



OLUMBUS TECHNICAL INSTITUTE



BULLETIN

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Course Description

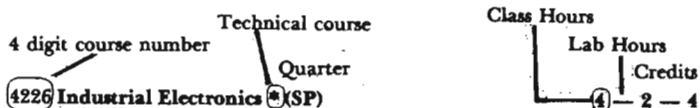
Columbus Tech's Course Numbering System

To make scheduling move more smoothly, no two courses at Columbus Tech have the same number. The first two digits of a course's four digit number identify for you the department; the last two numbers identify the individual course within the department.

Listed below are the various departments in order of their course numbers. Refer to this chart to find in which department a given course can be found. For example, 7513 Family Counseling would be found in the Course Descriptions section under Social Services.

09xx Army ROTC	47xx Welding
10xx Communication Skills	50xx Construction Core
11xx Mathematics	51xx Architecture Technology
13xx Basic Sciences	52xx Construction Management
15xx Behavioral Sciences	53xx Civil Engineering Technology
18xx Developmental Education	75xx Social Services
22xx Hospitality Management	77xx Interpreting/Transliterating
24xx Graphic Communications	78xx Law Enforcement
25xx Aviation Maintenance	79xx Fire Science/Safety
27xx Computer Science	80xx Medical Laboratory
28xx Financial Management	81xx Dental Laboratory
29xx Retail Management	82xx Vision Care
33xx Secretarial Science	83xx Emergency Medical Services
36xx Real Estate	84xx Mental Health/Mental Retardation
37xx Accounting	85xx Nursing
38xx Business Management	86xx Respiratory Therapy
41xx Automotive Maintenance	88xx Multi-Competency Health
42xx Electronic Engineering Technology	89xx Animal Health
44xx Mechanical Engineering Technology	
45xx Heating, Ventilating and Air Conditioning	
46xx Mechanical Engineering Technology	

Explanation of Course Description Codes



Industrial devices and utilization concepts. Welders, photo-electric devices, timers, and ultrasonics; Magnetic systems, rotary devices, and servo and synco systems. \$3.00 lab fee.

Prerequisites: 1214, 1234

Four digit course number - first two digits indicate the department; the second two identify the specific course. Two digits followed by XX, indicate an elective requirement for which only the department is specified; here the student may choose the specific course, subject to approval of his advisor. Where no digits appear, the elective may come from more than one department. It usually connotes a General Education course.

Technical Course - identifies courses within the student's major field. These may be used to work toward fulfilling departmental regulations that require students to take a certain number of technical courses.

Quarter - indicates which quarter or quarters the course is offered during the year. A-autumn, W-winter, SP-spring, SU-summer.

Prerequisites - identifies any course work that must be completed before the student is eligible to enroll for the course. For example, if the number 1002 were listed as a prerequisite for a course, then only students who have completed 1002 would be eligible to register for the course.

Concurrent Courses - identifies any course work that must be completed during the same quarter as the course in which you are enrolling. For example, if course 4205 is concurrent with course 4204, both courses must be taken during the same quarter.

Class Hours - tells the number of hours per week a particular course meets in a lecture classroom.

Lab hours - tells the number of hours per week a particular class meets in a laboratory situation. This is usually in addition to class hours.

Credits - identifies the number of credits awarded to students who successfully complete the course.

Lab Fee - identifies the amount of money (if any) required of students registering for the course. This fee is needed to help offset the cost of consumable materials used in lab situations. Examples are chemicals, glassware, booklets, manuals, and edibles.

Accounting Technology

3703 Intermediate Accounting I* (A) 4-3-5

A continuation of accounting theory. An in-depth study of the accounting process and accounting records; the nature and content of accounting statements: Balance sheets, income statements, statements of retained earnings; analysis of working capital; analysis and methods of valuations and statement presentation of the following items: Cash and temporary investments, receivables, and inventories. Lab fee: \$1.00 Prerequisite: 3733

3704 Intermediate Accounting II* (W) 4-3-5

A continuation of course no. 3703 including analysis and methods of valuation and statement presentation of the following items: Current liabilities - contractual and contingent items; investments in plant, and equipment - their acquisition, use, retirement, depreciation and depletion, and reevaluation; intangible assets, deferred charges and long-term liabilities. Lab fee: \$1.00 Prerequisite: 3703

3712 Accounting Machines and Systems* (SP,SU) 2-5-5

An introduction to systems fundamentals including flowcharting and internal control. A comprehensive application of accounting principles studied in 3731 and 3732 using microcomputers. Lab fee: \$12.00 Prerequisite: 3713 and 3732

3713 Data Processing for Accountants* (W,SP) 2-4-4

A survey of software packages most often used by accountants. Practice using LOTUS spreadsheet software on microcomputers. Lab fee: \$12.00 Prerequisite: 2782

3714 Cost Accounting* (A) 4-3-5

A study of the field of job order cost accounting; the cost cycle-methods of handling materials, labor costs, and manufacturing overhead expenditures (controllable and uncontrollable); process cost accounting; byproducts and joint products; fundamental cost-volume-profit relationships (break-even analysis); flexible and standard costs. Lab fee: \$1.00 Prerequisite: 3733

3716 Auditing* (SP,SU) 3-3-4

Independent and internal audits, professional ethics, legal liability, internal control, auditing standards and procedures. Evidential matter, auditors approach and techniques, reports, statistical sampling, management advisory services. Prerequisite: 3733

3723 Financial Statement Analysis I* (A,SU) 2-3-3

Forms of business organization; sources and management of working capital; tools of analysis, percentages, of working capital; tools of analysis, percentages, comparisons - past performance, industry standards; basic ratios including working capital. Lab fee: \$1.00 Prerequisite: 3733

3725 Financial Statement Analysis II* (W,SU) 2-3-3

A continuation of 3723, ratios of equity, return on equity and return on assets; corporate securities; financing through securities; sources and management of long-term assets, debt, and equity including capital budgeting; expansion and combinations, reorganization, receivership and dissolution. Lab fee: \$1.00 Prerequisite: 3723

3731 Principles of Accounting I* (A,W) 5-0-5

An introductory course in accounting. Course emphasis is on: 1) the accounting cycle as applied to a service organization; 2) adaptations in accounting for a merchandising concern, and 3) recording through use of specialized journals.

3732 Principles of Accounting II* (W,SP) 5-0-5

A continuation of Principles of Accounting I. Course emphasis is on problems related to cost aggregate assets, current liabilities and payroll. This course also begins to introduce the accounting concepts of partnership business organizations. Prerequisite: 3731

3733 Principles of Accounting III* (SP,SU) 5-0-5

A continuation of course 3732 with special emphasis on accounting problems peculiar to corporations (focusing on long-term liabilities and stockholder's equity sections). A major portion of this course is devoted to the analysis and interpretation of accounting information enabling management to plan their organization's financial destiny. Prerequisite: 3732

3735 State and Local Taxation* (SP,SU) 2-3-3

Payroll taxes, withholding and reports. Unemployment, industrial insurance contributions, workmen's relief funds. Franchise taxes. Personal property taxes. Classified and intangible taxes. City income taxes. Sales and use taxes. Real estate taxes. Vehicle and other taxes. Lab fee: \$2.00 Prerequisite: 3733

3736 Federal Taxation* (W,SU) 4-3-5

Individual income taxes; returns, income exemptions, deductions, gains and losses, rates, adjustments. Problems of proprietorship, partnerships, corpora-

tions - inventories, depreciation, accounting, installment and deferred sales treatment. Filing requirements, payments, refunds, claims. Tax planning techniques. Lab fee: \$2.00 Prerequisite: 3733

3745 Advanced Accounting* (SP) 3-3-4

Covers series of advanced topics such as partnership accounting, branch accounting, consolidations and installment sale accounting. These topics are such that they round out the students' knowledge of accounting for the most common organizational types. Prerequisite: 3704

3746 Accounting Practice* (SP) 3-3-4

A detailed study of accounting systems as applied to specific industries. Industries studied; retailing, construction, utilities, and government. Material from all previous courses applied. Accounts from local firms presented and developed in clinic approach. Lab fee: \$5.00 Prerequisite: 3704

3747 Advanced Taxation* (SP) 3-3-4

A continuation of federal taxation 3736, including non-liquidating distributions, accumulated earnings and undistributed income. Sub-chapter S corporations, stock redemption and partial liquidations, corporate reorganization and estate and gift taxation. Prerequisites: 3704 and 3736

3748 Controllership/CPA Review* (SP) 3-3-4

Executive accounting problems of industrial accounting organizations; study and analysis of cost systems, accounting data and special problems of manufacturing industries that confront management accountants/practical accounting problems and questions on accounting theory, law and auditing as presented in C.P.A. Examinations. Prerequisite: 3704

3749 Public Administration/Fund Accounting* (SP) 3-3-4

Accounting principles, standards and procedures applicable to enterprises operated not-for-profit; covers governmental units, institutions such as universities and hospitals, charitable organizations, fraternal organizations, religious groups, clubs, etc. Prerequisite: 3704

3751 Final Project* (SP) 2-8-5

Systems design, programming, and testing of generalized audit packages to assess the fairness of client prepared financial statements and reports. Prerequisite: 3704, 3716, 2727, and 2755

3752 Accounting Internship* (A,W,SP,SU) 0-20-2

A structured employment situation in which the student is introduced into an actual accounting office. The student is expected to perform many of the accounting procedures studied in conjunction with their other classes (i.e.- bank reconciliations, payroll, journal entries, etc.) and to gain relevant experience and a limited work record. Weekly supervision of the intern is used to solve any job-related problems and to attempt to develop a sense of responsibility and a professional attitude within the student/intern. Prerequisite: 3703 Concurrent: 3753

3753 Internship Seminar* (A,W,SP,SU) 2-0-2

A practical work experience in which the student is expected to perform several operational auditing procedures (i.e.- flowcharts, organization charts, analysis of existing internal control, recommendations, etc.) related to an accounting internship position. Emphasis is placed upon analyzing and further understanding the students' working environment. Prerequisite: 3703 Concurrent: 3752

3762 Financial Accounting (A,W,SP,SU) 4-0-4

The first of a two quarter sequence introducing accounting to students with no bookkeeping or accounting background. The course is a fundamental study of principles and procedures of double entry accounting as applied to sole proprietorships, partnerships, and corporations. Concepts of this first course are continued and applied in the second course, Managerial Accounting. Students are advised to avoid any time lapse between these courses. Lab fee: \$1.00

3763 Managerial Accounting (A,W,SP,SU) 3-0-3

An extension of Financial Accounting applying introductory accounting techniques to business situations. It is designed to acquaint the student with the use of accounting information in the control of a business operation and the interpretation of such information for management's use. This course is an overview of the analysis of financial statements, cost and responsibility accounting, budgeting, cost volume profit analysis and decision making. Lab fee: \$1.00 Prerequisite: 3731 or 3762

Animal Health Technology

8902 Animal Health Technology I* (A) 4-2-5

Introduction to the Animal Health Technology including laws and ethics, duties and job opportunities. Medical terminology and nutrition requirements for various animals. Concentration on management, common diseases of and basic

techniques used with common laboratory animals. Procedures necessary for maintenance of an animal colony. Lab fee: \$60.00

8904 Animal Health and Diseases* (A,W) 4-0-4
Study of normal physiological data, signs of disease, disease prevention and common diseases of canine, feline, equine and food animal species. Prerequisite: 8986

8908 Animal Parasitology* (W) 2-2-3
An introduction to the common internal and external parasites of domestic animals including scientific nomenclature, life cycles, common methods of identification and the treatment and/or prevention of these parasites. Lab fee: \$60.00 Prerequisite: 1331

8909 Client Relations* (A) 2-0-2
Exploration of the procedures used in veterinary practices, in client and public relations, including office procedures and computers. Prerequisite: Admission Concurrent: 8902

8916 Clinical Procedures I (Surgery)* (SP) 3-0-3
Fundamentals of routine surgery, including preparation of patient, identification of instruments, preparation of surgical packs, suture materials and patterns. Use of the autoclave and other methods of sterilization. Required preanesthetic laboratory tests and postoperative care of the patient. Prerequisites: 1332

8917 Clinical Procedures II (Radiology)* (SP) 2-0-2
Study of elementary physics, atomic structure, x-ray physics in the production of x-rays, interaction of x-ray within the body, interaction of x-rays with x-ray film, radiation safety, patient preparation and positioning, special diagnostic radiographic procedures and equipment. Prerequisite: 1331

8918 Clinical Procedures III (Pharmacology)* (W) 4-0-4
Drugs commonly used in veterinary medicine, including brief history, terminology, source, dosage form and drug classification. Methods of administration, factors altering drug response, prescription terminology and metrology. Regulations for controlled substances. Prerequisite: 1181

8919 Clinical Procedures IV (Anesthesiology)* (SP) 4-0-4
Study of systemic and inhalation anesthetic agents, premedication agents, ventilators, respirators and monitoring equipment. Emergency drugs and pre-anesthetic physical. Prerequisite: 1332

8926 Clinical Laboratory I* (SP,SU) 3-6-6
Course designed to teach procedures required to perform a complete blood count. Students use hemocytometer, pipet, centrifuge and spectrophotometer. Emphasis on the differential white blood cell counts including abnormal and immature red blood cells and white blood cells. Most other tests performed in a clinical hematology laboratory are presented. Prerequisite: 1332

8927 Clinical Laboratory II* (A,W) 3-6-6
Student performs tests on urine, including protein, glucose and ketones, and other tests performed in routine urinalyses laboratory. Students learn characteristics of and tests performed on transudates, exudates, and cerebrospinal fluid. Students perform blood chemistries, including glucose, bun, creatinine, and enzymes. Prerequisite: 8926

8929 Clinical Laboratory III* (A,W) 2-6-5
Processes necessary to identify causative agents of bacterial infections. Student performs susceptibility testing to identify chemical or antibiotic agents necessary for treatment. Basic bacteriological procedures which include isolation of colonies on culture plate and gram stain. Serologic procedures, identification of brucellosis by antigen antibody detections. Prerequisite: 8986

8931 Clinical Application I* (SP) 0-6-3
Laboratory exercises for 8916, 8917, 8919. Techniques of surgery, anesthesia and radiology along with techniques of venipuncture and injection. Lab fee: \$60.00 Prerequisite: 1332

8932 Clinical Application II* (A,W) 0-6-3
Laboratory experiences for students to practice skills of surgery, radiology, anesthesia and hematology. Practice in physical examination, client records. Lab fee: \$60.00 Prerequisite: 8986

8986 Clinical Experience I* (SU,A) 0-30-6
Practical experiences in techniques used in veterinary medicine. Students are assigned to veterinary facilities: The veterinary teaching hospital in the college of veterinary medicine at the ohio state university, and other veterinary facilities including research, private practices and the zoo. Lab fee: \$60.00 Prerequisite: 27 technical credits.

8987 Clinical Experience II* (W,SP) 0-30-6
Continuation of 8986. Lab fee: \$60.00 Prerequisite: All 89xx courses

8991 Clinical Seminar I* (SU,A) 0-2-1
Course conducted seminar style to discuss issues relating to clinical experience including euthanasia, problem solving models and change strategies. Prerequisite: 8919 Concurrent: 8986

8992 Clinical Seminar II* (W & SP) 0-2-1
Continuation of course 8991 seminar course to address issues emanating from clinical experience. Strategies for job hunting. Simulation interviews with veterinarians. Prerequisite: 8986 Concurrent: 8987

Architecture Technology

5112 Finish Materials/Installation (A,SP) 2-4-4
This course is intended to follow basic construction materials (5072 and expose the student to those materials which are specifically associated with the construction of buildings. Topics covered include interior finishes, window and door openings, moisture and thermal protection, acoustical treatments, and mechanical conveyance systems. Lab fee: \$15.00 Prerequisite: 5072

5114 Mechanical Systems I (HVAC)* (A,SP) 2-4-4
This course identifies the elements that affect the comfort of interior spaces. It stresses the fundamentals of comfort conditioning, heat loss and heat gain calculations, methods of heating, ventilation and air conditioning. The student will learn how to incorporate the necessary elements of HVAC into the building envelope. Lab fee: \$15.00 Prerequisite: 5142,5074,5078

5115 Mechanical Systems II (Electrical)* (W,SU) 2-4-4
This course deals with the fundamentals of light and lighting in buildings. Essentials of electrical code, electrical systems and standards. Conventional symbols, nomenclature and layouts. Coordination of electrical work with the elements of the building, and fixture and equipment schedules. Lab fee: \$15.00 Prerequisite: 5142, 5074, 5078

5116 Mechanical Systems III (Plumbing)* (SP,A) 2-2-3
This course emphasizes water supply and sanitation. Deals with plumbing codes, standards, equipment, and techniques. Conventional symbols, nomenclature, details, schedules and other representation on drawings. Lab fee: \$15.00 Prerequisite: 5142,5074,5078

5122 Structural Systems* (Wood) (A,W,SU) 3-2-4
This course involves the structural design and detailing of various systems used in wood construction, including conventional light framing, post and beam, trusses, and various plywood panel systems. Additional topics discussed include installation, insulation and protection of wood structures. Lab fee: \$15.00 Prerequisite: 1111 04 1146

5127 Vertical Construction Standards* (A,SP) 3-2-4
This course familiarizes the student with building codes and regulations. It introduces the student to office practices and standards and deals with contractual relationships within the building industry. The course also identifies fundamentals of specification organization and their relationship to other contract documents. Lab fee: \$15.00 Prerequisite: 5074,5078,5112

5135 Field Co-op Experience (SU) 0-40-4
Off campus work experience in construction, consulting engineering or construction related paid employment, that augments formal education received in the technology, with actual work conditions and job experience. "N" credit will not be allowed for this course. Permission of instructor will be required. Lab fee: \$30.00 Prerequisite: 5236

5142 Architectural Graphics I (W,SU) 2-6-4
This course follows construction engineering graphics with the emphasis on advanced orthographic projection and basic descriptive geometry as found in the construction of buildings. Problems are designed to develop the students ability to think three dimensionally and solve problems involving the intersection of surfaces and lines. Computer aided drafting (CAD) is also used. Lab fee: \$15.00 Prerequisite: 5071

5143 Architectural Graphics II* (A,SP) 1-9-4
This course introduces the student to basic free hand line drawing techniques used in the architect's office. The student is briefly introduced to shades and shadows and learns how to construct one and two point perspectives. The student then applies his knowledge and prepares a set of architectural presentation drawings. Lab fee: \$15.00 Prerequisite: 5142

5144 Architectural Graphics III* (W,SU) 1-9-4
This course deals with the generation of selected schedules and details utilized

by trade mechanics in multiple material construction of walls, floors, roofs, stairs, windows and doors. It will introduce the student to working drawing organization and the coordination of details with the rest of the drawings and specifications. Lab fee: \$15.00 Prerequisite: 5122,5143

5145 Architectural Graphics IV* (SP,A) 1-11-5
This course uses all of the knowledge obtained from the previous architectural courses. A complete set of working drawings is created as a team effort. The student learns to incorporate consultant information in the final set of working drawings. Independent search for and use of information is encouraged. Lab fee: \$25.00 Prerequisite: 5026,5078,5144

5181 Architectural History (W,SU) 2-2-3
This course will instruct on the men, their theories and material representations they used to express their evolutionary techniques from approximately 1600 A.D. to the present. Manual drafting exercises will be used to emphasize important advances. Lab fee: \$10.00 Prerequisite: 5071

Army ROTC

0911 Introduction to Military Establishment 0-3-1
A comprehensive study of the organization, mission and role of the military establishment, the U.S. Army components and the ROTC program. The course will also include a survey of basic fundamentals of first aid.

