody>
<tr>
<td>DPR 100</td>
<td>3</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>DPR 120</td>
<td>3</td>
<td>Programming</td>
<td>3</td>
</tr>
<tr>
<td>ECO 150</td>
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<td>3</td>
</tr>
<tr>
<td>EGL 101</td>
<td>3</td>
<td>Composition: Rhetoric</td>
<td>3</td>
</tr>
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<td>MTH 135</td>
<td>3</td>
<td>Introduction to Calculus I</td>
<td>3</td>
</tr>
<tr>
<td>BUS 111</td>
<td>3</td>
<td>Business Organization and Management</td>
<td>3</td>
</tr>
<tr>
<td>BUS 201</td>
<td>1</td>
<td>Financial Accounting</td>
<td>1</td>
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<tr>
<td>BUS 240</td>
<td>3</td>
<td>Business Statistics</td>
<td>3</td>
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</table>

Total Credits: 63

Course Descriptions

See Business Administration Department and Data Processing Department for course descriptions.

Part-Time Program

A.A.S. Degree

A minimum of 62 credits is required

Group I — General Education

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Total Credits: 41

* Acceptable mathematics courses include MTH 102, MTH 103, MTH 105, and all higher numbered mathematics courses from MTH 129 through MTH 253.

**Acceptable Data Processing electives should be chosen from among DPR 145, DPR 196, DPR 266, DPR 270 and DPR 255 (or DPR 215).

A.A.S. Degree

A minimum of 62 credits is required

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Total Credits: 41

* MTH 109 should be taken by those students who lack sufficient background for MTH 135; if science is chosen, course must have laboratory.

* Efficent (Arts and Sciences) 6 credits to include: English, Foreign Languages, Humanities, Mathematics, Science and Social Sciences (History, Political Science, Psychology, Sociology and Anthropology).

Part-Time Program

A.A.S. Degree

A minimum of 29 credits is required

A Certificate program in Computer Information Systems is available for those who do not wish to work toward a degree. The following is a list of courses which a student must take in order to earn the Certificate. Students with experience in the computer field may be excused from specific required courses, but will have to take replacement courses in their stead.

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Total Credits: 21

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Part-Time Program

A.A.S. Degree

A minimum of 62 credits is required

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A.A.S. Degree

A minimum of 62 credits is required

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* Efficent (Arts and Sciences) 6 credits to include: English, Foreign Languages, Humanities, Mathematics, Science and Social Sciences (History, Political Science, Psychology, Sociology and Anthropology).

Part-Time Program

A.A.S. Degree

A minimum of 29 credits is required

A Certificate program in Computer Information Systems is available for those who do not wish to work toward a degree. The following is a list of courses which a student must take in order to earn the Certificate. Students with experience in the computer field may be excused from specific required courses, but will have to take replacement courses in their stead.

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Total Credits: 21

* Applicants must have a minimum of 62 credits to include: English, Foreign Languages, Humanities, Mathematics, Science and Social Sciences (History, Political Science, Psychology, Sociology and Anthropology).
Computer Science

Associate in Science Degree
Admission Requirements:

Course Descriptions

Part-Time Program

A minimum of 60 credits is required

Group I — General Education

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<tr>
<td>EGL 101 Composition: Rhetoric</td>
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<td></td>
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<tr>
<td>EOL 102 Composition: Literature</td>
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<td></td>
</tr>
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<td>MTH 150 Analytic Geometry</td>
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<td></td>
</tr>
<tr>
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<td>4 credits</td>
<td></td>
</tr>
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<td></td>
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<td>MTH 245 Linear Algebra</td>
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</tr>
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<td>PHY 143 Physics I</td>
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<td>PHY 144 Physics II</td>
<td>4 credits</td>
<td></td>
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Group II — Computer Science

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<tr>
<td>CMP 125 Discrete Structures I</td>
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<td></td>
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<tr>
<td>CMP 130 Principles of Computing</td>
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<td></td>
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<td>CMP 227 Data Structures</td>
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<tr>
<td>CMP 255 Programming Languages</td>
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Course Descriptions

CMP 100 Principles of Computing

A rigorous approach to top down programming design. Topics will include problem statement, nested logic, formatting, procedures, data types, re入园, search, arrays and recursion. Students are expected to demonstrate a minimal level of programming skill in a language such as BASIC or FORTRAN.

Prerequisite: Permission of instructor

(4, 0) 4 credits

CMP 101 Computers and Programming

Provides an understanding of a computer at the machine language level of detail. A study of computer structures, machine languages, assembler languages, addressing techniques and macro instructions. Students will program in PASCAL language.

(4, 0) 4 credits

CMP 105 Data Structures

The representation and implementation of complex data types and their applications to programming problems and program design. Topics to include: arrays and structured variables, stacks and queues in both sequential and dynamic storage representations, trees and graphs, recursion, sorting and searching methods, hashing. The PASCAL language will be used to support the study of these structures.

Prerequisite: CMP 100 or the equivalent

(4, 0) 4 credits

CMP 110 Computer Programming with Applications

Programming using PASCAL with applications from various disciplines presented. The topics stressed are programming techniques, program structure, debugging and verification of programs.

(4, 0) 3 credits

CMP 126 Discrete Structures I

Foundations of Computer Science

A course to develop skills in analytical thinking and problem solving: logic sets, induction, relations and functions. Representation of algorithms: problem analysis and understanding, pre and post-condition, inputs and verification, introduction to sorting and searching algorithms. Recursion and recursive algorithms. Graphs and their applications.

(4, 0) 4 credits

CMP 130 Principles of Computing

Students are introduced to problem solving, algorithmic design and program development. Concepts of data types, structured programming, procedural abstraction and program testing are presented in the context of a high-level programming language. Through case studies and laboratory work, students will analyze problems, design, test and debug programs to solve these problems and document their work.

Prerequisite: CMP 125

(2, 3) 3 credits

CMP 200 Discrete Structures

A course dealing with data and mathematical structures commonly used in the organization and manipulation of information by computers. Included will be an analysis of sets, relations, functions, propositional logic, graphs and trees.

(2, 0) 3 credits

CMP 202 Assembly Language

Computer structure, machine and assembly language instruction execution, addressing techniques, and digital representation of data. Assembly language programs will be written and run.

(3, 0) 3 credits

CMP 203 FORTRAN and/or PL/I — a Second Language

Computation and data manipulation using FORTRAN and/or PL/I for students who have a background in PASCAL or BASIC. Topics will include precision and accuracy, debugging methods and dumps, multidimensional arrays, sorting and searching and mapping, alphanumeric manipulations.

Prerequisite: Satisfactory completion of an introductory computer course.

(2, 0) 3 credits

CMP 206 Numerical Methods

Programming for successive approximation, error analysis, numerical integration, interpolation, polynomials, simultaneous equations, inverse of matrices. Students will use a high level language such as BASIC or FORTRAN. Prerequisite: MTH 252 and MTH 245 and a working knowledge of at least one assembly language such as FORTRAN, PL/I or PASCAL.

(3, 0) 3 credits

CMP 217 Data Structure

The representation and implementation of complex data types and their applications to programming problems and program design. Topics include: arrays and structured variables, stacks and queues in both sequential and dynamic storage representations, trees and graphs, recursion, sorting and searching methods, hashing. The PASCAL language will be used to support the study of these structures.

Prerequisite: CMP 125

(3, 0) 3 credits

CMP 250 Discrete Structures II — Combinatorics and Graph Theory

Permutations, combinations and their properties and applications.

Graphs: definition and examples. Prerequisites: CMP 126 and MTH 252 or MTH 245 and a working knowledge of at least one assembly language such as FORTRAN, PL/I or PASCAL. (3, 0) 3 credits

Prerequisites: Satisfactory completion of an introductory computer course.

(2, 0) 3 credits

CMP 255 Principles of Programming Languages

This course is intended to provide students with criteria needed for evaluating computer programming languages. In instruction in programming in the BASIC language will include the solution of problems drawn from various engineering fields. The BASIC language will be used for the presentation of data. Assembly language programs will be required of the students.

Prerequisite: CMP 203

(3, 0) 3 credits

CMP 256 Pascal with Data Structures

Intended for students with a strong background in some high-level language such as BASIC or FORTRAN. This course rapidly develops the formulation in Pascal for the principal programming techniques: assignment, relational, repetition, decision and I/O. Then, the more advanced notions of problem solving and programming in Pascal are developed more carefully. These topics include: structured programming, procedures, recursion, linked lists and dynamic variables as applied to the Pascal data structures. Working Turbo Pascal programs will be required of the students.

(3, 0) 3 credits

Computing Graphics Department

Professor Edward Garcia, Chairperson

The Computing Graphics department instructs students in the traditional skills of manual drafting as well as computer graphic design, using advanced computer-aided drafting systems. The department provides coursework in traditional drafting and computer graphics for the major engineering fields: Aerospace, Automotive, Construction/Architectural, Electrical/Electronics, and Mechanical/Manufacturing.

Course Descriptions

GPH 103 Technical Drafting

This is a traditional manual drafting course including orthographic projection, dimensioning, auxiliary projection and pictorial representation. Emphasis will be placed on drafting techniques including lettering, line quality, accuracy and appearance.

(3, 0) 1 credit

GPH 104 Introduction to Computer Graphics

This is a laboratory course to provide basic understanding and skills in the College's computer graphics CAD software. (2, 0) 1 credit

GPH 105 Computer Applications

A course combining elementary computer programming and utilization of external software for engineering applications. Instruction in programming in the BASIC language will include the solution of problems drawn from various engineering fields. The BASIC language will be used for the presentation of data. Assembly language programs will be required of the students.

Prerequisite: CMP 100 or the equivalent

(1, 0) 2 credit

GPH 106 Basic Programming

This is an introductory course on computer programming in the BASIC language. Students will be assigned programs to write for typical technical problem-solving applications.

(2, 0) 1 credit

GPH 107 Surveying Instruments and Mapping

To make students familiar with surveying instruments, e.g., tape, level, surveyor’s compass, theodolite. Students will prepare drawings from the readings from the surveying instruments.

(2, 0) 3 credits

GPH 109 Computer Technology

A laboratory computer graphics course for student who have a basic understanding and introductory skill in the use of AutoCAD introduction. Prerequisite: PRE105 or equivalent AutoCAD introduction.

(2, 0) 1 credit

GPH 114 Technical Graphics

A developmental course in graphics to provide a general background in drafting. The student is instructed in both drafting and instrument drafting.

(0, 0) 1 credit
GPH 115 Computer Applications
This is an introductory course to instruct students in the use of the scientific hand calculator and personal computer. Basic mathematical operations, trigonometric functions and programming will be covered on the calculator and personal computer, an introduction to PC hardware, PC operating system (DOS) and applicable computer software will be covered.

GPH 123 Intermediate Computer Graphics
Continuation of GPH 104. Advanced topics in computer graphics including advanced dimensioning. Attributes and 3-D models, exercises are drawn from various engineering disciplines.
Prerequisite: GPH 104
(1, 2) 2 credits

GPH 205 Construction Computer Graphics
Introduction to structural working drawings. From given data, representative engineering working drawings and shop detail drawings for a steel building are developed. The latter part of the semester is devoted to familiarization with reinforced concrete working drawings and details. ASC and AEC detailing standards are followed for steel and concrete. This course will utilize computer graphics techniques.
Prerequisite: GPH 123
(1, 2) 2 credits

GPH 207 Advanced Technical Drafting
Continuation of GPH 103 Technical Drafting. Advanced topics in technical drafting covering descriptive geometry, geometry dimensioning and tolerancing and working drawings.
Prerequisite: GPH 103
(1, 2) 2 credits

GPH 211 Application and Maintenance of CAD Software
This is an introductory course to make students familiar with PC operations, basic trouble shooting, routine preventive maintenance and installation of software.
(1, 2) 2 credits

GPH 214 Architectural Computer Graphics
Introduction to Architectural Computer Graphics including the topics of site plan, floor plans, dimensioning, elevations, sections and details, and 3-D architectural drawing.
Prerequisite: GPH 123
(1, 2) 2 credits

GPH 215 Electronic Drafting
Graphical representation of electronic and electrical systems. Electrical and electronic symbols and the construction of circuit diagrams will be included. Examples of printed circuit and integrated circuit diagrams will be introduced. Computer graphics methods for circuit layout are incorporated into this course.
(1, 2) 1 credit

GPH 223 Advanced Computer Graphics
Continuation of GPH 213. Advanced topics in computer graphics including modeling with 3-D Studio, still imaging, animating and presentations.
Prerequisite: GPH 223
(1, 2) 2 credits

GPH 250 Computer Graphics Project
Under the direction of Department faculty, each student will undertake to create a complete set of drawings using computer graphics. Projects may be drawn from the engineering field of the student's choice and may be a machine, a structure or an electrical device.
Prerequisite: GPH 223
(1, 3) 3 credits

GPH 255 Desktop Publishing for Engineering Graphics
This is a hands-on application course for engineering and technical drafting students. Typical engineering proposals for an imaginary engineering office will be prepared. Also, a technical manual with CAD drawings will be prepared on a Xerox's Ventura Desktop Publishing software. Desktop publishing on a Word processing program, such as WordPerfect will also be utilized.
(1, 2) 2 credits

GPH 300 Computer Aided Design
This is a theory and laboratory course which introduces 3-D models in wire frame, surfaces, surface of revolution and solids. The students will also learn to prepare 2-D multiview drawings from 3-D models. Analysis of 3-D models consists of mass properties, centroids, and moment of inertia.
Prerequisites: GPH 103 and GPH 104 or equivalent in Computer Graphics
(1, 2) 2 credits

Construction / Architectural Engineering Technology

Associate In Applied Science Degree

Admission Requirements:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Units</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>2 units</td>
<td>Sequential (Integrated) Math 1, 2 required. (Elementary Algebra and either Plane Geometry or Intermediate Algebra)</td>
</tr>
<tr>
<td>Science</td>
<td>1 unit</td>
<td>A science course with associated laboratory required; Chemistry or Physics recommended. *</td>
</tr>
</tbody>
</table>

Dr. Amitabha Bandyopadhyay, Chairperson

The imagination of the architect working with the ever increasing structural knowledge and ingenuity of the engineer has produced a multitude of the world's most unique buildings. The vast industry of building materials supplies the designer with a nearly unlimited variety of materials and structural assemblies.

The courses in the building construction curriculum are designed to give a basic understanding of building technology. A solid foundation in mathematics, together with knowledge of materials and methods of construction, are complemented with technical studies in planning, designing, surveying, drafting, estimating, and inspecting. Graduates are engineers or technicians prepared for many types of supervisory and technical employment positions in the building industry.

This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology.

Typical Employment Opportunities

Architectural Designer
Assistant Surveyor
Architectural Drafter
Engineering Aide
 Structural Detailer
Estimator
Contractor:
Materials Estimator
Building Inspector
Materials Tester

Program of Study

<table>
<thead>
<tr>
<th>Week</th>
<th>Hours per</th>
<th>Class</th>
<th>Lab</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CON 103 Surveying</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CON 111 Graphics I</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CON 161 Materials and Methods of Construction I</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
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<tr>
<td>CON 164 Applications of Programming</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>MTH 129 Technical Math</td>
<td>4</td>
<td>4</td>
<td></td>
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<tr>
<td>EGL 101 Composition: Rhetoric</td>
<td>3</td>
<td>0</td>
<td>3</td>
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</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CON 163 Site Planning and Construction Surveying</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CON 165 Graphic Design</td>
<td>1</td>
<td>2</td>
<td>2</td>
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<tr>
<td>CON 162 Materials and Methods of Construction II</td>
<td>1</td>
<td>2</td>
<td>2</td>
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<tr>
<td>CON 102 Surveying</td>
<td>1</td>
<td>3</td>
<td>3</td>
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<tr>
<td>MTH 130 Technical Calculus</td>
<td>4</td>
<td>4</td>
<td></td>
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<tr>
<td>EGL 102 Composition Literature</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

SUNY Farmingdale • 1994-1995 College Catalog
CON 103 Surveying
The development of skills in the use of the basic surveying instruments - tape, level, transit. Trigonometric and differential leveling and cross-sectioning. Azimuth, bearing and angle determination by repetition procedures. Angular closures. Stadia and stadia reduction of inclined sights, topographic mapping by transit and plan table methods.

CON 106 Statics
This is a basic course in Statics. The main objective of this course is to provide the student with a basic understanding of the principles of statics. Topics such as resultant of a force, equilibrium of forces, moments, couples, analysis of simple trusses, centroids, center of gravity, moments of inertia and friction are covered in this course.

CON 111 Graphics I
To develop student's abilities in lettering, technical sketching, drafting and the use of drafting instruments. The fundamentals of orthographic projection and pictorial drawings develop the student's abilities to visualize and describe objects and structures graphically.

CON 121 Graphics II
To continue the development of the graphic skills from Graphics I to include one and two point perspective drawing and an extensive use of computer-aided drawing on AutoCAD.

CON 141 Blueprint Reading
Familiarization with reading and interpreting architectural plans, elevations, sections; including reading of architectural and engineering sales, projection views dimensions, symbols, abbreviations, structural and architectural; practical practice will be given in the interpretation of both residential house plans and industrial or commercial type buildings.

CON 163 Site Planning and Construction Surveying

CON 164 Applications of Programming
The use of commercially prepared programs in surveying and technology as well as the actual writing and execution of programs for the programmable calculator; extensive hands-on experience is emphasized.

CON 205 Strength of Materials
This course introduces the concepts of stress, strain, tension, bending and shear stresses. Also elasticity, stress and moment diagrams for beams, moment of inertia of irregular sections, thermal and combined stresses are included. Laboratory demonstration of experiments and testing equipment are emphasized.

CON 207 Elements of Strength of Materials
Introduces to the concepts of stress, strain, bending and shear stresses, including elasticity, stress and moment diagrams for beams, moment of inertia of irregular sections, thermal and combined stresses. Laboratory demonstration of experiments and testing equipment are included.

CON 220 Elements of Structures
Application of strength of materials to elementary structural design in steel and concrete. Elasticity theory in steel is emphasized, with an introduction to ultimate strength in concrete. Loadings and structural elements commonly encountered in highways and bridge work are used for analysis and design. Latest codes are used.

CON 221 Introductory Structures
An overview and introduction to structures and their use in buildings. Systematic treatment of all the major structural elements used mainly in a building context. Discussion of design principle. Includes steel, concrete, and timber design.

CON 251 Architectural Design I
A study of the development of building design from the Hellenic Period through the major historical periods to the present. Emphasis is on the evolution of the forms derived from architectural technologies of the periods surveyed.

CON 263 Building Codes and Zoning Regulations
An introduction to the basic concepts of the New York State Uniform Fire Prevention Code, Energy Code and Building Code. Emphasis will be local on local government land use controls and how they are implemented, as well as county and state controls over construction projects.

CON 264 Highway Construction Materials
Properties of basic materials used in highway and bridge construction. The materials to be studied are on-site, aggregates, concrete, steel, and asphalt. The physical parameters which contribute to material performance are studied in detail. Quality control procedures and construction methods required for successful use of materials are presented.

CON 270 Rendering and Model-Building
Development of practical drafting exercises and preparation of models. Emphasis on the presentation of research notes, preliminary studies and architectural renderings, and a model of this project.

CON 274 Construction Estimating
Development of a systematic procedure to take off quantities from working drawings for a typical project. Current wage rates and material costs, percentages, proportions and selection of labor costs. Estimating and specification writing from working drawings.

CON 275 Construction Estimating
Development of a systematic procedure to take off quantities from working drawings for a typical project. Current wage rates and material costs, percentages, proportions and selection of labor costs. Estimating and specification writing from working drawings.
Criminal Justice – Law Enforcement

Associate in Science Degree

Admission Requirements:

**Subject** | **Units** | **Remarks**
--- | --- | ---
Mathematics | 2 | 2 units Sequential (Integrated) Math
| | | 1, 2 Required (Elementary Algebra plus Plane Geometry or Intermediate Algebra)
Science | 2 | Laboratory Biology Required

Professor John Kostanek, Chairperson

The Criminal Justice program is designed to develop ongoing professional competencies in police operations and management and students have the opportunity to interact with a faculty who represent a wide spectrum of prior law enforcement experience and expertise as well as scholarly achievements, including: authorship of textbooks and articles in professional and related publications; papers read before learned societies; and technical assistance to the National Institute of Justice. The program is supported by modern laboratory facilities housing scientific and analytical technology with which to identify and individuate crime scene evidence; sophisticated computer systems and software programs for crime trend mapping and modus operandi analysis in crime control; and state-of-the-art sensor systems including imaging sensors with which to design and build the crime prevention systems of the future.

SUNY Farmingdale and SUNY Old Westbury offer a coordinated program in which graduates with an A.S. degree in Criminal Justice may enter Old Westbury as juniors and earn a B.S. degree in Criminology. Criminal Justice may enter Old Westbury as juniors and earn a B.S. degree in Criminology.

Criminal Justice

**Program of Study**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Course</th>
<th>Credit</th>
<th>Lab.</th>
<th>Class</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 100</td>
<td>Introduction to Criminal Justice</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>CRJ 101</td>
<td>Law Enforcement and Community Relations</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>EGL 102</td>
<td>Composition: Rhetoric</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>MTH 102</td>
<td>Finite Mathematics</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>30</td>
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<tr>
<td>MTH 110</td>
<td>Statistics</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>SOC 122</td>
<td>Introductory Sociology</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
</tbody>
</table>

A minimum of 60 credits is required

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course</th>
<th>Credit</th>
<th>Lab.</th>
<th>Class</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 103</td>
<td>Organized Crime</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>EGL 102</td>
<td>Composition: Literature</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>POL 166</td>
<td>State and Local Government</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>BIO 101</td>
<td>General Biology</td>
<td>4</td>
<td>2</td>
<td>15</td>
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</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
<th>Lab.</th>
<th>Class</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 200</td>
<td>Criminal Investigation</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 203</td>
<td>Criminology</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 204</td>
<td>Criminal Law</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSY 131</td>
<td>Introductory Psychology</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>SOC 223</td>
<td>Social Issues and Institutions</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

| SOC 224 | Urban Sociology | 3 | 0 | 3 | 15 |
| SOC 225 | Sociology of Marriage and the Family | 3 | 0 | 3 | 15 |

**Fourth Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit</th>
<th>Lab.</th>
<th>Class</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRJ 201</td>
<td>Criminalistics</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 202</td>
<td>Criminal Procedure</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>CRJ 211</td>
<td>Law Enforcement Administration</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>SOC 229</td>
<td>Minorities in American Society</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSY 235</td>
<td>Abnormal Psychology</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education Elective</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
</table>

**Total Credits: 61**

**Part-Time Program**

Thirty credits, as set forth in Group II – Criminal Justice degree program requirements, are required of all certificate candidates.

**Course Descriptions**

**CRJ 100 Introduction to Criminal Justice**

Philosophical and historical background of policing throughout the free world; special emphasis is placed on the heritage of British and American policing, the governmental role of law enforcement in society; administration of American justice at all levels of government.

**CRJ 101 Law Enforcement and Community Relations**

Emphasis will be placed on the numerous and complex factors involved in the area of human relations as they affect law enforcement. An examination of prejudices, myths, and discrimination, how to control them, and their impact in law enforcement.

**CRJ 103 Organized Crime**

An introduction and an orientation to the causes and treatment of juvenile delinquency; and examination of the methods of handling juvenile offenders, including interviewing techniques, screening, and referrals to social agencies.

**CRJ 105 Juvenile Delinquency**

... (continues)

**CRJ 203 Criminology**

The historic roots of organized crime; the causal factors of organized crime in American society; the activities, organization and economics of organized crime; the problems of corruption and graft; and the development of strategies to control the activities of organized crime.

**CRJ 204 Criminal Law**

An introduction to criminal investigation, technical methods used at the crime scene; development of clues, identification of suspects; criminal investigation procedures including the theory of an investigation; conduct at crime scenes; collection and preservation of physical evidence, analysis of the elements that constitute all crimes. Includes use of profile analysis and modus operandi data base software.

**CRJ 205 Criminal Procedure**

Rules of evidence of particular importance at the operational level in law enforcement, with emphasis on criminal procedure in important areas such as arrest, force, and search and seizure. Particular emphasis will be placed on the New York State Penal Law and Criminal Procedure Law. Computer record keeping and search using large data banks will be included.