0912 Land Navigation 0-3-1
A study of military maps and land navigation techniques including terrain evaluation, scale and distance, and direction and location. The course will also include the basic principles of drill and ceremonies.

0913 Military Basic Leadership (Modern) 0-3-1
Examination and application of fundamentals of rifle marksmanship. The course will also include a survey of basic principles and techniques of leadership, drill and ceremonies, and the exercise of command.

0921 National Security Policy 0-3-1
Survey of American military history from World War II to Vietnam. The principles of war and law of war. Study of US/Soviet policy on use of nuclear, biological or chemical weapons (first strike).

0922 American Military History I 0-3-1
Survey of American military history; illustrated by selected campaigns and battles. History from the colonial period to the Civil War with special emphasis on organization, tactics, technology, campaigns, battles and commanders.

0923 American Military History II 0-3-1
Survey of American military history from the Civil War to World War I. Illustrated by special emphasis on organization, tactics, technology, campaigns, battles and commanders.

0924 Military Leadership 2-3-3
A study of behavioral patterns and managerial methods applied to the military environment. The course will also include a survey of basic soldier skills and radio/wire communications. Lab: Squad and platoon drill and physical training, and field training exercise.

0925 Military Skills Training 2-3-3
An in-depth review in map reading to include practical exercises in a field environment. Also discussion of preventive medicine and first aid. Lab: Squad and platoon drill and physical training, and field training exercise

0926 Military Tactics 2-3-3
An in-depth review and survey of small unit tactics to include: Analyze terrain camouflage, individual movements, reaction to flares, call for/adjust indirect fire, and principles of offensive and defensive operations. Lab: Squad and platoon drill, physical training, and field training exercise.

0927 Military Logistics 2-3-3
Presentation of Department of the Army logistics system to include: Accounting for property, classes of supply, organization of logistical units, and administrative investigations. Lab: Physical training, staff meetings, and field training exercise.

0928 Military Justice 2-3-3
Introduction to the Uniform Code of Military Justice to include: Jurisdiction, investigations, search and seizure, pretrial restraint, interrogations and the law of war. Lab: Physical training, staff meetings, and field training exercises.

0929 Military Administration and Management 2-3-3
Unit of instruction will include the following: How to plan and conduct meetings, counseling personnel on conduct, job performance, and disciplinary matters. Management simulation program and writing in the military to include decision papers. Lab: Physical training, staff meetings and field training exercises.

Automotive Maintenance Technology

4101 Introduction to Automotive Technology* (A,W,SP,SU) 4-4-6
Covers basic maintenance operations on cars and light trucks. The instructor demonstrates all repair techniques, adjustments and performs the necessary labor operations using approved procedures and tools. This course is a prerequisite for all other automotive courses. Lab fee: \$15.00

4106 Shop Experience*(SP,SU) 1-8-4
Automotive service and troubleshooting, proper shop procedures, diagnosis and service techniques, new car preparation and eight A.S.E. Exam reviews are covered. Lab fee: \$15.00

4109 Automotive Electricity I*(A,W,SP,SU) 2-4-4
An introductory course covering basic principles of electricity and magnetism; battery theory, service and testing; routine electrical service operations; diagnosis, service, and repair of power operated accessories. Lab fee: \$15.00 Prerequisite: 4101

4111 Brake Systems*(A,W,SP,SU) 2-6-4
Course covers basic brake system fundamentals. Includes the theory, testing, and service of current brake systems. Lab fee: \$15.00 Prerequisite: 4101

4112 Automotive Powerplants I*(A,W,SP,SU) 2-5-4
An introductory course designed to provide students with the basic knowledge and skills in the areas of basic internal combustion engines, principles of operations, engine diagnosis and testing, engine construction, lubrication systems, cooling systems, in-car repair and service, and specification interpretation. Lab fee: \$10.00 Prerequisite: 4101

4117 Steering and Suspension Systems* (SP) 2-6-4
Course covers basic suspension and steering systems. Course includes front alignment on two and four wheel alignment machines, and theory, testing and service of the systems. Lab fee: \$15.00 Prerequisite: 4101

4125 Automotive Electricity II* (A,W,SP,SU) 2-4-4
Course covers inspection, diagnosis, and service of automotive starting systems, charging systems, accessory circuits and systems diagnosis. Prerequisite: 4109

4126 Automotive Electronics Applications* (A,W,SP,SU) 2-4-4
An advanced electrical course designed to provide students with a knowledge of vacuum and electrical components, circuits, and diagrams; includes the testing and service of automotive computer systems. Prerequisite: 4109

4127 Fuel and Ignition Systems*(A,W,SP,SU) 3-3-4
Course designed to provide students with a working knowledge in the area of fuel and ignition systems; including electronic ignition and fuel injection, also procedures for performing a maintenance tune-up are covered. Lab fee: \$10.00 Prerequisite: 4101

4128 Engine Diagnostics*(A,W,SP,SU) 2-5-4
An advanced course designed to provide diagnostic skills in the areas of fuel, air, and ignition systems; includes emission control systems and the proper use and interpretation of diagnostic equipment. Lab fee: \$5.00 Prerequisites: 4127

4129 Advanced Engine Diagnostics*(W,SP,SU) 2-5-5
Course designed to provide students with a working knowledge in the area of detailed engine diagnostics. Including fuel, injection and computer systems. Lab fee: \$10.00 Prerequisite: 4128

4134 Manual Drivetrains* (A,W,SP,SU) 2-4-4
Practical experience in diagnosing and repairing manual transmissions, trans-axles, and rear axles. Includes theory and service procedures for clutch, driveshaft, and drive axles. Lab fee: \$10.00 Prerequisites: 4101

4135 Automatic Transmissions I*(A,W,SP,SU) 2-4-4
Course designed to provide students with a knowledge and skill in automatic transmission and transaxles; includes diagnostics and light repair procedures. Lab fee: \$15.00 Prerequisite: 4134

- 4136 Automatic Transmissions II*(W,SP,SU)** 3-6-5
An advanced course in automatic transmission and transaxle diagnostics, major overhaul and design. Lab fee: \$15.00 Prerequisite: 4135
- 4143 Engine Machining* (A,SP,SU)** 2-6-5
An advanced course designed to provide students with basic knowledge and skill in automotive machine shop procedures with emphasis on valve face and seat grinding, cylinder boring and honing, align boring, and inspection and service to all parts of the internal combustion engine. Lab fee: \$25.00 Prerequisite: 4112
- 4144 Air Conditioning*(A,W,SP,SU)** 2-3-3
Course covering the theory and operation of automotive air conditioning systems. Diagnosis, charging and minor service techniques are also included. Lab fee: \$15.00 Prerequisite: 4101
- 4145 Parts and Service Management* (A,W,SP,SU)** 3-2-4
An automotive management course covering those management fields that are uniquely applied in the automotive service and parts industry. Prerequisite: 4101
- 4191 Special Topics in Auto Tech* I** 1-0-1
4192 Special Topics in Auto Tech* II 1-3-2
4193 Special Topics in Auto Tech* III 1-6-3
4195 Special Topics in Auto Tech* V 2-7-5
(courses offered on demand)
Special topics in automotive technology is a series of courses specifically designed to meet the needs of a constantly changing automotive service and parts industry. Courses will be designed for a particular purpose and/or group and will have the approval of the department chairperson. Up to five credits of special course work may be applied to degree. Lab fee: \$10.00 Prerequisite: Permission of instructor.

Aviation Maintenance Technology

- 2501 Aviation Theory*(A,W,SP,SU)** 4-3-5
Basic science for the aviation maintenance technician, including aerodynamics of lifting and control surfaces, conditioning for flight stability, weight and balance effects, center of gravity limits, reports. Federal air regulations. Lab fee: \$8.00
- 2502 Aircraft Construction and Design*(A,W,SP,SU)** 3-4-5
Blueprint reading and interpretation, fundamentals of drawing, drawing sketches of hardware and materials used in construction of aircraft. Lab fee: \$8.00
- 2504 Basic Aviation Maintenance*(A,W,SP,SU)** 4-6-6
Fabricating and installing fluid lines and fittings. Selecting and performing non-destructive testing methods. Selecting cleaning and corrosion control. Lab fee: \$8.00
- 2505 Aircraft Structures I (welding)*(A,W,SP,SU)** 2-3-3
Development of sufficient proficiency for the A and P maintenance technician's license. Practice in oxyacetylene welding and analyzing welding faults during routine inspection of airframe components. Lab fee: \$8.00
- 2506 Aircraft Structures II*(A,W,SP,SU)** 7-13-12
Identification of aircraft metals and plastics, properties of aircraft metals, heat treatment of fabricated parts, layout from blueprints, bending and bending allowances, protective finishes, identification, selection and use of inspection, and repair of wood structures, maintenance and repair of fabric and fiberglass. Lab fee: \$8.00 Prerequisites: 2501, 2505
- 2508 Aircraft Environmental Control Systems*(A,W,SP,SU)** 3-3-4
Inspection and repair and cabin atmosphere control systems; inspection check, troubleshooting, service and repairing of ice and rain control systems. Maintenance of aircraft fire control systems. Lab fee: \$8.00 Prerequisites: 2501, 2553
- 2509 Aircraft Fluid Systems*(A,W,SP,SU)** 8-9-11
Basic hydraulic and pneumatic principles. Basic hydraulic systems. Brake systems. Hydraulic line, fittings, fluids, pumps, and actuating devices. Inspection, troubleshooting, repair. Vacuum systems; maintenance, inspection, and repair. Aircraft fuel systems. Lab fee: \$8.00 Prerequisites: 2501, 2508
- 2511 Aircraft Rigging, Assembly and Inspection*(A,W,SP,SU)** 2-6-5
Airplane nomenclature. Disassemble and assemble sequence and procedure. Alignment procedures. Airplane overhaul. Fundamentals and methods of rigging. Stability in flight, control surfaces. Control cables; inspection, installation,

splicing. Landing gear assembly; types, maintenance, repair. Fuel systems. Aircraft appliances and miscellaneous equipment. Servicing and handling of aircraft. Heating, pressurization, and other internal systems. Instrument installation and inspection. Weight and balance review. Inspection of complete aircraft. FAA report forms. Helicopter theory and maintenance. Aero-dynamics of the helicopter. Lab fee: \$8.00 Prerequisites: 2501,2508

- 2512 Powerplant Theory and Maintenance(Reciprocating Engines)*7-12-11 (A,W,SP,SU)**
The principles, development, and design of internal combustion engines, engine maintenance, repair, and overhaul. Inspection and troubleshooting. Identification of aircraft materials, parts, and components. Calibration of tools and testing, and maintenance. Hazards of aircraft engine operation. Lubrication systems. Lab fee: \$8.00 Prerequisites: 2501, 2511
- 2513 Powerplant Theory and Maintenance (Turbine Engine)* 3-3-4 (A,W,SP,SU)**
Principles, development, design and classification of turbine engines. Engine inspection, maintenance, repair and overhaul. Installation and removal of turbine engines. Lab fee: \$8.00 Prerequisites: 2501, 2511
- 2514 Magnetos and Ignition Systems*(A,W,SP,SU)** 7-8-10
Basic electrical principles in ignition systems. Magneto theory, construction, operation, overhaul. Review of combustion principles. Types of magneto, distributor. Magneto timing; internal and external. Harness construction, inspection, overhaul, and testing. Booster systems. Low tension ignition systems. Lab fee: \$8.00 Prerequisites: 2501, 2553
- 2515 Carburetion and Fuel Controls*(A,W,SP,SU)** 4-6-6
Theory, construction, operation, maintenance, overhaul and troubleshooting of float, pressure, and injection type carburetors. The theory, construction, operation, maintenance and troubleshooting jet engine fuel controls, engine supercharging and induction systems. Lab fee: \$8.00 Prerequisites: 2501, 2553
- 2516 Propellers*(A,W,SP,SU)** 5-6-7
Aerodynamic principles of propellers. Propeller types, construction and materials. Inspection, repair, and troubleshooting. Installation, removal, tracking and balancing. Controllable propellers. Constant speed governor control: Construction, operation, maintenance, adjustment, troubleshooting. Reversible propellers. Hazards of propeller operation. Lab fee: \$8.00 Prerequisites: 2501, 2515
- 2517 Powerplant and Systems Inspection*(A,W,SP,SU)** 6-8-9
Condensation and coordination of previously accumulated knowledge. Inspection of power plants and power plant systems. Use of inspection equipment and aids. Procedures for returning aircraft to active service. Lab fee: \$8.00 Prerequisites: 2501, 2515
- 2553 Basic Aviation Technology*(A,W,SP,SU)** 5-8-9
Basic electricity for the aviation maintenance system including reading and interpreting electrical circuit diagrams utilized in troubleshooting aircraft electrical systems. Batteries and generators. Performing ground operation and servicing of aircraft. Understanding maintenance publications, forms and records. Lab fee: \$8.00
- 2557 Aircraft Electrical Systems*(A,W,SP,SU)** 6-10-10
Review of fundamentals of electricity. Generator control systems. Direct current motors. Electrical engine starting systems: Types, inspection, maintenance, overhaul, troubleshooting. Review of basic alternating current principles. Alternating current motors. Alternating current instrument systems. Reading electrical blueprints. Wiring practices, bonding, shielding. Electrical systems. Electrical power units. Radio installations, and inspection. Lab fee: \$8.00 Prerequisites: 2501, 2553
- Basic Sciences**
- 1301-1306 Special Topics in Biological and Physical Sciences 1-6 (On Demand)**
Selected materials from the regular course offerings, designed to meet specific needs. May be used for independent studies. Lab fee determined according to content.
- 1311 Inorganic Chemistry (A,W,SP,SU)** 4-3-5
An introductory course in fundamental chemical concepts and laboratory techniques. Topics include atomic structure, periodic classification of elements, chemical equations, chemical calculations, solutions, acids and bases, equilibria, and the gas laws. Lab fee: \$4.00 Prerequisite: High school algebra, 1341 or equivalent

1312 Organic Chemistry (A,SP) 4-3-5
A course in fundamental organic chemistry. The study of carbon compounds: Aliphatic hydrocarbons, alcohols, ethers, aldehydes, ketones, carbohydrates, lipids, and proteins. Related laboratory. Lab fee: \$4.00 Prerequisite: 1311 or equivalent.

1313 General and Biological Chemistry (A,W,SP,SU) 4-3-5
A review of general chemistry and a study of the properties and nomenclature of carbon compounds, with emphasis on biological applications. An examination of the properties of biologically important carbohydrates, lipids, and proteins. Lab fee: \$4.00 Prerequisite: 1341 or equivalent 1313 is not open to students who have credit for 1312.

1315 General Microbiology (A,W,SP,SU) 3-4-5
Use of bright field microscopic techniques to reveal bacterial characteristics. Study of laboratory techniques for isolation and cultivation of pure bacterial cultures including human normal flora. Methods for physical and chemical control of bacterial growth. Susceptibility testing and a detailed study of the involvement and impact of microbes on health and disease lab fee: \$8.00 Prerequisite: 1341 or equivalent

1316 Microbial Diseases (On Demand) 3-0-3
A basic study of the concepts of microbial disease. Topics covered are host-parasite interactions and resistance and immunity to disease, including the development of the immune system and mechanisms of antigen-antibody reactions. Additional topics for detailed discussion are human airborne, food-borne and waterborne infections and human contact diseases. Prerequisite: 1315

1323 General Health Problems (A) 4-0-4
Emphasis is placed on contemporary problems associated with physical and social health within the community. The biologic causes as well as sociologic causes of the problems are discussed and analyzed. The scope of the course encompasses prenatal situations through old age.

1324 Human Genetics and Society (On Demand) 3-0-3
A study of Mendelian genetics as it relates to the human organism. Special emphasis is placed upon human genetic anomalies and their social and psychological ramifications. The role of genetic counseling is discussed

1331 Anatomy (A,SP) 0-6-3
All organ systems of the human are presented in anatomical detail. Except for the special senses, integumentary and endocrine systems, functioning is treated superficially. The cat and organs of the sheep are utilized as representative of mammalian anatomy. Lab fee: \$8.00 Prerequisite: 1343 or equivalent. 1331 is not open to students with credit for 1321 or 1361.

1332 Human Physiology (A,W,SP,SU) 4-0-4
Functional detail of all human organ systems (except special senses, integumentary and endocrine) are presented in detail. Basic function of the cell and tissues is also presented. Prerequisite: 1331 or Concurrent with 1331. 1332 is not open to students with credit for 1321, 1322, 1366, 1367, or 1368

1341 Survey of Chemistry (A,W,SP,SU) 3-3-4
Basic concepts of chemistry with emphasis on the chemical properties of matter and an introduction to chemical reactions. Related laboratory work and demonstrations. Lab fee: \$3.00 Prerequisite: 1105 or equivalent 1341 is not open to students who have credit for 1311 or 1312

1342 Survey of Physics (A,W,SP,SU) 3-3-4
A study of the basic concepts of physics with emphasis on energy in its various forms. Topics include mechanics, heat, electricity, and waves. Related laboratory work and demonstrations. Lab fee: \$1.00 Prerequisite: 1105 or equivalent 1342 is not open to students who have credit for 1381, 1382, 1383 or 1385

1343 Introduction to Biological Sciences (A,W,SP,SU) 4-0-4
A general biology course in which basic principles such as the characteristics of life, basic biochemistry, cell reproduction and genetics are explored. Prerequisite: Score of 22 or above on ASSET reading test. Concurrent: 1105 1343 is not open to students who have credit for 1321, 1322, 1331, 1332, 1361, 1366, 1367, or 1368

1344 Introduction to Anatomy and Physiology (A,W,SP,SU) 3-0-3
A general overview of normal human anatomy and physiology. Topics include the cell, tissues, musculo-skeletal, nervous, cardiovascular, genitourinary, digestive, respiratory and endocrine systems. 1344 is not open to students who have credit for 1321, 1322, 1331, 1332, 1361, 1366, 1367, or 1368

1361 Human Anatomy (A,W,SP,SU) 2-4-4
Starting with cells and tissues, all the organ systems of humans are presented in anatomical detail. Functioning is treated superficially. The cat is utilized as a representative mammal in the laboratory. Lab fee: \$8.00 Prerequisite: 1343 or equivalent placement out of 1812 1361 is not open to students who have credit for 1321 and 1322

1362 Human Embryology (On Demand) 3-0-3
Starting with gametogenesis and reproduction, the embryological development of humans from fertilization to birth is presented for morphogenesis and organogenesis of the following: Face, neck, pharynx, limbs, circulatory system, nervous system, respiratory system, digestive system, urinary system, and reproductive system. Prerequisite: 1361

1366 Human Physiology I (W,SP) 3-3-4
The functioning of the various systems of the human body is presented in detail. Topics include cell physiology, neural and endocrine regulation. Lab fee: \$3.00 Prerequisite: 1361 and 1313 1366 is not open to students with credit for 1332, or 1321 and 1322

1367 Human Physiology II (SU,A) 3-3-4
A continuation of 1366. The major topic is regulation of the internal environment. This includes cardiovascular physiology, blood, renal physiology, fluid and electrolyte, acid-base balance, and regulation of respiration. Lab fee: \$3.00 Prerequisite: 1366 or equivalent 1367 is not open to students with credit for 1332, or 1321 and 1322

1368 Human Physiology III (A,W) 3-3-4
A continuation of 1367. Topics include immunology, responses to external environment (sensory systems, body mechanics, and movement), digestion and nutrition, reproduction, and inheritance. Lab fee: \$3.00 Prerequisite: 1366 or equivalent 1368 is not open to students with credit for 1332, or 1321 and 1322.

1381 Physics (Mechanics) (A,W,SP,SU) 3-3-4
A course in the basic principles of mechanics. Major topics include equilibrium of rigid bodies, particle motion, Newton's laws of motion, work and energy, conservation principles, and rotational motion. Related laboratory and demonstrations. Lab fee: \$1.00 Prerequisite: 1111 or 1146 or equivalent

1382 Physics (Electricity and Magnetism) (W,SP) 3-3-4
A course in the basic principles of electricity and magnetism. Major topics include electric charge and fields, capacitance, current and resistance, DC circuits, magnetic forces and fields, magnetic properties of matter, and alternating current. Related laboratory and demonstrations. Lab fee: \$1.00 Prerequisite: 1111 or 1146 or equivalent.

1383 Physics (Properties of Matter) (A,W,SP,SU) 3-3-4
A course in the basic principles associated with the mechanical and thermal properties of matter. Major topics include elasticity, fluid mechanics, heat and temperature, energy transformations, heat transfer, ideal and real gases, thermodynamics, vibrations and wave motion. Related laboratory and demonstrations. Lab fee: \$1.00 Prerequisite: 1111 or 1146 or equivalent

1384 Physics (Light and Optics) (W) 3-3-4
A course in the basic principles of optics. Major topics include electromagnetic waves, physical and geometric optics, with special attention given to lenses, mirrors, and optical instruments. Related laboratory and demonstrations. Lab fee: \$1.00 Prerequisite: 1108 or equivalent

1385 Physics (Heat, Light and Sound) (SU,A) 3-3-4
A course in the basic principles associated with heat, light, and acoustic phenomena. Major topics include temperature and heat, heat transfer, wave and particle nature of light, atomic theory, solidstate theory, electronics, and acoustics. Related laboratory and demonstrations. Lab fee: \$1.00 Prerequisite: 1112 or equivalent

Behavioral Sciences

1512 Human Sexuality (A,W,SP,SU) 3-0-3
An introduction to the biological, physiological, psychosocial behavioral, and cultural aspects of human sexuality covered in a way that is meaningful to mental health/mental retardation technology students. Special emphasis is placed on facts, fallacies, and feelings surrounding human sexuality.

1514 General Sociology (A,W,SP,SU) 3-0-3
An introduction to the sociological perspective as the scientific study of the following topics: Culture, society, socialization, deviance, social stratification, minorities, groups and organizations, social institutions, urban life and population, and social change.

1515 Human Behavior (A,W,SP,SU) 3-0-3
This course will explore various psychological, sociological, and physiological factors which influence individual growth, development, and behavior. Em-

Business Management Technology

phasis will be placed on the following: Utilization of current theoretical approaches to understanding and achieving self-awareness; the application of conditioning and motivation techniques to behavior modification; group dynamics; methods of self-help; and methods of improving interpersonal communications and relationships. The course will emphasize individual projects and in-class activities.

1522 General Psychology (A,W,SP,SU) 3-0-3

An introductory course providing an overview of the origins, growth, present-day content and applications of psychology, including such integral components as: The scientific method; sensory physiology and processes; perception; motivation; emotional learning; memory; cognition; intelligence; development (spanning physical, cognitive, and moral); personality; abnormal behavior; and societal utilization.

1524 Adult Psychology (A,W,SP,SU) 4-0-4

A developmental psychology course in which students are introduced to the various developmental stages of adulthood from youth to old age. Research and theory related to adult development and death as the final stage of growth are examined.

1525 Marriage and Family Relations (A,W,SP,SU) 3-0-3

An introduction to the impact of modern society upon the family as it relates to dating, courtship, size of family, member relationships, economic problems, and marital stability. The course compares alternative life styles and marriage and family relations throughout the life span.

1526 Abnormal Psychology (A,W,SP,SU) 3-0-3

Abnormal psychology is a course which presents to the students the basic concepts of abnormalities as defined by the American psychiatric association's diagnostic and statistical manual of mental disorders (DSM III). The course illuminates the classification scheme of diagnoses listing descriptive terms and symptoms of all diagnoses. This course examines the research, philosophies, major perspectives, and myths in the field of mental health. Prerequisite: 1522

1528 Ethnic Studies (A,W,SP,SU) 3-0-3

The course is a survey of the multicultural nature of American society. Multidisciplinary in nature, ethnic studies examines specific ethnic groups and includes facts, concepts and generalizations regarding ethnicity in general.

1531 Child Development I (A,W,SP,SU) 3-0-3

A study of developmental patterns of children from conception to the chronological age of six. The traditional child development approach is utilized with emphasis upon physical, cognitive, social, emotional and language development. Observation of children is an integral part of the course.

1532 Child Development II (A,W,SP,SU) 3-0-3

A study of developmental patterns of children from the age of six through adolescence. The traditional child development approach will be utilized with emphasis on cognitive, physical, social, and emotional development. Observation of children with the use of language and objective techniques will be an integral part of the course. Prerequisite: 1531

1541 Community Sociology (A,W,SP,SU) 4-0-4

A study of communities and community development from a sociological perspective. The course covers the following topics: Nature of community; socio-cultural, demographic, and ecological perspectives; process of community development; leadership and community development; community conflict; professionals and community development; research and community development.

1546 Social Issues and Problems (A,W,SP,SU) 4-0-4

An introduction to the sociological perspective as it applies to contemporary issues and problems within American society. Cultural, institutional, structural, and individual causes of chemical dependency, interpersonal and domestic violence, mental illness, deviance, inequality associated with poverty, aging, and sex roles, and problems relating to work and technology will be explored.

1585 Human Growth and Development Through the Life Span (A,W,SP,SU) 4-0-4

A survey of developmental change from conception to death. The interdisciplinary course of human growth and development studies each stage from the time of conception and prenatal growth through infancy, childhood, adolescence, adulthood and death. This course will also focus on physical, social, emotional and cognitive development attempting to familiarize the student with the many forces that shape individuals and the options individuals have to influence their own development.

1593 Independent Study (A,W,SP,SU) 3-0-3

An individual student-structured course. The independent study elective permits a student to pursue his/her interests within the context of a faculty-guided program. Prerequisite: One course in psychology or sociology or related subject and approval by instructor.

3801 Marketing* (A,W,SP,SU) 5-0-5

A study of marketing fundamentals in a changing environment. Concepts and applications of various marketing strategies and marketing research techniques as they apply to the marketing mix, consumer behavior and marketing policies.

3806 Macroeconomics (A,W,SP,SU) 3-0-3

The course is designed to introduce the student to basic macroeconomic concepts and principles necessary for analyzing economic trends and understanding both business and government activity. Topics covered include supply and demand, gross national product, unemployment, the federal reserve system, and economic growth.

3807 Microeconomics (A,W,SP,SU) 3-0-3

A discussion and analysis of the fundamental economic principles that govern the operation of a single business firm. The elements for discussion are those of consumer choice, price theory, profit objectives, specialization, technology, the advantage of scale, and the law of diminishing returns.

3808 Survey of Advertising* (W,SP,SU) 3-0-3

An in-depth exploration of advertising as a part of the "Marketing Mix." Course content includes the steps necessary to produce and deliver an advertising campaign to the consuming public. Non-credit elective when 2902 is used for credit.

3809 Small Business Management* (A,W,SP,SU) 3-0-3

An overview of business management as it applies to the entrepreneur. Concentrates on planning aspects particularly in the areas of production, marketing, personnel, and finance. Students will be taught the essentials of writing a business plan and be required to analyze a variety of small business management situations. Prerequisites: 3763,3801,3813

3812 Government and Business* (A,SP) 3-0-3

Presents the relationship between the operations of business organizations as they interact with and impact upon society. Various government regulations, environmental issues and ethical standards will be covered. Prerequisite: 3821

3813 Management* (A,W,SP,SU) 3-0-3

The basic management process of planning, organizing, directing and controlling business organizations is covered. The organization is viewed as a system of interdependent parts which interacts with the outside environment.

3814 Organizational Behavior for Management* (A,W,SP,SU) 3-0-3

An introduction to the fundamental concepts of human relations in an organization. Topics include managerial applications of interpersonal communication styles, decision-making modes, needs analysis and motivational techniques. Prerequisite: 3813

3815 Promotion* (A,W,SP,SU) 4-0-4

A survey of the promotional efforts contributing to economic exchange in today's distributive business. Personal selling, advertising, sales promotion and publicity are presented as key elements in the promotional process.

3818 Consumer Behavior* (A,SU) 3-0-3

Consumer behavior is designed to assist the student in developing a fuller understanding of the influences, both internal and external, that determine consumer behavior. It augments and complements 3815 Promotion, 3819 Technical Selling, and 3808 Advertising.

3819 Technical Selling* (A,SP) 3-0-3

Practical application of selling theory in a variety of personal selling situations. Techniques of all phases of the selling process from initial contact to the close will be taught using video tape playback.

3821 Introduction to Business (A,W,SP,SU) 4-0-4

A discussion of all significant activities in the field of business including the interaction of business with internal and external forces, ownership, organization, marketing, location, purchasing, production, personnel, finance, and control. These areas are described as they relate to the basic principles of management and economics.

3822 Sales Management* (A,W) 1-2-2

The primary focus of sales management is on the activities of the first-line sales manager. Planning, budgeting, staffing, compensation, and motivation of a sales force are examined. Each student will develop complete plans for an off-site motivational sales meeting. Prerequisite: 3819

- 3823 Business Law I (A,W,SP,SU) 3-0-3**
Survey of the legal framework of business, the nature of legal systems and the law, including contracts, criminal, and the law of torts.
- 3824 Business Law II (A,W,SP,SU) 3-0-3**
A continuation of Business Law I covering sales, negotiable instruments, bankruptcy and partnerships, trusts, and insurance. Prerequisite: 3823
- 3828 Cases in Business Policy* (A,W,SP,SU) 4-0-4**
Cases covering all functional areas of management will be analyzed and presented. Emphasis will be placed on the problem solving process as a tool for developing and implementing corporate strategy. Capstone course open to last quarter students only. Prerequisite: 3763
- 3831 Personnel Interviewing* (A,W,SP) 3-0-3**
Personnel Interviewing is an in-depth study of the various types of interviews which are conducted in business from the employer and employee frame of reference. Techniques of interviewing will be presented utilizing video tape playback. Prerequisite: 3832
- 3832 Personnel Management* (A,W,SP,SU) 3-0-3**
The philosophy, principles, and methods of personnel management: Organizational structure, areas of responsibility and authority, policy making, procurement, and placement, training, evaluation, wage and salary administration, and benefit programs.
- 3833 Management Decisions* (A,W) 2-4-4**
A practical presentation of the concepts underlying steps in the process of decision-making utilizing a computer-driven game. Open to last quarter business management students only. Lab fee: \$8.00 Prerequisite: 3763
- 3835 Industrial Relations* (A,W,SP,SU) 3-0-3**
A survey of industrial relations, including the history of the labor movement, labor legislation, collective bargaining, and daily contract administration. A simulation of an actual bargaining case will be presented by the students. Prerequisite: 3832
- 3836 Staffing Under the Law (A,W,SP,SU) 3-0-3**
A thorough review of the legal aspects and boundaries of the hiring process for all organizations. Topics covered include determining hiring needs, finding the right people, the hiring process and Affirmative Action issues. Prerequisite: 3832
- 3837 Public Relations* (W,SU) 3-0-3**
Public relations examines both the theoretical and practical factors that contribute to a firm's image among its many publics. The emphasis is on public relations as a function of management as well as an adjunct of promotion. Prerequisite: 3801 and 3815 or advisor's approval
- 3838 Administration of Personnel* (A,SP) 5-0-5**
An in-depth study of the various facets of a personnel program for people already employed. Among the topics to be covered are: Compensation plans, employee fringe benefits, performance appraisal, training and development, grievances and discipline. Presentation of each subject will be in-depth and include legal considerations. Prerequisite: 3832
- 3842 Business Management Internship I* (A,W,SP,SU) 0-25-4**
Supervised on-the-job application of knowledge and skills acquired in the classroom. This course is to be taken concurrently with 3843. Advisor approval required.
- 3843 Special Problems in Business Management I* (A,W,SP,SU) 0-6-2**
Application of business management knowledge to specific areas of on-the-job internship. This course is to be taken concurrently with 3842. Advisor approval required.
- 3845 Distribution* (A,S) 3-0-3**
An overview of the movement of goods and services through the channels of distribution. Topics will include warehousing, transportation, inventory methods and materials handling as well as alternative channels of distribution. Prerequisite: 3801
- 3846 Business Management Internship II* (A,W,SP,SU) 0-25-4**
Continuation of 3842. This course is to be taken concurrently with 3847. Prerequisite: 3842 advisor approval required.
- 3847 Special Problems in Business Management II* (A,W,SP,SU) 0-6-2**
Continuation of 3843. This course is to be taken concurrently with 3846. Advisor approval required.
- 3854 Information Resource Management* (A,SP) 3-0-3**
This course is designed to teach the basics of records management. Students will be provided the latest, most current information available in the information management field of today. This course covers such topics as productivity in the office, records management development, responsibilities of the records manager, records systems, inventory analysis and cost saving systems.
- 3855 Forms Management* 3-0-3**
A study of design of management systems using forms for control and organization of useful business information. The concepts of analyzing and designing forms using a computer-aided tool will be included.
- 3857 Office Automation* (A,SP) 3-0-3**
Intensive study into present and future technological resources used to facilitate the handling of office information. Emphasis will be placed on the selection, placement and use of equipment and systems used in micrographics, records management, word processing, and other areas.
- 3859 Records Security and Disposition* (W,SU) 3-0-3**
This course will emphasize records inventory, inventory analysis, scheduling, vita records systems, record centers, archival management, and records security.
- 3869 Production & Inventory Control* (A,SP) 4-0-4**
An introductory course in the basics of production and inventory management. Topics to be covered include types of inventories and related inventory costs, order quantity models, material requirements. Planning just-in-time inventory management and capacity planning models. Prerequisite: 3872
- 3871 Purchasing Principles I* (A,SP) 3-0-3**
A basic course focusing on the procurement and control of supplies and equipment in a business enterprise. It provides fundamental information regarding principles, procedures, techniques and tools which are employed in the purchase and control of materials necessary for production and delivery of goods and services.
- 3872 Purchasing Principles II* (W,SU) 3-0-3**
This course is a continuation of basic purchasing policies and procedures, yet is more geared to the many types of products and services being procured. A detailed analysis will include foreign purchasing, forward buying and commodities, as well as the purchase of capital assets, transportation services and disposal of scrap, surplus, and obsolete material. Prerequisite: 3871
- 3873 Advanced Purchasing* (W,SU) 4-0-4**
This course will relate the act of purchasing management to the materials management concepts of centralized control. Discussion will include ordering policy in conjunction with inventory control methods and the master production schedule, forecasting models, negotiations, inventory investment analysis, and the role of materials planning in the business plan. Prerequisite: 3869
- 3874 Management Training for Supervisors* (A,W,SP) 3-0-3**
A comprehensive examination of management functions and techniques and of the role of a supervisor. This course will increase awareness of the role and present proven methods and techniques to do a better job. Major areas covered include: Setting objectives, problems identification techniques, decision making, time management, management styles, motivation, training subordinates, performance evaluation, verbal and non-verbal communications, interviewing techniques, and a look at the challenge of leadership in an organizational setting. Emphasis will be placed on actual on-the-job problems.
- 3881-3889 Studies in Contemporary Business I-IX* (On Demand) Arr**
Studies in contemporary business is a specially designed series of courses to meet the needs of the constantly changing business community and student population. Instructional methods may include seminar, travel, field experience, research, lecture series, and video tapes. All students work with an instructor assigned by the department chairperson. Advisor approval required. Lab fee: Varies according to course.
- 3891-3893 Studies in Contemporary Business X-XII* (On Demand) Arr**
A continuation of 3881-3889.