**CRJ 207 Criminalistics**

Introduction to criminal investigation, technical methods used at the crime scene; development of clues, identification of suspects; criminal investigation procedures including the theory of an investigation; conduct at crime scenes; collection and preservation of physical evidence, analysis of the elements that constitute all crimes. Includes use of profile analysis and modus operandi data base software.

**CRJ 211 Law Enforcement Administration**

Principles of organization and management in law enforcement and public safety. The evaluation of administrative devices. Analysis and evaluation of the major problems in police administration, organization problems, and policy planning and research. Software data retrieval and mapping programs will enhance planning and research activities.

**CRJ 201 Criminalistics**

The role of the Crime Laboratory in the law enforcement organization; scope of the criminalistics operation; organizational orientation of the criminalistics laboratory. The Forensic field technician in police operations is emphasized.
## Data Processing — Computer Technology

**Associate in Applied Science Degree**

**Computer Technology**

**Data Processing** — Mathematics 2 units

**Computers and information-processing systems pervade our lives. They are increasingly becoming part of the foundation for supporting our technological industry and society. It will be increasingly difficult to qualify as a broadly-educated person in this decade or the future without some knowledge of computers and the interaction of computers and information-processing systems. A broad, basic function is coupled with electronic spreadsheet application packages, such as Lotus 1-2-3. This software will be used to develop diverse applications to solve typical business problems.**

**Prerequisite:** DPR 100 or Department approval

### Course Descriptions

<table>
<thead>
<tr>
<th>Courses Listed</th>
<th>Offered to Students Majoring in Computer Information Systems and Data Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPR 100 (or DPR 191)</td>
<td>is a prerequisite for all courses except DPR 120 and DPR 136. It is a corequisite for DPR 125.</td>
</tr>
<tr>
<td>DPR 100 Introduction to Computers</td>
<td>3 credits</td>
</tr>
<tr>
<td>DPR 120 Foundations of Computer Programming</td>
<td>3 credits</td>
</tr>
<tr>
<td>DPR 136 Programming in COBOL-I</td>
<td>3 credits</td>
</tr>
<tr>
<td>DPR 146 Programming in Assembly I</td>
<td>3 credits</td>
</tr>
<tr>
<td>DPR 237 Intermediate Cobol Programming</td>
<td>3 credits</td>
</tr>
<tr>
<td>DPR 265 Operating Systems</td>
<td>3 credits</td>
</tr>
<tr>
<td>DPR 215 UNIX Operating System</td>
<td>3 credits</td>
</tr>
<tr>
<td>Data Processing Electives (3)</td>
<td>3 credits</td>
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</tbody>
</table>

### Typical Employment Opportunities

**Program of Study**

<table>
<thead>
<tr>
<th>Program</th>
<th>Business Systems Analyst</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>First Semester</th>
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</thead>
<tbody>
<tr>
<td>EGL 101 Composition: Rhetoric</td>
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<tr>
<td>DPR 100 Introduction to Computers</td>
</tr>
<tr>
<td>DPR 120 Foundations of Computer Programming</td>
</tr>
<tr>
<td>DPR 136 COBOL I</td>
</tr>
<tr>
<td>Math*</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGL 102 Composition: Literature</td>
</tr>
<tr>
<td>ECC 106 Principles of Economics</td>
</tr>
<tr>
<td>DPR 237 Intermediate Cobol Programming</td>
</tr>
<tr>
<td>DPR 265 Data Base Programming</td>
</tr>
<tr>
<td>Math*</td>
</tr>
<tr>
<td>Physical Education Elective</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Third Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPR 146 Assembly I</td>
</tr>
<tr>
<td>DPR 196 C-Language</td>
</tr>
<tr>
<td>DPR 270 Data Structures</td>
</tr>
<tr>
<td>Business Elective</td>
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<tr>
<td>Social Science Elective</td>
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<table>
<thead>
<tr>
<th>Fourth Semester</th>
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<tbody>
<tr>
<td>DPR 255 Operating Systems</td>
</tr>
<tr>
<td>DPR 260 Data Base Programming</td>
</tr>
<tr>
<td>BUS 101 Accounting</td>
</tr>
<tr>
<td>Data Processing Elective*</td>
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<tr>
<td>Social Science Elective</td>
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</table>

**Total Credits: 61**

### Part-Time Program

A minimum of 60 credits is required

**Group I — General Education**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>English (EGL 101, EGL 102)</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics*</td>
<td>6</td>
</tr>
<tr>
<td>Economics (ECC 106)</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Electives</td>
<td>6</td>
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</table>

**Group II — Data Processing**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPR 100 Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>DPR 136 Programming in COBOL-I</td>
<td>3</td>
</tr>
<tr>
<td>DPR 237 Intermediate Cobol Programming</td>
<td>3</td>
</tr>
<tr>
<td>DPR 265 Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>DPR 120 Foundations of Computer Programming</td>
<td>3</td>
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</tbody>
</table>

**AND**

3 Data Processing Electives**

**Core Courses**

(A) Systems Analysis Orientation

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>DPR 150 Introduction to Systems</td>
<td>3</td>
</tr>
<tr>
<td>DPR 255 Systems II</td>
<td>3</td>
</tr>
<tr>
<td>DPR 115 Business Applications</td>
<td>3</td>
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</table>

(B) Programming Orientation

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DPR 146 and DPR 252 Programming II in Assembly I and II</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>DPR 148 and DPR 149 Programming II and III (8068/8086)</td>
<td>3</td>
</tr>
</tbody>
</table>

### Additional programming course

Students with experience in course areas may challenge up to three (3) credits (9 credits) via Credit-by-Examination. **Note:** Only married students are eligible. Credit-by-Examination may not be received for DPR 237 Cobol II.

| Any DPR course previously offered or not listed but completed | Credits |

### Transfer Credits

Transfer credits from an accredited institution and Credit-by-Examination credits are not to exceed 3 courses (9 credits).
DPR 150 Introduction to Systems∗
This course develops the fundamental skills and knowledge of data processing systems. Topics studied will include system traicy, applications, and documentation. (3, 0) 3 credits

DPR 151 General Ledger DP Systems
This course investigates the use of computer software in general ledger systems. Automated accounting information systems are stressed in laboratory work exercises using real-world business software. Prerequisites: BUS 101, DPR 100 or DPR 115
Corequisites: BUS 102, DPR 265 (1, 2) 2 credits

DPR 152 Programming in FORTRAN
This course develops the fundamental skills and knowledge to use FORTRAN to solve business computer oriented problems. Topics discussed will include table handling and disk. (3, 0) 3 credits

DPR 156 Programming in PL/1
This course develops the fundamental skills and knowledge to use PL/1 to solve business oriented problems. Topics discussed will include table handling and disk. (3, 0) 3 credits

DPR 157 Programming in RPG∗
This course develops the fundamental skills and knowledge to use RPG to solve business problems. Hands-on experience writing programs using RPG/400 on an IBM AS/400 microcomputer will provide the basis for developing RPG skills. Prerequisite: COBOL or Assembly Language or Department approval. (3, 0) 3 credits

DPR 158 Programming in BASIC∗
The fundamental skills and knowledge of BASIC programming language are developed using the IBM-PC microcomputer. Typical business applications such as checkbook reconciliation, fuel usage, budget, etc. will be programmed. (3, 0) 3 credits

DPR 159 Computer Programming for Business
This introductory course is an overview of the computer and an understanding of the computer as a tool in business and industry. Hands-on experience using IBM-PC with emphasis on business applications will be provided. (3, 0) 3 credits

DPR 192 Computer Programming for Biology and the Health Sciences
This course, recognizing the use of computers in both biologic and the health sciences, will teach fundamental computing concepts to understand computers. Fortran programming will be taught with emphasis upon problems in the biological and health science fields. (3, 0) 3 credits

DPR 193 Computer Programming for Technological Studies
Recognizing the use of computers in industrial technology and engineering applications, this course provides the technological major with an understanding of computers and their applications. Fortran programming will be taught with technological applications. (3, 0) 3 credits

DPR 194 Computer Programming for Social Science
In view of the increased use of the computer as a tool in behavioral and social sciences, this course offers students an understanding of the computer as a symbol manipulating device and information process. Fortran will be taught and students will be provided with exercises in the behavioral and social science fields. (3, 0) 3 credits

DPR 196C Language
An introduction to the fundamentals of the C programming language will be provided with the benefit of hands-on experience. The course will provide the ability to design, code, and debug C programs, as well as the interface of C with the UNIX operating system. Prerequisite: Programming language, other than BASIC, or Department approval. (3, 0) 3 credits

DPR 200 Hardware and Software Selection∗
This course provides a hardware and software overview of the microcomputer industry. The design of various commercially available computers and their input/output devices will be explored in detail. Criteria for equipment selection decision making will be presented. Prerequisite: Programming language, such as PASCAL, using both static and dynamic storage concepts, will be used in exploring and developing these algorithms. (3, 0) 3 credits

DPR 205 Programming in Assembly II
This course expands the fundamental skills and knowledge of computer programming in Assembly Language. Among the topics studied are: macro instructions, and physical and logical instructions. Prerequisite: Completion of DPR 146 with a grade of "C" or better. (3, 0) 3 credits

DPR 206C COBOL—A Study of the Language∗
An in depth study of the COBOL programming language. The study will include strategy of statement positioning, effective and efficient code, segmentation, subprogram linkage, string manipulation, input/output, and report writer features. Prerequisites: Intermediate COBOL Programming and Programming in Assembly I. (3, 0) 3 credits

DPR 215 UNIX Operating System∗
This course designs the fundamental knowledge of computer operating systems using UNIX. Topics include basic understanding of the UNIX system, utilizing the file system, programming language and security system. (3, 0) 3 credits

DPR 220 Microcomputer Data Base Management System (DBMS)∗
This course provides an overview of data base concepts, techniques and applications, and develops a practical use of DB management software and programming capabilities by using a specific software package such as DBASE III. (3, 0) 3 credits

DPR 237 Intermediate Cobol Programming
This course expands the skills and knowledge of computer programming using COBOL. Topics to be covered include multi-level control break processing, file handling techniques for sequential and indexed files, file processing, and searching and sorting methods. Prerequisite: Completion of DPR 136 with a grade of "C" or better. (3, 0) 3 credits

DPR 240 Statistics and Computing
Focuses on statistical data-processing utilizing computer programming. Approaches and differences between raw data and frequency array analysis by computer is included as well as the design and selection of analytic models based upon the nature of the data. Emphasis is placed upon applications and interpretation of statistical data in business and scientific fields. Prerequisite: Completion of MTH 100 or a more advanced course in mathematics. (3, 0) 3 credits

DPR 253 Programming in Assembly II
This course expands the fundamental skills and knowledge of computer programming in Assembly Language. Among the topics studied are: macro instructions, and physical and logical instructions. Prerequisite: Completion of DPR 146 with a grade of "C" or better. (3, 0) 3 credits

DPR 254 COBOL—A Study of the Language∗
An in depth study of the COBOL programming language. The study will include strategy of statement positioning, effective and efficient code, segmentation, subprogram linkage, string manipulation, input/output, and report writer features. Prerequisite: Intermediate COBOL Programming and Programming in Assembly I. (3, 0) 3 credits

DPR 255 Programming in Basic II
This course expands the fundamental skills and knowledge of computer programming in BASIC Language. The study will include strategy of statement positioning, effective and efficient code, segmentation, subprogram linkage, string manipulation, input/output, and report writer features. (3, 0) 3 credits

DPR 256 Programming in Ada∗
This course develops the fundamental skills and knowledge of computer programming in Ada Language. Topics studied are: macro instructions, and physical and logical instructions. Prerequisite: Completion of DPR 120 with a grade of "C" or better. (3, 0) 3 credits

DPR 260 Data Structures
This course is designed to present sequential and linked representations of various built-in and abstract data structures including arrays, records, queues and trees. Algorithms will be developed relating to various sorting and searching techniques, merging, and recursion. A high-level structured programming language, such as PASCAL, using both static and dynamic storage concepts, will be used in exploring and developing these algorithms. (3, 0) 3 credits

DPR 262 Data Communications∗
A fundamental introduction to data communications is developed in this course. Topics studied will include elements of data communications systems, data communications computer networks, and introduction to data entry systems, and communications networks. (3, 0) 3 credits

DPR 266 Systems II
This course develops the fundamental skills and knowledge in the design and implementation of data processing systems. Topics include system design, development and implementation of various computer systems. Students are stressed in laboratory work exercises using real-world business software. (3, 0) 3 credits

DPR 267 Systems Structures∗
This course will present sequential and linked representations of various built-in and abstract data structures including arrays, records, queues and trees. Algorithms will be developed relating to various sorting and searching techniques, merging, and recursion. A high-level structured programming language, such as PASCAL, using both static and dynamic storage concepts, will be used in exploring and developing these algorithms. (3, 0) 3 credits

DPR 268 Introduction to Database Systems
This course provides an introduction to database systems. Topics include the design and implementation of data base systems. Prerequisite: Use of a specific software package such as DBASE III. (3, 0) 3 credits

DPR 269 Introduction to Data Base Management Systems (DBMS)∗
This course provides an overview of data base concepts, techniques and applications, and develops a practical use of DB management software and programming capabilities by using a specific software package such as DBASE III. (3, 0) 3 credits

DPR 270 Microcomputer Programming I
This course offers an introduction to microcomputer components, microprocessor concepts, internal data representation and manipulation, and evaluation of microcomputer configurations as well as basic microcomputer programming. Prerequisite: Programming language experience (3, 0) 3 credits

DPR 274 Microcomputer Programming II
This course develops the fundamental skills and knowledge in the design and implementation of microcomputers with emphasis on business and industrial applications. Prerequisite: DPR 273 or permission of the Department Chairperson (3, 0) 3 credits

DPR 275 Numerical Analysis
Computer utilization in numerical methods is the emphasis in this course. Students will study methods of solution of equations, interpolation, approximation as well as numerical differentiation and integration. Also included is the study of matrices, determinants and curve-fitting. (3, 0) 3 credits

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DPR 148 B08688 Assembler Programming II

Knowledge of the B08688 Assembler language is further extended through the study of arithmetic and string operations, core conventions, core addressing, and disk I/O. Interfacing of assembler with high level languages such as Basic Pascal will be covered.

Prerequisite: DPR 146
(3,0) 3 credits

DPR 160 Introduction to Systems

This course develops the fundamental skills and knowledge of data processing systems. Topics studied will include system theory, applications, and documentation.

(3,0) 3 credits

DPR 151 General Ledger DP Systems

This course investigates the use of computer software in general ledger systems. Account processing information systems are stressed in laboratory work exercises using real-world business software.

Prerequisite: BUS 101, DPR 100 or DPR 115
Comprehensiveness BUS 102, DPR 285
(1,2) 2 credits

DPR 166 Programming in FORTRAN

This course develops the fundamental skills and knowledge to use FORTRAN to solve business computer oriented problems. Topics discussed will include data handling and disk.

(3,0) 2 credits

DPR 166 Programming in PLI

This course develops the fundamental skills and knowledge to use PLI to solve computer oriented problems. Topics discussed will include data handling and disk.

(3,0) 2 credits

DPR 176 Programming in RPG

This course develops the fundamental skills and knowledge to use RPG to solve business problems. Hands-on experience writing programs using RPG/400 from an IBM AS/400 minicomputer will be provided for developing RPG programs. 

Prerequisite: COBOL or Assembly Language or Department approval
(3,0) 3 credits

DPR 186 Programming in BASIC

The fundamental skills and knowledge of BASIC programming language are developed using the IBM-PC microcomputer. Typical business applications such as checkbook reconciliation, fuel usage, budget, etc. will be programmed.

(3,0) 3 credits

DPR 190 Computer Programming for Business

This introductory course provides an overview of the computer and an understanding of the computer as a symbol manipulating device. Hands-on exposure using IBM-PC with emphasis on business applications such as spreadsheets, data base management systems and word processing. Data Processing and Computer Information Systems students should not take this course, but should see DPR100.

(3,0) 3 credits

DPR 192 Computer Programming for Biology and the Health Sciences

This course, recognizing the use of computers in both biologic and the health and medical fields, such as in understanding of computers. Fortran programming will be taught with emphasis upon problems in the biological and health sciences fields.

(3,0) 3 credits

DPR 193 Computer Programming for Technological Studies

Recognizing the use of computers in industrial technology and engineering applications, this course develops an understanding of the technology that makes the use of computers possible and their applications. Fortran programming will be taught with technological applications.

(3,0) 3 credits

DPR 194 Computer Programming for Social Science

In view of the increased use of the computer as a tool in behavioral and social sciences, this course offers students an understanding of the computer as a symbol manipulating device and information processor. Fortran will be taught and students will be provided with exercises in the behavioral and social science fields.

(3,0) 2 credits

DPR 196 C-Language

An introduction to the fundamentals of the C programming language will be provided with the benefit of hands-on experience. This course will provide the ability to design, code, and debug C programs, as well as to interface of C with the UNIX operating system.

Prerequisite: A programming language other than BASIC, or Department approval
(3,0) 3 credits

DPR 205 Hardware and Software Selection

This course provides a hardware and software overview of the microcomputer industry. The design of various commercial available computers and their input/output devices will be explored in detail. Criteria for equipment selection decision making will be presented among computer systems, personal computers, microcomputer systems, monitors, printers, plotters, modems, A/D and D/A converters and operating systems.

(3,0) 3 credits

DPR 206 Programming in ADA

The fundamental skills and knowledge of ADA programming are developed emphasizing the "structured" features of the language. Topics studied and syntax notation for declaratives, operations, expressions and array types; and the modular use of subprograms and predefined ADA packages.

(3,0) 3 credits

DPR 215 UNIX Operating System

This course develops the fundamental knowledge of computer operating systems using UNIX. Topics include basic understanding of the UNIX system, utilizing the file system, programming language and security system.

(3,0) 3 credits

DPR 220 Microcomputer Data Base Management System (DBMS)

This course provides an overview of data base concepts, techniques and applications, and a practical use of DB management packages and programming capabilities by using a specific software package such as CLASHE.

(3,0) 3 credits

DPR 237 Intermediate Cobol Programming

This course expands the skills and knowledge of computer programming using COBOL. Topics to be covered include multi-level control break processing, file handling techniques for both sequential and indexed files, table processing, and searching and sorting methods.

Prerequisite: Completion of DPR 138 with a grade of "C" or better
(3,0) 3 credits

DPR 240 Statistics and Computing

Focuses on statistical data manipulation utilizing computer programming. Approaches and differences between raw data and frequency array analysis by computer is included as well as an introduction to the use of probability theory as a measure of central tendency and dispersion, correlation and regression methods, sampling concepts. Emphasis is placed on applications and interpretation of statistical data in computing, business and scientific fields.

Prerequisite: Completion of MTH 100 or a more advanced course in mathematics
(3,0) 3 credits

DPR 252 Programming in Assembly II

This course expands the fundamental skills and knowledge of computer programming in Assembly Language. Among the topics studied are: macro instructions, and physical and logical instructions.

Prerequisite: Completion of DPR 146 with a grade of "C" or better
(3,0) 3 credits

DPR 254 COBOL—A Study of the Language

An analysis of the COBOL programming language. The study will include strategy of statement positioning, effective and efficient code, segmentation, subroutine linkage, string manipulation, sort, and report writer features.

Prerequisites: intermediate Cobol Programming and Programming in Assembly I
(3,0) 3 credits

DPR 255 Operating Systems

This course develops the fundamental knowledge of computer operating systems. Topics included in this study are types of operating systems, facilities and features of the different systems and user techniques.

(3,0) 3 credits

DPR 256 Programming Languages

Computer languages other than COBOL and Assembly Language, which are used in general business and industrial data processing, will be studied. Among the higher level languages included are: FORTRAN, PLI, RPG, BASIC and/or a list processing language.

Prerequisite: Permission of the Department Chairperson
(3,0) 3 credits

DPR 260 Assembler—A Study of the Language

This course studies in depth the Assembly language. Specific topics will include the examination of the entire 360/370 instruction set, the construction of Macros, and assembler programming techniques and strategies.

(3,0) 3 credits

DPR 262 Data Base

This course provides the fundamental knowledge of data base concepts. Topics studied will include data base structures, programming, and implementation strategies and development. Also included is the study of matrices, determinants, and curve-fitting.

(3,0) 3 credits

DPR 264 Intermediate Cobol Programming

This course expands the skills and knowledge of computer programming using COBOL. Topics to be covered include multi-level control break processing, file handling techniques for both sequential and indexed files, table processing, and searching and sorting methods.

Prerequisite: Completion of DPR 138 with a grade of "C" or better
(3,0) 3 credits

DPR 265 Systems I

This course develops the fundamental skills and knowledge of computer information systems analysis and design concepts, philosophies, and trends. Topics included: general systems, computer information systems functions and capabilities; tools and techniques of systems analysis and design; structured data analysis and design; and industry. Case studies are used throughout the course to present a variety of problems and enable students to apply systems analysis and design techniques to their solutions.

(3,0) 3 credits

DPR 266 Systems II

This course expands the fundamental skills and knowledge of computer information systems analysis and design concepts, designing; utilizing of application software development techniques and methodologies. Study of computer information systems implementation and documentation are also emphasized. Functioning as members of a systems team, students use systems tools and techniques to prepare several large systems projects during the course.

Prerequisite: Completion of DPR 265 with a grade of "C" or better
(3,0) 3 credits

DPR 273 Computer Structures

This course will present sequential and linked representations of various built-in and abstract data structures including arrays, stacks, queues, trees, and hash tables. It will be developed relating to various sorting and searching techniques, merging, and recursion. A high-level structured programming language, such as PASCAL, using both static and dynamic storage concepts will be used in exploring and developing these algorithms.

Prerequisite: Completion of DPR 120 with a grade of "C" or better
(3,0) 3 credits

DPR 273 Microcomputer Programming I

This course offers an introduction to microcomputer components, microprocessor concepts, internal data representation and manipulation, and evaluation of microcomputer configurations as well as basic microcomputer programming.

Prerequisite: Programming language experience
(3,0) 3 credits

DPR 274 Microcomputer Programming II

This course develops the fundamental skills and knowledge in assembly language programming with emphasis on business and industrial applications.

Prerequisite: DPR 273 or permission of the Chairperson
(3,0) 3 credits

DPR 275 Numerical Analysis

Computer utilization in numerical methods is the emphasis in this course. Students will study methods of solution of equations, interpolation, approximation as well as numerical differentiation and integration. Also included is the study of matrices, determinants and curve-fitting.