Civil Engineering Technology

- 5307 Geotechnical Engineering* (SU,W) 2-3-3**
An analysis of soil behavior and the design construction of substructures (those parts of structures that transmit loads of structures into earth). Investigation of the principles of excavation, tunneling and building earth supported structures. Lab fee: \$10.00 Prerequisite: 5025,5072
- 5315 Horizontal Construction Standards* (A,SP) 3-2-4**
Elements of route location, construction materials, methods and procedures.

Relation of design standards to topography and prospective traffic, earthwork measurement, physical design standards, financing. Lab fee: \$15.00 Prerequisite: 5074,5075,5082

5316 Elementary Hydraulics* (A,SP) 2-2-3
Study of water at rest and in motion, criteria for measurement of pressure, velocity, friction and capacity of open channels, pipe lines and metering devices. Lab fee: \$10.00 Prerequisite: 1111 or 1146

5321 Advanced Civil Graphics* (W,SU) 2-6-4
Advanced drawing procedures and methods for contract drawings with emphasis on ink work, formality and accuracy. Use of CAD equipment. Lab fee: \$20.00 Prerequisite: 5071

5323 Materials Testing II* (SP,SU) 1-5-3
A study of the properties, testing methods and manufacture of construction material. Standard methods and procedures for conducting laboratory tests of physical properties are designed to build on basics taught in course 5072. Lab fee: \$20.00 Prerequisite: 5072

5325 Townsite Urban Development*(W,SP) 1-5-3
Municipal subdivision planning, calculations and preliminary cost considerations. Public and private interest conflicts are related to methods of resolving them and the specific standards that govern that area. Lab fee: \$15.00 Prerequisite: 5078,5082,5321

5327 Water Supply Systems* (SP,SU) 2-3-3
A study in design and planning of water supply, storage, treatment, transmission and distribution systems. Lab fee: \$12.00 Prerequisite: 5316,5325

5328 Storm and Wastewater Systems* (W) 2-3-3
A study in planning and design of storm water and sanitary collection systems and treatment processes. Lab fee: \$12.00 Prerequisite: 5316,5325

5337 Civil Engineering Project* (SP) 2-8-5
The participant will plan, design and prepare detailed drawings for a project thereby integrating knowledge gained in preceding civil engineering courses. Professional civil engineering office atmosphere, techniques and procedures will be simulated to provide the student with design-draw ing experience. Actual work site project can be substituted with prior approval of instructor. Lab fee: \$20.00 Prerequisite: Permission of instructor

5338 Engineering Analysis* (W) 1-5-3
A study in environmental consideration which enter into the civil engineering planning process. Lab fee: \$20.00 Prerequisite: 1111 or 1146,5316,5072

5345 Survey Law* (W,SU) 2-3-3
A study of the legal codes and practices as applicable within the job duties of a two year civil engineering technician. Municipal records research will be utilized as one learning method. Lab fee: \$15.00 Prerequisite: 5078,5082

5357 Field Co-op Experience (SU) 0-40-4
Off campus work experience in construction, consulting engineering or construction related paid employment, that augments formal education received in the technology, with actual work conditions and job experience. Permission of instructor is needed. "N" credit will not be allowed for this course. Lab fee: \$30.00 Prerequisite: 5236

5361 Hazardous Waste Regulations* (SU) 2-2-3
A study of the local, state and national codes and regulations as they apply to storage, utilization and disposal site preparation for hazardous wastes materials. Lab fee: \$12.00 Prerequisite: 5328,5338,5072

5383 Land Subdivision Systems* (AU,SP) 2-3-3
Advanced surveying including section and subdivision lines and residential property lines. Re-establishment of property boundaries and legal considerations for boundary descriptions including local municipal records searching. Lab fee: \$15.00 Prerequisite: 5078,5082,5345

Communication Skills

1001 Language Development (A,W,SP,SU) 3-0-3
Skills for developing confidence in writing. Concentration on English essentials for writing sentences to paragraphs. Prerequisite: 1831 or placement as a result of essay placement test

1002 Beginning Composition (A,W,SP,SU) 3-0-3
Through the writing process, students will compose clear, concise expositions. Prerequisite: 1001 or placement

1003 Essay and Research (A,W,SP,SU) 3-0-3
A continuation of communication skills 1002 expanded to include reading and argumentation, research techniques and research papers. Prerequisite: 1002

1004 Technical Writing (A,W,SP,SU) 3-0-3
Principles and practices in writing required of engineering and scientific technicians, including resumes, letters, memos, and various technical reports as required of a student's technology. Prerequisite: 1003 and at least two quarters or equivalent in the technology.

1007 Creative Writing (SP) 3-0-3
A discussion and in-depth study of the techniques of creative writing, and the actual writing of short stories, poems in a workshop approach. Prerequisite: 1002

1014 Business Communications (A,W,SP,SU) 3-0-3
Practice writing clear, concise, correct business letters and memos. Problem solving report using original sources, resume preparation, and job search techniques. Business etiquette and written and/or oral reports. Prerequisite: 1002 and at least two quarters in a technology or equivalent.

1024 Speech (A,W,SP,SU) 3-0-3
Emphasis on communications, verbal and nonverbal. At least three prepared speeches required. Listening techniques. Opportunity to be audio and video recorded during the quarter in various situations. Lab fee: \$2.00

1027 Conference and Group Discussion (A,W,SP) 3-0-3
Designed to develop the attitudes, skills, and knowledge of methods necessary to effectively participate in discussion by conferences, committees and other small groups. Role playing using various conference and group forms and parliamentary procedure. Prerequisites: 1002 and 1024

1035 Introduction to Science Fiction (SP) 3-0-3
Introduction to modern science fiction short stories. Emphasis is upon the interaction between technology (in each story) and society. Prerequisite: 1002

1054 Basic English As Second Language (A,SU) 8-2-9
Basic spoken and written English. Reading, writing, speaking, listening are integrated with idiom practice and vocabulary building.

1055 Developmental English As A Second Language (A,W) 9-0-9
Designed for the non-native speaker of English who has some knowledge of the language but who needs further work on vocabulary, intonation, idiom, and structure of American English. Emphasis on reading and writing. Prerequisite: 1054 or placement

1056 English As A Second Language: Conversation & Composition (W,SP) 9-0-9
Selected readings from current English prose. Fundamentals of writing. Practice with sentence structure and the idiom. Daily practice with the spoken and written language. Prerequisite: 1055 or placement

1057 English As A Second Language: Theme and Research (SP,SU) 9-0-9
A continuation of 1056 in conversation and composition with emphasis on composition and reading. Library work and research techniques. Students go on to 1831 or take placement test. Prerequisite: 1056 or placement

Computer Science Technology

2701 Assembly Language I* (W,SP, SU) 2-8-5
Introduction to programming in the IBM Assembly language. Students are also trained in the use of on-line computer terminals and their programming language. The student continues their study of problem solving techniques, flow-charting and structured programming concepts and techniques. Students learn job control language, codes and test lab problems on the computer. Lab fee: \$25.00 Prerequisite: 2732

2702 Assembly Language II* (SP,SU,A) 2-8-5
Continue the study of programming in the IBM Assembly language. Emphasis on binary arithmetic and disk file properties, organization, and concepts. Students continue to study job control language, codes and test lab problems on the computer. Lab fee: \$40.00 Prerequisite: 2701

2703 Assembly Language III* (SP,SU) 2-8-5
Continue the study of programming in the IBM Assembly language. Introduction to sort/merge and utility programs. Additional disk file concepts are introduced as well as additional job control languages. Student code and test lab problems on the IBM computer. Lab fee: \$40.00 Prerequisite: 2702

lab problems on the IBM computer. Lab fee: \$40.00 Prerequisite: 2702

2714 BASIC Business Language* (A,SP,SU) 2-3-3
Introduction to the BASIC programming language with business applications
lab fee: \$25.00 Prerequisite: 2702

2715 COBOL I* (A,W) 2-8-5
Introduction to the concepts and techniques of batch COBOL programming
using structured programming techniques. Sorts and sequential access methods
are stressed. Lab fee: \$40.00 Prerequisite: 2702 assembly language II lab fee:
\$40.00 Prerequisite: 2703

2717 RPG II* (A,SU) 2-8-5
Study of the fundamentals of the Report Program Generator (RPG) program-
ming language, particularly as it applies to a small computer. Lab fee: \$40.00
Prerequisite: 2702 Assembly Language II

2726 Systems Analysis I* (A) 3-2-4
Introduction to the science of systems analysis and design to include expla-
nation of systems flowcharting, documentation and detailed discussion of com-
mon business applications. Prerequisite: 2702

2727 Systems Analysis II* (W) 3-2-4
Continuation of 2726 with a case study which is used to apply the principles of
systems analysis and design in a medium size business environment. The stu-
dent is also introduced to the theory and design of various types of data base
systems. Prerequisite: 2726

2728 Operating Systems* (WI,SP,SU) 2-3-4
Selected topics of current interest will be presented, including a comparative
discussion of operating systems, job control language, and on-line program-
ming techniques. The student will also code several JCL lab exercises. Lab fee:
\$25.00 Prerequisite: 2732

2736 PASCAL* (A,W,SP) 2-8-5
Introduction to problem solving techniques, algorithm development, flow-
charting, and Pseudocode. Introduces the student to the concepts and tech-
niques involved in the PASCAL programming language using structured
techniques. Lab fee: \$40.00 Prerequisite: Admittance to computer science
technology

2755 COBOL II* (W,SP) 2-8-5
A continuation of 2715, COBOL I. Random access through VSAM file structure
is introduced. On-line processing using VSAM files and CICS is introduced.
Lab fee: \$40.00 Prerequisite: 2715

2756 COBOL III* (SP,SU) 2-8-5
A continuation of 2755, COBOL II. On-line programming through IBM's CICS
system and on-line data base programming through ADR'S DATACOM IDB
system is introduced. Lab fee: \$40.00 Prerequisite: 2755

2757 Final Project* (SP,SU) 2-8-5
A complete system design and implementation is done. Design may be using
VSAM file structures, on-line programming or special off campus projects
through various companies. Lab fee: \$40.00 Prerequisite: 2755, 2727

2782 Computer Literacy - Business/Health (A,W,SP,SU) 2-2-3
This course is designed to introduce the student to the fundamental concepts
of computer literacy. The student will learn about computer hardware, soft-
ware, systems analysis, and the impact of computers on society. In addition,
the student will also get an opportunity to write some programs in BASIC as
well as use some micro-based software packages. Lab fee: \$10.00

2783 Micro-Computer Applications (W,SP,SU) 2-2-3
Students are introduced to the use of the micro-computer utilizing packaged
programs. Spread sheet, graphics, word processing and data base management
programs are studied and used in the lab environment. Lab fee: \$25.00 Pre-
requisite: 2782 computer literacy

2784 IBM-PC Assembler* (W,SU) 2-8-5
Introduction to programming in the IBM Assembly language for the personal
computer. The student will code and test lab problems on the IBM-PC. Lab
fee: \$25.00 Prerequisite: 2702

2785 Data Base Systems* (A,W,SP) 2-3-3
An introduction to data base systems in theory and application. Students will
design and build a data base on IBM personal computers using a popular data
base package. Lab fee: \$25.00 Prerequisite: 2727

2791 Special Topics in BDP I* 1-0-1
2792 Special Topics in BDP II* 2-0-2
2793 Special Topics in BDP III* 3-0-3
2794 Special Topics in BDP IV* 4-0-4
2795 Special Topics in BDP V* 5-0-5

(courses offered on demand)

Special topics in BDP is a series of courses specifically designed to meet the
needs of the constantly changing business community and student population.
Courses will be designed with the advice of the particular group requesting the
course and approval of the department chairman.

Construction Core

5023 Structural Steel Systems* (A,W) 1-5-3
Design and drafting exercises of steel construction techniques and detailing
using the steel construction handbooks. Structural layout, details, schedules,
shop drawing techniques, checking and coordination of steel structural ele-
ments with other parts of the building will be examined. Some computer and
materials testing lab exercises will be scheduled. Lab fee: \$25.00 Prerequisite:
5025, 5074, 5078

5024 Structural Concrete Systems (W,SP) 1-5-3
Design and drafting exercises of concrete construction techniques and detailing
using the concrete construction handbooks. Structural layout, details, sched-
ules, shop drawings techniques, checking and coordination of concrete struc-
tural elements with other parts of the building will be examined. Some computer
and materials testing lab exercises will be scheduled. Lab fee: \$25.00 Preq-
uisite: 1111 or 1146, 5025

5025 Construction Statics*(W,SU) 2-2-3
This is a beginning course in structural design as applied to the field of con-
struction. The emphasis is on the analysis of forces and reacting forces, load
transference and the application of elementary concepts of strength of mate-
rials. The student should be able to size conventionally loaded simple beams in
wood or steel. Lab fee: \$10.00 Prerequisite: 1111 or 1146

5026 Construction Strength of Materials* (SP,A) 2-2-3
This course is the second in the structural sequence following 5025, construc-
tion statics. The emphasis is on calculating the required resisting stresses of
beams, columns and trusses. Topics covered include shear bending, properties
of sections, stress and strain. Lab fee: \$10.00 Prerequisite: 5025

5071 Construction Basic Drafting* (A,W,SU) 2-6-4
This is a basic drafting course using both manual and computer aided drafting
(CAD). Areas covered include lettering, linework, layout, dimensioning, geo-
metric construction, orthographic projection and isometric. Problems are drawn
from throughout the construction industry. Lab fee: \$15.00 Prerequisite: None

5072 Basic Construction Materials* (A,SP) 1-5-3
A study of soil, concrete, masonry, wood and metal properties, form and use
of these basic construction materials and products by means of laboratory ex-
amination and elementary testing. Field trips to manufacturing facilities and
construction projects, as available, will be included. Lab fee: \$10.00 Prequi-
site: None

5073 Survey of Construction Industry* (A,SP,SU) 3-0-3
An introduction to the employment fields within the construction engineering
technology department with emphasis on architecture, civil engineering, and
construction management. The development of an appreciation of the many
diverse human personality characteristics used in the construction industry and
contributions of workers in the industry. Management and organization prac-
tices and interrelationships of special interest groups will be discussed. Lab fee:
None Prerequisite: None

5074 Building Construction Drawings (A,W,SP,SU) 2-6-4
Reading and interpretation of construction drawings as related to residential,
commercial, and industrial construction projects. Interpretation of the rela-
tionships of plans, elevations, sections and details, and the coordination with
specifications. A basic method of material quantity take-off will be explained.
Lab fee: \$15.00 Prerequisite: None

5075 Construction Contract Documents (A,W,SP,SU) 2-3-3
Intensive study of all documents related to a project with emphasis on the
important legal aspects of each, and the role of the contractor in the project.
Lab fee: \$7.00 Prerequisite: None

5077 Supervising Field Operations (W,SP) 2-3-3
An overview of the principles of field supervision which includes leadership
skill, motivation techniques, problem solving, motivation techniques, problem
solving processes, communication methods and useful supervisory aids for con-
struction projects. Lab fee: \$7.00 Prerequisite: 5075

5078 Vertical Layout & Measurement* (SP,SU) 2-6-4
A comprehensive study of the techniques and procedures utilized to locate,
measure and check construction components for both new and existing build-
ings and related structures. Development of hands-on skills using the tools and

equipment in construction simulated application exercises. Utilization of contract documents as sources of information for layout and measurement of projects as well as the documentation techniques used to record field activities. Lab fee: \$25.00 Prerequisite: 1146, 5074

5079 Horizontal Estimating (W,SU) 2-3-3
Development of topics such as material price extensions, equipment requirements labor requirements, time requirements, as related to highway/heavy construction. Lab fee: \$25.00 Prerequisite: 5215

5082 Horizontal Layout/Measurement* (SU,A) 2-6-4
A comprehensive study of the techniques and procedures, building on those learned in course 5078 and utilized to locate, measure, and check construction components for both new and existing highways and public works structures. Development of hands-on skills by using the tools and equipment in construction simulated application exercises. Utilization of contract documents as sources of information for layout and measurement of projects as well as the documentation techniques used to record field activities. Lab fee: \$25.00 Prerequisite: 5072, 5215

5083 Vertical Estimating* (A,SP) 2-3-3
Development of topics such as material price extensions, equipment requirements, labor requirements, and time requirements as related to building construction. Lab fee: \$15.00 Prerequisite: 5074, 5075, 5234

Construction Management Technology

5202 Managing A Construction Company* (A,W,SP) 2-3-3
An overview of the operations of a construction firm with a simulation of the management process by student teams demonstrating skills and competencies required. Lab fee: \$4.00 Prerequisite: None

5203 Construction Company Financial Management* (SP) 2-3-3
A review of the records required and the methods of producing these records as applied to the medium size contracting firm. The course summarizes the financial records required for operating and government reporting. Lab fee: \$8.00 Prerequisite: 5202

5215 Highway/Heavy Construction Drawings* (W,SP) 2-3-3
Reading and interpretation of construction drawings as related to highway and publicworks construction projects. Interpretation of the relationships of plans, elevations, sections and details, and the coordination with published specifications. A basic method of material quantity take-off will be explained. Lab fee: \$12.00 Prerequisite: 5074

5222 Horizontal Construction Methods* (W,SP) 2-3-3
A study of methods used to build horizontal projects, such as highways, dams, airports, bridges and utility lines. The various pieces of equipment and materials used in these type projects will be explained as well as the processes used in laying asphalt and concrete. Lab fee: \$12.00 Prerequisite: None

5234 Vertical Construction Methods (A,W,SP) 2-3-3
A study of the methods used in work-site preparation, materials handling systems, assembly of construction materials and systems, and the strategies employed to control and coordinate these activities. Lab fee: \$8.00 Prerequisite: None

5235 Construction Work Experience* (SU) 0-40-4
Off-campus work experience in construction, consulting engineering or construction related paid employment, that augments formal education received in the technology, with actual work conditions and job experience. "N" credit will not be allowed for this course. Permission of instructor will be required. Lab fee: \$25.00 Prerequisite: 5236

5236 Work Experience Seminar* (SP) 1-0-1
This class will prepare the student to work as a co-op student in a construction related position. Resumes, interviews, and job preparation will be discussed. The student taking this class should have been a student in one of the construction engineering technology programs for at least two previous quarters. Lab fee: \$4.00 Prerequisite: None

5241 Construction Planning and Scheduling* (A,W) 2-3-3
A study of project control and coordination through systematic planning and scheduling, including operational adjustments for resource changes and alterations. Computer computation of critical path methods and analysis. Lab fee: \$15.00 Prerequisite: 5222 or 5234

5242 Construction Safety and Loss Prevention* (A,SP) 2-3-3
Identification of work hazards and unsafe practices, safety programs and train-

ing, and the role of O.S.H.A. and insurance companies in safety programs. Red Cross first aid and CPR are included. Development of theft reduction programs with the cooperation of local law enforcement departments and insurance companies. Lab fee: \$20.00 Prerequisite: 5074,5075

5244 Marketing Construction Services (A,SP) 2-3-3
Application of data analysis principles to the area of finding business projects. Contract negotiation, financial and contract packaging, along with the study of techniques of written and oral communications will be developed to include recording on-site activities to prospective clients. Lab fee: \$20.00 prerequisite: 5222,5234

5245 Construction Bidding Strategy* (W,SP) 2-3-3
Extended study of how bids should be analyzed, how overhead and profit can be calculated, how to determine the financial objectives, and how to analyze the competition based upon market analysis and past bid figures. Lab fee: \$20.00 Prerequisite: 5079

5251 Construction Process Controls* (W,SP) 2-3-3
Methods and techniques of cost analysis used to develop skills in controlling construction production operating costs. Lab fee: \$15.00 Prerequisite: 5241

5252 Construction Contract Law* (W,SP) 2-3-3
Analysis of the special conditions of construction law as applied to contractual on-site conditions, document usage, negotiations of disputes, change orders and master contracts. Lab fee: \$5.00 Prerequisite: 5075

5253 Construction Labor Law* (A,W) 2-3-3
Investigation of the legal areas of labor contracts, project contracts, NLRB regulations, insurance requirements, fringe benefit collection, dispute resolution, arbitration and litigation as related to construction labor disputes. Lab fee: \$5.00 Prerequisite: 5075

5254 Construction Quality Assurance* (A,W) 2-3-3
A study of the techniques and methodology used in controlling quality on the construction job, including record keeping and inspection techniques. Lab fee: \$8.00 Prerequisite: 5234,5222

5261 Construction Project Management* (SP,SU) 2-3-3
Tracking a project through a construction firm which includes job start, control assignments, control structures, organization, and move-out phases of the construction project. Computer simulation of project activities and management processes. Lab fee: \$15.00 Prerequisite: 5251

5262 Construction Productivity Analysis* (A,SP) 2-3-3
Developing and testing methods of productivity from analysis of project histories, equipment analysis, and manpower utilization studies. Timelapse photography will be utilized for one method of analysis. Lab fee: \$20.00 Prerequisite: 5234,5222

5263 Construction Claims* (SP,SU) 2-3-3
A study of the techniques of identification, negotiation and resolving contract disputes, along with formal methods of resolving construction claims. Lab fee: \$5.00 Prerequisite: 5252

5274 Residential Construction* (A,SP) 2-3-3
The basic construction of a single family residence from the ground up, emphasizing construction methods, equipment used, structural design theory, materials and terminology. Lab fee: \$8.00 Prerequisite: None

Dental Laboratory Technology

8108 Dental Materials I*(A) 3-0-3
This course involves a comprehensive study of the chemical and physical properties of materials used by the dental technician.

8109 Dental Materials II*(W) 2-0-2
This course is a continuation of the study of materials begun in 8108.

8121 Complete Dentures I*(A) 1-6-3
This course involves an introduction to complete dentures and includes a study of the procedures from preliminary impressions through wax contouring, with special emphasis upon artificial tooth arrangement.

8122 Complete Dentures II*(W) 1-3-2
This course is a continuation of the study of complete dentures and includes procedural material from flasking through patient remount and occlusal adjustments. Lab fee: \$55.00

Developmental Education

- 8123 Complete Dentures III*(SP)** 1-6-3
This course involves a study of procedures required to solve specific postinsertion problems, e.g. Repair, rebase, and relin. In addition, the student is introduced to the immediate denture technique. Lab fee: \$55.00
- 8124 Complete Dentures IV*(SU)** 1-3-2
In this course, the student will fabricate an overdenture and will concentrate upon characterization of complete dentures. Lab fee: \$55.00
- 8125 Dental Morphology and Anatomy*(A)** 2-3-3
This course provides the student with an introduction to the masticatory system. The student will be exposed to the significant structures and landmarks of the oral cavity, with extensive study of the permanent dentition. Lab fee: \$55.00
- 8132 Occlusion*(W)** 1-6-3
This course will entail a study of occlusal morphology, the temporomandibular joint and mandibular movements.
- 8142 Removable Partial Dentures I*(W)** 1-6-3
This course is a basic study of removable partial dentures, and presents principles such as survey, design, and fabrication.
- 8143 Removable Partial Dentures II*(SP)** 1-3-2
This course will involve an intensification of the study of survey, design and fabrication of removable partial dentures.
- 8144 Removable Partial Dentures III*(SU)** 1-6-3
During this course, the student will apply acquired knowledge and skills by fabrication of removable partial dentures. The didactic portion will encompass the specialized designs such as stressbreakers, precision attachments and the rpi technique.
- 8153 Fixed Partial Dentures I*(SP)** 1-6-3
This course will introduce the student to the fixed appliance. The content will be limited to the single unit crown.
- 8154 Fixed Partial Dentures II*(SU)** 1-6-3
This course is designed to extend the students' experiences in construction of fixed appliances and will contain material related to fixed partial denture assembly for soldering. In addition, the student will fabricate a three unit bridge using the single casting technique.
- 8155 Fixed Partial Dentures III*(A)** 1-6-3
This course will extend the students' experiences in fixed partial dentures construction by introducing the acrylic veneer, resin crown, and steel's facings. Lab fee: \$55.00
- 8156 Fixed Partial Dentures IV*(W)** 2-6-4
This course will involve a study of fixed partial denture cases and procedures not covered previously. The student will study precision attachments, temporary appliances, and die-lok trays. In addition, the student will fabricate a crown for an abutment tooth with an existing removable partial denture. Lab fee: \$55.00
- 8164 History and Ethics*(SU)** 2-0-2
This course deals with the history of dental technology and its effect upon dentistry. In addition, the course will explore current problems and situations a dental technician must cope with.
- 8175 Dental Ceramics I*(SU)** 1-6-3
This course is an introduction to dental ceramics and will involve a study and construction of porcelain fused to metal restorations.
- 8176 Dental Ceramics II*(A)** 2-6-4
This course will entail a continuation of the study of porcelain fused to metal restorations and will introduce the porcelain jacket crown for study.
- 8185 Othodontics and Pedodontics*(A)** 1-3-2
This course will entail a basic introduction to the laboratory skills necessary to provide services in the areas of orthodontics and pedodontics.
- 8196 Applied Laboratory I*(W)** 0-8-3
This course consists entirely of laboratory and is intended to simulate a working laboratory. The student will fabricate fixed and removable appliances for a full mouth rehabilitation case which is patterned after the dentroll technique case.
- 8197 Applied Laboratory II*(SP)** 0-20-7
This course consists entirely of laboratory and is intended to simulate a working laboratory situation with regard to work schedules, case flow, and coping with real problems. Lab fee: \$55.00

- 1811 Reading Improvement (S,A,W,SP)** 4-0-4
A course designed for students to improve reading comprehension and develop word recognition skills. 1811 is not opened to students with credit for 1812. Lab fee: \$3.00
- 1812 Reading and Study Skills (S,A,W,SP)** 3-0-3
For development of reading speed, comprehension and study skills to become more effective students. Lab fee: \$3.00
- 1815 Speed Reading (S,W,SP)** 3-0-3
A course designed to help the student acquire the maximum amount of reading flexibility by developing perceptual skills and advanced reading techniques with emphasis on speed and comprehension. Lab fee: \$5.00
- 1823 Spelling and Vocabulary (S,A,W,SP)** 2-0-2
For development of spelling skills through the use of phonics, personal word lists and basic spelling rules. Lab fee: \$3.00
- 1824 Advanced Vocabulary Skills (W,SP)** 2-0-2
The course is designed to provide students with the information, strategies and skills that are most likely to ensure them a lifetime of vocabulary growth.
- 1831 Writing Skills (S,A,W,SP)** 2-2-4
For development of basic writing skills to include grammar review and sentence structure procedures. A variety of individualized approaches will be used. 1831 is not opened to students with credit for 1001. Lab fee: \$1.00
- 1841 Arithmetic Skills (S,A,W,SP)** 4-0-4
For development of basic arithmetic skills which includes addition, subtraction, multiplication, and division of whole numbers, fractions and decimals. It will also include ratios, proportions, and percentages. A modular approach will be used for each topic. 1841 is not opened to students with credit for 1105 or 1131. Lab fee: \$5.00
- 1842 Pre-Algebra (A,W,SP,SU)** 4-0-4
This course will give a review of fractions and decimals and the basic pre-algebra skills to students who have not had algebra before. 1842 is not opened to students with credit for 1105. Lab fee: \$3.00
- 1881 Career Life Planning (A,W,SP)** 3-0-3
A course designed to help the individual student to identify and examine his/her abilities, interests, values, personality and financial means relative to education and career choices. Lab fee: \$3.00
- 1882 Career Options for Women (as needed)** 3-0-3
A course designed to assist women explore career opportunities that have traditionally been closed to them, as well as the educational opportunities necessary for support of these careers.
- 1883 College Survival Skills (A,W,SP)** 2-0-2
An orientation to the college emphasizing its purpose, programs and services. Basic "survival" skills such as "how to study", test taking, note-taking, library skills, and time management will be detailed towards the development of skills for academic success. Lab fee: \$3.00
- 1884 Student Coping/Roles (A,W,SP)** 2-0-2
This course is designed to facilitate a student's ability (primarily women) to cope with being a student and handle other life roles, i.e., parent, spouse, employee, and homemaker. The course will focus on self-esteem, goal-setting, problem-solving, time management and assertiveness. Lab fee: \$3.00

Electronic Engineering Technology

- 4201 Electrical/Electronic Drafting* (A,W,SP,SU)** 1-2-2
An introductory drawing course incorporating the use of instruments, instructions, and practice to produce quality schematics and pictorial diagrams using lettering, electronic, and electrical symbols. The student will be given an introduction to computer-aided drafting. Lab fee: \$8.00
- 4211 DC Fundamentals* (A,W,SU)** 4-0-4
An introduction to direct current fundamentals, electron physics, current and

voltage, work, power, series and parallel resistances, network theorems, magnetic circuits, electrical measurement devices, inductance and capacitance. Concurrent courses: 1111, 4261

4212 AC Fundamentals* (A,W,SP) 4-0-4
Analysis of alternating current fundamentals, complex algebra, reactance, impedance, networks, and power (including 3 phase), transformers, coupled circuits and poly-phase systems. Prerequisite: 4211, 4261 Concurrent: 4262, 1112

4213 Introduction to Electronic Devices* (SP,SU) 4-0-4
Introduction to electronic devices, JFET and bipolar auxiliary components. Rectifiers, filters, basic amplifiers. Prerequisites: 4212, 4262 Concurrent: 1113, 4263

4214 Electronic Devices Circuit Analysis* (A,SU) 4-0-4
Analysis of linear circuits. Small signal and large signal methods. Special amplifiers, feedback, linear IC's regulators and oscillators. Prerequisites: 4213, 4263 Concurrent: 4264

4215 Electronics Communications I* (W) 4-0-4
An introduction to electronic communication circuits and systems. Basic AM, FM, and TV transmitter and receiver systems are discussed, along with digital communication techniques. Prerequisites: 4214, 4264 Concurrent: 4265

4217 Electronics Calculus I* (A,W) 3-0-3
Practical application of differential calculus to electronic circuitry. Functions, limits, algebraic differentiation, differentials, higher derivatives, maxima and minima. Prerequisite: 4213

4218 Electronics Calculus II* (W,SP) 3-0-3
A continuation of electronics calculus I. Definite integrals, trigonometric functions, logarithmic and exponential functions. Prerequisite: 4217

4219 Electronics Calculus III* (SP,SU) 3-0-3
A continuation of calculus for electronics II. Partial derivatives, integration techniques, double integrals. Maclaurin's series, Taylor's series, Fourier series. Introduction to differential equations. Prerequisite: 4218

4221 Digital Fundamentals (SP,SU) 2-3-3
An introductory course in digital electronic fundamentals, covering number systems, boolean algebra, truth tables, basic combinational (gates, adders, multiplexers, etc.), and sequential (latches, flip-flops, etc.) circuits. Lab fee: \$8.00 Prerequisite: 4272

4222 Digital Devices* (SU,A) 4-0-4
A continuation of the study of digital electronics, covering the waveforms and generation of pulses and study of the related circuitry (switching ckts, multivibrators, Schmitt trigger). More complex and widely used digital devices such as counters, shift registers, memories, etc., are presented. Also, some basic units of a computer (BUS, ALU) are studied. In conjunction with the concurrent lab course 4271 a digital clock is built. Prerequisite: 4221 Concurrent: 4272

4223 Microprocessors* (A,W) 4-0-4
Different building blocks of a microprocessor and their functions are introduced. Different methods of data storage and programming a microprocessor are studied. Some use of a microprocessor as a controller and interfacing it to other devices are also studied. A Motorola 6800 microprocessor is used as an example throughout the course. Prerequisite: 4222 Concurrent: 4273

4226 Industrial Electronics* (SP,SU) 4-0-4
Industrial devices and utilization concepts, power, timers, photoelectric devices, magnetic systems, servo and synchro systems, and microprocessor interfacing. Prerequisite: 4223 Concurrent: 4276

4231 Electronic Fabrication* (W,SP) 1-0-3
An introduction to the fabrication of electronic circuits from assembly through testing, to include soldering/desoldering, use of heat sinks, testing, documentation and repair/replacement of parts. Lab fee: \$15.00 Prerequisite: 4222