(3,0) 3 credits
DPR 277 Systems Modelling and Simulation
Introduction to discrete simulation and comparison with other analysis methods. Discrete simulation models, elements of queuing theory and stochastic processing will be studied as well as random number generation and evaluation of simulation models and simulation programming languages.
(3, 0) 3 credits

DPR 278 Cryptography and Computer Security
Introduction to security, secrecy and privacy in computer systems with an analysis of hardware and software measures and countermeasures. Elementary cryptography principles and methods and a study of the National Bureau of Standards' DES Data Encryption Standard, and other hardware and software techniques are included.
Prerequisite: Knowledge of computer programming language
(3, 0) 3 credits

DPR 279 Computing Project
This is an independent study course designed to offer a student experience in research and computer programming in a specialized area of his interest. The number of credits will be determined by the complexity of the program and agreed upon prior to the student's starting this course. Can be taken only with permission of the Department Chairperson.
(1, 0) 1 credit or (3, 0) 3 credits

DPR 291 Microcomputing for Business
This course introduces students to microcomputers and their use in business and word processing. Students will be taught the BASIC programming language and will write and use various business applications.
Prerequisite: DPR 191 or the approval of the Department Chairperson
(3, 0) 3 credits

DPR 300 Management Information Systems
Managers have increasing responsibility for determining their information system needs and for designing and implementing information systems that support these needs. Management information systems integrate, for purposes of information requirements, the accounting, finance, and operations management functions of an organization. This course will examine the role of microcomputers and information systems required by an organization to integrate these functions.
Prerequisite: Upper level student or permission of Data Processing Department Chairperson
(3, 0) 3 credits

DPR 301 Systems Analysis and Design
This course explores the major issues in the design of a system, including management of the implementation process; flow chart and declarative design as well as functional modeling of approaches that improve the successful implementation of a computer system. Topics include general systems theories and System Development Life Cycle, data flow diagrams, data dictionary, hardware and software evaluation. Feasibility analysis, CASE tools and prototyping. Students are required to participate as team members in the development of a systems project applying techniques learned in class, and will be required to use CASE software and/or prototyping software. Prerequisite: DPR 100 or DPR 191 or equivalent
(3, 0) 3 credits

DPR 312 Local Area Network (Using Novell Network)
This course will focus on the general concepts of data communications and networking, and more specifically, the concepts involved in the design and implementation of a local area network. A hands-on approach will be utilized employing an existing network running Novell Netware. Prerequisite: Completion of DPR100R or DPR300R with a grade of C or better, or permission of the Department Chairperson
(3, 0) 3 credits

DPR 313 Local Area Networks II (Using Novell Network)
This course is a continuation of the DPR312Local Area Networking-using Novell Netware 3.11 course and will further develop the concepts of data communications and local area networking. The primary emphasis of this course will be on management strategies and troubleshooting techniques. A hands-on approach will be utilized employing an existing network running Novell Netware 3.11. Prerequisite: Completion of DPR312R with a grade of C or better
(3, 0) 3 credits

DPR 315 UNIX Operating System II
This course further develops the knowledge of computer operating systems using UNIX operating systems. It will augment the knowledge gained in DPR215. Topics to be covered include in-depth examination of the design of the UNIX system, system programming and techniques to set up the setup and administration of UNIX networks.
Prerequisite: Completion of DPR215 with a grade of C or better
(3, 0) 3 credits

DPR 336 C Language Programming II (Intermediate C and C++)
This course expands the fundamental skills and knowledge of C-Language. Topics to be studied include: the RunTime Environment and associated C constructs; C++ programming; and the utilization of C++/XMS features from VAX C.
Prerequisite: DPR 196
(3, 0) 3 credits

DPR 346 Object Oriented Programming using C++
An introduction to the Fundamentals of Object Oriented Programming using the Turbo C++ compiler. The course will cover the syntax of the C++ language by studying and implementing traditional C programs as well as the methodology to design and implement an Object Oriented Program.
Prerequisite: DPR 315R, with a grade of C or better
(3, 0) 3 credits

DPR 360 Advanced Database
The second in a two course sequence applies the knowledge of DPR 237 and DPR 260 to design and implement a relational database system. Concurrent with the system development, the concepts of Database Administration are developed.
Prerequisite: Completion of DPR237 and DPR260R with a grade of C or better
(3, 0) 3 credits

*Distributed only in the evening

Dental Hygiene

Associate in Science Degree
Admission Requirements
-

(Day/Evening)

Subject Units Required

Science
2 units Laboratory Biology and Laboratory Chemistry required.

Mathematics
2 units Sequential 1 and 2 or Elementary Algebra and either Intermediate Algebra, Trigonometry, or College Math.

Program of Study

Group I — General Education

Credit

Subject

Course Title

Day/Evening

111

200 Interpersonal Communication

3

PSY

Psychology

Introductory Psychology

3

SOC

Sociology

Introductory Sociology

3

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Note:

Students must be certified in basic life support procedures prior to entering the Dental Hygiene Program.

Effective Fall, 1994

The TOEFL (Test of English as a Foreign Language) Examination with a minimum score of 500 will be required for all students who have had ESL (English as a Second Language) courses in high school. This TOEFL examination must be taken at an official test center.

The College is now approved to take the Dental Hygiene program for:

a) applicants who are former high school seniors and have had ESL (English as a Second Language) courses in high school.

b) applicants with secondary credentials from a foreign country, regardless of any coursework completed in the United States.
### Part-Time Program (Two-Year Track)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM 140</td>
<td>Intro to General, Organic, and Biochemistry</td>
<td>3</td>
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<tr>
<td>BIO 166</td>
<td>Anatomy and Physiology</td>
<td>3</td>
</tr>
<tr>
<td>DEN 110</td>
<td>Preventive Oral Health Concepts I</td>
<td>2</td>
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<tr>
<td>DEN 115</td>
<td>Clinical Dental Hygiene I</td>
<td>2</td>
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<tr>
<td>EGL 101</td>
<td>Composition: Rhetoric</td>
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**Total Credits:** 15

### Second Semester

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<tr>
<td>BIO 119</td>
<td>Oral Health &amp; Embryology</td>
<td>2</td>
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<tr>
<td>BIO 220</td>
<td>Medical Microbiology</td>
<td>3</td>
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<tr>
<td>BIO 106</td>
<td>Oral Radiology I</td>
<td>2</td>
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<td>DEN 120</td>
<td>Preventive Oral Health Concepts II</td>
<td>2</td>
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<td>DEN 125</td>
<td>Clinical Dental Hygiene II</td>
<td>2</td>
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<tr>
<td>DEN 102</td>
<td>Dental Materials and Expanded Functions</td>
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<tr>
<td>DEN 220</td>
<td>Periodontology</td>
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**Total Credits:** 15

### Third Semester

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<tr>
<td>DEN 212</td>
<td>Pharmacology</td>
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<tr>
<td>DEN 235</td>
<td>Preventive Oral Health Concepts III</td>
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<tr>
<td>DEN 205</td>
<td>Oral Pathology</td>
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<td>PSY 130</td>
<td>Introductory Psychology</td>
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<td>DEN 221</td>
<td>Dental Health Education</td>
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<tr>
<td>FDN 291</td>
<td>Dental Nutrition</td>
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<tr>
<td>DEN 207</td>
<td>Oral Radiography II</td>
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**Total Credits:** 16

### Fourth Semester

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<td>DEN 240</td>
<td>Dental Practice Management, Ethics and Jurisprudence</td>
<td>2</td>
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<tr>
<td>DEN 245</td>
<td>Clinical Dental Hygiene IV</td>
<td>2</td>
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<tr>
<td>SPE 200</td>
<td>Interpersonal Communication</td>
<td>3</td>
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<tr>
<td>SOC 122</td>
<td>Introductory Sociology</td>
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<tr>
<td>DEN 222</td>
<td>Community Oral Health</td>
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<td>DEN 240</td>
<td>Dental Practice Management, Ethics and Jurisprudence</td>
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<tr>
<td>DEN 245</td>
<td>Clinical Dental Hygiene IV</td>
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**Total Credits:** 22

### Part-Time Program (Three-Year Track)

#### Sequence of Study

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</tr>
<tr>
<td>CHM 140</td>
<td>Introduction to General, Organic, and Biochemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credits:** 15

### Course Descriptions

#### DEN 105 Dental and Oral Anatomy
The study of the anatomy of the oral, facial complex and the morphology of the dentitions. Emphasis is placed on technical and practical aspects of dental terminology as well as occlusion. Prerequisites: Admission to the Dental Hygiene program and certification as a dental hygienist.

#### DEN 106 Oral Radiology
An introduction to the nature of ionizing radiation. The history, production and properties of dental x-rays, stressing radiation hygiene. Theory and practice in exposing, processing, mounting and analyzing intra-oral roentgenograms. Discussion of extraoral radiographic techniques. Prerequisite: EGI 101, CHM 140 and BIO 166.

**Total Credits:** 3

### Additional Notes

1. Can be completed prior to admission to the Dental Hygiene program.
2. Can be completed prior to admission to the Dental Hygiene program.
3. Can be completed prior to admission to the Dental Hygiene program.

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ECON 321 Engineering Economics
This course will provide students with a basic understanding of the economic aspects of engineering in terms of the evaluation of engineering proposals with respect to their worth and cost. Topics include: Introduction to Engineering Economics; Interest and interest formulas; equivalence and equivalence calculations; evaluation of replacement alternatives and operational activities; fundamentals of cost accounting.
Prerequisite: Admission to B. Tech program or Department approval
(3, 0) 2 credits Spring, Day and Evening

ECO 340 International Trade
First of a two semester offering to provide a comprehensive exposition of the theory and principles of international trade, the importance of international trade in interdependent economics, and a knowledge of international trade institutions and how they relate to U.S. commercial policy. The material will employ an analytical as well as historical and institutional approach.
Prerequisite: ECO 157
(3, 0) 2 credits Fall, Day

ECO 341 International Finance
Second half of a two semester offering to provide theoretical and practical knowledge of international finance, its relationships to financial markets, and the international monetary system as it relates to the U.S. economy. The course will focus on balance of payments, foreign exchange markets and the international monetary system.
Prerequisite: ECO 340
(3, 0) 2 credits Spring, Day

DEN 202 Community Oral Health
A study of public health concepts and theories and their application to federal, state and local levels. Included in program planning methodology is methods of assessment, evaluation and statistical analysis. Special attention is given to the role of the dental hygienist as an integral member of the health care team.
Prerequisite: DEN 211
(2, 0) 2 credits

DEN 230 Preventive Oral Health Concepts III
A continuation of the development, assessment and evaluation of dental hygiene practice through a variety of classroom techniques. Lectures will concentrate on new oral hygiene innovations and values clarification of the dental hygiene profession. Discussions will include a review of current preventive dental techniques and procedures. Guest speakers from the community will address various dental specialists and their relationships to the dental hygiene profession.
Prerequisites: DEN 110, DEN 115, DEN 120, DEN 125, BIO 220
Corequisite: DEN 255
(3, 0) 2 credits

DEN 235 Clinical Dental Hygiene III
A continuation of the development and application of dental hygiene skills and knowledge through clinical practice in hospitals and clinics both on and off campus. Clinical participation with new innovations, and current preventive techniques in the practice of dental hygiene and application of the expanded roles of the dental hygienist will be emphasized.
Prerequisites: DEN 110, DEN 115, DEN 120, DEN 125, BIO 220
Corequisite: DEN 230
(0, 14) 4 credits

DEN 240 Dental Practice Management, Ethics and Jurisprudence
Through a variety of classroom techniques, the development, assessment and evaluation of dental hygiene practice will be continued. Lectures and discussions will focus on current issues in dental hygiene including ethics, jurisprudence, dental law, practice management and alternative practice settings. Seminars will be on hold for writing and job interviews.
Prerequisites: DEN 110, DEN 115, DEN 120, DEN 125, DEN 230, DEN 235, BIO 220
Corequisite: DEN 240
(2, 0) 2 credits

DEN 245 Clinical Dental Hygiene IV
A continuation of the development and application of dental hygiene skills and knowledge through clinical practice in hospitals and clinics both on and off campus. Clinical participation with new innovations, and current preventive techniques in the practice of dental hygiene and application of the expanded roles of the dental hygienist will be emphasized as well as dental practice management concepts.
Prerequisites: DEN 110, DEN 115, DEN 120, DEN 125, DEN 230, BIO 220
Corequisite: DEN 240
(0, 14) 4 credits

ECON 131 Economic Geography
Shows how the location of men's economic activities is related to the production, exchange and consumption of goods and services. Current issues concerning world trade and commerce are examined in relation to the study of geography.
(3, 0) 2 credits Spring and Fall, Day and Evening

ECON 156 Principles of Economics (Macroeconomics)
A macroeconomic study of the household, business and government sectors of the American economy, supply-demand analysis, and an overview of national income accounting, business cycles, and the nature and effect of monetary and fiscal policies.
(3, 0) 2 credits Spring and Fall, Day and Evening

ECON 157 Principles of Economics (Microeconomics)
Discusses the American economy in microeconomic terms, the operation of supply, demand, and elasticity, marginal utility and indifference curve analysis, the business firm in competition and monopoly, and the economic and political significance of shifting currents in the nation's balance-of-payments and balance-of-trade transactions.
(3, 0) 2 credits Spring and Fall, Day and Evening

ECON 255 Money and Banking
A description of American central banking, the structure and development of commercial banks and non-bank financial intermediaries, the nation's money and capital markets, bank regulation and supervision, monetary theory and its policy implications, and the operation of the system of international payments.
Prerequisite: ECO 156 or equivalent
(3, 0) 2 credits Fall, Day

ECON 258 Labor Economics and Labor Relations
Discusses economic factors underlying changes in labor productivity, the concept of the labor market, and the role of labor unions, determination and classification of wages and wage structures in private and public employment, and the effect of legislation on collective bargaining procedures.
Prerequisite: ECO 156 or equivalent
(3, 0) 2 credits Spring, Day

ECON 259 Contemporary Economic Problems and Issues
Explores and analyzes the problems and issues of inflation, unemployment, the necessity of urban renewal, the growth of corporate conglomerates, the social and political ramifications in the world's money markets, together with the reasons giving rise to these occurrences.
Prerequisite: ECO 156 or equivalent
(3, 0) 2 credits Spring, Day

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Electrical Engineering Technology – Electronics

Associate in Applied Science Degree

Admission Requirements:
Special Education
Mathematics 2 units, English (Integrated) Math 1, 2 required. (Elementary Algebra and Intermediate Algebra)
Science 1 unit A science course with associated laboratory required; Chemistry or Physics recommended.

Professor Socrates Thanassas, Chairperson

This A.A.R. degree program prepares engineering technicians for positions in the fields of communications electronics, industrial electronics, and computer electronics.

The increasing application of electronic equipment has created a need for qualified technical specialists to develop, install, operate, and maintain this equipment in all industries. This program provides the student with the theoretical background and operational skills needed to enter industry as an electronics technician in almost any branch of Electronics, or to continue (generally with full junior status) towards a baccalaureate degree in Electrical Engineering Technology. See Bachelor of Technology program.

This program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

Typical Employment Opportunities

Communication Technician Field Service Representative
Computer Technician Missle Electronics Technician
Computer Programmer Radar Technician
Electronics Drafter Research Laboratory
Electronics Technician Technician
Engineering Aide Sales Representative
Environmental Test/Technical Writer
Technician Test Technician

Program of Study

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours per Week</th>
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<tbody>
<tr>
<td>EET 105</td>
<td>Intro to Digital Electronics</td>
<td>3</td>
<td>3</td>
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<tr>
<td>EGL 101</td>
<td>Composition: Rhetoric</td>
<td>3</td>
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<tr>
<td>EET 113</td>
<td>Electric Circuits I</td>
<td>3</td>
<td>3</td>
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<tr>
<td>MTH 129</td>
<td>Technical Math *</td>
<td>4</td>
<td>4</td>
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<tr>
<td>EET 117</td>
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<td>EGL 102</td>
<td>Composition: Literature</td>
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<td>EET 110</td>
<td>Computer Applications</td>
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<tr>
<td>EET 113</td>
<td>Electric Circuits II</td>
<td>3</td>
<td>2</td>
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*“See "Testing" under "Academic Information"
Third Semester

EET 222 Amplifiers 3
EET 223 Digital Electronics 3
PHY 130 College Physics II* 5
Arts/Science Electives + 6
Total Credits: 12

Fourth Semester

EET 228 Advanced Electronics 2
EET 229 Communication Electronics 3
EET 251 Microprocessors 4
EGL 136 College Physics III* 5
EET 299 Technical Communications 3
Arts/Science Electives + 6
Total Credits: 18

* 12 credits of Liberal Arts/Science electives must include: 6 credits in Social Sciences
** Departmental approval is required for Mathematics electives
*** Additional approval is required for Mathematics electives

Part-Time Program

A minimum of 71 credits is required

Group I—General Education Credits

English (ENG 101, 102) 6
Arts and Humanities** 9
Mathematics** 11
Physics* 5
Total Credits: 31

Group II—Electrical Technology Credits

EET 111 Electric Circuits I (T&L) 4
EET 108 Introduction to Digital Electronics 3
EET 113 Electric Circuits II (T&L) 4
EET 117 Basic Electronics 3
EET 222 Microprocessors (T&L) 3
EET 225 Digital Electronics (T&L) 3
EET 228 Advanced Electronics 3
EET 251 Microprocessors 3
Total Credits: 36

Electrical Engineering Technology

Certificate Programs

Certificate in Linear Electronics and Communication Systems
Course Code Credits
MTH 129 4
EET 111 4
EET 117 3
MTH 129 4
EET 226 4
Total Credits: 28

Certificate in Digital Electronics and Communication Systems
Course Code Credits
MTH 129 4
EET 111 4
EET 117 3
MTH 129 4
EET 226 4
Total Credits: 28

Course Descriptions

EET 105 Introduction to Digital Electronics
An introduction to the fundamental concepts of Digital Electronics. Topics covered include: Boolean Algebra, Karnaugh Map Techniques, Adders, Multiplexers, Code Converters, etc., Measurement of Waveforms and Timing Diagrams in Digital Circuits. The student will become familiar with commonly adopted techniques of measurement of an oscilloscope. Prerequisite: None
Corequisite: EET 111
(1, 2) 3 credits

EET 106 Computer Applications I
An introduction to the application of computers in Electrical Engineering Technology. Topics covered are basic programming applied to electronic network analysis and program control of electronic instrumentation using the standard IEEE488 bus. Controlled instruments will include switchers, power supplies and multimeters. Corequisites: EET 111, MTH 129 (1, 2, 3) 4 credits

EET 109 Computer Applications II
A continuation of EET 108 Computer Applications I. Topics covered include additional programming in BASIC, further use of the IEEE-488 bus and programmable instrumentation to perform automated testing of both electronic devices and networks, and the use of software for the analysis of electronic networks. Prerequisites: EET 108, EET 111 Corequisite: EET 113 (2, 3, 3) 6 credits

EET110C Computer Applications
An introduction to the application of computers in Electrical Engineering Technology using MS-DOS based PCs, the "C"programming language (Microsoft QuickC), IEEE-488 Standard interfacing to programmable instrumentation, and the PSpice/ElectricCAD network analysis software.
Corequisite: EET 113 (2, 3, 3) 5 credits

EET 111 Electric Circuits I
A basic course in direct current circuit theory. Concepts of charge, current and voltage; Ohms Law; current-voltage analysis; analysis of series, parallel, and series-parallel circuits; mesh and node analysis; Superposition, Thévenin's & Norton's theorems; maximum power transfer theorem; electric fields and capacitance; magnetic fields and inductance; analysis of R-C and R-L, R-L, R-C switching networks. The laboratory is coordinated with, and supports, the theory course. Corequisite: MTH 129 (3 hr. theory, 1 hr. recitation, 2 hr. lab) 4 credits

EET 113 Electric Circuits II
This is the second of a two-course sequence designed to provide the background needed to analyze electronic networks. Topics covered in this course include sinusoidal waveforms and non-sinusoidal waveforms; the phasor representation of sinusoidal signals; the use of complex numbers to analyze R-, C-, R-L, and R-L-C networks under sinusoidal steady-state conditions; series and parallel resonances; average power calculation; simple passive filters, frequency response (dB magnitude and phase) and its relation to the stop response of R-, C-, R-L, and R-L-C networks; transformer principles and types of transformers; three phase balance systems. Prerequisites: EET 111, MTH 129 (3 hr. theory, 2 hr. recitation, 1 hr. lab) 4 credits

EET 114 Basic Electronics
The fundamentals of semiconductor diodes, Bipolar Junction Transistors - BJTs and Field Effect Transistors - FETs are discussed. Basic diode circuits, rectifiers, rectifier circuits, zener diodes and zener regulated power supply are analyzed while three terminal IC regulators are described qualitatively. Bipolar and Field Effect Transistor biasing schemes are analyzed in terms of Q point operating conditions. Small signal single stage bipolar and field effect transistor amplifiers are analyzed in terms of voltage gain, current gain, and power gain, input impedance and output impedance at midband frequencies. Transistor bias circuits. Prerequisites: EET 110, EET 113 Corequisite: MTH 129 (3, 2, 3) 6 credits

EET 115 Electronic Instrumentation
This is the second of a two-course sequence designed to provide the background needed to analyze electronic networks. Topics covered in this course include: sinusoidal waveforms and non-sinusoidal waveforms; the phasor representation of sinusoidal signals; the use of complex numbers to analyze R-, C-, R-L, and R-L-C networks under sinusoidal steady-state conditions; series and parallel resonances; average power calculations; simple passive filters, frequency response (dB magnitude and phase) and its relation to the stop response of R-, C-, R-L, and R-L-C networks; transformer principles and types of transformers; three phase balance systems. Prerequisites: EET 111, MTH 129 (3 hr. theory, 2 hr. recitation, 1 hr. lab) 4 credits

EET 116 Introduction to Electronic Instrumentation
An introduction to electronic circuits, electronic signals, and electronic instrumentation. Topics covered include: voltage, current, resistance, electric energy and power; Ohm's Law; Kirchoff's Laws; resistive series, parallel and series-parallel circuits; time-varying voltage and current waveforms and their parameters; sources of time varying voltage and current sig- nals; the use of meters and the oscilloscope to measure sig- nals parameters; principles and applications of various trans- ducers; some basic transmitter circuitry; superheterodyne receivers for various modulation methods; multiplexing techniques including FM stereo multiplexing. Prerequisites: EET 222, MA 130 (3, 3, 3) 6 credits

EET 117 Basic Electronic Circuits
An introductory lecture/demonstration course in the terminology, concepts, and components of electric circuits. The aim is to give students from other disciplines (e.g., Office Management, Nursing, etc.) sufficient knowledge and under- standing to effectively communicate with technical specialists in this field. Prerequisites: Sequential (Integrated) Math 1 (4, 3, 4) 6 credits

EET 118 Electronic Instrumentation
This is the second of a two-course sequence designed to provide the background needed to analyze electronic networks. Topics covered in this course include: sinusoidal waveforms and non-sinusoidal waveforms; the phasor representation of sinusoidal signals; the use of complex numbers to analyze R-, C-, R-L, and R-L-C networks under sinusoidal steady-state conditions; series and parallel resonances; average power calculations; simple passive filters, frequency response (dB magnitude and phase) and its relation to the stop response of R-, C-, R-L, and R-L-C networks; transformer principles and types of transformers; three phase balance systems. Prerequisites: EET 111, MTH 129 Corequisite: EET 105 (3, 3, 2) 6 credits

EET 119 Basic Amplifiers
DC operating conditions and Signal parameters of single stage, cascaded, Darlington, and cascade amplifiers that con- tain BJTs, BJFET, DMOS and EMOS transistors are investigat- ed. Operational amplifiers, decibel ratings, manufacturer specifications as well as amplifiers that exhibit voltage feedback are also studied. AC load lines and optimum Q point conditions for maximum output signal swing in class A small signal Operational Amplifiers are analyzed in terms of output limitations that result from clipping and harmonic distortion. Q point stability for changes in device parameters and tem- perature is investigated for various class A Amplifier configurations. Characteristics of Class B, Class AB and Class A complementary symmetry push pull amplifiers are analyzed in terms of DC operating conditions and AC signal parame- ters. In addition, transistor power dissipation and heat sink requirements are specified for the student in Class A and push pull amplifier configurations. Amplifier efficiency and a Figure of Merit are also defined for the various amplifier con- figurations studied. Bode plots, frequency response and step response of BJT, JFET and MOS Amplifier configurations are analyzed. Micro-Cap is used to simulate DC and Signal para- meters as well as the overall frequency response of various amplifier configurations investigated throughout the course. The student will be required to write formal laboratory reports in this course. Prerequisites: EET 105, EET 110, EET 113, EET 117 Corequisite: MTH 130 (3, 3, 4) 4 credits

EET 123 Digital Electronics
Analysis and design of combinational and sequential logic cir- cuits. SSI and MSI circuits; flip-flops, counters, and shift reg- isters; integrated circuit families: multiplexors; semiconductor memory devices; RAM and ROM converters. The associate laboratory reinforces the topics covered in the theory through relevant experiments performed by the student. A formal report is part of the laboratory requirement. Prerequisites: EET 105, EET 117 (3, 2, 3) 6 credits

EET 225 Communications Electronics
An introduction to communication signals and circuits. Topics include: filters, interpretation and application of Fourier series; modulation and demodulation; frequency and phase modulation techniques; basic transmitter circuitry; superheterodyne receivers for various modulation methods; multiplexing techniques including FM stereo multiplexing. Prerequisites: EET 222, MA 130 (3, 3, 3) 6 credits

EET 228 Advanced Electronics
Differential amplifier analysis and operational amplifier con- figurations. Differential and common mode operation, CMRR and non-inverting amplifiers, Frequency characteristics and effects on Op Amp operating parameters. Industrial ICs and manufacturers specifications. Selected Op Amp applications. Prerequisites: EET 110, EET 117, MTH 130 Corequisite: EET 232 (2, 3, 3) 6 credits

EET 261 Microprocessors
Fundamental microprocessor concepts; architecture theory of operation, circuitry, programming, signals, timing and I/O interfacing. Laboratory work on 8085 microprocessor trainer as an 8085 assembler and simulator. The student will be required to interface input and output devices to the micro- processor and to quantify the associated hardware/software trade-offs. Prerequisites: EET 233 (3, 3, 3) 6 credits