4236 Electronics Communications II* (W,SP) 3-3-4
A continuation of Communications I. Ultra-high frequency, transceiver, microwave principles, systems, antennas, wave guides, use of Smith charts, impedance matching. Lab fee: \$4.00 Prerequisite: 4215

4246 Analog Computers* (SP,SU) 1-3-2
Fundamentals of analog computers covering circuits and equipment, control theory, Laplace transform, introduction to differential equations. Lab fee: \$4.00 Prerequisite: 4217 Concurrent: 4219

4261 DC Laboratory* (A,W,SU) 0-6-2
Laboratory study of DC fundamentals, electrical measurement devices, network theorems. Lab fee: \$12.00 Concurrent: 4211

4262 AC Laboratory* (A,W,SP) 0-6-2
Laboratory study of signal sources, oscilloscopes, reactance, AC networks, transformers and filter circuits. Lab fee: \$12.00 Prerequisites: 4211, 4261 Concurrent: 4212

4263 Electronic Devices Laboratory* (SP,SU) 0-6-2
Laboratory study of electronic devices, transistor characteristics and amplifiers. Lab fee: \$12.00 Prerequisites: 4212, 4262 Concurrent: 4213

4264 Electronic Devices Circuit Analysis Laboratory* (A,SU) 0-6-2
Laboratory study of amplifiers, oscillators, special purpose devices, frequency response, and feedback. Lab fee: \$12.00 Prerequisite: 4263 Concurrent: 4214

4265 Communications I Laboratory* (W) 0-6-2
Laboratory study of communication circuitry, AM, FM, TV and commercial systems, including digital communications. Lab fee: \$12.00 Prerequisite: 4263 Concurrent: 4214

4272 Digital Devices Lab* (A,SU) 0-6-2
This lab course, concurrent with the lecture course 4222, gives the student an opportunity to learn and design complex and widely used digital devices. Switching and wave shaping circuits are built using real life IC chips. Different devices which are used in building blocks of a computer are introduced and used in experiments. Finally, in a design project, students build a digital clock. Lab fee: \$12.00 Prerequisite: 4221 Concurrent: 4222

4273 Microprocessor Lab* (A,W) 0-6-2
This lab course is the practical version of the concurrent lecture course 4223. Different blocks of a microprocessor studied in lecture are used and experimented on in the lab course. Along with each lab, programming methods for different blocks of the microprocessor are introduced. The practical aspects of using the microprocessor as a controller for other devices are also explored. A 6800 microprocessor is used. Lab fee: \$15.00 Prerequisite: 4222 Concurrent: 4223

4276 Industrial Laboratory* (SP) 0-6-2
Analysis and design study of components, circuits and systems used for industrial control. Lab fee: \$15.00 Prerequisite: 4273 Concurrent: 4226

4281 Basic Electricity (AU,SP) 3-2-3
An introductory electrical fundamentals course covering direct and alternating current concepts, components, measurements, circuit analysis, magnetism, electrical energy sources, and electrical energy conversion. This course is not required for students in the Electronic Engineering Technology. Lab fee: \$8.00 Prerequisite: 1108 or 1146

4282 Electronics and Digital Fundamentals (WI, SU) 3-2-3
An introductory electronics and digital fundamentals course. Course content covers electronic basics, diodes, transistors, electronic power supplies, amplification, power control, and digital devices. This course is not required for students in the Electronic Engineering Technology. Lab fee: \$12.00 Prerequisite: 4281

4291 Special Subjects in Electronics* I (On Demand) 0-0-1
4292 Special Subjects in Electronics* II (On Demand) 0-0-2
4293 Special Subjects in Electronics* III (On Demand) 0-0-3

Special subjects in electronics are courses designed to meet the needs of the constantly changing electronics industry. Typical subject areas may include instrumentation, lasers, troubleshooting, and bio-med. Instructional methods may include seminar, travel, field experience, research, lecture and computer assisted instruction.

Emergency Medical Services Technology

8301 Emergency Victim Care* (A,W,SP,SU) 3-6-6
This course provides a first phase of training in the career structure of the emergency medical technician (EMT); the course covers all the knowledge and skills required to take the state certification examination. Lab fee: \$20.00

8302 Advanced EMT-A* (A,W,SP,SU) 2-3-3
In depth study into a patient assessment, shock physiology, fluid and intravenous therapy is the direction of this course. Training in these areas takes place in the classroom and clinical areas. Lab fee: \$23.00 Prerequisite: 8301

8305 EMT-P I* (A) 4-2-5
This course encompasses the training of the paramedic in the areas of their role, triage and assessment of victims, care of the victim in the areas of shock, respiratory system, intravenous therapy. The training includes the care for involvement due to medical or traumatic emergencies communications and telemetry. Lab fee: \$53.00 Prerequisite: 8301, program acceptance concurrent 8313

8306 EMT-P II* (W) 4-2-5
This course encompasses the training of the paramedic in the areas of: The evaluation and care of the cardiovascular system, specific medical situations, and emotional emergencies. Lab fee: \$15.00 Prerequisites: 8305 Concurrent: 8314 & 8361

8307 EMT-P III* (SP) 4-2-5
This course encompasses the training of the paramedic in the areas of: Central nervous system, musculoskeletal system, soft tissue injuries, obstetric and gynecologic, neonatal and pediatric, rescue. Lab fee: \$15.00 Prerequisites: 8306 Concurrent: 8315 & 8362

8309 Crash Injury Mgmt., First Responder* (A) 1-3-2
This course is designed to teach the person (public safety officer or others), who arrives first at the scene of an accident, proper life saving procedures, terms of emergency victim care, the first responder will provide what is needed until qualified emergency medical technicians arrive. Lab fee: \$5.00

8313 Hospital Clinical I* (A) 0-6-2
Hospital clinical, observation and experience, encompassing the didactic areas covered in 8305. Concurrent: 8305

8314 Hospital Clinical II* (W) 0-6-2
Hospital clinical, observation and experience, encompassing the didactic areas covered in 8306. Prerequisite: 8313 Concurrents: 8306 & 8361

8315 Hospital Clinical III* (SP) 0-6-2
Hospital clinical, observation and experience, encompassing the didactic areas covered in 8307. Prerequisite: 8314 Concurrents: 8307 & 8362

8323 Advanced Care for EMT-P* (SP) 2-2-3
This course will encompass in-depth patient assessment and monitoring. The course will also provide training and up-date on the newest methods and expansions of treatment in the area of pre-hospital care. Lab fee: \$10.00 Prerequisite: 8306

8324 River Rescue* (SU 1st Term) 2-2-3
This course deals with rescuing victims from the water. It will include, but not be limited to, self-rescue, rescue from shore, boat assisted rescues, rescue from boats and repelling. Lab fee: \$5.00 Prerequisite: Intermediate swimmer

8325 Advanced Rescue* (SU 2nd Term) 3-2-4
This course deals with getting the EMT to an entrapped victim and removing the victim from the entrapment. Special rescue techniques will be covered in the areas of: Vehicle, fire, building, farm, water, wilderness and electrical. Lab fee: \$15.00

8326 EMS Systems* (A) 3-0-3
This course deals with the history, development, organization, funding, and control of EMS. It will involve the student in planning and coordination of an EMS System.

8334 Legal Principles for EMT* (A) 2-0-2
This course encompasses the laws and regulations which govern the EMT and their actions. The course also deals with the rights of the patient and professionalism of the EMT

8344 Emergency Psychiatric Intervention* (W) 2-2-3
This course deals with the EMT's approach to victims exhibiting abnormal behavior and provides an in-depth look into methods of evaluation and management of these people.

8351 Special Topics for Paramedics* (SU) 0-0-3
In this course the paramedic will be required to develop and present an in-depth study in an area of their individual interest.

8354 Disaster Aid* (SP) 3-0-3
This course will familiarize the EMT with disaster planning, community needs assessment, organization and control in development of a community disaster plan, and in developing testing procedures for this plan.

8355 Public Health Education* (W) 3-0-3
This course will involve the paramedic in the role of public health educator from needs assessment, organizations involved to implementation, and the student will be required to do some practical public health education.

8356 Handling Hazardous Materials Situations* (SU) 3-2-4
This course encompasses the safety factors and care the paramedic must consider when dealing with victims exposed to hazardous materials, (i.e. toxic fumes, radioactive materials, electrical, explosive and flammable materials).

8357 Pediatrics for the Paramedic* (W) 2-2-3
This course involves the paramedic in detailed evaluation and treatments specific to the pediatric patient. Included in the course format are the differences

in approach, assessment, physical-physiological activities as compared with the adult. Prerequisite: 8305

8358 Emergency Medical Services Dispatcher (SP) 2-1-2
The EMS dispatcher course is designed to prepare EMS dispatcher personnel to operate a telecommunication base station for the purpose of receiving requests for emergency medical services and allocating community resources in response to such request. Lab fee: \$3.00

8361 Vehicle Clinical I* (W) 0-5-1
Vehicle clinical, observation & experience. Prerequisites: 8305 & 8313 Concurrents: 8306 & 8314

8362 Vehicle Clinical II* (SP) 0-5-1
Vehicle clinical, observation & experience. Prerequisites: 8306, 8314 & 8361 Concurrents: 8307 & 8315

Financial Management Technology

2802 Personal Finance* (A,W,SP,SU) 3-0-3
This course presents a lifetime program of money management for the individual. The rudiments of such topics as: Budgets, savings, job search, buying a house, insurance, mutual funds, stock market, real estate investments, taxes, and estate planning are covered. Students will develop and write a personal financial plan. Lab fee: \$3.00

2803 Money and Banking* (A,W,SP,SU) 5-0-5
A study of the operation, organization, and economics of U.S. monetary and banking systems. Current trends and problems are also covered. Prerequisite: 3806

2805 Analyzing Financial Statements* (A,SP) 4-0-4
This course is organized into two main sections. The first section serves as a useful review of basic accounting principles. The second section covers the techniques of financial statement analysis.

2806 Principles of Bank Operations* (+) 4-0-4
Presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may acquire a broad (and operational) perspective. The descriptive orientation is intentional. Banking is increasingly dependent upon personnel who have the broad perspective so necessary for career advancement.

2807 Financial Institutions and Markets* (W) 3-0-3
This course covers the spectrum of financial institutions and markets. This course presents current changes in laws, regulations, forms of organizations, markets, and institutions. Also covered is the development of new financial markets and new institutions. The recent erratic fluctuations of financial markets makes this a timely and interesting course.

2809 Bank Investments* (+) 4-0-4
The bank's need for primary reserves and loanable funds limit the funds available for investment. This course describes the nature of such funds and how their uses are determined. It also analyzes the primary and secondary reserve needs of commercial banks, the sources of reserves, their fluctuations, and shows the influence of these factors on investment policy. This analysis is followed by a study of yield changes as they affect a bank's long-term holdings.

2811 Federal Reserve System* (+) 4-0-4
Examines the operations and policies of the federal reserve system during critical periods over the past 60 years. The approach taken is topical rather than chronological, thereby enabling students to compare and contrast federal reserve policies dealing with similar problems at different periods in time. Attention is given to international monetary affairs and economic developments affecting the American fiscal system.

2812 Introduction to Commercial Credit* 3-0-3
A basic course in commercial credit and collections. Studies will be centered on the establishing of the credit department, nature and function of credit, various types of credit, sources of credit, sources of credit information, analysis of information, factors of risk.

2813 Credit Administration* (W) 5-0-5
Analytical study of credit control, and management of collections. Topics include; management and analysis of consumer credit, business credit, government credit, and foreign credit. Lab fee: \$1.00

2815 Business Financial Management* 4-0-4
This course will acquaint the student with the principles of finance as applied

Fire Science/Safety Technology

to the operations of a (non-bank) firm. Active participation in the process of tools and techniques necessary for the efficient financial management of a modern business enterprise. An up-to-date overview of the activities of the business financial manager is provided.

2816 Advanced Credit Analysis* (+) 3-0-3

This is an advanced course in Commercial Credit and Financial Analysis. Studies will be centered on financial statements and their use as the basis for credit decisions. This will include class participation in the assigning of credit limits and the evaluation of risk situations, together with the understanding of additional influences which impact the final credit decisions.

2818 Installment Credit* 4-0-4

In this course, the techniques of installment lending are presented concisely. Emphasis is placed on establishing the credit, obtaining and checking information, servicing the loan, and collecting the amounts due. Each phase of a bank's installment credit operation is carefully scrutinized. Other topics discussed are: Inventory financing, special loan programs, business development, advertising, and the public relations aspect of installment lending.

2819 Finance Research* (W) 1-2-2

The student receives exposure to current developments in finance and economics through class discussion and projects.

2821 Fundamentals of Investments* (W,SP,SU) 3-0-3

This course examines the investments for the individual with emphasis on stock market. Topics presented include: Risk and return trade offs, sources of investment information, stocks, bonds, mutual funds, options, and tax considerations. Lab fee: \$3.00

2822 Fundamentals of Investments II* (On Demand) 3-0-3

This course is a continuation of 2821.

2823 Business Finance* (A,W,SP,SU) 4-0-4

An introduction to the principles of financial management of private firms. Topics covered include: Financial analysis, financial planning, working capital management, financial leverage, sources of financing, capital budgeting and capital markets.

2825 Cases in Financial Management* (SP,SU) 3-0-3

A study of the quantitative techniques used in managerial decisions of financial problems. Current real-world situations are presented in a case study format. Prerequisite: 2823

2827 Trust Functions and Services* (+) 4-0-4

Presents a complete picture of the services rendered by institutions engaged in trust business. Providing an introduction to the services and duties involved in trust operations, the course is intended for all bankers, not only those who are engaged in trust business. It endeavors to keep clear the distinction between business and legal aspects of trust functions.

2831 Savings and Time Deposits* (+) 4-0-4

Covers the historical development of savings institutions and an awareness of the basic economic function of the savings process are necessary to an understanding of the current operations and policies of these institutions. It begins with a review of the economics of the savings process in order to clarify important differences between financial savings by individuals or organizations and real savings that appear as capital formation. Different types of financial savings are reviewed in order to describe the system of financial flows of income to capital investment.

2834 Management of Commercial Bank Funds* (+) 4-0-4

Those necessary principles from which the student can derive an adequate philosophy of funds management. Differences between practices in large banks and smaller institutions are spelled out so that this text is useful to bankers institutions of all sizes.

2836 International Banking* (On Demand) (+) 4-0-4

The course is an introduction for those working in international departments. The objective of this course is to present the basic framework and fundamentals of international banking: How money is transferred from one country to another, how trade is financed, what the international agencies are and how they supplement the work of commercial banks, and how money is changed from one currency to another.

2838 Law and Banking* (+) 4-0-4

An introduction to basic U.S. law, presenting the rules of law which impact banking. Topics include jurisprudence, the court system, civil procedure, contracts, quasi-contracts, property, torts, crimes, agencies, partnerships, corporations, sales of personal property, commercial paper, bank deposits, collections documents of title, and secured transactions. The uniform commercial code is also covered.

+ These Courses Are Offered By AIB and are open To CTI students for credit.

7901 Introduction to Fire Protection* (A) 3-0-3

Survey of fire protection; the role, history and development of the fire service. Organization of the fire service. Other topics: Fire equipment and apparatus, communications, records and reports, insurance rating systems, and the law as it pertains to the fire service.

7902 Fire Prevention Practices* (A) 3-0-3

A study of buildings and other structures with emphasis on fire protection procedures and practices. Fire ratings of materials. Inspection practices, explosive flammable storage, and codes and fire ordinances.

7903 Fire Prevention Codes* (SU) 3-2-4

A study of important building construction and fire safety codes with emphasis on fire prevention and enforcement.

7904 Fire Hydraulics* (SP) 3-2-4

An introduction to hydraulic theory. Drafting of water, velocity and discharge, friction loss, engine and nozzle pressure, fire streams, and pressure losses in flowing hydrants. Practice in application of hydraulic principles. Flow and pump testing as well as study of water distribution. Lab fee: \$2.00 Prerequisite: 1105

7905 Fire Investigation Methods* (SP) 3-2-4

A study of the principles of fire investigations including recognition, preservation, collection, and presentation of arson evidence. Arson laws, interrogation of witnesses, application of photography, preparation of reports and adjustment of insured losses. Estimation of loss due to fire, smoke, and water. Lab fee: \$5.00

7906 Administration of a Fire Department* (SU) 3-0-3

The contemporary fire protection agency, its functions, structure, and operational techniques. Principles of organization, staffing, budgeting, controlling, coordinating, planning, research in fire protection. The development and maintenance of liaison and cooperation between fire and police departments. Prerequisite: 7921

7909 Chemistry of Hazardous Materials I* (A) 3-2-4

Concepts of chemistry needed to understand hazardous materials. Lab fee: \$6.00 Prerequisite: 1341

7912 Fire Protection Systems* (A) 2-2-3

The design and operation of fire protection systems, including water distribution, direction, alarm and watchman services and protection systems for special hazards. Carbon dioxide, dry chemical, foam and water spray systems studied in detail. Standpipes and sprinkler systems and methods of reestablishment after use.

7913 Chemistry of Hazardous Materials II* (W) 3-2-4

An analysis of chemical reaction as the causative agent of fire. Topics discussed: REDOX reactions, reaction rates, toxic compounds, and hazardous combinations of chemicals. Hazards of radioactive materials, poisonous gases and LP gases. Methods of transportation of hazardous materials. DOT regulations and markings. Lab fee: \$6.00 Prerequisite: 7909

7914 Fire Fighting Command I* (W) 3-2-4

Group operations and command strategy at the company officer level. The training of the company to operate as a team. Methods of implementing plans developed at the chief level. Prerequisite: 7914

7915 Fire Fighting Command II* (SU) 0-6-3

Group operations and command strategy at the chief officer level. Preplanning of firefighting operations, employment of personnel and equipment. Specific tactical problems analyzed. Operations and tactics including mutual and outside aid in fire fighting. Lab fee: \$3.00 Prerequisite: 7914

7916 Legal Aspects of Fire Protection* (SU) 3-0-3

Introduction to law, civil and criminal actions, the judicial system. Municipal liability for acts of the fire department and its members. Pensions, salary and compensation, and termination. Duty owed by the public to members of the fire department. The initiation, operation, liability, and legal aspects of mutual aid, primary response contracts, and private contracts.

7917 Community Affairs I-Local Government (W) 3-0-3

The role of local government in the community; its structure, organization, responsibility. Local government politics and the community. Methods and principles of local budgeting. Urban, suburban, rural and community structure.

7919 Personnel Training Methods (SP) 1-4-3
Methods of instruction, application of audio visual equipment, testing and evaluation, and preparation of materials are introduced. Special emphasis is placed upon planning an organizational training program. Methods of evaluation. Lab fee: \$3.00

7921 Fire Fighting Practices* (SU) 4-0-4
Techniques and procedures of fire fighting with emphasis on the role of the individual firefighter. Methods of extinguishing fires, life saving procedures, special fire fighting equipment, salvage, prevention rekindling and overhauling. Experienced firefighters having graduated from a fire department academy may receive credit for this course upon recommendation by the local fire department. Lab fee: \$5.00 Concurrent: 7961

7923 Fire Safety Education* (SU) 2-2-3
A course designed to generate methods and techniques for providing an education program in fire safety for a community, for a school, or for a municipality. Lab fee: \$5.00

7926 Fire Protection Seminar* (A) 1-2-2
Discussions of the particular problems related to the fire safety in high rise buildings. Learners will research and establish life-safety plans for a building. Information gained from previous incidents in high rise buildings will be utilized. Lab fee: \$5.00

7927 Supervisory Methods (SP) 3-0-3
Supervision techniques applied to public service personnel. The study of the need for job descriptions and job procedures, civil service requirements, report, oral and written directions, work evaluation, and conference leadership. Methods of instruction effective in teaching and motivating personnel.

7928 Public Relations (W) 3-0-3
The psychology of relations between public service employees and the general population. Policies and practices of community relations as they apply to public service agencies. Current national and local community problems.

7933 Fire Fighting Problems* (A) 3-0-3
Methods of fighting aircraft and marine fires. Methods of fighting fires in industrial processes involving hazardous or unknown materials. Lab fee: \$3.00 Prerequisite: 7933

7934 Fire Insurance* (W) 1-2-2
The history of fire insurance. The principles and practices of inspections by the insurance services office. The rating system as used by I.S.O. To determine premium rates. Extensive study of methods used by I.S.O. To classify public protection and individual property fire suppression.

7935 Building Construction (SP) 4-0-4
An introduction to the present practices of building construction. Local and state building codes and laws applied to fire protection. An insight into the contents of concealed space, location of ventilation equipment, plumbing and electrical cut-offs. Relationships between construction materials and fire damage of a building. Lab fee: \$2.00

7941 Fire Code Blueprint Analysis* (A) 2-2-3
A course designed to allow a fire prevention officer to read, understand, and analyze construction blueprints so that he may be able to enforce fire safety codes. Prerequisite: 7935

7961 Fire Fighting Practices Laboratory* (SU) 0-4-2
Laboratory to accompany 7921 fire fighting practices. Lab fee: \$2.00 Concurrent: 7921

7971 Introduction to Occupational Health and Safety* (A,SP,SU) 4-0-4
An introduction to the principles of occupational health and safety. A survey course covering basic principles and techniques.

7972 Motor Fleet Safety* (On Demand) 3-0-3
A basic introduction to problems and practices of motor fleet safety programming with emphasis on regulatory requirements. Lab fee: \$2.00

7975 Human Factors in Safety* (On Demand) 3-0-3
Designed to acquaint the serious student with the physiological and psychological factors that contribute to accident causation, and exploration of theoretical and research findings.

7976 Safety Program Management* (W) 3-0-3
Designed to acquaint the student with the common elements of a modern safety program.

7981 Safety and Health Standards, Codes and Regulations* (On Demand) 4-0-4
A review of the important occupational safety and health standards and codes with particular emphasis on application of these codes to typical work situa-

tions: Lab fee: \$2.00

7982 Physical Hazards Control I* (On Demand) 4-0-4
An examination of physical hazards in the work environment and methods of control.

7983 Physical Hazards Control II* (On Demand) 4-0-4
A continuation of physical hazards control I. An examination on the control of physical hazards in the work environment. Prerequisite: 7982

7984 Elements of Industrial Hygiene* (On Demand) 4-0-4
A basic introduction to the field of industrial hygiene. A survey of the effects of toxic agents on the body and general methods of control.

7985 Techniques of Industrial Hygiene* (On Demand) 4-0-4
Exploration of basic categories of field instruments for detection of toxic substances with explanation of underlying theoretical principles. Prerequisite: 7984

7986 Product Safety* (On Demand) 3-0-3
A course aimed chiefly at product and processes and the hazards inherent in them. Particular attention is given to new chemical, plastics and their processes. Lab fee: \$2.00

Graphic Communications Technology

2402 Survey Photo Offset* (A,W,SP,SU) 2-5-4
A basic study of the technique of the various operations and processes of printing and duplication and their application and impact in the graphic communication industry. Lab fee: \$10.00

2403 Offset Press Operation* (SP,SU) 2-5-4
Techniques of offset press operation, press design, register systems, dampening systems, cylinder preparation and operational procedures. Lab fee: \$10.00

2404 Printing Production Management* (A) 4-0-4
A comprehensive study of printing management, practices and procedures. An analysis of job components, from layout to bindery and shipping department. Lab fee: \$5.00

2407 Estimating & Costing* (A) 2-5-4
Principles of estimating and pricing printing. Analysis of specifications, determination of material and use of production data for assigning time to personnel and machines. Theory and practice of cost determination in the graphic arts industry. Students should have taken 1131. Lab fee: \$5.00

2408 Photography I* (A,W,SP,SU) 2-4-4
An introduction to the principles of continuous tone photography emphasizing the manipulative functions, operative settings, shutter speed and focus control of cameras and enlargers; elements of composition and lighting and applied practice of film development and print processing. Lab fee: \$25.00

2409 Photography II* (A,W,SP,SU) 2-4-4
Advanced applied still photography of small format (35mm) black and white, with emphasis on problem solving and visual communications. This course exposes the student to more extensive use of lighting, filter, films and printing papers. It is required that each student have a 35mm camera with variable shutter speeds, aperture and light meter. Lab fee: \$25.00 Prerequisite: 2408

2411 Photography III* (A,SP) 2-4-4
Advanced and applied techniques in professional photography under studio and location conditions. Main emphasis is placed on lighting, subject treatment and camera manipulation. The student will experience black and white continuous tone photography with medium format cameras. Lab fee: \$50.00 Prerequisite: 2409

2412 Copy Preparation* I (W) 2-5-4
An introduction to drawing board composition and the fitting of copy, selection of type and paste-up of mechanicals for the camera. Lab fee: \$15.00

2413 Design and Typography* (SP) 2-5-4
A study of the theory and practice of design for production of the printed message. The development of efficient procedures in the preparation of roughs, layouts and comprehensives are examined in the laboratory. Lab fee: \$10.00

2417 Lithographic Stripping* I (W,SU) 2-5-4
A study of stripping operations. The assembly of photographic film for se-

quence and position. Preparation of masks, screens, surprints and reverses. Proofing system, contacting and duplicating film. Lab fee: \$50.00

2418 Video Production* I (A,W,SP,SU) 2-4-4
An introduction to basic video production (with audio), using black and white video equipment to give students a working knowledge of video cameras, tape recorders, microphones, videotape, editing equipment, tape format, and transfer of film to videotape. Lab fee: \$25.00

2419 Video Production II* (SP) 2-3-3
An intermediate course in video production, following basic video production and covering multi-camera color TV studio production, along with umatic video cassette editing, character generation, special effects generation, video test equipment setup and operation, multi-source audio recording and editing, set design and graphics for television. Lab fee: \$25.00 Prerequisite: 2418

2423 Printing Papers* (SP) 3-0-3
A study of the manufacture and selection of paper used in printing operations; sizes, colors, characteristics, limitations and packaging of printing papers. Field trip to a paper mill.

2432 Copy Preparation II* (SU) 2-4-4
An intensive study of techniques and procedures used in the preparation of mechanicals involving art assembly, close register, multiple colors, reverses, screens, spreads, chokes, newsletters and keyline work. Lab fee: \$10.00 Prerequisite: 2412 or permission of instructor

2433 Design II* (SU) 2-5-4
Designed as a sequential follow-up to 2413 Design and Typography. This elective course will build upon basic principles of design and place emphasis on synthesizing solutions drawn from these principles. Lab fee: \$10.00 Prerequisite: 2413 or permission of instructor

2434 Lithographic Stripping II* (SU) 2-4-4
Advanced and applied techniques and procedures of lithographic stripping, introducing to the student chokes and spreads, various contact methods, multiple page stripping and emphasizing four color stripping. Lab fee: \$50.00 Prerequisite: 2417 or permission of instructor.

2435 Lithographic Cameras* (A,W) 2-5-4
A study of film, film development, camera optical systems, camera calibration and exposure determination for line and halftone. Litho darkroom procedures. Lab fee: \$50.00

2436 Photo Typesetting Systems* I (A,W) 2-5-4
A study and application of phototypesetting equipment, autotape keyboards, video display terminals for editing, corrections and storing of formats, and programs. Output and processing procedures. Lab fee: \$25.00

2437 Introduction to Color Separation* (SP) 2-4-4
An introduction to the basic principles of color separation photography for the graphic arts industry. The techniques of dealing with reflection and transmission copy, masking, and the direct and indirect methods of separating colors. Lab fee: \$50.00 Prerequisite: 2435

2438 Silk Screen* (SP,SU) 2-4-4
Theory and practice of the silk screen process. Frame construction, stencil making, hand and film, screen fabric materials. Screening on paper, fabrics and metal. Decal printing, electronic circuit and metal decorating. Lab fee \$50.00

2439 Photo Typesetting II* (SP) 2-5-4
A continuation of increasingly difficult lab projects for direct preparation of job placement in the photocomposition industry. Techniques in the following areas are covered: Total composer manipulation, tabulation, floppy disk memory, programming of typesetter, trouble shooting and machine maintenance. Lab fee: \$25.00 Prerequisite: 2436

Heating, Ventilating And Air Conditioning Technology

4511 HVAC Graphics I* (A,W,SP) 1-5-3
A course designed for the student with no previous experience in reading or drafting HVAC blueprints. The course is structured toward drafting HVAC residential systems and symbols, and leads to understanding the heat loss/gain calculations performed in 4522. Some exercises are scheduled computer CAD. Lab fee: \$10.00 Prerequisite: None

4512 Basic Piping* (A,W,SP,SU) 2-4-4
Selection of the proper piping material and valves, along with consideration of the joining method will be studied. Sizing exercises will be combined with the

study of symbology used in piping diagrams, steam lines, hot and chilled water lines and refrigeration piping systems. Lab fee: \$10.00 Prerequisite: None

4513 Survey of HVAC* (A,SP) 2-4-4
A course designed to introduce students to the various people and jobs within the HVAC engineering, sales, contracting and service community. The course also deals with various business aspects including: Bidding, contracting, bonding, purchasing, designing, and in-plant operating procedures. Lab fee: \$10.00 Prerequisite: None

4521 HVAC Graphics II* (A,W,SP) 1-5-3
A follow-up course to HVAC Graphics I, 4511, this course concentrates on commercial equipment, ductwork and systems. Projects in piping layout, diffuser schedules and typical notes used on large job blueprints will be assigned. Isometric principles will be explained and used in drafting exercises. Lab fee \$12.00 Prerequisite: 4511 or equivalent

4522 HVAC Load Calculations* (W,SP) 2-4-4
A course covering residential heat loss/gain calculations, design of systems, and selection of equipment. ACCA design manuals will be used and subjects such as heat transmission factors, external static pressure, infiltration, enthalpy and ductwork sizing will be included. Lab fee: \$12.00 Prerequisite: 1145

4531 HVAC Commercial Load Calculations* (W,SP) 2-4-4
A course covering commercial heat gain/loss calculations, design of systems, and selection of equipment. The systems used in commercial applications will be discussed and compared, along with correct balancing procedures. The factor of sound as it applies to these types of systems will also be included. This course is one of six that prepares the student to take the HVAC contractor's license exam. Lab fee: \$12.00 Prerequisite: 4522

4532 HVAC Equipment* (W,SU) 3-2-4
A course discussing the components used to make up environmental conditioning systems in residential and commercial buildings. Chillers, unit heater, furnaces, radiant heaters, boilers, and auxiliary equipment will have their cycle of operation explained, application and selection parameters detailed, along with the, historical development. Lab fee: \$10.00 Prerequisite: 4512, 4541

4535 Field Co-op Experience* (SU) 0-40-4
Off campus work experience in construction, consulting engineering or construction related paid employment, that augments formal education received in the technology with actual work conditions and job experience. Permission of instructor is needed. "N" credit will not be allowed for this course. Lab fee: \$25.00 Prerequisite: 5236

4541 Principles of Refrigeration* (A,SP,SU) 2-3-3
A basic refrigeration cycle theory course covering heat thermodynamics, temperature - pressure relationships, mechanical operations of refrigeration equipment and representative application and selection data for class I refrigerants. Lab fee: \$10.00 Prerequisite: 4512

4542 HVAC Mechanical Standards/Safety* (A,SP) 3-2-3
A basic introduction to HVAC safety considerations, first aid, and CPR as well as emergency procedures for on the job accidents. An introduction to the various codes that effect the workplace and jobsite, such as OSHA, NFPA, state and local building codes. NEC, energy codes and ASHRAE standards will also be covered. Lab fee: \$12.00 Prerequisite: 4512, 4541, 4552

4543 Air Conditioning Systems* (SP,SU) 2-6-4
A course designed for the student with a fundamental knowledge of the air conditioning cycle. Previous training in refrigeration theory, wiring diagrams, control circuits, and tools used in the trade are necessary to enroll in this course. The course is designed around hands-on training and testing of the various component parts of a vapor compression split system. Lab fee: \$20.00 Prerequisite: 4541,4553,4561,4583

4544 Heat Pump Systems Service* (SP,SU) 2-6-4
A course designed for the student with a fundamental knowledge of the air conditioning and heating processes. Previous training in refrigeration cycle, wiring diagrams, control circuits, and tools used in the trade are necessary to enroll in this course. The course is structured around hands-on training on the various components parts of an air cycle heat pump system. Lab fee: \$20.00 Prerequisite: 4541,4553,4561,4583

4552 Instrumentation/Combustion Process* (A,SP) 2-4-4
A course about basic combustion processes using all the fossil fuels and psychometric chart work to track the thermal heat transfer. The instruments used to test these processes will also be explained along with the fan laws. Instruments used in energy auditing are then explained and preventative maintenance programs written. Lab fee: \$15.00 Prerequisite: 4512

4553 Automatic Controls* (W) 2-2-3
A course introducing HVAC residential and light commercial control systems and the components that make up the systems. Emphasis will be placed on

operators, sensors, controllers and various pneumatic and electrical devices used in modern control systems along with the logic used to develop their control sequences. Lab fee: \$20.00 Prerequisite: 4541,4552,4583

4554 Gas/Electric Heating Service* (A,W) 2-6-4
A course designed for the student with a fundamental knowledge of heat transfer characteristics and air movement properties. This course is designed around hands on training and testing of the various component parts and accessories that make up gas and electric heating systems, humidifiers and electronic air cleaners. Lab fee: \$20.00 Prerequisite: 4552,4561,4583

4555 Fuel Oil Heating Service* (A,W) 2-6-4
A course designed for the student with the fundamental knowledge of heat transfer characteristics and air movement properties, the course is designed around hands on training and testing of the various components and accessories that make up a fuel oil high pressure gun type heating system. Lab fee: \$24.00 Prerequisite: 4552,4561,4583

4557 Light Commercial Rooftop Systems Service* (SP,SU) 2-6-4
A course designed for the student with a fundamental knowledge of the residential heating and air conditioning servicing. Previous training in refrigeration cycle, wiring diagrams, control circuits, combustion process, and tools used in this trade are necessary to enroll in this course. The course includes hands-on training and testing of the various component parts of a rooftop heating and cooling system. Lab fee: \$24.00 Prerequisite: 4543,4554

4561 Hand Tools Laboratory* (W,SP,SU) 2-4-4
A course building elementary skills in welding, brazing, soldering, threading, cutting, swaging, and other skills that relate to service, installation and maintenance processes in the HVAC field. Basic handtools and meters will be demonstrated and used in lab exercises. Lab fee: \$15.00 Prerequisite: None

4563 Energy Management* (A,SP) 2-3-3
An overview of the world energy supply with both renewable and nonrenewable types being investigated. Attention will be given to building energy survey and calculation techniques, analysis and decision making within energy policy. Computer simulations, conservation measures and systems will be utilized to conserve energy. A glossary of EM terms will be assigned. Lab fee: \$15.00 Prerequisite: 4531,4532,4552