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Course Descriptions
ESC 103 Man and Technology
Designed as an introductory study of the interaction between individuals, society and technology, this course provides the student with an understanding of the scientific and social forces involved with technological change. Through selected readings, films, and a research project, students become aware of how technological developments arise, how they work, and the manner in which they have impacted and continue to impact social change. (3, 0) 3 credits

ESC 201 Engineering Mechanics (Statics)
A rigorous vectorial approach to three dimensional statics analysis of particles, rigid bodies, trusses, frames and machines. Topics include distributed forces, centroids, friction, stability, variational mechanics, shear, bending moment, and introduction to tensor analysis via moment of inertia and Mohr's circle analogy. Prerequisites: PHY 151, MTH 151 concurrent; MTH 252 (2, 2) 3 credits

ESC 202 Engineering Mechanics (Dynamics)
A rigorous vectorial approach to three dimensional analysis of particle and rigid body kinetics, kinematics and Dynamics, including energy and momentum methods and developments leading to Euler's equations of motion. Prerequisites: ESC 201, MTH 252 (2, 2) 3 credits

ESC 251 Engineering Circuit Analysis I
Basic passive and active circuit elements are introduced and defined. Basic laws are defined. Techniques of circuit analysis by node and loop analysis, source transformation, Thévenin & Norton's Theorems, Natural and forced response of RL, RC, & RLC circuits are studied. Sinusoidal steady-state circuit analysis is introduced. Prerequisites: MTH 150, MTH 151 and PHY 151 Concurrent: MTH 252 and PHY 152 (2, 2) 3 credits

ESC 252 Engineering Circuit Analysis II
Course concentration is aimed at developing students' skills in relating analytical descriptions and predictions of circuit behavior with observed physical phenomena. Throughout the course students perform open-ended design or research projects. Initially focusing on using laboratory equipment and describing mathematically the relationships among circuit variables, the course then turns to examining current-voltage relationships at circuit terminals. The examination is approached with the objective of predicting the behavior of inter-connected circuits. Transient and steady-state response of circuits with energy storage elements are studied from both time and frequency-domain viewpoints. Prerequisite or Concurrent: ESC 251 (2, 2) 3 credits

ESC 252 Engineering Circuit Analysis Laboratory I
In addition to stressing the skills emphasized by ESC 251, this course also addresses student's research and publication techniques. Oriented around the theoretical aspects of circuit analysis studied in ESC 262, students perform open-ended experiments concerned with time and transform-domain methods of analysis and synthesis. A term research project and an associated research paper are required. Prerequisite or Concurrent: ESC 252 (0, 0) 1 credit

ESC 271 Mechanics of Deformable Bodies
A rigorous development of solid mechanics theory: Stress and strain analysis and transformation via three dimensional tensor operators. Introduction to the theory of elasticity, torsion, determine and indeterminate analysis of beams and simple structures, thermal stresses, thin shells, buckling, and displacements. Prerequisites: ESC 201, MTH 252 (4, 0) 4 credits

ESC 305 Culture and Technology: The Industrial Revolution in England 1750-1800
This course is a multidisciplinary examination of the ways in which technology affected everyday life during the Industrial Revolution in England. Covering the years 1750 to 1860, it examines the changes taking place in technology during the period, how these changes ultimately affected various aspects of the economy, the home, and the community and how novelists of the period felt about these changes. (NOTE: Students completing this course may not receive credit for HUM305, HIS 305, SOC 305 or HIS 305). Prerequisites: EGL 102 and any science course with a laboratory (3, 0) 3 credits

ESC 251 Engineering Circuit Analysis II
This course is a continuation of ESC 251 beginning with a more thorough study of energy and power using power triangle as an aid to power factor corrections. These three phase, balanced, Y and delta are examined closely. Complex frequency, transfer functions, frequency response and resonance are studied. Mutually coupled circuits are analyzed. The study concludes with an examination of Laplace Transforms and Fourier's Analysis. Prerequisite: ESC 251 (2, 2) 3 credits

ESC 252 Engineering Circuit Analysis Laboratory II
Course concentration is aimed at developing students' skills in relating analytical descriptions and predictions of circuit behavior with observed physical phenomena. Throughout the course students perform open-ended design or research projects. Initially focusing on using laboratory equipment and describing mathematically the relationships among circuit variables, the course then turns to examining current-voltage relationships at circuit terminals. The examination is approached with the objective of predicting the behavior of interconnected circuits. Transient and steady-state responses of circuits with energy storage elements are studied from both time and frequency-domain viewpoints. Prerequisite or Concurrent: ESC 251 (2, 2) 3 credits

English/Humanities Department

Dr. O. P. Malhotra, Chairperson

Offerings in English are designed for a variety of purposes. Developmental English prepares students in the communication skills necessary for successful college-level work. Composition and literature courses involve the students in the achievement of greater rhetorical facility and in gaining insight into the human experience. All courses are designed to provide the necessary background for a college education.

Note: All students will be enrolled in a writing course commensurate with their writing abilities. For this reason, all students will be required to take a Writing Placement Examination prior to enrolling in EGL 101. Students are individually placed in the appropriate course once the test is evaluated.

(Also refer to the Humanities)

Course Descriptions
EGL 107 Basic Writing Skills
A developmental course concerned with the improvement of written communication skills. Students review grammar and mechanics, syntax, vocabulary, paragraph and essay organization, and reading skills. A pass/fail grade will be awarded. This course is not applicable toward an Associate degree. (3, 0) 3 ncu (non-credit units)

EGL 101 Composition: Rhetoric
A course in expository writing with emphasis on the use of argumentation and evidence and the application of historical principles and research. Students will gain experience in the writing process, including revision. A research paper is required with an essay in library research, note taking, outlining, and incorporating sources into a final draft. Prerequisite: Placement Examination (3, 0) 3 credits

EGL 102 Composition: Literature
An introduction to plays, poetry, short stories, novels, and essays. Papers are written on forms, techniques, and themes of literature. Prerequisite: EGL 101 or equivalent (3, 0) 3 credits

EGL 103 Honours Freshman Composition
An interdisciplinary approach to reading and writing in such fields as philosophy, history, ethics, and science, emphasizing their interrelationships. Students explore issues in depth via term papers, presentations by guest speakers, and visits to museums, corporations, libraries, and theaters. Prerequisite: Permission of English/Humanities Department Chairperson (3, 0) 3 credits

EGL 205 Shakespeare
A survey of representative comedies, tragedies, romance, and histories showing Shakespeare's dramatic variety. Acting styles are emphasized with the use of recordings, tapes and, when possible, live performances. Prerequisite: EGL 102 or equivalent (3, 0) 3 credits

EGL 201 English Literature: Old English through the 18th Century
A historical survey of English literature from the beginnings to neoclassicism. Consideration is given to Anglo-Saxon and medieval writers, Chaucer, Elizabethan and Jacobean writers, Shakespeare, Milton, and the writers of the Age of Reason, English history, religion, and philosophy are studied as they relate to literature. Prerequisites: EGL 102 or equivalent (3, 0) 3 credits

EGL 202 English Literature: 19th Century to the Present
A historical survey of the Romantics, including Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats; the Victorians, including Tennyson, Browning, and Arnold; and twentieth century writers, including Yeats, Joyce, and Eliot. Emphasis is placed on the development and complexity of literary traditions. Prerequisite: EGL 102 or equivalent (3, 0) 3 credits

EGL 203 American Literature: Beginnings to 1865
An examination of major historical and new canonical American authors, genres, and periods of the seventeenth, eighteenth, and part of the nineteenth centuries up to the Civil War. An analysis of the works of writers of the New Republic, the Revolutionary and Federalist periods of the eighteenth century, as well as the emerging national literatures of indigenous and colonizing groups; the ages of Transcendentalism, American Gothic, early Realism as well as the works of Native American, Feminist, African-American, Abolitionists, Frontier and Civil War writers will be considered. Prerequisite: EGL 102 or equivalent (3, 0) 3 credits

EGL 204 American Literature: 1865 to the Present
An examination of major historical and new canonical American authors, genres and periods of the era from the Civil War through the twentieth century. An analysis of such trends as Realism, Naturalism, immigrant literature, the regional and local color movements, as well as the rise of bibliographical genres, and the influence of psychology and technology on literature will be made. Modernism, the renaissance in American poetry, the Harlem Renaissance, and the literature of social critique will also be examined. Prerequisites: EGL 102 or equivalent (3, 0) 3 credits

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EGL 206 World Literature: Early Classics
An introduction to Western and non-Western literature from earliest times through the seventeenth century. Included are works from ancient Greece, Rome, Modern and Renaissance Europe, the Middle East, Africa, China, and India.
Prerequisite: EGL 102 or equivalent

EGL 207 World Literature: The Moderns
An introduction to Western and non-Western literature from the eighteenth century through the twentieth century. Included are works from authors of the Enlightenment, the Romantic and Realist Movements, and the twentieth century from the Continent and the Third World.
Prerequisite: EGL 102 or equivalent

EGL 209 Technical Communication
A course stressing the structure of written and oral exposition and, to a lesser degree, related oral communication of a practical, technical, or scientific nature intended for a specific audience. Students are required to produce written and oral reports, proposals, resumes, and professional correspondence. A 1500-word research report is required.
Prerequisite: EGL 102 or equivalent

EGL 210 Introduction to Drama
A survey of Western drama stressing close reading of plays from ancient Greece, Elizabethan and Restoration England, nineteenth-century Scandinavia and Russia, and twentieth-century Britain and America. The changing concepts of comedy and tragedy are discussed.
Prerequisite: EGL 102 or equivalent

EGL 212 Introduction to Fiction
A survey of American, British, and continental prose fiction. An understanding of the critical theory of such works is stressed.
Prerequisite: EGL 102 or equivalent

EGL 214 Introduction to Poetry
A survey of English language poetry. Selected works of both traditional and contemporary poets are analyzed and discussed.
Prerequisite: EGL 102 or equivalent

EGL 216 Creative Writing
An introduction to a wide spectrum of written formats, especially those employed by writers of fiction and poetry. Students read in these genres and submit a short written piece, in either genre, for each class. In addition, students complete a major project in their chosen area.
Prerequisite: EGL 102 or equivalent

EGL 221 Cultural Diversity, Literature and Learning
A detailed study of the technological, economic, social, political, and cultural transition of American from a rural, agrarian republic to a complex, industrialized, urban nation in the period from 1820-1920. This interdisciplinary course uses primary and secondary material to examine the effects of technology and urbanization on American life. A multi-cultural and cross-gender perspective will provide focus.
Prerequisite: EGL 101 and 3 credits in Social Science

EGL 233 Holocaust Literature
A study of poems, short stories, and novels written in response to the Nazi genocide of Jews, commonly referred to as the Holocaust. Literary works, historical context, and the role played by perpetrators of the genocide, as well as by the Jewish victims and by other groups, is examined.
Prerequisites: EGL 102 or equivalent

EGL 234 Black Literature and the American Tradition
A study of representative works of African-American writers from the Pre-Civil War Period through the present day. Historical and social backgrounds are examined. African-American Literature is considered as an expression of a people, and as a part of the American literary tradition.
Prerequisite: EGL 102 or equivalent

EGL 236 Literature of the American West
An examination of periods of literary significance, representative works, writers, and genres of and about the American West from a multi-cultural perspective. Historical, cultural and social backgrounds are examined together with material ranging from Native American oral literature to contemporary literature of Hispanic, Euro-American, Asian American, and other writers of the American West.
Prerequisite: EGL 102 or equivalent

EGL 238 Long Island in Fiction
An exploration of the diverse view of Nassau and Suffolk counties by twentieth century authors. Concentration is placed upon the fictional depictions of suburban growth, materialism, environmental degradation, changing social patterns and sexual mores, and the American Dream.
Prerequisites: EGL 102 or equivalent

EGL 240 Themes in Science Fiction
An exploration of how writers of science fiction have used science and technology to examine moral questions, social issues and the boundaries of technology. Reading of selected authors will focus on the ways creative writers have explored various aspects of the genre, including scientific experimentation, alternate timespace continuum, weaponry, psychosomatic, robotics, alien life and the future.
Prerequisites: EGL 102 or equivalent

EGL 306 From Farm to Factory: The Transformation of America 1820-1920
A detailed study of the technological, economic, social, political, ideological and cultural transition of American from a rural, agrarian republic to a complex, industrialized, urban world. A multi-cultural and cross-gender perspective will provide focus.
Prerequisite: EGL 101 and 3 credits in Social Science

EGL 312 Major Authors in American Literature
An in-depth examination of the major trends in American Literature as reflected specifically through the works of individual authors. The instructor will select the two or three authors to be studied each semester. Secondary sources, a major research project, and an annotated bibliography of criticism of a particular work will be required.
Prerequisite: EGL 102 or equivalent

EGL 318 Advanced Creative Writing
An intensive workshop experience in which students are taught to recognize and appreciate excellence in the poetry and fiction of significant contemporary writers, and to produce polished works in these genres. Students will be required to keep a formal writer's journal and to participate in formal readings of their works, as well as to provide pertinent critical evaluations of the writing of others.
Prerequisite: EGL 216

NOTE: For English as a Second Language, see Modern Languages Department.
The Food and Nutrition program is designed to provide professional training in preparation for the many careers in nutrition, dietetics, and food science. These include the medically oriented hospital dietetics, or one of the new and emerging careers in food and nutrition outside the clinical setting such as nutrition education, research, public and community health, international nutrition, food science, sports medicine, development of healthier foods, more concern with food laws abroad, etc. This program will also satisfy those individuals who are planning to enter the food service industry, such as baby foods, "health foods" etc. as to safety, quality, cost and nutritional value.

Prerequisite: FDN 111, CHM 150-151 or Department approval
Corequisite: FDN 110

FDN 150 Principles of Nutrition
An introduction to the science, principles and concepts of nutrition with a practical approach to dietary selection. Topics include nutrients and their relationship to health. Nutrition in pregnancy, weight control and current nutritional controversies will be discussed. Healthy eating patterns for various lifestyles and ages will be included. Open to non-majors only.

(3, 0) 3 credits

FDN 191S Principles of Nutrition (Early Childhood)
The basic principles of nutrition will be covered: the nutrients of foods and the needs of various age groups. Emphasis will be on the feeding of the young child at home and in child care or school situations. Nutritional education for children is included.

(3, 0) 3 credits

FDN 210 Nutrition II
Discussion of nutritional needs throughout the life cycle: in pregnancy, in the infant, child, adolescent, adult, and aged. Includes nutritional assessment and factors influencing food choices of these groups.

Prerequisites: FDN 110, 151, BIO 166, FDN 110 or Department approval

(3, 0) 3 credits

FDN 211 Food and Nutrition Seminar
Discussion of current developments and controversies in the field. Readings in current literature. Guest speakers.

Prerequisite: FDN 110
Corequisite: FDN 210 or Department approval

(1, 0) 1 credit

FDN 212 Social and Cultural Aspects of Food
Examines the social and cultural influences of food and the religious aspects of food of different countries and nationalities with emphasis on ethnic groups common in the United States. Visits to markets, restaurants and preparation of typical foods are included. Malnutrition and world food problems will be discussed.

Prerequisites: FDN 112 or Department approval

(2, 3) 3 credits

FDN 213 Field Experience in Food and Nutritional Services
A course which provides an opportunity for students to study and visit a variety of agencies which provide food and/or nutrition education to groups within the community: hospitals, nursing homes, school lunch programs, clinics, college food service, soup kitchens, WIC programs, public health departments, etc. Corequisites: FDN 210 or Department approval: A course which provides an opportunity for students to study and visit a variety of agencies which provide food and/or nutrition education to groups within the community: hospitals, nursing homes, school lunch programs, clinics, college food service, soup kitchens, WIC programs, public health departments, etc. Corequisites: FDN 210 or Department approval

(3, 0) 3 credits

FDN 215 Food Science
This course builds on previous food courses and deals with basic concepts and principles of food science to conform with current concepts of healthy eating. (low sodium, fat, and cholesterol and high fiber) will be investigated. Emphasis of special foods such as baby foods, "health foods" etc. as to safety, quality, cost and nutritional value.

Prerequisite: FDN 111, CHM 150-151 or Department approval
Corequisite: FDN 110

(3, 0) 3 credits

FDN 230 Diet in Disease
This course builds on previous food courses and deals with the use of diet therapy in disease. Emphasis is placed on disease of the cardiovascular system, the liver and gall bladder, renal system, diabetes, inborn errors of metabolism, and psychiatric disease. The modifications of diet in treatment and the reasons for such changes are discussed.

Prerequisites: FDN 110, BIO 166, CHM 150 or Department approval
Corequisite: FDN 210 or Department approval

(3, 0) 3 credits

FDN 291 Dental Nutrition (Dental Hygiene only)
The fundamental principles of nutrition will be presented, and their role in the dental health of individuals. Emphasis will be on the application of nutrition to dental practice.

Prerequisite: CHM 140

(0, 0) 0 credits
A discussion of the development of the United States, from its new civilization arising out of revolution, independence, new governmental institutions, and egalitarianism, and illustrating the results of the westward movement, and the causes and consequences of the Civil War.

HIS 122 U.S. History Since Reconstruction
A historical evaluation of American society, assessing Reconstruction, immigration, the nature of imperialism, progressivism, World War I and II, the Cold War, and contemporary America.

HIS 123 Roots of Black Americans
Traces the lives of blacks in America, and illustrates their consciousness of ethnic and geographic heritage, their plight in slavery, and their experiences through the Civil War, Reconstruction, migration to the North, and life in the ghetto, as well as their identification with the efforts of black leaders to overcome discrimination.

HIS 124 History of New York State
Traces the growth of New York State from its Indian, Dutch and English origins, to a description of the vital functions which the state and New York City now perform in national and international affairs.

HIS 212 The Twentieth-Century World
Analyzes the development of the twentieth-century world's major political systems, since 1900, the effects of war, the imprint of culture and ideology, and the future of man.

HIS 213 Peoples and Cultures of Asia
A study of the peoples, cultures, religions, customs and philosophies of India, China, Japan, and Southeast Asia, and discussion of the social and political effects of Mongol, Moslem, and Occidental contacts with the Orient.

HIS 219 Topics in History
A treatment of diverse topics, chosen by the Department of History, Economics, and Politics for their long-term interest and current historical impact.

HIS 220 Ethnic and Immigration History
An analysis of immigration in American life, employing studies of demography, economic and political impact, and mass migrations, and describing the ordeal of adjustment, nativism, immigration policy, cultural pluralism, and the shifting ethnic pattern.

HIS 223 Contemporary America
Depicts America's response to the Cold War, violence, and military aggression, the emergence of third world countries, the economic and political impact of rising expectations, the problems of the city and the suburbs, and the quest for social justice.

HIS 225 America's Unfinished War: Vietnam and American Politics, Culture and Society
This course will examine American involvement in the Vietnam conflict from its origins in the cold war to its legacies today. It will adopt a multidisciplinary approach and use a variety of mediums, integrating history, literature, and film and utilizing lectures, guest speakers, and discussions. Particular attention will be given to cultural origins and effects of the war.

HIS 233 Comparative Religions and Cultures
A survey of religions of the East and the region of the Mediterranean, with discussion of their impact on the lives of individuals, and on cultures and other societies through the interrelationship of values systems.

HIS 240 History of Public Health Care and Medicine
An examination of the historical development of health and medical care in societies, both Western and non-Western, from ancient times to contemporary America. An emphasis on scientific and technological advancement, care of the ill, treatment of illness, and the impact of medical care. Discussion of the values of each historical period and the relationships between social values, ethics, and prescribed health care.

HIS 250 History of Public Health Care and Medicine
A historical discussion and analysis of economic development in the United States, resulting from the contributions of land, labor, capital, business enterprise, and government, and from the national attitudes toward work, business, the efforts of the self-made man, and the achievement of the American dream.

HIS 256 Readings in the American Experience I — Honors
Within the context of the American past, this advanced course will attempt the writings of leading historians and the development pattern of American historiography from the Colonial Period to the Reconstruction Period. Selected themes will be examined through conflicting interpretations in seeking the meaning of the national experience.

Prerequisite: Approval of Department Chairperson

HIS 256 Readings in the American Experience II — Honors
A treatment of diverse topics, chosen by the Department of American History will be analyzed in this course that incorporates in its narrative the great historical literature in American civilization from the Reconstruction Period to the present.

Prerequisite: Approval of Department Chairperson

HIS 305 Culture and Technology: The Industrial Revolution in England, 1760-1880
This course is a multidisciplinary examination of the ways in which technology affected everyday life during the Industrial Revolution in England. Covering the years 1750 to 1880, it examines the changes taking place in technology during the period and their effect on the workplace, the home, and the community and how novelists of the period felt about these changes.

Note: Students completing this course may not receive credit for HUM 205, SOC 305, ESC 305 or IDP 305
Prerequisites: EGL 102 and any science course with a laboratory

HIS 306 From Farm to Factory: The Transformation of America, 1820-1920
A detailed examination of the economic, social, political, ideological and cultural transition of America from a rural, agrarian republic to a complex, industrialized, urban nation in the period from 1820-1920. This interdisciplinary course uses primary and secondary material to examine the effect of technology and urbanization on American life. A multi-cultural and cross-cultural perspective will provide focus.

Note: Students completing this course may not receive credit for HUM 204 or IDP 305
Prerequisites: EGL 101 and 3 credits in Social Science

HIS 307 Germany in the 19th and 20th Centuries
This course examines the technological, cultural and political development of Modern Germany in the 19th and 20th centuries. Special emphasis will be placed on the interaction between technological advancement and politics in Germany during the Imperial, Inter-War, National Socialist, and Post-War periods.

Prerequisite: 3 credits in history or permission of instructor

HIS 310 Russia since 1917
This course examines the connection between industrialized and post-Soviet Russia. Topics include the development of Russian communism, collectivization, the Cold War, and Post-Soviet politics and culture.

Prerequisite: 3 credits in history or permission of instructor

HIS 313 Germany in the 19th and 20th Centuries
A detailed examination of the ways in which technology affected everyday life during the Industrial Revolution in England. Covering the years 1750 to 1880, it examines the changes taking place in technology during the period and their effect on the workplace, the home, and the community and how novelists of the period felt about these changes.

Note: Students completing this course may not receive credit for HUM 205, SOC 305, ESC 305 or IDP 305
Prerequisites: EGL 102 and any science course with a laboratory

HIS 320 Art History: Survey of American Art
A survey of the development of painting, sculpture, and architecture in the United States from the early colonial period to the contemporary period. Students will be exposed to slides and textbook illustrations, will provide the basis for an analysis of the "schools" styles, and influences that determined and are effecting the direction of American Art.

Prerequisite: 3 credits in history or permission of instructor

HUM 122 Oral Interpretation of Literature
Theory and practice of effective oral reading based on analysis of content. Selections, analysis, rehearsal and presentation of literature: prose, poetry and drama. (Offered in Spring)

Prerequisite: 3 credits in history or permission of instructor

HUM 305 Culture and Technology: The Industrial Revolution in England, 1750-1880
This course is a multidisciplinary examination of the ways in which technology affected everyday life during the Industrial Revolution in England. Covering the years 1750 to 1880, it examines the changes taking place in technology during the period; how these changes ultimately affected the workplace, the home, and the community and how novelists of the period felt about these changes.

Note: Students completing this course may not receive credit for HUM 205, SOC 305, ESC 305 or IDP 305
Prerequisites: EGL 102 and any science course with a laboratory

HUM 332 Intercultural Communication
This course is designed to develop an understanding of how specific inter-personal techniques can facilitate effective inter-cultural communication encounters. Students will be exposed to the ways in which cultural differences affect inter-cultural communications. Obstacles to effective inter-cultural communication will be examined and techniques to overcome these will be explored and practiced.

Prerequisite: One course in either psychology or sociology
PHI 105 Philosophy, Classical and Medieval
An examination of philosophical ideas based on the writings of classical and medieval authors. Major topics include the history of philosophy, logic, and religion. (3, 0) 3 credits

PHI 106 Philosophy: Modern and Contemporary
An examination of philosophical issues based on the writings of modern and contemporary authors. Major topics include metaphysics, ethics, and politics. (3, 0) 3 credits

PHI 203 Ethics
An examination of ethical theories including utilitarianism, determinism, and the concept of duty, and the application of these theories to contemporary problems. The place of ethics in relation to other branches of philosophy and the role of religion in shaping ethical theory are also discussed. (3, 0) 3 credits

PHI 207 Business Ethics
An examination of ethical issues that arise in business and how these issues can be resolved. Various principles of ethical theory are analyzed and applied to particular business situations. (3, 0) 3 credits

PHI 208 Philosophy of Science and Technology
A philosophical overview of developments in science and technology, showing their impact on general culture. Some highlights include the early separation of religion and philosophy, the role of mathematics in culture, the beginnings of modern science in the works of Galileo, Descartes, Leibniz and Newton, and contemporary revolutions in science and technology. Prerequisite: One semester of science (3, 0) 3 credits

SPCH 130 Public Speaking
This course is designed to prepare the student in the organization, development, and delivery of expository and persuasive speeches. Attention is paid to the students' voice and diction and experiences provided in group discussion and problem solving. (3, 0) 3 credits

SPCH 131 Voice and Diction
A study of the physiological, psychological and social bases for voice and articulation. Emphasis is on the improvement of the student's speech habits. (3, 0) 3 credits

SPCH 330 Technical Speech
A course designed to prepare the technical student in the organization and delivery of expository speeches, stressing the use of audio-visual materials are emphasized. Attention will be given to the student's speech habits. Prerequisite: PSY 130 or equivalent. (3, 0) 3 credits

IDP 305 Culture and Technology: The Industrial Revolution in England, 1759-1815
A detailed study of the technological, economic, social, political, ideological and cultural transition of America from a rural, agrarian republic to a complex, industrialized, urban nation in the period from 1820-1920. This interdisciplinary course uses primary and secondary material to examine the effect of technology and urbanization on American life. A multi-cultural and cross-cultural perspective will provide focus. (3, 0) 3 credits

IDP 306 From Farm to Factory: The Transformation of America 1820-1920
A detailed study of the technological, economic, social, political, ideological and cultural transition of America from a rural, agrarian republic to a complex, industrialized, urban nation in the period from 1820-1920. This interdisciplinary course uses primary and secondary material to examine the effect of technology and urbanization on American life. A multi-cultural and cross-cultural perspective will provide focus. (3, 0) 3 credits

THE 133 Introduction to the Theatre
A survey of the elements of theatrical art, including script, acting, scenery, lighting, costumes, and the roles of the various members of professional production: producer, director, actor, and audience. Representative plays, playwrights, and styles from ancient Athens to off-Broadway are examined. (3, 0) 3 credits

THE 134 Play Production
Principles and techniques of play production from script selection to performance, including casting, rehearsals, set design, lighting, costumes, make-up, and theatrical management. (Offered in Spring) (3, 0) 3 credits

ITALIAN

(See Modern Language Department)
Mathematics / Applied Mathematics

The following minimum number of credits are required for graduation:

Mathematics Concentration—Specific Requirements

Mathematics (one of the following sequences)*

MTH 107/110
MTH 109/110
MTH 119/135
MTH 135/136
MTH 109/110

*By advisement

Science Electives—

(Any 2 Laboratories by advisement, a sequence is not required)...

Philosophy (PHI 102 or 105 or 106 or 205 or 207)...

English or Humanities elective...

Social Science electives...

Art and Science electives...

Life Sciences and Pre-Health Sciences Concentration—Specific Requirements

Mathematics—

MTH 105/110
MTH 119/135
MTH 135/136
MTH 109/150
MTH 150/151

Chemistry

CHM 115/151 or
CHM 154/155

Biology

BIO 130/131

Science Sequence electives (one of the following sequences)

CHM 217/2171

PHY 135/136

PHY 151/151/161/161 (lab)...

Mathematics or Science Electives (by advisement)...

Arts or Science electives*...

Mathematics/Science Concentration—Specific Requirements

Mathematics—

Calculus sequence MTH 150/151 and Elective courses (MTH 105, 110, 252, 253, 245 or one computer science elective)...

Chemistry

CHM 154/155...

Science Sequence electives (one of the following sequences):

CHM 270/271

BIO 170/171

PHY 135/136

PHY 151/151/161/161 (lab)...

Mathematics or Science Electives (by advisement)...

Arts or Science electives*...

Mathematics Electives (2)...

A minimum of 40-43 credits is required

No. of Certificate Requirements Credits

CHM 154 General Chemistry I...

CHM 155 General Chemistry II...

MTH 105 Elementary Functions...

MTH 135 Introduction to Calculus I...

MTH 136 Introduction to Calculus II...

PHY 135 College Physics I...

PHY 138 College Physics II...

Mathematics or Science Elective...

Mathematics or Science Elective...

Mathematics or Science Elective...

Mathematics Electives (2)...

THE FOLLOWING COURSES WILL BE TAKEN AT STONY BROOK

**To be taken at Stony Brook

Admission Requirements:

Subject Units Remarks
Mathematics 3 units Sequential (Integrated) Mth 1, 2, 3

A unique program in Applied Mathematics is offered in a cooperative venture between the State University of New York campuses at Farmingdale and Stony Brook.

Designed for those students who enjoy mathematics but who believe they may be academically underprepared to pursue such a major, this program provides a highly supportive and stimulating learning environment. Through small classes and individual, personal attention, student preparation is strengthened.

Students apply to and enter this joint program at Farmingdale, where they will complete their first three years of study. As they approach their senior year and the completion of the Bachelor’s degree at Stony Brook, students will be encouraged to apply to Stony Brook’s Master of Science program in Applied Mathematics. After only five years of study, successful students will have earned three degrees from two SUNY campuses.

Typical Employment Opportunities

Students of applied mathematics graduate with excellent career preparation in many areas including engineering, business, telecommunications, economics, finance, computer applications, actuarial science, statistics, operation research, information services, quality control, pharmaceutical research, transportation, and education.

<table>
<thead>
<tr>
<th>Course Descriptions</th>
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</thead>
<tbody>
<tr>
<td>MTH 015 Elements of Algebra</td>
</tr>
<tr>
<td>This course fulfills the elementary algebra requirement for entrance into many programs at the College. Topics include numeric and algebraic operations, solutions of linear equations and inequalities, graphs and equations of lines, systems of linear equations, polynomial operations, factoring, and solution of quadratic equations.</td>
</tr>
<tr>
<td>MTH 016 Intermediate Algebra with Trigonometry</td>
</tr>
<tr>
<td>This course includes a review of elementary algebra, algebraic fractions and solution of fractional equations, exponentials, logarithms, geometric relations, right triangle trigonometry.</td>
</tr>
</tbody>
</table>

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MTH 095 Basic Mathematics I*
An introduction to the basic concepts of algebra. Topics include are decimals, arithmetic fractions, rational numbers, fundamental operations in algebra, linear equations and inequities, factoring, algebraic fraction, fractional equations and simultaneous equations. (3, 0) 3 nau (non-credit unit)

MTH 096 Basic Mathematics II
A continuation of MTH 095; further concepts in algebra and an introduction to solutions and functions. Topics included are: exponents and radicals, factoring, quadratic equations, set language, ordered pairs, graph and solutions of relations, and definition and graphs of linear and quadratic functions. Prerequisite: MTH 095 (3, 0) 3 nau (non-credit unit)

MTH 102 Finite Mathematics I Linear Programming
This course treats the problems of maximizing and minimizing variable quantities which are described by systems of linear equations. It begins with the graphical approach and leads the student through the algebraic process which culminates with the simplex method of solution. The student must have a strong background in graphing straight lines, algebraic solutions of equation solving and manipulation of equations, in addition to arithmetic processes. Prerequisite: Sequential (Integrated) Math 1 or Elementary Algebra (3, 0) 3 credits

MTH 103 Finite Mathematics II — Probability
This course uses set theory to develop the basic concepts of finite probability. The student is introduced to the tree method and counting methods of developing sample spaces. The probability of mutually exclusive events, dependent and independent events is treated, as well as stochastic processes by means of trees. Finally, some applications to probability distributions of discrete variables are covered. The student should have a good grasp of the arithmetic of fractions and solving simple algebraic equations in one variable. Prerequisite: Sequential (Integrated) Math 1 or Elementary Algebra (3, 0) 3 credits

MTH 107 Introduction to Mathematical Ideas
A survey of contemporary topics in mathematics designed to develop an awareness of the power and significance of mathematics and its uses in modeling the world around us. Topics may include the mathematics of social choice, growth and symmetry, mathematical systems, Euclidean and non-Euclidean geometries, management science. Prerequisite: Sequential (Integrated) Math 1 and 2 (3, 0) 3 credits

MTH 109 College Algebra
Review of algebra from the perspective of its application to problems in a variety of disciplines. Investigation of functions through numerical, graphical and algebraic representations. Introduction to trigonometry. (3, 0) 3 credits

MTH 110 Statistics
Basic concepts of probability and statistical inference. Included are the binomial, normal, and chi-square distributions. Practical applications are examined. Computer assignments using Minitab form an integral part of the course. Prerequisite: Two years of high school mathematics or equivalent (3, 0) 3 credits

MTH 112 Pre-Calculus
The real number system, properties of functions, algebra of functions, inverse functions, elementary notions concerning examination of the linear, quadratic, polynomial, rational, exponential, logarithmic, and the six trigonometric functions. Prerequisites: Two and one-half years of high school mathematics to include Intermediate Algebra or Sequential (Integrated) Math 1, 2, or 3 or MTH 104 (3, 0) 3 credits

MTH 120 Introduction to Technical Mathematics I*
An introduction to the basic concepts of algebra and geometry, and basic concepts of trigonometry. Topics included are: quadratic equations, logarithms, systems of equations, application of geometric theorem, trigonometric ratios and angular measurement. Prerequisite: MTH 120 or Sequential (Integrated) Math 1 and 2 or Elementary Algebra and Plane Geometry. (3, 0) 3 credits

MTH 129 Technical Math A
This is a pre-calculus course designed primarily for students in the Electrical Technologies. Topics included are: review of algebra, trigonometric, exponential and logarithmic functions, complex numbers, limits, progresses and elements of analytic geometry. The main thrust will be active application of the concepts learned. Prerequisite: Sequential (Integrated) Math 1, 2, or equivalent (4, 0) 4 credits

MTH 130 Technical Calculus A
An intuitive approach to differential and integral calculus. Topics included are: differentiation and integration of algebraic, trigonometric, exponential and logarithmic functions. Main thrust of the course will be the development of skills in dealing with applications to engineering problems. Prerequisite: Successful completion of MTH 129 (4, 0) 4 credits

MTH 135 Introduction to Calculus I
This course presents the concepts and techniques of differential and integral calculus as they may be applied in business, economics, and the social and life sciences. Topics include limits, continuity, differentiation and integration of algebraic, logarithmic and exponential functions with applications. Prerequisites: 2½ years of high school mathematics to include Intermediate Algebra, Sequential Math 1, 2, and 3 or successful completion of MTH 104 (3, 0) 3 credits

MTH 136 Introduction to Calculus II
This course covers the concepts taught in MTH 135. Advanced techniques of integration as well as partial differentiation are introduced and applied to both algebraic and non-algebraic functions. Prerequisite: MTH 135 (3, 0) 3 credits

For MTH 015, MTH 095, MTH 120, MTH 121, the only grades available are A, B, C, D, F

MTH 150 Analytic Geometry and Calculus I
Prerequisite: D/F units of high school mathematics to include Advanced Algebra or MTH 129 or MTH 105 (4, 0) 4 credits

MTH 151 Analytic Geometry and Calculus II
A continuation of the calculus of one variable. Differentiation and Integration of the transcendental functions. Integration techniques, polar coordinates, infinite series. Prerequisite: MTH 150 or MTH 138 (4, 0) 4 credits

MTH 265 Linear Algebra
A study of the basic properties of vectors and vector spaces; linear transformations and matrices; matrix representations of transformations; characteristic values and characteristic vectors of linear transformations; similarity of matrices, selected applications. Prerequisite: MTH 151 (3, 0) 3 credits

MTH 266 Discrete Structures II — Combinatorics and Graph Theory
Permutations, combinations and their properties and applications. Graphs: definitions and examples, paths and cycles in graphs and digraphs. Planar graphs, Eulerian and Hamiltonian graphs. Shortest Path algorithms: Trees; spanning trees, binary search trees, other tree applications. Prerequisite: MTH 151 (3, 0) 3 credits

MTH 285 Analytic Geometry and Calculus III
Solid analytic geometry. The calculus of several variables, partial differentiation, multiple Integration, Vector calculus. Prerequisite: MTH 151 (4, 0) 4 credits

MTH 295 Differential Equations
The solution of ordinary differential equations. First order-first degree, second order linear, Laplace Transforms, Applications of Differential Equations, applications of linear circuits and vibrations, Ordinary and partial differential equations, series solutions, systems of linear differential equations. Introduction to partial differential equations. Prerequisite: MTH 151 (4, 0) 4 credits

MTH 296 Probability
A calculus based course which includes the following topics: finite sample spaces, conditional probability, independence and Bayes Theorem, discrete and continuous random variables, expected value and variance, Chebyshev's inequality. The following probability distributions are considered: Poisson, geometric, hypergeometric, binomial, normal, exponential and chi square. Prerequisites: MTH 130, MTH 151 or the equivalent (3, 0) 3 credits

MTH 297 Applied Calculus
Topics to be covered: methods of integration, including integration by parts, trigonometric and inverse trigonometric forms and applications; the definite integral to work area and average value; polar, cylindrical and spherical coordinates; partial derivatives, multiple integrals and applications. Prerequisite: One semester of college calculus (3, 0) 3 credits

MTH 298 Advanced Mathematical Analysis
Topics to be covered: infinite series, first and second order Differential Equations and Applications, Laplace Transforms, Fourier Series, Homogeneous and Forced Responses, applications: Matrices, simple Linear Equations Involving Matrices, Solution of Systems of Linear Equations by Gauss-Elimination methods. Prerequisite: MTH 321 or equivalent (3, 0) 3 credits

MTH 300 Applied Abstract Algebra
Essential structures of modern algebra: sets, relations, groups, homomorphisms, and rings will be studied with a view toward their applicability. Applications may include error correcting codes, computational complexity, and counting problems. Prerequisite: MTH 151 and MTH 245, or equivalent (3, 0) 3 credits

MTH 335 Analytic Geometry and Calculus
A continuation of the Technical Calculus sequence for students in the Manufacturing Engineering Technology curriculum. Topics to include: review of conics, translation and rotation of axes, application of the definite integral; techniques of integration, including integration by parts, trigonometric and inverse trigonometric forms; partial derivatives, multiple integrals and their applications; surfaces in three dimensions. Prerequisite: MTH 129 or equivalent (3, 0) 3 credits
MTH 335 Applied Differential Equations

A continuation of the mathematics sequence for students in the Manufacturing Engineering Technology curriculum. Topics to be covered include infinite series, Taylor, Maclaurin, Fourier series, first and second order differential equations, and applications to include Spring-Mass damped systems, partial differential equations to include heat transfer equation.

Prerequisite: MTH 335 or equivalent

MTH 354 Applied Mathematical Analysis I

This course will address those mathematical structures that are applied to solving problems in Science and Engineering. Applications will be to areas that require computer analysis of mathematical modeling that involve adjuitive and diffusive phenomena.

Prerequisite: MTH 253

MTH 355 Applied Mathematical Analysis II

This course is a continuation of Applied Mathematical Analysis and to those techniques on topics in the complex domain. These topics are essential in understanding many applications in Engineering and Physics.

Prerequisite: MTH 354

MTH 360 Applied Probability and Statistics

A calculus-based course which studies applications of probability and statistical inference. Use of appropriate computer packages forms an integral part of the course. Topics are chosen from statistical parameters, continuous and discrete random variables, probability distributions, correlation and regression analysis, design of experiments and ANOVA. Prerequisite: One year of calculus.

MTH 390 Probabilistic Methods in Research Operations

A survey of stochastic operations research/management science techniques used in decision-making by business and industrial technologies. The course is not mathematically rigorous, but is conceptually rigorous and supported by appropriate computer software. Topics include decision analysis, inventory and queuing theory,PERT/CMP models and simulation.

Prerequisites: SUNY 110 or MTH 110 or MTH 260 or equivalent

Mechanical Engineering Technology

Associate in Applied Science Degree

Admission Requirements:

Subject Units Remarks
Mathematics 2 units Sequential (Integrated) Math 1, 2 required. (Elementary Algebra and either Plane Geometry or Intermediate Algebra)

Science 1 unit A science course with associated laboratory required; Chemistry or Physics recommended

Prerequisite: MTH 253

(3, 0) 3 credits

Mechanical Engineering Technology

Associate in Applied Science Degree

Admission Requirements:

Subject Units Remarks
Mathematics 2 units Sequential (Integrated) Math 1, 2 required. (Elementary Algebra and either Plane Geometry or Intermediate Algebra)

Science 1 unit A science course with associated laboratory required; Chemistry or Physics recommended

Prerequisite: MTH 253

(3, 0) 3 credits

Professor John Tiedemann, Chairperson

This degree program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/AETEC). Course are offered during the day and evening, and students may matriculate on a full-time or part-time basis.

The curriculum has several transfer capabilities to public and private colleges in the fields of manufacturing, industrial, and design engineering. Many graduates of this program transfer to Farmingdale's upper division program in Manufacturing Engineering Technology to pursue a Bachelor of Technology degree.

A goal of the course has been to utilize the general studies core in preparing the graduate to enter industry in the employment opportunities listed. This knowledge and operations taught are based upon studies made of graduates in industry, advice from industrial consultants, and from criteria established according to engineering studies.

Typical Employment Opportunities

R & D Technologist (Numerical Control Programmer)
Metallurgical Technologist (Quality Control Specialist)
Purchasing Agent (Machine and Tool Designer)
CADD/CAM Specialist (Methods Planner)

Program of Study

Hours per Week Credit

First Semester

Class Lab. Hours

EGL 101 Composition: Rhetoric 3 0 3
GPH 103 Technical Drafting 3 0 3
MET 109 Computer Programming and Applications 2 2 2
MET 116 Machine Tool Laboratory 1 2 2
MET 129 Technical Math A 4 0 4
MET 130 Advanced Machine Tool Laboratory 3 2 5
MET 131 Descriptive Geometry 4 0 4

Second Semester

Class Lab. Hours

EGL 102 Composition: Literature 3 0 3
PHY 135 College Physics I 3 3 3
GPH 104 Intro. to Computer Graphics 0 2 1
MET 106 Statics 2 2 2
MET 128 Advanced Machine Tool Laboratory 1 3 2
MET 130 Technical Calculus A 4 0 4
MET 135 Descriptive Geometry 4 0 4

Year Total 13 14 19

Third Semester

Class Lab. Hours

PHY 136 College Physics II 3 2 4
MET 205 Strength of Materials 3 2 4
MET 207 Tool Design 2 2 2
MET 216 Manufacturing Analysis 3 3 3
MET 251 Numerical Control 3 0 3

Total Credits: 10 10 17

Fourth Semester

Class Lab. Hours

MET 205 Material Science 2 3 3
MET 209 Production Control 3 2 4
MET 208 Machine and Product Design 2 2 2
MET 220 Electrical Principles — Manufacturing Systems 2 0 2
MET 252 Quality Control 3 0 3
MET 259 Social Science Elective 3 0 3

Total Credits: 15 10 18

"See "Testing" under "Academic Information"

Part-Time Program

A minimum of 70 credits is required

Part-Time Required Courses

Students who elect to complete the Associate degree require on a part-time basis are required to take the same courses as those attending full-time. The Physical Education course is not required.

Part-time students may register for day or evening courses. When registering, students must follow the correct course sequence and pay particular attention to course prerequisites. Students who need assistance should meet with a Continuing Education Counselor prior to registration.

Suggested course sequences are available from the Department Chairperson.

Evening Courses

The Mechanical Engineering Technology Department usually offers the following courses in the evening. Support courses, including English, Humanities, mathematics and physics are usually offered each semester, as well as in the summer.

Group I General Education Credits

English (EGL 101, EGL 102) 6
Social Science Elective 3 0
Mathematics (MTH 129, MTH 130) 8
Physics (PHY 135, PHY 136) 8

Group II Mechanical Engineering Technology

MET 106 Statics 3
MET 109 Computer Programming and Applications 3
MET 116 Machine Tool Laboratory 2
MET 126 Advanced Machine Tool Laboratory 2
MET 130 Technical Calculus A 4
MET 131 Descriptive Geometry 4
MET 205 Strength of Materials 3
MET 207 Tool Design 3
MET 209 Production Control 3
MET 212 Manufacturing Analysis 3
MET 216 Manufacturing Systems 3
MET 251 Numerical Control 3
MET 252 Quality Control 3
GPH 104 Introduction to Computer Graphics 1

"CON 106 may be substituted for MET 106

MANUFACTURING METHODS AND NUMERICAL CONTROL

Certificate Program

This Certificate program is offered by the Mechanical Engineering Technology Department through the School of Academic Services and Lifelong Learning. This program is approved by the State Education Department and requires the completion of 32 credits. Applicants should contact a Continuing Education Counselor for more information.

Required Courses for Certificate Program

GPH 103 Technical Drafting
GPH 104 Introduction to Computer Graphics
MET 116 Machine Tool Laboratory
MET 126 Advanced Machine Tool Laboratory
MET 109 Computer Programming and Applications
MET 205 Material Science
MET 204 Production Control
MET 210 Design
MET 216 Manufacturing Analysis
MET 220 Electrical Principles — Manufacturing Systems
MET 251 Numerical Control
MET 252 Quality Control
MET 351 Computer Aided Manufacturing (CAM)

Course Descriptions

MET 106 Statics

This is a basic course in Statics. The main objective of this course is to provide the student with a basic understanding of the principles of Statics. Topics such as resultant of force, equilibrium of forces, moments, couples, analysis of simple trusses, centroids, center of gravity, moments of inertia and friction are covered in this course.

(Note: Students completing this course cannot receive credit for CON 106.)

Prerequisites: MTH 129 (2, 2) 3 credits

MET 109 Computer Programming and Applications

This is an introductory course in computer programming in the BASIC language. The program is specifically written to be used in the areas of Statics, strength of materials, machine design, heat transfer, and fluid mechanics.

MET 116 Machine Tool Laboratory

In this course the theory and operation of engine lathes is emphasized. Also included are the drill press, the shaper, related measuring tools, the geometics of cutting tools, and thread configuration and thread cutting. Laboratory projects will be assigned which reinforce the topics covered in the theory.

Prerequisite: MET 116 (1, 2) 2 credits

MET 126 Advanced Machine Tool Laboratory

This course is a continuation of MET 116. Topics emphasize the theory and operation of metal lathes and numerically controlled milling machines. Programming will be done on an IBM PC. Additional topics are the gear shaper, indexing head, point-to-point drilling and milling, and three axis movement. Laboratory projects will be assigned which reinforce the topics covered in the theory.

Prerequisites: MET 116 (1, 3) 2 credits
MET 208 Machine and Product Design
Topics cover the application of the principles of statics and strength of materials to the design of machine elements including springs, gears, couplings, shafts, and fasteners at dynamic loading conditions. Design projects will be assigned in the laboratory which will reinforce the topics covered in the theory. Students will also use Computer Aided Design (CAD) software running on IBM PCs in the laboratory.
Prerequisite: MET 206 or CON 806
(3, 2) 3 credits

MET 215 Manufacturing Analysis
This course is a continuation of MET 126 and includes advanced manufacturing methods on the turret and tracer lathes, surface and cylindrical grinders, EDM, and numerically-controlled milling machines. Also covered is the theory and practice of differential indexing, cam milling, and compound angles. Laboratory practice will be assigned which reinforces the topics covered in the theory.
Prerequisite: MET 126
(2, 2) 3 credits

MET 220 Electrical Principles—Manufacturing Systems
This is a theory course designed to introduce Mechanical Engineering Technology students to basic electrical principles. Topics covered include analysis of series, parallel and combination circuits. Single and three phase AC circuits, magnetism, induction and their application to motors and electrical/electronic control systems currently utilized in manufacturing systems are also discussed. Related demonstrations and problem solving activities are included.
Prerequisite: MET 206 or CON 806
(2, 2) 2 credits

MET 251 Numerical Control
In this course, the fundamental skills and knowledge of the IBM System/360APT Numerical Control programming language are developed. Students will be required to write and run APT programs on the Department's numerical control system. Students will also process programs to produce EIA-NC code suitable for machine control.
Prerequisite: MET 126, GPH 103, GPH 104
(3, 3) 3 credits

MET 252 Quality Control (Metrology)
Students will be introduced to the three main aspects of industrial quality control: dimensional inspection, calibration, and statistical quality control. The theory and practice of metrological devices, such as gauge blocks and comparators, the optical comparator and the tool-maker’s microscope will be covered. State-of-the-art digitmetric equipment, height gauges, and super micrometer will be taught as well as other inspection techniques. The use of the computer assisted coordinate measuring machine (CMM) will also be emphasized.
Prerequisite: GPH 103, GPH 104, MET 126
(2, 2) 3 credits

*Offered only in the evening

Note: Also see Manufacturing Engineering Technology for Upper Division course descriptions.

Medical Laboratory Technology
Associate in Science Degree (Day)
Admission Requirements:

Subject | Units | Remarks
--- | --- | ---
Mathematics | 2 units Sequential (Integrated) Math | 1, 2 required, (Elementary Algebra and either plane geometry or intermediate algebra)
Science | 2 units | Laboratory Biology and Laboratory Chemistry required.

Dr. Joyce Lopez, Chairperson

Students in this curriculum receive a background in biology and chemistry in preparation for the specialized clinical courses in Medical Laboratory Technology. Laboratories are equipped with state-of-the-art equipment and the students are taught manual methods as well as automated and semi-automated procedures. Physiological principles upon which medical laboratory procedures are based are emphasized.

The curriculum offers the A.S. degree and prepares the student for entry-level employment or transfer to baccalaureate degree programs. The curriculum is nationally accredited by NACCLS (National Accrediting Agency for Clinical Laboratory Science). Graduates are eligible to take the ASCP (MLT-AD) examination. Graduates are also eligible to take the National Certifying Agency examination, County, State and Federal Civil Service exams at the Medical Laboratory Technician level.

It is strongly recommended that students who test negative for Hepatitis "B" receive the appropriate vaccine. Students who decline this recommendation will be required to sign a waiver of responsibility. Each student is required to obtain a liability insurance policy which will provide malpractice coverage during the time enrolled in the MLT curriculum. All non-vaccinated MLT students are required to have health and accident insurance.

Typical Employment Opportunities
Hospital Medical Technicians
Clinical Laboratory Technician
Doctor's Laboratory Technician
Pharmaceutical Laboratory Technician
Quality Control Technician
Community and Drug Industry Technician

Program of Study

<table>
<thead>
<tr>
<th>Hours per Week</th>
<th>Credit</th>
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<tbody>
<tr>
<td>12</td>
<td>18</td>
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<tr>
<td>16</td>
<td>18</td>
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</table>

Second Semester

| CHM 141 Principles of Chemistry | 3 | 3 |
| EOL 101 Composition, Rhetoric | 3 | 3 |
| Physical Education Elective | 0 | 2 |

MET 100 College Algebra or
MTH 102 Finite Mathematics 1, 2, 3 with approval

BIO 130 Biological Principles I | 3 | 3 |

MLT 103 Medical Laboratory Techniques | 0 | 3 |

| | 12 | 16 |

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*Students are required to provide their own transportation to off-campus employment sites. For all field experiences, students must dress in scrubs with agency protocol. This course is to be taken after 4th semester final exams.

Other Elective choices require Department Chairperson's approval.

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MLT 218 Blood Banking
Blood banking theory and practice are integrated in this course. Topics included are basic genetics, blood collection and preservation, blood group antigens and routine blood bank procedures. Transfusion safety and federal regulatory requirements are also covered. Competency testing and antibody identification are emphasized. Guest lecturers may speak on current topics and field trips to local blood banks shall be arranged.
Prerequisite: MLT 217

MLT 223 Hematology and Renal Physiology
A study of hemopoiesis and the formed elements of blood, normal and abnormal conditions. The theory and practice of the blood count as a diagnostic tool is presented. The significance of quality control is emphasized and normal and abnormal findings are related to a quality control program.
Prerequisite: BI 130, BI 166, CHM 160 or Department approval

MLT 233 Histology and Cytology
The essentials of preparation of mammalian and human tissue for microscopic examination are covered. Processing as well as selected cytochemical techniques are performed. Students are also instructed in the theoretical and practical aspects of tissue and organ identification. Automated tissue processing, staining, frozen sectioning, and thin plastic sectioning are included.
Prerequisite: BI 130, BI 166, CHM 160 or Department approval

MLT 242 Clinical Practice
This course is designed to develop laboratory skills learned in other medical laboratory technology courses as well as to acquire new laboratory skills. Clinical laboratory testing is performed on patient specimens simulating hospital laboratory and "shift" laboratory workloads. Quality control, accurate recording and computer logging of results are emphasized. Students are introduced to solution preparation through application of laboratory mathematics.
Prerequisite: MLT 233 or Department approval
Corequisite: MLT 217 or Department approval

Modern Language Department

Dr. Lois P. Magnone, Chairperson

The Department of Foreign Language offers courses in elementary, intermediate and advanced French, German, Italian and Spanish. These courses are designed to fulfill the language requirements in the Liberal Arts and Sciences curriculum as well as to satisfy the interests of those students from other curricula who choose to take language courses as electives.

All foreign languages, depending on the level begun, must be completed in sequence through level four.

Course Descriptions

ENGLISH AS A SECOND LANGUAGE

ESL 091 Beginning English as a Second Language* A course in understanding, speaking, reading and writing English for non-native speakers.
(3, 4) 4 credits

ESL 092 Intermediate English as a Second Language* A continuation of ESL 091.
Prerequisite: ESL 091
(3, 2, 1) nru (non-credit units)

ESL 093 Advanced English as a Second Language* A continuation of ESL 092. This course will prepare students to take the TOEFL or a similar examination. It will assist those who need advanced communication skills in business and professional fields.
Prerequisites: ESL 091 and 092
(3, 2, 1) nru (non-credit units)

FRENCH

FRE 101 French I (Elementary)
A beginning course in French emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: None
(3, 0) 3 credits

FRE 102 French II (Elementary)
A continuation of French 101 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing, with stress on communicative competence and cultural awareness.
Prerequisite: FRE 101 or 1 or 2 years of high school French
(3, 0) 3 credits

FRE 103 French III (Intermediate)
An intermediate course that further emphasizes the development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. A literary and cultural reader will be introduced.
Prerequisite: FRE 102 or 2 or 3 years of high school French
(3,0) 3 credits

FRE 104 French IV (Intermediate)
A continuation of French 103 emphasizing the development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness. A literary and cultural reader will be introduced.
Prerequisite: FRE 103 or 3 or 4 years of high school French
(3,0) 3 credits

FRE 205 French V (Advanced)
An advanced course in French emphasizing the composition reading course with intensive practice in oral and written French. Prepared discussions and writing assignments on selected historical, cultural and literary topics.
Prerequisite: FRE 104 or 4 or more years of high school French or Department approval
(3, 0) 3 credits

FRE 206 French VI (Advanced)
A continuation of FRE 205 with intensive practice in oral and written French. Prepared discussions and writing assignments on selected historical, cultural and literary topics.
Prerequisite: FRE 104 or FRE 205 or 4 or more years of high school French or Department approval
(3, 0) 3 credits

GERMAN

GER 111 German I (Elementary)
A beginning course in German emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: None
(3, 0) 3 credits

GER 112 German II (Elementary)
A continuation of German 111 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: GER 111 or 1 or 2 years of high school German
(3, 0) 3 credits

GER 113 German III (Intermediate)
An intermediate course that further emphasizes the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: GER 112 or 2 or 3 years of high school German
(3, 0) 3 credits

GER 114 German IV (Intermediate)
A continuation of German 113 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: GER 113 or 3 or 4 years of high school German
(3, 0) 3 credits

GER 215 German V (Advanced)

*Offered only in the evening

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SPANISH

SP1A 141 Spanish I (Elementary)
A beginning course in Spanish emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: None
(3, 0) 3 credits

SP1A 142 Spanish II (Elementary)
A continuation of Spanish 141 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: SPA 141 or 1 or 2 years of high school Spanish
(3, 0) 3 credits

SP1A 143 Spanish III (Intermediate)
An intermediate course in Spanish that further emphasizes the development of the four language skills: listening, speaking, reading and writing with more intensive reading and conversation. A basic literary and cultural reader is introduced.
Prerequisite: SPA 142 or 2 or 3 years of high school Spanish
(3, 0) 3 credits

SP1A 144 Spanish IV (Intermediate)
Structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Selected readings from modern authors. Continued attention to Spanish culture.
Prerequisite: SPA 143 or 3 or 4 years of high school Spanish
(3, 0) 3 credits

SP1A 145 Intermediate Spanish for Medical Personnel I
A conversational course for people who are working or are planning to work in the medical or allied medical fields. The course includes structural review and realistic, practical dialogues dealing with the different situations that medical personnel encounter in the course of their work. A valuable course for those who intend to work in New York City or Long Island.
Prerequisite: SPA 142 or 3 or 4 years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 146 Intermediate Spanish for Medical Personnel II
A continuation of SPA 145.
Prerequisite: SPA 145 or 3 or 4 years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 147 Spanish for Business I
This is a beginning language course which covers basic linguistic structures of Spanish. The course differs from the traditional academic course only in its emphasis on developing vocabulary useful for careers in business, economics, or finance. Both oral and written communication skills will be developed and writing with stress on communicative competence and cultural awareness.
Prerequisite: None
(3, 0) 3 credits

SP1A 148 Spanish for Business II
A continuation of SPA 147.
Prerequisite: SPA 147 or 1 or 2 years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 149 Spanish for Social Services I
A course designed for people who are working in the Social Services field or are planning a career in Social Services. This course presents different situations that Social Workers encounter in the course of their work. Classroom activities including dialogues, question and answer sessions, role playing, help the student to understand and to communicate effectively with Spanish speaking clients.
Prerequisite: SPA 142 or 3 or 4 years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 150 Spanish for Social Services II
A continuation of SPA 149.
Prerequisite: SPA 149 or 3 or 4 years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 245 Spanish V (Advanced)
This course is designed for those who wish to improve their reading and comprehension skills. Selected representative works of Spanish American fiction will be read. Because the course deals mainly with Spanish fiction, emphasis will be given to familiarizing the student with this narrative in order to explore the different linguistic and cultural styles as well as the literary and social-cultural contexts of the periods for comparison and contrast.
Prerequisite: SPA 142 or 4 or more years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 246 Spanish VI (Advanced)
This course is designed for those who wish to improve their reading and comprehension skills. Selected representative works of Spanish American fiction will be read. Because the course deals mainly with Spanish fiction, emphasis will be given to familiarizing the student with this narrative in order to explore the different linguistic and cultural styles as well as the literary and social-cultural contexts of the periods for comparison and contrast.
Prerequisite: SPA 144 or SPA 146 or 4 or more years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 247 Commercial Spanish I
Twelve topics each focusing on a particular commercial field. An intermediate Spanish course to provide a systematic introduction to the commercial Spanish and to supply a valuable learning aid to develop all the students needed for future jobs.
Prerequisite: SPA 142 or 3 or 4 years of high school Spanish or Department approval
(3, 0) 3 credits

SP1A 248 Commercial Spanish II
The second semester of this course consists of reading and writing assignments relevant to each of the fields covered in SPA 247.
Prerequisite: SPA 247 or 3 or 4 years of high school Spanish or Department approval
(3, 0) 3 credits

ITALIAN

ITA 121 Italian I (Elementary)
A beginning course in Italian emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: None
(3, 0) 3 credits

ITA 122 Italian II (Elementary)
A continuation of Italian 121 emphasizing the gradual development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: ITA 121 or 1 or 2 years of high school Italian
(3, 0) 3 credits

ITA 123 Italian III (Intermediate)
An intermediate course that further emphasizes the development of the four language skills: listening, speaking, reading and writing with stress on communicative competence and cultural awareness.
Prerequisite: ITA 122 or 2 or 3 years of high school Italian
(3, 0) 3 credits

ITA 124 Italian IV (Intermediate)
Structural review, intensified practice in oral expression with increased emphasis on reading and writing skills. Selected readings from modern authors. Continued attention to Italian culture.
Prerequisite: ITA 122 or 2 or 3 years high school Italian
(3, 0) 3 credits

ITA 225 Italian V (Advanced)
An advanced conversation/composition reading course with intensive practice in oral Spanish. Prepared discussions and writing assignments on selected cultural, historical and literary topics.
Prerequisite: ITA 124 or 4 or more years of high school Italian or Department approval
(3, 0) 3 credits

ITA 226 Italian VI (Advanced)
A continuation of ITA 225 with intensive practice in oral and written Italian. Prepared discussions and writing assignments on selected cultural, historical and literary topics.
Prerequisite: ITA 124 or ITA 225 or 4 or more years of high school Italian or Department approval
(3, 0) 3 credits

Nursing

Associate in Science Degree
(Day/Evening)

Admission Requirements:

Subject Units Remarks
Mathematics 2 units Sequential (Integrated) Math 1, 2 or Elementary Algebra and Intermediate Algebra, Trigonometry, Geometry or College Level Math

Science 2 units Laboratory Biology and Laboratory Chemistry required. (For evening refer to "Admission Requirements/Evening")

(All applications submitted for the program by January 15 receive equal consideration.)

For Fall 1994, students who are not applying directly from high school must successfully complete the following courses: Anatomy and Physiology I & II (BIO 170 & 171), English 101 and Introduction to Psychology (PSY 131).

Professor Loretta Falk, Chairperson

The Nursing program prepares students for entry into the profession of Nursing. Upon graduation, students receive the Associate in Science degree in Nursing and are eligible to take the New York State Board of Examining Nurses.

The curriculum offers a balance of courses in general education and nursing. The curriculum provides the theoretical knowledge and clinical practice needed to administer care for individuals throughout the life cycle. Learning experiences take place in the classroom, College nursing laboratory and in a variety of clinical settings. All students are assisted in the development of personal potential with guidance offered by faculty who possess broad nursing experience and academic preparation in the field.

Men and women who meet the College entrance requirements are eligible for admission to the Nursing program. Applicants must fulfill the College entrance requirements and present a transcript documenting completion of the following: evidence of satisfactory mental and physical health in advance of registration. Evidence of appropriate immunization, including titers for measles, mumps, rubella, varicella and Hepatitis B is required. Mantoux test for tuberculosis is also required. It is strongly recommended that students who test negative for Hepatitis B receive the appropriate vaccine. Students who decline this recommendation will be required to sign a waiver of responsibility.

Men and women who meet the College entrance requirements are eligible for admission to the Nursing program. Applicants must fulfill the College entrance requirements and present a transcript documenting completion of the following: evidence of satisfactory mental and physical health in advance of registration. Evidence of appropriate immunization, including titers for measles, mumps, rubella, varicella and Hepatitis B are required. Mantoux test for tuberculosis is also required. It is strongly recommended that students who test negative for Hepatitis B receive the appropriate vaccine. Students who decline this recommendation will be required to sign a waiver of responsibility.

Each student is required to obtain a liability insurance policy which will provide malpractice coverage during the time enrolled in the Nursing curriculum. Students must provide their own transportation to and from clinical sites. For all field experiences, student dress must conform with agency protocol.

New York State RN licensure requires the applicant to be of good moral character. An applicant for licensure who has received equal consideration.)

The Nursing curriculum is accredited by the National League for Nursing.

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Program of Study

Typical Employment Opportunities

First level nursing positions in hospitals, skilled nursing facilities, and community agencies.

Course Descriptions

NUR 097 Introduction to Nursing

This pre-nursing course presents concepts and experiences designed to prepare the student for entry into the nursing curriculum. Students, via small group experiences, explore behaviors and attitudes necessary for success in nursing, the application of basic reading, communication, and math skills to nursing, the role and work of the nurse. Selected field and laboratory experiences will provide observation and hands-on opportunities.

NUR 103 Theory & Practice of Nursing I

This course introduces the student to basic nursing concepts, scientific principles and nursing skills necessary to meet the needs commonly to all patients. Development of the role of the nurse, basic human needs, Erikson's psycho-social stages of development, principles of communication and levels of adaptation are stressed throughout the course. Opportunities for application of these nursing principles and nursing skills are provided in the College laboratories and in various health care settings.

Prerequisites (Day): NUR 103, BIO 170 and PSY 131

NUR 105 Theory & Practice of Nursing II A

This course will focus on the needs of the childbearing family. The identification and the role of the nurse in achieving the desired outcomes for beginning level practice. Prerequisites (Day): NUR 103, BIO 170

NUR 106 Theory & Practice of Nursing II B

This course explores the theories of Maslow and Erikson and the role of the nurse in achieving the desired outcomes for beginning level practice. Prerequisites (Day): NUR 103, BIO 170

NUR 107 Theory and Practice of Nursing II A

This course is designed to teach the student the principles of basic Pharmacology and its application to patient care and patient education. Fundamental acquisition of drug actions, understanding reactions, medication applications of specific drugs in each classification and the role of the nurse in achieving the desired outcomes of therapy are discussed. Prerequisites: NUR 103, NUR 105 and NUR 106

NUR 108 Theory and Practice of Nursing II B

This course is designed to teach the student the principles of basic Pharmacology and its application to patient care and patient education. Fundamental acquisition of drug actions, understanding reactions, medication applications of specific drugs in each classification and the role of the nurse in achieving the desired outcomes of therapy are discussed. Prerequisites (Day): NUR 103, BIO 170

NUR 109 Theory and Practice of Nursing III

This course is designed to teach the student the principles of basic Pharmacology and its application to patient care and patient education. Fundamental acquisition of drug actions, understanding reactions, medication applications of specific drugs in each classification and the role of the nurse in achieving the desired outcomes of therapy are discussed. Prerequisites: NUR 103, NUR 105 and NUR 106

NUR 207 Theory and Practice of Nursing III

This course provides an introduction to basic Pharmacology and its application to patient care and patient education. Fundamental acquisition of drug actions, understanding reactions, medication applications of specific drugs in each classification and the role of the nurse in achieving the desired outcomes of therapy are discussed. Prerequisites: NUR 103, NUR 105 and NUR 106

NUR 208 Theory and Practice of Nursing IV

This course continues the study of the major health problems occurring in children and adults. The nurses' role in restoring children and adults to health and supporting them and their families in acute, chronic and terminal illness is examined. Increasingly complex clinical experiences are provided to further integrate nursing theory and practice, thus preparing the graduates for beginning level practice. Prerequisites: NUR 107, BIO 220, CPR certification

NUR 211 Clinical Pharmacology for Nursing

This course presents an introduction to basic Pharmacology and its application to patient care and patient education. Fundamental acquisition of drug actions, understanding reactions, medication applications of specific drugs in each classification and the role of the nurse in achieving the desired outcomes of therapy are discussed. Prerequisites: NUR 103, NUR 105 and NUR 106

NUR 231 Introduction to Computing for Nurses

This course introduces the student to the use of the computer in education, professional and personal spheres. The sessions take place in the computer lab, exploring various components of hardware and software. Emphasis is placed on the actual use of the computer in education and in health care delivery. Open to matriculated Nursing students

NUR 232 Nursing Seminar A

This seminar explores major concerns and issues involved in current nursing practice. Topics include the History of Nursing, the Health Care System and Ethics/Legal issues of Nursing. Prerequisites: NUR 105 and NUR 106

NUR 233 Nursing Seminar B

This seminar explores major concerns and issues involved in current nursing practice. Topics include the History of Nursing, the Health Care System and Ethics/Legal issues of Nursing. Prerequisites: NUR 105 and NUR 106

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The Department of Ornamental Horticulture offers courses for those who would engage in business or obtain employment in the field of ornamental horticulture. Opportunities in the fields of ornamental horticulture are numerous. Each year, requests for technically prepared men and women have greatly exceeded the number of available graduates. There are two options available to students: General Opportunities in the fields of ornamental horticulture are offered to students. There is a minimum of 32 credits is required. The objective of the Certificate program is to develop and prepare individuals for careers in horticulture. Openings exist for technically-oriented specialists as sales representatives, managers, supervisors, and production managers in turf, nursery, patio, florists, landscaping, and closely related fields.

Program of Study

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Hours per Year</th>
<th>Credit</th>
<th>Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>BIO 101 Botany</td>
<td>1</td>
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<td>BIO 202 Biology</td>
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<td>EQL 101 Biology</td>
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<tr>
<td>HRC 211 Woody Plants</td>
<td>3</td>
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<tr>
<td>HRC 110 Horticulture</td>
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<td>HOR 127 Horticulture</td>
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<tr>
<td>GCC SCI / HUM Elective</td>
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<tr>
<td>Total Credits: 51/52</td>
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</table>

| Second Semester  |                |        |       |
| BIO 110 Entomology | 2         | 2      | 3     |
| CHM 120 Chemistry  | 2            | 3      | 3     |
| HRC 212 Woody Plants | 2     | 3      | 3     |
| BUS 212 Business Math | 3     | 0      | 3     |
| BUS 267 Small Business Management | 3 | 0      | 3     |
| DPR 191 Microcomputers and their Applications for Business | 3 | 0      | 3     |
| HOR Elective*    | 2             | 3      | 3     |
| Total Credits: 14/13 7/8 15/16 | |        |       |

| Third Semester   |                |        |       |
| EQL 101 Literature | 3           | 0      | 3     |
| HRC 100 Herbario | 2             | 3      | 3     |
| HOR Elective*    | 2             | 3      | 3     |
| BUS 212 Business Math | 3     | 0      | 3     |
| BUS 267 Small Business Management | 3 | 0      | 3     |
| DPR 191 Microcomputers and their Applications for Business | 3 | 0      | 3     |
| HOR Elective*    | 2             | 3      | 3     |
| Total Credits: 12/12 6/6 15 | |        |       |

| Fourth Semester  |                |        |       |
| SDC SCI Elective | 3             | 0      | 3     |
| BUS 121 Business Math | 3     | 0      | 3     |
| BUS 267 Small Business Management | 3 | 0      | 3     |
| DPR 191 Microcomputers and their Applications for Business | 3 | 0      | 3     |
| HOR Elective*    | 2             | 3      | 3     |
| HOR 204 Herbario Plants | 2   | 3      | 3     |
| Total Credits: 11/12 7/7 15 | |        |       |

Recommended Additional Electives

- HRC 105 Landscape Gardening
- HRC 228 Current Topics
- HRC 265 Horticulture Project
- HRC 238 Turfgrass Culture
- HRC 236 Drainage and Irrigation
- HRC 217 Horticultural Materials & the Environment
- HRC 209 Planting Plans I
- HRC 200 Greenhouse Management

**Ornamental Horticulture Certificate Program**

- A minimum of 32 credits is required

- Program of Study

- Horticulture Electives - credits minimum
  - Elective courses chosen from the Horticulture curriculum or other related areas (such as Business) with the approval of the Department Chairperson.
HOR 103 Herbaceous Plants I
Classification, identification, and general culture of perennials, bulbs, and roses commonly used in garden planning. (2, 3) 3 credits

HOR 104 Horticulture Elective
Second Semester:
HOR 103 Herbaceous Plants I 3 credits
HOR 104 Horticulture Elective 3 credits

elective courses chosen from Horticulture or related areas with the approval of the Department Chairperson.

Prerequisite courses required for students enrolled in the Degree or Certificate program:
BIO 194 Botany or BIO 192 Biology I (Botany) for:
HOR 250 Plant Propagation
HOR 211 Woody Plants I
HOR 212 Woody Plants II
HOR 103 Herbaceous Plants I
HOR 218 Indoor Plants
HOR 201 Arboriculture
HOR 104 Horticulture II

Horticulture Program:
The following sequence of courses is specific to the wholesale and retail florist industry. These courses are the same as those offered in the degree program and may be applied to the Associate in Applied Science degree.

Program Courses
HOR 120 Commercial Floral Design I
HOR 122 Woody Plant Production
HOR 129 Soil and Tissue Testing
HOR 142 Cut Flowers and Pot Plant Production

Floral Design Program:
The following sequence of courses is specific to the wholesale and retail florist industry. These courses are the same as those offered in the degree program and may be applied to the Associate in Applied Science degree.

Program Courses
BIO 194 Botany or BIO 192 Biology I (Botany)
BUS 121 Business Mathematics
HOR 218 Indoor Plants
HOR 122 Commercial Floral Design I
HOR 202 Flower Shop Management I
HOR 103 Herbaceous Plants I
HOR 255 Interior Plants
HOR 205 Advanced Floral Design
HOR Ornamental Horticulture Elective

Course Descriptions
HOR 101 Soil Science
The study of soil formation and its physical and chemical properties in relation to plant nutrition and growth. Discussion of lime, fertilizers, manures, and pests with respect to nursery and container production of horticultural plants as well as landscape and garden soils. (2, 2) 3 credits

HOR 102 Floriculture
A survey of the floriculture industry, including both the basic floral design and greenhouse management. Lectures and laboratory experiences include corsage construction, flower arranging, greenhouse management, and crop development. Through practical experience, all students are given the opportunity to gain knowledge in many phases of floriculture. (1, 3) 3 credits

HOR 120 Commercial Floral Design I
A study of typical floral arrangements. Emphasis is placed on party arrangements, holiday designs, and buffer arrangements. The campus flower shop provides required supplies at cost. (1, 5) credits

HOR 121 Commercial Floral Design II
A continuation of Commercial Floral Design I with emphasis on party arrangements, holiday designs, funeral arrangements, and basic wedding designs. The campus flower shop provides required supplies at cost. Prerequisites: HOR 120 (1, 4) credits

HOR 122 Woody Plant Production
Commercial practices for the production of trees and shrubs will be studied. Areas include site selection, soil management, weed control, container production, fertilization and pruning. Special emphasis will be given to the control of insects and diseases. Prerequisite: HOR 121 (3, 3) credits

HOR 127 Horticultural Seminar
The course provides an overview of the industry and major areas of development; it will provide an opportunity for students to hear from representatives of the industry. Students will be provided with the basis for an assessment of future career opportunities as well as the opportunity to evaluate individual needs for continuing education. (1, 0) 1 credit

HOR 129 Landscape Drafting
The introduction to landscape drafting, including the use of drafting equipment, drawing of landscape symbols, lettering techniques, and perspective drawing. (3, 2) 3 credits

HOR 131 Landscape Drafting I
A study of drafting techniques in Landscape Design. This course will develop the student's abilities in laying out, landscape drafting and layout using drafting instruments. (3, 2) 3 credits

HOR 132 Horticulture Practice I
Application of classroom theory to practical situations in the field. Students are assigned to areas in the greenhouse, gardens, nursery, and plant collections to learn and practice the art and skills of gardening. Students are given supervision in the greenhouse and staff from the Horticulture Department. (2, 0) 2 credits

HOR 133 Landscape Drafting II
To further the development of graphic skills from Landscape Drafting I and to develop students' abilities to visualize space by laying out perspective design, orthographic projection and working drawings. Prerequisite: HOR 131 (3, 2) 3 credits

HOR 142 Cut Flowers and Pot Plant Production
A study of the commercial requirements necessary for the production of top quality cut flowers and pot plants for the most commonly cultivated and grown in commercial greenhouse ranges. Crop timing, grading systems, fertilization, lighting, automation, and post harvest care will be covered. Prerequisites: HOR 203, HOR 101, BIO 182 (3, 2) 3 credits

HOR 150 Horticultural Skills and Operation I
Students are provided the opportunity to learn the skills and to become proficient in many horticultural operations. Students will have the opportunity to learn to drive tractors and to operate other horticultural equipment used in the trade. Tools, techniques, and standards of workmanship are taught. Students will be assigned duties in the greenhouse range, landscape gardens, arboretum, nursery, or turfgrass area. (0, 6) 6 credits

HOR 161 Horticultural Skills and Operation II
A continuation of HOR 150 Horticultural Skills and Operation I. Prerequisite: HOR 150 (6, 0) credits

HOR 157 Introductory Arboriculture
This course provides an introduction to arboriculture and includes basic tree design, preparation, and care and identification of flowering and foliage plants. (2, 2) 3 credits

HOR 201 Arboriculture I (Theory)
Theories of the practice of arboriculture. Elements and principles of design with application in lettering, drafting, and perspective drawing. Arboricultural field experience will involve large tree transplanting, fertilization, and spraying. (1, 5) 3 credits

HOR 201 Arboriculture I (Lab)
Demonstration, techniques, pruning practices, and tree climbing techniques practiced with HOR 201 Theory. (0, 3) 1 credit

HOR 202 Flower Shop Management I
A study of the internal workings of a florist shop including accounting, sales, and bookkeeping. Preparation, pricing, personnel management, public relations, planning, cash flow management, displays and advertising. Field trips are taken to wholesale and flower shops. Prerequisite: HOR 120 (2, 9) 3 credits

HOR 203 Greenhouse Management
A study of greenhouse structures used for commercial production of flowers and pot plants. Various construction and operational techniques will be discussed, as well as greenhouse ventilation and cooling equipment. Practical application of greenhouse equipment will be discussed and applied to the production of crops. (2, 2) 3 credits

HOR 204 Herbaceous Plants II
Continuation of Herbaceous Plants I: annual and biennial flowers, and foliage horticulture. Perennials use horticultural genetics and design of flower borders. (2, 2) 3 credits

HOR 205 Advanced Floral Design
This course will include instruction in contemporary and European arrangements, artistic party pieces, holiday style arrangements, and all phases of wedding floral designs. The campus flower shop provides required supplies at cost. Prerequisites: HOR 120, HOR 121 (1, 4) 3 credits

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HOR 206 Horticulture Management, Contracts and Specifications
The basic requirements for contracts, specifications writing, and ethics within the profession of ornamental horticulture are emphasized. The professional relationships among the client, consultant, contractor, designer, and landscape architect, other allied professions and employees are also discussed. Project cost and fee determination procedures are presented.
(3, 0) 3 credits

HOR 207 Landscape Plans I
The theory and principles of landscape design applied to selection landscape problems. Preliminary sketches and final presentations in plan, section, and perspective form. Grading, construction, planting, and staking plans; basic details of architectural construction.
(1, 6) 3 credits

HOR 208 Nursery Production
Commercial nursery stock production dealing with plant growth patterns and plant responses in relation to soils, water, fertilization, planting techniques and distances, top and root pruning. Plant production cycles, rotations, and treatment for economy production. Emphasis will be placed on the commercial propagation of woody plants by sexual and asexual means.
(3, 3) 4 credits

HOR 209 Planting Plans I
Emphasis in this course will be placed on the different types of plans which the landscape designer must know how to read and draw. Site analysis planting designs and grading plans will be covered in detail as they pertain to residential site work. Visual examples are utilized with previously drawn plans and slides of developed plans.
(1, 6) 3 credits

HOR 210 Horticulture Materials and the Environment
This course is intended to focus on various horticultural materials and practices that have an impact on the public and the environment. Discussion and classification of horticultural materials such as fertilizers, growth regulators, pesticides, etc., as well as their regulatory and safety measures will be explored throughout the course. Finally, alternative management practices which reduce the use of horticultural materials and cultural methods will be examined. The current computer software available in the library on various related topics will also be utilized during the semester.
(3, 0) 3 credits

HOR 211 Woody Plants I
The Woody Plants Courses give a picture primarily of the woody plants grown for landscape purposes, and secondly of those found in arborets, woodlands, and fields of Northeastern United States. Emphasis is on identification, culture, uses, flowers, and fruits, and ecological relationships. Several of the evergreens, broad and narrow leaf, as well as some of the deciduous trees and shrubs will be covered in this first study.
(2, 3) 3 credits

HOR 212 Woody Plants II
A continuation of Woody Plants I covering additional over-grows, broad and narrowleaf, as well as deciduous plants — trees, shrubs, vines and ground covers.
(2, 2) 3 credits

HOR 213 Arboriculture II
Advanced theory, practice and field studies of the arboriculture industry including care and pruning of fruit plants, diagnosis of tree ill, landscape architecture, and power equipment. Business practices and organization including management, record keeping, estimating, customer relations, ethics and standards. Prefaced by an overview of the arborist industry.
(2, 3) 3 credits

HOR 214 Horticultural and Turfgrass Equipment
A study of the types of power tools and equipment used by the industry. Small engines and power sources are studied. Emphasis is placed on selection maintenance and operation of this equipment.
(2, 2) 3 credits

HOR 215 Flower Shop Management II
This course will include instruction in contemporary and European arrangements, artistic styles, and plant care. The wedding design segment of the course will concentrate on both the ceremonial and reception flower arrangements. Students will learn how to book a wedding with a client, order the flowers from the wholesaler and carry out the floral designs.
(2, 3) 3 credits

HOR 216 Greenhouse Management II
The study of floral crops, modern technical applications, and cultural requirements, as used in the production of cut flowers and pot plants in the floriculture industry.
(3) 3 credits

HOR 217 Horticultural Service Management
The knowledge and skills necessary to manage a Horticultural Service Business are examined. Programs in past management, lawn care, tree care, and landscape management are studied so that students learn to develop a horizontally sound service business. Basic business principles as they relate to such services are also studied. The special personnel, materials, and production management needs of service businesses to successfully serve large numbers of accounts are emphasized.
(2, 3) 3 credits

HOR 218 Indoor Plants
A study of various plants that are suitable for indoor culture. Emphasis will be placed on identification, propagation, cultural requirements, ecological and aesthetic values.
(3, 0) 3 credits

HOR 219 Landscape Construction
Details of steps, walls, seats, walls, fences, and other landscape features and structures. Selection and use of materials used in the construction of these features.
(3, 0) 3 credits

HOR 220 Landscape Plans II
A continuation of Landscape Plans I with progressively more problems.
(2, 3) 4 credits

HOR 221 Landscape Surveying
The theory of plans surveying applied to landscape design problems. A study and evaluation of instruments, procedures, and computations as related to pacing, pacing, determination of angles, leveling, and topographic mapping for land surveying.
Prerequisite: BLIS 121, HOR 131, HOR 133
(1, 4) 3 credits

HOR 222 Nursery Management II
A continuation of the study of commercial plant production dealing with programming plant production and nursery land use, as related to nursery layout in sections and blocks. Special facilities and structures are included in the production programs for economic production. Cost finding techniques, price listing, and profits are studied and evaluated.
(2, 3) 3 credits

HOR 223 Turfgrass Management II
A study of the production of turfgrasses. Business procedures for professional turf growers including cost accounting, time study, record keeping, and evaluation of equipment and materials. Field trips are taken to local golf courses and private businesses to observe the management operations.
(3, 3) 3 credits

HOR 224 Planting Plans II
In this course the use of plant materials in relation to other garden elements and landscape elements is emphasized. Proper selection of ornamental plants and aesthetic composition of ornamental plants to solve specific landscape problems will be stressed. Preparation of planting plans and planting specifications.
Prerequisite: HOR 209 or permission of instructor
(1, 6) 3 credits

HOR 225 Woody Plants III
Advantage study of the plants previously considered, especially of named varieties or cultivars, and of the lesser-known trees, shrubs, vines and ground covers. An understanding of plant peculiarities and requirements, and the ability to evaluate them for landscape purposes are important objectives.
Prerequisites: HOR 211, HOR 212
(1, 2) 3 credits

HOR 226 Drainage and Irrigation
The efficiencies of various drainage and irrigation concepts are discussed as they pertain to soils, climate, and plants being grown. Water sources, availability and storage are taught along with pressure requirements and means of conservation. When to irrigate, how to irrigate and rates of irrigation application are discussed as they relate to soils and terrain.
Prerequisite: HOR 129 or Department approval
(2, 3) 3 credits

HOR 227 Landscape Graphic Design on the Macintosh
The integrated graphics environment of the Macintosh computer combined with contemporary printing technology permits creation of sophisticated landscape graphics. Emphasis is placed on the design principles professional needs who needs an alternative method to present landscape plans or planting plans. This course is designed for the Macintosh hardstone and software available to the landscape designer in order to maximize them to obtain professional results.
Prerequisite: HOR 129 or HOR 209 or demonstration of strength landscape design skills or HOR 250
(1, 2) 3 credits

HOR 228 Current Horticultural Topics
Topics of current horticultural interest will be selected by the Horticultural Department and covered in depth. The topics to be covered will be announced in the course bulletin each semester the course is offered.
(3, 2) 3 credits

HOR 229 Soil and Tissue Testing
A continuation of Horticultural Soils with emphasis on soil and tissue testing, correlation of results and fertilizer recommendations. Plants' nutrient needs, fertilizer type, liquid fertilization, and fertilization practices for the greenhouse nursery and container growing and landscape materials will also be covered.
Prerequisite: HOR 101
(3, 0) 3 credits

HOR 230 Turfgrass Management II
Business procedures for professional turf growers including cost accounting, time study, record keeping, and evaluation of equipment and materials. Field trips are taken to local golf courses and private businesses to observe the management operations.
(3, 3) 3 credits

HOR 231 Horticulture Practice II
Students are assigned specific areas within their field of interest to learn supervisory skills such as organization, time-labor assessments, field reporting, planning, and evaluation of personnel. Students may also be given field problems within the areas of landscape development, greenhouse management, turf management, and nursery management. Field trips to off-campus horticultural entities will be used to gain a broader perspective of the horticultural profession.

HOR 232 Drainage and Irrigation
The efficiencies of various drainage and irrigation concepts are discussed as they pertain to soils, climate, and plants being grown. Water sources, availability and storage are taught along with pressure requirements and means of conservation. When to irrigate, how to irrigate and rates of irrigation application are discussed as they relate to soils and terrain.
Prerequisite: HOR 129 or Department approval
(2, 3) 3 credits

HOR 238 Turfgrass Culture
A study of the turfgrasses: soil, propagation, maintenance, growth requirements, and identification characteristics. Numerical materials, equipment, operations, uses, programs, and work procedures for proper and efficient man-
Techniques of horticultural merchandising. Emphasis is on business site feasibility, selection and requirements; advertising and sales techniques; purchasing, pricing and profit determination. Guest speakers and field trips to commercial sites are used to advantage.

HOR 246 Woody Plant Diagnostic Techniques * This course will cover the subject techniques and procedures required for the proper identification of woody plant problems. The student will be required to draw upon the cumulative educational experiences of the first three semesters in identifying insect disease, site and physiological problems affecting woody plants. The use of keys and integrated control measures will be stressed.

(2, 2) 3 credits

HOR 250 Land Propagation A study of the fundamental techniques and the theory and principles involved in the production of horticultural plants by seeds, cuttings, layering, and grafting.

(2, 2) 3 credits

PHYSIOLOGY
(SoA: Humanities)

Physical Education Department

Professor Fred Acee, Chairperson

Physical Education is designed to help students lead more effective and satisfying lives. Instruction in Physical Education offers students an opportunity to learn the skills of such lifetime sports as badminton, bowling, tennis, racquetball, golf, swimming, and outdoor lifetime recreational activities such as canoeing, backpacking, and biking. Courses in Physical Education, Wellness, and Aquatics are designed to encourage students to maintain a lifetime of physical health.

Physical Education is a requirement of most curricula for day students who are medically fit to participate. Students may elect to take an extra semester of Physical Education on a space-available basis. It is expected that all students registering for Physical Education will have completed college medical form on file in the Intramurals. The intramural sports program is conducted by Mr. Tom Galeazzi. This course is designed to give a comprehensive picture of the activities and standards of the physical education profession and to combine the skills acquired in previous courses in landscape development. To this end, students will pursue projects in site analysis, drainage, and irrigation, landscape construction, plant selection, and care; and cost estimating, grading, and field operations. Participation in and visits to games and field trips conducted to gardens and landscaped areas, nurseries, offices, urban areas, and suppliers.

(2, 2) 3 credits

HOR 255 Landscape Design Emphasis in this course will be placed on theory and principles of design related to residential landscape design. Landscape design problems will be presented in plain, elevation and perspective form.

(2, 2) 3 credits

HOR 258 Landscape Design A study of the fundamental techniques and principles involved in the production of horticultural plants by seeds, cuttings, layering, and grafting.

(2, 2) 3 credits

HOR 259 Irrigation Technology This course is designed to teach the student the fundamentals of the irrigation process. The student will receive a Standard First Aid Card.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 260 Introduction to Self Defense This course is designed to give students the knowledge of how to administer first aid and conduct immediate rescue and care of an emergency victim. This course will also involve cooperative first aid and when caring for accidents or sudden illnesses. At the successful completion of this course, all students will receive a Standard First Aid Card.

(1/2 semester, 1 hour per week - 1 credit)

HOR 261 Intermediate Swimming This course is designed to provide the student with the understanding, knowledge and basic skills of golf such as grip, stance and the effectiveness of the trained first responder. Students will become Basic Emergency CPR on adults, children and infants. The student will also learn to perform the various methods of Airway and Pulmonary Resuscitation, American Red Cross, and First Aid. The student will be awarded upon successful completion of this course.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 262 Golf Individual instruction in the fundamentals of Pickleball including court position and strategy. This game is an excellent lead up activity to tennis.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 263 Introduction to Archery This course is designed for anyone who considers themselves either a non-swimmer or a weak swimmer. This class is intended to help students overcome their fear of the water and to learn some of the basic swimming skills such as survival float, elementary backstroke and freestyle. This course will also involve cooperative first aid and when caring for accidents or sudden illnesses. At the successful completion of this course, all students will receive a Standard First Aid Card.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 265 Introduction to Golf This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 266 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 267 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 268 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 269 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 270 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 271 Intermediate Swimming This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 272 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 273 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 274 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 275 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 276 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 277 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 278 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 279 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)

HOR 280 Landscape Design Emphasis in this course will be placed on theory and principles of design related to residential landscape design. Landscape design problems will be presented in plain, elevation and perspective form.

(2, 2) 3 credits

HOR 281 Introduction to Archery This course is designed to teach the student the fundamental skills necessary to play the game of Badminton correctly. It will stress the rules and strategies involved. It is designed to give a general knowledge of the game and basic skill deemed necessary for the total development of Badminton. An afternoon practice session prior to the class will be held.

(1/2 semester, 2 hours per week - 1/2 credit)
PED 220 Beginning Volleyball
This course is designed for the student who is interested in learning the rules, receiving instruction in a variety of skills and concepts associated with volleyball. Team strategy and officiating techniques will also be developed.
(1, 2) 2 Credits

PED 221 Introduction to Weight Training
This course is open to both men and women. The material covered will be on weight training’s proper lifting techniques, safety in the weight room, nutrition, lifting, workout variations and aerobics fitness.
(2, 0) 2 credits

PED 222 Introduction to Backpacking
The Backpacking class will include 15 lecture hours that will cover in detail the equipment used in backpacking such as tents, sleeping bags, packs and frames, boots, clothing, backpacking stove and fuel. Areas of camping and backpacking also to be covered include: first aid, hypothermia, fire building, hiking techniques, how to use a life-saving whistle. In addition, a large segment of the class will be devoted developing a level of physical fitness necessary to have a successful class trip.
(1, 2) 2 Credits

PED 223 Introduction to Gymnastics and Trampoline
Fifteen weeks of instruction will be given in rebound tumbling, parallel bars, pommel horse, balance beam, uneven bars and vaulting. This course is open to both men and women.
(semester, 2 hours per week – 1 credit)

PED 224 Introduction to Karate
This course is designed for students interested in learning the martial art of the Goju-ryu style of Karate. The course will consist of basic kata, kumite, kihon and aikido. The student will be able to achieve a Black Belt instructor.
(semester, 2 hours per week – 1 credit)

PED 225 Introduction to Beginning Racquetball
This course is a non-competitive course open to all men and women. It involves conditioning in many aspects including mat exercises, jumping, rope jumping, weight training, aerobics, nutrition, diet, weight control and water exercising.
(semester, 2 hours per week – 1 credit)

PED 228 Introduction to Intermediate Racquetball
This course will enable students to develop good teaching techniques, establish a sense of classroom organization and a variety of concepts encompassing many areas of health and psychological changes which are experienced by a victim in distress as well as developing the lifesaving skill itself.
Does not meet the Physical Education Activity Requirement (semester, 2 hours per week – 1 credit)

PED 250 Introduction to Personal and Family Health
This course will focus on the mental, physical and sociological health of the individual as it relates to the total personal and family life. The contributing factors affecting the individual's mental and physical health, disease, drug abuse, alcohol and smoking will also be examined.
(3, 0) 3 credits

PED 255 Concepts of Physical Fitness
The course is designed for the general college student. Its aim is to teach students how to exercise properly and safely; why exercise and physical fitness are important in daily living; and what the individual exercise needs of the student are. Laboratory experiments and activities will supplement lectures.
(2, 3) 3 credits

PED 260 Cardiac Pulmonary Resuscitation for the Community and the Professional
This course is intended to train health care workers, professional rescue personnel and lay persons in the performance of cardiopulmonary resuscitation. Emphasis is placed on developing an understanding of the physiological, anatomical and psychological changes which are experienced by a victim in distress as well as developing the lifesaving skill itself.
Does not meet the Physical Education Activity Requirement (semester, 2 hours per week – 1 credit)

PED 261 Safety, Fitness and Emergency Care
This course is designed to meet the dual objectives of teaching the first aid and Basic Life Support skills with conditioning the participant to be able to physically perform the necessary activities. The student will learn first aid and safety procedures which will lead to American Red Cross certification in First Aid as well as Infant-child CPR. The conditions and procedures will be frequently practiced to help the student achieve the necessary level and length of fitness to adequately perform the skills necessary to be proficient.
(1, 2) 2 credits
Physics Department

Dr. Lloyd Makorowicz, Chairperson

The Physics Department provides its students with an understanding of the interactions among all forms of matter and energy. Toward this end, the Department offers each student a physics education carefully tailored to suit his/her needs. A student who is not pursuing a science-related field of study may choose from among a diverse assortment of physical science courses, including astronomy, meteorology, geology, and the environment. These specialized courses for non-science students are taught by faculty with strong interest and expertise in the respective sub-disciplines. The student has the opportunity to taste the flavor of science and to appreciate its value to humanity in a technical context.

Course Descriptions

PHY 110 Physical Science — Physical Geography
A survey course in physical geography, examining the various minerals and rock types and the physical processes occurring on and below the surface of the earth.

(3, 0) 3 credits

PHY 112 Physical Science Survey
A broad descriptive course in Physical Science. Topics to be covered will be from the areas of Philosophy of Science, Astronomy, Physics, Meteorology, Chemistry, Technology, and the Environment.

(3, 0) 3 credits

PHY 113 Physical Science — Physics
A descriptive course that presents the ideas of Classical and Modern Physics qualitatively and conceptually. The emphasis will be on the relevance of Physics to the student's own experience. Topics covered will be heat and temperature, radioactivity, nuclear physics, stars, and black holes. Discussion will also center on cosmology, the NASA mission to Mars, such as pulsars, quasars and black holes will be studied. Discussion will also center on cosmology, the NASA mission to Mars, such as pulsars, quasars and black holes.

(3, 0) 3 credits

PHY 120 Physical Science — Extraterrestrial Phenomena
An elementary astronomy course in which the stars and galaxies are treated in detail. Recently discovered phenomena, such as pulsars, quasars and black holes will be studied. Discussion will also center on cosmology, the NASA mission to Mars, such as pulsars, quasars and black holes.

(3, 0) 3 credits

PHY 121 General Physics — Classical
A preparatory course designed for students who have not had high school physics and who need an introduction to physics. The topics are concerned with the topics studied in PHY 103. PHY 121 cannot be used as credit toward a degree at this College. PHY 121 introduces some Associate degree technology programs. Topics include units of measurement, velocity, acceleration, Newton's laws of motion, friction, and energy. Students seeking a traditional transferrable College Physics course must take PHY 135-136 College Physics I & II. Students not seeking a traditional transferrable College Physics course may take PHY 105-106 Technical Physics I & II unless otherwise specified in a curriculum course listing.

(3, 0) 3 credits

PHY 122 General Physics — Modern
A preparatory course designed for students who have not had high school physics and who need an introduction to physics. The topics are concerned with the topics studied in PHY 103. PHY 121 cannot be used as credit toward a degree at this College. PHY 121 introduces some Associate degree technology programs. Topics include units of measurement, velocity, acceleration, Newton's laws of motion, friction, and energy. Students seeking a traditional transferrable College Physics course must take PHY 135-136 College Physics I & II. Students not seeking a traditional transferrable College Physics course may take PHY 105-106 Technical Physics I & II unless otherwise specified in a curriculum course listing.

(3, 0) 3 credits

PHY 125 Physical Science Laboratory I
A Physical Science laboratory to any of these courses will satisfy requirements for a one or two semester laboratory science elective.

(0, 2) 1 credit

PHY 126 Physical Science Laboratory II
A Preparatory course designed for students who have not had high school physics and who need an introduction to physics. The topics are concerned with the topics studied in PHY 103. PHY 121 cannot be used as credit toward a degree at this College. PHY 121 introduces some Associate degree technology programs. Topics include units of measurement, velocity, acceleration, Newton's laws of motion, friction, and energy. Students seeking a traditional transferrable College Physics course must take PHY 135-136 College Physics I & II. Students not seeking a traditional transferrable College Physics course may take PHY 105-106 Technical Physics I & II unless otherwise specified in a curriculum course listing.

(0, 2) 1 credit

PHY 127 The Physics of Computers and Computation
The principles which govern the design and use of computer equipment are discussed. Discussion will include the historical development of computer equipment from the Babbage calculator through integrated semiconductor logic to the bicrystal computer. Other topics will include the use of computation in scientific applications and will involve the binary arithmetic, programming languages and an introduction to programming.

Prerequisite: PHY 110 or consent of the instructor.

(5, 2) 1 credit

PHY 129L Computers in the Physical Sciences
A course designed to familiarize the student with computer operation in the physical science laboratory. 

(5, 2) 1 credit
PHY 132 College Physics II
A continuation of PHY 131. Topics will include heat, electricity, magnetism, light and optics.
Prerequisite: PHY 131 Theory and Laboratory
(3, 0) 3 credits

PHY 132 L College Physics II Laboratory
Laboratory problems, experiments and report writing associated with topics studied in PHY 132.
Prerequisite: PHY 132 Theory and Laboratory (completed)
PHY 132 completed or concurrent
(3, 2) 1 credit

PHY 135 College Physics I
An integrated theory/laboratory general college physics course without calculus. Topics will include fundamental concepts of units, vectors, equilibrium, velocity and acceleration in linear and rotational motion, force, energy, momentum, fluids at rest and in motion, and oscillatory motion. Laboratory experiments, problems and report writing associated with the topics studied in the theory are performed.
Prerequisite: PHY 105 or MTH 129 completed or concurrent
(3, 4) 4 credits

PHY 136 College Physics II
A continuation of PHY 135. Topics will include heat, electricity, magnetism, light and optics.
Prerequisite: PHY 135 and PHY 131 Laboratory completed
(3, 2) 2 credits

PHY 143 Physics I
A fundamental, calculus based, physics course with laboratory offered primarily for students in Science curricula. Topics discussed include mechanics, Wave Motion, Kinetic Theory, and Thermodynamics.
Prerequisite: MTH 138 completed or concurrent
(3, 2, 2 hour recitation) 4 credits

PHY 144 Physics II
A continuation of PHY 143. Topics discussed include Electricity, Magnetism and Optics.
Prerequisite: PHY 143 completed
MTH 136 completed or concurrent
(3, 0) 3 credits

PHY 151 University Physics I
A fundamental calculus based, physics course in three semesters offered primarily for students in the Engineering Science curriculum. Topics discussed in the first semester include mechanics of particles and rigid bodies, work energy momentum, conservation laws, and fluids.
Prerequisite: MTH 150 completed or concurrent and High School Physics or PHY 103 with laboratory
(3 hours lecture, 2 hours laboratory) 4 credits
Fall, Day and Evening
Spring, Day and Evening

PHY 152 University Physics II
A continuation of PHY 151. Topics will include Coulomb’s Law, the electric field, potential, capacitance and properties of dielectrics, current, resistance and electromagnetic forces, D.C. circuits and instruments. The magnetic field and forces, induced EMF, alternating currents and electromagnetic waves.
Prerequisite: PHY 151 completed; MTH 151 completed or concurrent
(3, 2) 3 credits
Fall, Day/Spring, Day and Evening

PHY 161 University Physics Laboratory I
Laboratory experiments associated with PHY 151 and part of PHY 152.
Prerequisite: PHY 151 completed; PHY 152 completed or concurrent
(3, 0) 1 credit
Fall, Day; Spring, Day and Evening

PHY 233 College Physics III
An introduction to topics in modern physics on the elementary level. Topics included are Einstein’s Special Theory of Relativity, atomic physics, nuclear physics and applied nuclear physics.
Prerequisite: PHY 132
(3, 0) 3 credits

PHY 234 University Physics III
A continuation of PHY 152. Topics will include temperature and expansion, heat and temperature measurements, transfer of heat, thermal properties of matter, molecules, thermodynamics, molecular properties of matter, wave motion, vibration bodies, acoustical phenomena, light reflection and refraction, lenses and optical instruments. Interference and diffraction, polarization.
Prerequisite: PHY 152 Fall, Day and Evening
Spring, Day
(2, 3) 3 credits

PHY 254 Modern Physics
An introduction to the basic ideas of modern physics such as Einstein’s theories of relativity, early ideas of atomic structure including the Bohr and Rutherford models, photoelectric effect, de Broglie’s wave mechanics. Schroedinger’s equation, Heisenberg’s Uncertainty Principle, Hydrogen Atom, electron spin, Pauli’s Exclusion Principle, quantum oscillator, classical and quantum statistics, solid state physics, nuclear physics and elementary particles.
Prerequisite: PHY 233 or PHY 144
(4, 0) 4 credits
Spring, Day Session

PHY 262 University Physics Laboratory II
Laboratory experiments associated with PHY 152 and PHY 253.
Prerequisite: completed
PHY 253 completed or concurrent
(3, 2) 3 credits
Fall, Day and Evening
Spring, Day and Evening

PHY 266 University Physics Laboratory III
Laboratory experiments associated with PHY 253 and PHY 262.
Prerequisite: completed
PHY 262 completed or concurrent
(3, 2) 3 credits
Fall, Day and Evening

POL 166 State and Local Government
An examination of the structures and purposes of state, county, and municipal political institutions, emphasizing the importance of citizen participation in community affairs and the election process, in enhancing the effectiveness of state legislatures, counties and local government, and the protection of civil rights through law enforcement.
(3, 2) 3 credits
Spring, Day and Evening

POL 167 American National Government
Explores the operation of executive, legislative, and judicial functions in the American system of national government, and illustrates the meaning of federalism, the essentiality of civil liberties, and the role of political parties and other interest groups in a democracy.
(3, 3) 3 credits

POL 265 Comparative Government
A study and comparison of political processes and governing structures in European nations, the former Soviet Union, and the United States.
(3, 3) 3 credits

POL 263 American Foreign Relations
A study of American foreign relations in the post-World War II era, describing the transition from isolationism to the adoption of mutual security agreements, and political and constitutional sanctions which sustain the nation’s overseas commitments
(3, 3) 3 credits

Politics
The objective of the Politics course is to provide students with an understanding of the political system of the United States and other countries. Courses cover the structure of state, local and national government, comparison of the political processes in foreign governments, and the study of America’s post-World War II foreign relations.
Students are prepared for upper division courses in Political Science as well as to pursue careers involving a knowledge of our political system.
Note for those courses that do not indicate term offered, contact the department chairperson of the History, Economics and Politics Department.

Course Descriptions
POL 166 State and Local Government
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Spring, Day and Evening

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Pre-Technical
One Year Certificate Program (Day)
Admission Requirements:

Subject Units Remarks
Mathematics 1 unit Required. (Elementary Algebra)
Science 1 unit

Professor Alan R. Swain, Chairperson

The Pre-Technical, one-year preparatory program, is designed to strengthen the academic ability of the student in order that he/she may fulfill the requirements for admission to an Associate degree program in the engineering technologies. These programs include Aerospace Technology, Aircraft Maintenance-Mechanical Technology, Automotive Engineering Technology, Biomedical Engineering Technology, Construction/ Architectural Engineering Technology, Electrical Engineering Technology, and Mechanical Engineering Technology. The more advanced student also may meet the admission requirements for Engineering Technology.

The Pre-Technical program is structured to meet the needs of each individual student. Its objective is to enhance the student's academic capabilities in mathematics, physics, technical problem-solving, verbal and visual communications, reading comprehension and the social sciences. The integration of mathematics, physics, and problem solving reflects their interrelationship in today's technical world. This integration, and the use of computers and graphing calculators, facilitates learning and motivation. College level courses are often included in a student's program. Course selection is determined by diagnostic testing and in consultation with an advisor. Entering students meet with their academic counselor to discuss career goals and program of study.

College-level course work successfully completed may be applied to a student's Associate degree program. Eligibility for acceptance to an Associate degree program in the engineering technology field is contingent upon fulfilling admission requirements for the program and the satisfactory completion of the Pre-Technical program with a cumulative G.P.A. of 2.0.

Program of Study

PRE-TECHNICAL PROGRAM

Pre-Technical

Pre-Technical One Year Certificate Program (Day)
Admission Requirements:

Subject Units Remarks
Mathematics 1 unit Required. (Elementary Algebra)
Science 1 unit

Professor Alan R. Swain, Chairperson

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Program of Study

Code Title Hours per Week Lect. Lab. Credit
First Semester
EGL 097 Communications Skills I 3 0 3
EGL 101 Composition: Rhetoric 3 0 3
PRE 122 Integrated II 3 3 4
PRE 165 Technical Graphics 0 2 4
CST 020 Critical Reading 0 2 2
SOC 004 Introduction to the Social Sciences 3 0 3 10.5 6-9
Second Semester
EGL 102 Composition: Literature 3 0 3
PRE 123 Integrated II 3 3 4
GPH 109 Tech. Computer Graphics 0 2 2

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Area of Future Major **  
- Select One – (Curriculum Titles in Italic)  

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours per Week</th>
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Note: Degree Credit. Non-credit units are assigned only for the purposes of computing tuition fees and academic load.

Course Descriptions

PRE 094 Electrical Measurements  
An introductory course designed to help develop the student’s understanding of an electric circuit and the measurements that can be made in substantiate the analysis. The student is introduced to some of the fundamental methods of DC circuit analysis based on Ohm’s Law and Kirchoff’s Laws. Basic principles of AC circuits and applications are examined. Demonstrations and laboratory activities reinforce DC and AC circuit fundamentals, and the principles of Ohm’s Law are applied.  
(N.B. Failure in PRE102, Integrated I, will require a withdrawal from the program.)  

* No Degree Credit. Non-credit units are assigned only for the purposes of computing tuition fees and academic load.

Psychology Department

Professors David Grise, Chairperson

Courses offered by the Psychology Department have been designed to expose the student to a broad spectrum of psychological disciplines. The systematic, logical and mathematical problem-solving approach to the solution of written technical problems will be emphasized in lectures, demonstrations, and laboratory exercises. The problem-solving will focus on the solution of engineering related problems integrating many of the concepts presented in mathematics, drafting/graphics and Introduction to Technology.  

(1, 3) 2 ncu (non-credit units)

PRE 102 Introduction to Technology  
This course focuses on several vital concerns of students preparing for careers in the engineering technology field, including the development and growth of technology, the exploration of design and the requirements to attain the career goal. The studying and understanding of technical materials is emphasized. The positions and roles of the members of the Technological Team are examined. Personal factors and occupational trends are considered as they relate to career selection.  
(3, 0) 3 credits

PRE 103 Technical Graphics  
A foundation course utilizing both sketching and computer graphics in the representation and presentation of technical ideas, objects and information. Students will gain an understanding of graphics principles and develop skills in the two graphics methods.  
(0, 4) 2 credits

PRE 122 Integrated I  
This course applies the concepts and principles of Mathematics and physics to problem solving in the technical world. The disciplines are integrated into a cohesive, practical course that covers the following topics: use of calculators, fractions, decimals, roots, problem solving techniques, estimation, rectangular coordinate measurement, ratio, proportion, and first and second degree equations. The emphasis throughout the course is on solving non-trivial, practical technical problems with the aid of state-of-the-art calculators and computing techniques. A term project is required.  
(7, 5) 4

PRE 123 Integrated II  
The concepts and principles of mathematics and physics as applied to solving technical problems. The disciplines are integrated into a cohesive, practical course that covers the following topics: advanced formulas, functions, trigonometry, vectors, scales, forces, equilibrium, work, and energy. Problem solving is emphasized as in the first course. A term project is required.  
(3, 0) 3 credits

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NOTE: The following are advanced Psychology courses. It is recommended that students take either PSY 130 or PSY 131 as a foundation for these courses.

PSY 230 Femininity and Masculinity: A Psychological Perspective  
This course will examine sex role stereotypes and their effects, research on psychological sex differences, theories of males and female development, sex roles and social institutions - how perceptions of males and females are influenced by the culture, and the effects of behaviors. However, an emphasis will be placed on the complete introduction to Psychology, it is recommended that both courses be taken. (This course includes a unit on study skills for the college student.)

PSY 130 Introduction to Psychology (Perception, Learning, Motivation, Physiology)  
This course is designed to present basic psychological concepts and to introduce students to the scientific study of behavior. Topics covered include methods of psychological research, behavioral biology, altered states of awareness, principles of learning, memory/forgetting, sensation/perception, language/thought, and motivation/emotion/stress. Psychological theories, uses of psychology (individual and general), and careers in psychology will be discussed.  
Prerequisite: None  
(3, 0) 3 credits

PSY 131 Introduction to Psychology (Personality, Abnormal Therapy, Societal)  
This course is designed to present basic concepts in the science of behavior. Topics covered include methods of psychological research, psychology as a profession, human development, intelligence, theories of personality, the family, and the individual. Content will include behavioral genetics, growth and development, medical and mental health issues, education, computers, the workplace, unemployment, and the American community. The course will explore ways to accept the rapid pace of change as useful rather than as stressful. (Students completing this course cannot receive credit for SOC 211.)  
Prerequisite: None  
(3, 0) 3 credits

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PSY 234 Social Psychology
This course introduces the student to the study of how people influence each other. Topics to be covered include: liking and loving, aggression and violence, obedience and compli-
cance, helping in emergencies, attitudes, prejudice and sex-
ism. In addition, social perception and group behavior will be
examined.
Prerequisite: None; PSY 130 or 131 recommended
(3, 0) 3 credits

PSY 235 Abnormal Psychology
This course studies the foundations and concepts of abnormality, including mental illness and behavioral disorders. Topics will include biological, psychological, and sociological perspectives: psychodynamic, trait, learning, and
behavioral approaches. Prerequisite: None; PSY 130 or 131 recommended
(3, 0) 3 credits

PSY 237 Theories of Personality
The course will examine the concept of personality from four theoretical perspectives: psychodynamic, trait, learning, and
humanistic. Representative theories of each perspective are
discussed in terms of basic conceptualizations, methods of
assessment, development, research and clinical application.
Prerequisite: None; PSY 130 or 131 recommended
(3, 0) 3 credits

SOC 220 Sociology of Aging
An examination of the significance, causes and conse-
quences of aging as a life cycle event and process. Focus
will be placed on social and cultural changes. A variety of anthropological and
sociological theories are examined. Prerequisite: SOC 122
(3, 0) 3 credits

SOC 223 Social Issues and Institutions
This course analyzes a complex set of social issues primarily
within the United States, such as crime, alcoholism, drug use,
social behavior, environmental issues and problems, changes and
problems within the major social institutions (i.e., family, educa-
tion, religion, politics, economics) are also analyzed in depth.
(3, 0) 3 credits

SOC 224 Urban Sociology
This course shall examine the rise, diversity and changes of
cities and modern metropolitan areas. The sociological study
of urban growth, suburbanization, community decay and
renewal, competition among localities and the gen-
eral effects of urbanization will be undertaken. Sociological
theories, concepts and data bases will serve to analyze
crime and poverty.
(3, 0) 3 credits

SOC 225 Sociology of Marriage and the Family
Sociologically examines marriage and the family, with a spa-
cial emphasis on current status of marriage and nuclear fam-
ily in America. Theoretical and applied approaches are exam-
ined. Topics to be covered include (among possible others) dating
and courtship, marriage, marital dynamics, division of labor in the family, the effects of feminism on the family, work-
force issues, parent-child conflict, divorce and remarriage.
(3, 0) 3 credits

SOC 226 Sociology of Work
This course focuses on the definitions, causes and conse-
quences of work, being a parent, divorce, the empty nest syndrome,
mid-life crisis, retirement, and dying. Biological and
social factors will be taken into consideration, as will psycho-
logical theories and individual responses to stages and pas-
sages throughout adulthood.
Prerequisite: None; PSY 130, PSY 131
(3, 0) 3 credits

SOC 230 Sociology of Education
An examination of the function, structure and problems of the
American educational system today. Focuses on the school
system, including higher education institutions as agents of
socialization, change, mobility as a transmitter of culture.
Also examined is the educational system as a formal bureaucratic
organization and subsystem that allocates and sorts people.
Prerequisite: SOC 122
(3, 0) 3 credits

SOC 231 Sociology of the Family
An analysis of the defining characteristics of the American
family, with a particular emphasis on family changes and
problems within the major social institutions (i.e., family, educa-
tion, religion, politics, economics) are also analyzed in depth.
(3, 0) 3 credits

SOC 232 Sociology of Aging
Empath on the process of aging in a social context. Com-
bined with contemporary theories of aging, cross-cultural
examination of aging, selection of problems of aging and the
theoretical, sociological and social problems. (3, 0) 3 credits

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The Undeclared Major

Admission Requirements: (Day)

High School Diploma or General Equivalency Diploma (GED) and satisfactory performance on a pre-admissions reading examination.

Professor Edward J. Werring, Coordinator

The Undeclared Major is designed to accommodate students who can meet admission requirements to Farmingdale but are undecided about career direction and, therefore, a degree program at the College. Among those courses taken by Undeclared Major students is a required course which enables them to examine academic and career options, understand theory of personality development, develop research and study skills and refine decision-making skills. The college-level courses taken by students while an Undeclared Major may be applicable toward their degree once a degree major has been declared, and provided those courses are needed to fulfill graduation requirements from that department.

Program of Study

* Required of all Undeclared Majors
** Determined by curriculum interest and individualized advisement

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FACULTY

I. Edward Acatra
Distinguished Teaching Professor, Professor of Biology
B.S., Iona College; M.S., Ph.D., St. John's University
Fellow, American Academy of Microbiology
Farmingdale Foundation Excellence in Teaching Award, 1996; Chancellor's Award for Excellence in Teaching, 1990

Charles Fishman
Distinguished Service Professor, Director of Writing Programs and Professor of English
B.A., M.A., Hofstra University; D.A., SUNY Albany
Chancellor's Award for Excellence in Teaching, 1985
Farmingdale Foundation Award for Excellence in Teaching, 1988
NYS/UUP Excellence Award, 1990

Comitella P. McAdory
Distinguished Service Professor and Professor of English and Humanities
B.A., St. Francis College; M.A., New York University
NYS/UUP Excellence Award, 1991

Federick A. Ace
Associate Professor and Chairperson of Physical Education
B.S., SUNY Cortland; M.S., Ithaca College

Charles N. Adair
Professor and Chairperson of Biology
B.S., New York State University; M.S., Cornell University; Ph.D., University of Hawaii

Patrick Avenell
Instructor of Advertising Art and Design
A.A.S., SUNY Farmingdale; B.S., SUNY Buffalo

I. Edward Acatra
Distinguished Teaching Professor, Professor of Biology
B.S., Iona College; M.S., Ph.D., St. John's University
Fellow, American Academy of Microbiology
Farmingdale Foundation Excellence in Teaching Award, 1996; Chancellor's Award for Excellence in Teaching, 1990

Steven Amstott
Assistant Professor of Mathematics
B.A., University of Pennsylvania; Ph.D., Rutgers University, New Jersey

William Austin
Assistant Professor of English and Humanities
B.A., Queens College; M.A., Ph.D., Tulane University

Henry N. Balb
Professor of Criminal Justice
A.A.S., SUNY Farmingdale; B.S., John Jay College of Criminal Justice, CUNY; M.A., M.S., SUNY Stony Brook; Ed.D., Nova Southeastern University

Charles Badowski
Associate Professor of Mathematics
B.S., Manhattan College; M.S., New York University; M.S., New York Institute of Technology

Antonella Bandopadhyay
Associate Professor and Chairperson, Construction/Architectural and Civil Engineering Technology
B.E., University of Calcutta, India; M.S., Ph.D., Pennsylvania State University; P.E., New Jersey

Salvatore Barbasso
Professor of Mathematics
B.S.E.E., City College of New York; M.S.E.P., Polytechnic Institute of Brooklyn

Albert Barker
Assistant Professor of Advertising Art & Design
B.A., Pratt Institute

Paul K. Baumann
Associate Professor and Chairperson of Aerospace Engineering; Associate Dean and Aeronautical Sciences
B.S., M.E., New Jersey Institute of Technology; M.S., A.S., Air Force Institute of Technology; P.E., New York State

Victor I. Belford
Professor and Acting Chair of Pre-Technical
A.A.S., SUNY Delhi; B.S., M.A.T., Ph.D., Cornell University

Gary A. Brown
Professor of Biology
A.A.S., SUNY Farmingdale; B.S., M.S., Ph.D., University of Georgia

Jason W. Brown
Assistant Professor of Construction/Architectural and Civil Engineering Technology
B.S., New York State University; M.S., Hofstra University

John L. Brown
Professor of Electrical Engineering Technology
B.S., SUNY Buffalo; B.S., M.S.E.E., City College of New York

Joshua A. Bubba
Assistant Professor of Data Processing/Computer Technology
B.A., Ed.M., University of Miami

Anna Bits
Professor of Data Processing/Computer Technology
B.A., Ed.M., University of Miami

Maria Galvano-Glasberg
Associate Professor of Accounting
B.S., M.S., M.S.U.N.Y. Queens College; M.P.H., Ph.D., City University of New York

Linda Cakarevic
Professor of Business Administration
B.S., A.A., Hofstra University

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Henry Bojako
Associate Professor of Data Processing/Computer Technology
A.A.S., Suffolk Community College; B.S., Hofstra University

Paula M. Boulouba
Assistant Professor of Electrical Engineering Technology
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Kenneth W. Bowers
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A.A.S., SUNY Farmingdale; B.S., SUNY Stony Brook

Colores R. Bradley
Assistant Professor of Nursing
B.S., R.N., Hunter College, CUNY; M.S., Adelphi University

Alan R. Brown
Professor of Technical
B.S., M.S., Iowa State University

Gary A. Brown
Professor of Biology
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Joseph A. Beitz
Assistant Professor of Construction/Architectural and Civil Engineering Technology
B.S., B.Arch., Rensselaer Polytechnic Institute; M.S., M.E., New Jersey Institute of Technology; Registered Architect; N.Y., N.J., Conn.

Raymond E. Bigliani
Professor of Physics
B.S., Manhattan College; M.S., New York University

Judith C. Bird
Librarian
B.A., SUNY Oneonta; M.S., Long Island University; M.A.L.S., SUNY Stony Brook; NYS/UUP Excellence Award, 1981

John P. Burkat
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B.S., M.A., City College of New York; Ph.D., New York University

David Conford
Professor of English
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Anne Cuba
Assistant Professor of Food and Nutrition
B.A., B.S., M.S., M.C., SUNY Queens College;

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Associate Professor of Electrical Engineering Technology
B.S., M.S., Bangalore University; M.S., SUNY Stony Brook

Eileen Eichler
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B.S., Herbert Lehman College, CUNY; M.S., U.I.U., New York University

Robert L. Elgert
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B.S., Kings College; M.A., Ph.D., St. John's University

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B.S., M.E., A.S., Georgia Institute of Technology; M.S., M.E., Mississippi State University; P.E., New York State

Loretta Falk
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B.S., SUNY Stony Brook; M.A., New York University

Eleanor Fopchu
Associate Professor of Economics
B.A., Vassar College; M.A., Ph.D., New York University

Madeline Fava
Assistant Professor of Foreign Languages
B.A., Fordham University; M.A., Ph.D., New York University

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Professor of Electrical Engineering Technology
A.A., Adams Community College; A.A.S., Nassau Community College; B.S., A.S., Buffalo; M.A.L.S., SUNY Stony Brook

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Gary Ottin
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B.S., M.S., Western Illinois University

Henderson
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Raymond Dunstan
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Gerald Flynn
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Paul Fogelberg
Assistant Professor of Ornamental Horticulture
A.A.S., SUNY Farmingdale; B.A.A., University of Georgia

142
Charles Straub
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Morton P. Seitelman
Associate Professor of Mechanical Engineering Technology
B.S., M.S.E., University of Kentucky; Ph.D., New York University

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Joel C. Sullivan
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Hazem Tarik
Professor of Mechanical Engineering Technology and Director of Manufacturing/Engineering Research
B.Sc., M.Sc., University of Alexandria; M.S.E., Stevens Institute of Technology, P.E., CT

Socrates Thanassi
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B.E.E., City College of New York; M.S.E.E., Syracuse University

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Joseph A. Ursino
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