4564 Service Management* (A,SP) 2-2-3
This course will cover the basic management practices and procedures used in a residential service contracting organization. This course will emphasize human resource development, labor management, service agreements, materials inventory and financial management. Lab fee: \$12.00 Prerequisite: Permission of instructor

4566 Advanced Problems* (A,SP) 0-8-4
A simulation that will allow the student to use the knowledge gained in a problem or problems that emphasizes the design or practical service aspects of a heating and cooling system. The instructor will need to give prior approval of the project or projects to be completed by the student. Lab fee: \$8.00 Prerequisite: Permission of instructor

4583 HVAC Wiring Circuits I* (A,W,SP,SU) 2-4-4
This course is designed to teach a new student how to read, draw, interpret and understand residential heating and cooling wiring diagram symbols, device and wire size identification, basic circuit distribution concepts and schematic applications of same. Lab fee: \$10.00 Prerequisite: None

4584 HVAC Wiring Circuits II* (A,SP) 2-4-4
This course will concentrate on lab experiments designed to teach a student how to properly wire up typical heating and cooling devices into working circuits. Devices such as motors, controllers, contactors, compressors and safety devices will be covered. Lab fee: \$15.00 Prerequisite: 4281,4282,4583,4584

4585 HVAC Electronic Controls I* (A,SP) 2-4-4
This course uses basic electronic knowledge from 4281 and 4282, plus electrical knowledge from 4583 and 4584 to build a basic understanding of HVAC solid state computer controls. This theory course will cover controllers, sensors, relays and HVAC electronic operational devices. Lab fee: \$10.00 Prerequisite: 4281,4282,4583,4584

4586 HVAC Electronic Controls II* (W,SU) 2-4-4
This course will use lab exercises to teach how to wire and install, along with how to test and service the primary HVAC solid state computer controls. Lab fee: \$15.00 Prerequisite: 4585

4587 Boiler Systems* (A,SP) 3-2-4
This course uses basic combustion knowledge from 4552 and piping system knowledge from 4512, along with codes from course 4542 to build a basic understanding of boiler types, systems, safety procedures and codes that will prepare a person to take the highpressure boiler license examination. Lab fee: \$10.00 Prerequisite: 4512, 4542, 4552

4588 Ammonia Systems* (W,SU) 3-2-4
This course uses basic piping knowledge from 4512, refrigeration cycle theory from 4541, codes from 4542 and control knowledge from 4553 to build a basic understanding of the operational theory and safe operating practices for an industrial class II ammonia refrigeration system. Entering students should have 4561 course content or proficiency credit before enrolling in this class. Lab fee: \$10.00 Prerequisite: 4512,4541,4542,4553,4561

Hospitality Management Technology

2201 Survey of Hospitality Industry* (A,SP) 3-0-3
Introduction to management of restaurants, and of institution food services and lodging facilities to provide an overview of the industry. The role of related professional associations is studied, as well as trade journals and publications. Field trips and industry speakers provide a background of organization, operation and management. Lab fee: \$2.00

2202 Food Service Equipment* (W) 4-3-5
A study of equipment used in the storage, preparation, and service of food. Proper operation, cleaning, and maintenance are discussed. Purchase considerations are presented for major production and nonproduction equipment. Lab fee: \$10.00

2203 Bar Management and Wine Technology* (A,SP,SU) 3-2-4
Classification, history, and control of beer, wines and spirits. Covers Ohio liquor and legal regulations, inventory control, liquor dispensing systems, cash control and drink merchandising. The art of mixology. Lab fee: \$25.00

2205 Records and Cost Control* (A,SP) 3-2-4
Covers the principles and procedures involved in an effective system of food, beverage, labor and sales control. Emphasizes development and use of standards and calculation of actual costs. This course follows guidelines of course 464 from the educational institute of the American Hotel and Motel Association. An (EIAHMA) certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2208 Food Preparation I Laboratory* (SU) 0-6-2
A field experience food preparation laboratory stressing preparation terminology, use of standardized recipes, preparation of protein foods, identification and proper use of knives and utensils. This is a competency based instruction, under the supervision of a professional chef, for students enrolled in the chef apprenticeship training program. This is comparable to the laboratory portion of course no. 2211.

2209 Food Preparation I Lecture* (SU) 3-0-3
An introductory foods course including basic chemistry and physics of foods; definitions and terminology of food preparation; detailed study of protein foods-eggs, milk and dairy products, meats, seafoods and poultry and fats used in food preparation. This is the lecture portion of course no. 2211, and offered to chef apprentices who register for 2208.

2211 Food Preparation I* (W) 3-6-5
A laboratory course in basic food preparation including basic chemistry and physics of foods, definitions and terminology of food preparations, use of standardized recipes, detailed study of protein foods egg, milk and dairy products, meats, seafoods, poultry and fats. Preparation of small quantities of a variety of foods in order to master basic skills required for all types of food preparation. Lab fee: \$50.00

2212 Food Preparation II* (SP) 3-6-5
A laboratory course in quantity food preparation. Detailed study of sauces, herbs and spices, fruits, vegetables, starches, baked goods and desserts; use of equipment required for quantity food production; preparation and evaluation of the quality of standardized quantity recipes; estimation of raw material needs and management of the lab. Lab fee: \$50.00 Prerequisite: 2211

2215 Food Preparation II Lecture* (W) 3-0-3
A continuation of 2209 including detailed study of sauces, herbs and spices, fruits, vegetables, starches, baked goods and desserts. Standardized quantity recipes, standards of quality food products, and estimation of raw material needs for various recipes will be discussed. This is the lecture portion of course no. 2212, and offered to chef apprentices who register for 2216. Prerequisite: 2209

2216 Food Preparation II Laboratory* (W) 0-6-2
A field experience laboratory utilizing the principles of quantity food production, equipment required for the preparation of large quantity recipes, eval-

uation of the quality of products, estimation of raw material needs and costing of recipes. This is a competency based instruction under the supervision of a professional chef, for students enrolled in the chef apprenticeship training program. This is comparable to the laboratory portion of course no. 2212.

2217 Food Specialties I (Garde Manger)* (SP) 1-3-2
Special garde manger techniques such as vegetable carvings, appetizers, pates, terrines and galantines are studied. Buffet showpieces will be included, as well as meat cutting and boning of poultry. Manipulation of the tools which are used is stressed. Open to chef apprentices. Lab fee: \$40.00

2218 Food Specialties II (baking)* (W) 1-3-2
Fundamentals of baking including preparation of yeast breads, puff pastries, cakes, pies, cookies, puddings and specialty desserts. Open to chef apprentices. Lab fee: \$40.00

2222 Sanitation and Safety* (A,W,SU) 3-0-3
A detailed study of the control of bacteria, materials handling and safety practices to maintain a safe and healthy environment for the consumer in the food and lodging industry. Includes examination of applicable laws and regulations. Upon satisfactory completion of the course, a certificate from the National Institute for the Foodservice Industry (NIFI) will be awarded. Lab fee: \$5.00

2223 Food Purchasing and Specifications* (SP) 5-3-6
Provides a working knowledge of procurement methods and procedures and recordkeeping when purchasing and receiving food. Special emphasis is given to writing specifications, determining quantities to order, controlling portion cost, evaluating product quality, and determining availability. Field trips allow the student to see food processing and wholesale food markets. Lab fee: \$10.00
Prerequisite: 1131

2224 Hospitality Personnel Management* (A,SU) 3-2-4
Supervisory techniques applied to hospitality management. A study of organizational structures, job descriptions and specifications, employee application forms, and interviewing techniques used for the selection of employees. Improving communication and job performance with the development of orientation, training, and work simplification programs. Prerequisite: 3813 lab fee: \$2.00

2225 Menu Planning*(W) 3-0-3
Historical background of menus. Principles of menu planning including graphic design and layout and effective merchandising of food offered. Consideration given to various pricing strategies of menu selections. Lab fee: \$2.00 Prerequisite: 2212

2232 Budgeting, Purchasing & Records for Housekeeping* (A) 4-0-4
Provides an overview of the fundamentals of housekeeping operation in the areas of budgeting, purchasing, recordkeeping and financial management. This course meets certification requirements for National Executive Housekeepers Association course E85-16, E85-17, and E85-18. Lab fee: \$5.00

2233 Environmental Controls for Housekeeping (A) 4-0-4
A basic introduction to microorganisms for executive housekeepers. Included are chemical controls with uses of disinfectants, detergents, and floor care products. Also, an introduction to the common types of pests and effective measures for controlling them. Meets certification requirements for National Executive Housekeepers Association courses E85-10, E85-11, and E85-12. Lab fee: \$5.00

2234 Housekeeping Techniques* (W) 4-0-4
This course will identify responsibilities in professional environmental services management. Included are supplies and equipment for cleaning, development of cleaning procedures, safety programs, materials, handling and motion economy. Meets certification requirements for National Executive Housekeepers Association courses E85-7, E85-8 and E85-9. Lab fee: \$5.00

2235 Basic Interior Design* (SP) 2-0-2
Introduces the selection, use and care of interiors and furnishings. It includes the basic principles of decoration necessary to produce an environment that is harmonious, safe, and economical to maintain. It meets certification requirements for National Executive Housekeepers Association course E85-28. Lab fee: \$10.00

2237 Food Service Layout and Planning* (SP) 3-2-4
Food service layout, planning and analysis. For a variety of food and beverage operations. Includes equipment selection, flow charts, time and motion studies. Prerequisite: 2202

2241 Introduction to Hotel-Motel Management* (W,SP) 3-0-3
Covers the growth and development of the lodging industry. Internal operations and management skills are studied. This course follows the guidelines for courses 103 and 250 from the Educational Institute of the American Hotel-Motel Association. (EIAHMA) certificates will be awarded to those who successfully complete the challenge examinations. Lab fee: \$2.00

2242 Food and Beverage Management Survey* (SP) 3-0-3
Surveys entire food and beverage operations from purchasing, receiving and storage to preparation and service. It follows the guidelines of course 240 from the Educational Institute of the American Hotel-Motel Association. An EIAHMA certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2243 Hotel-Motel Law* (A) 3-0-3
Provides a general knowledge of the law as it applies to the hotel-motel industry. This course follows guidelines of course 390 from the Educational Institute of the American Hotel-Motel Association. An EIAHMA certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2244 Hotel-Motel Accounting* (W) 2-2-3
Covers the accounting concerns and techniques necessary for the managerial decisions in the lodging industry. This course follows guidelines of course 402 from the Educational Institute of the American Hotel-Motel Association. An (EIAHMA) certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2245 Front Office Procedures* (SP) 3-0-3
The principles required to organize, operate and manage a front office in a hotel or motel. This course follows guidelines of course 331 from the Educational Institute of the American Hotel-Motel Association. An (EIAHMA) certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2246 Hospitality Sales* (W,SP) 3-0-3
Selection of an advertising media to convey a particular message to a selected market. Market analysis and consumer surveys. Customer relations. This course follows guidelines of course 405 from the Educational Institute of the American Hotel-Motel Association. An (EIAHMA) certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2248 Hospitality Security and Maintenance* (SP) 3-0-3
This course covers the security and maintenance of a property. Risk management planning emphasizes losses due to thefts, injuries and disaster. Also included are personnel safety, OSHA rules and disasters preparedness. The second half of the course covers plant maintenance, preventive maintenance and other phases of maintenance operations. Meets requirements for National Executive Housekeepers Association courses E85-26 and E85-27. Lab fee: \$5.00

2249 Convention Management* (A) 3-0-3
Analysis of group business sales, sales department organization, marketing tools, media selection, targeting markets and successful selling approaches. This course follows the guidelines of course 429 from the Educational Institute of the American Hotel and Motel Association. An EIAHMA certificate will be awarded to those who successfully complete the challenge examination. Lab fee: \$2.00

2253 Nutrition (A,SP,SU) 5-0-5
A study of normal nutrition and its role in promoting good health. Includes composition and functions of foods, nutritional needs throughout the life cycle, and contemporary concerns, as well as a computerized diet and energy analysis for each student. Lab fee: \$16.00

2261 Dietetic Technician Practicum I* (A) 1-7-2
Practical application of information presented in the classroom from 2201, 2222, and 2253 to related health-care facilities. Skills are developed through supervised learning situations to evaluate foodservice systems, to maintain established standards of sanitation and safety, and to determine and meet the nutritional needs of selected persons. Lab fee: \$10.00 Concurrent: 2201, 2222, & 2253

2262 Dietetic Technician Practicum II* (W) 1-7-2
Practical application of information presented in the classroom from 2202 and 2211 to related health-care facilities. Skills are developed through supervised learning situations to operate, maintain and select equipment, to assist in food production and service, and to maintaining food quality and portion control lab fee: \$10.00 Prerequisite: 2261 concurrent 2202 and 2211

2263 Dietetic Technician Practicum III* (SP) 1-7-2
Practical application of information presented in the classroom from 2212 and 2223 to related health-care facilities. Skills are developed through supervised learning situations to procure and store food, supplies, and equipment used, to calculate food costs, to participate in quantity food production, and to develop and/or test products. Lab fee: \$10.00 Prerequisite: 2262 Concurrents: 2223 & 2212

2265 Dietetic Technician Seminar* (SP) 2-0-2
An in-depth study of management related problems and recent developments in health-care food service departments. Specific areas of study include nutritional assessment, development of dietary department budgets, employee motivation, computer assisted programs for inventory and menu planning, and

new concepts in the preparation and serving of food. Individual student project to be selected and presented. Lab fee: \$10.00 Prerequisite: 2268 Concurrent: 2269

2267 Dietetic Technician Practicum IV* (A) 1-7-2
Practical application of information presented in the classroom from 2205, 2224, and 2273 to related health-care facilities. Skills are developed through supervised learning situations to maintain and develop cost control systems, to select, train, schedule, and supervise employees, to supervise food production, and to evaluate employee performance. Lab fee: \$10.00 Prerequisites: 2263 Concurrents: 2205, 2224 & 2273

2268 Dietetic Technician Practicum V* (W) 1-7-2
Practical application of information presented in the classroom from 2275 to related health-care facilities. Skills are developed through supervised learning situations to interview patients, to evaluate nutritional data collected, to understand the rationale for dietary modifications and associated medical terminology, and to assist in the preparation and service of special diet meals. Lab fee: \$10.00 Prerequisites: 2267 Concurrent: 2275

2269 Dietetic Technician Practicum VI* (SP) 1-7-2
Practical application of information presented in the classroom from 2225 to related health-care facilities. Skills are developed through supervised learning situations to plan regular and modified menus considering nutritional needs, budget, employee skills and equipment available. Lab fee: \$10.00 Prerequisites: 2268 Concurrents: 2225 & 2265

2272 Catering* (SP) 2-3-3
A laboratory course in which students will study, then apply, the principles of operating a catering business or department including generating business, approving locations, preparing and serving various menus, transporting food and materials, training personnel and maintaining sanitation practices. Lab fee: \$10.00 Prerequisite: 2212

2273 Food Service Systems (A) 2-2-3
The recognition and evaluation of different types of food service delivery systems with emphasis on dining room management.

2275 Diet Therapy* (W) 4-3-5
Ways in which variations in caloric content, consistency and nutrient composition may be employed to meet individual dietary requirements. Rationale for dietary modifications and related medical terminology. Special diet meals prepared and tasted. Lab fee: \$10.00 Prerequisite: 2253

2283 Hospitality Coop-Work Experience I* (A,W,SP,SU) 1-20-2
A practical application of principles taught in the classroom. Hotel and restaurant students will take part in actual supervised work experience in the hospitality industry. A minimum of 20 hours per week will be spent in employment and weekly classroom discussion.

2284 Hospitality Coop-Work Experience II* (A,W,SP,SU) 1-20-2
A continuation of 2283. Students will have job experiences to be better prepared for obligations in hospitality management upon completion of the educational program. A minimum of 20 hours per week will be spent in employment and weekly classroom discussions. Prerequisite: 2283

2291 Dietary Manager Seminar I* (A) 3-0-3
A study of the types of health-care facilities, typical health-care organizational structures, role of the dietary manager. Regulations and how they affect food-service in health-care facilities are examined. Discussions concentrating on food service safety and sanitation principles, and utilization and care of equipment. Concurrent: 2294

2292 Dietary Manager Seminar II* (W) 3-0-3
Principles of planning menus to meet the nutritional needs of people in health care facilities. Explanation of methods and records used in procurement, receiving, and storage of food and related items. Surveys control measures for maintaining quality, quantity, and cost of food production. Prerequisites: 2291 & 2294 Concurrent: 2295

2293 Dietary Manager Seminar III* (SP) 3-0-3
Methods and records used to determine food needs and preferences are presented. Modified diets are written using established menu patterns and patient care plans. Evaluation of supervisory skills and employment techniques that affect employee performance as discussed. Development of training programs. Prerequisites: 2292 & 2295 Concurrent: 2296

2294 Dietary Manager Coop-Work Experience I* (A) 0-5-2
Supervised work related learning experiences to be performed on the job following material presented in the classroom from Dietary Manager Seminar I - 2291. Lab fee: \$15.00 Concurrents: 2291 and employment

2295 Dietary Manager Coop-Work Experience II* (W) 0-5-2
Supervised work related learning experiences to be performed on the job fol-

lowing materials presented in the classroom from Dietary Manager Seminar II - 2292 and employment. Lab fee: \$15.00 Prerequisite: 2291 & 2294 Concurrents: 2292 & employment

2296 Dietary Manager Coop-Work Experience III* (SP) 0-5-2
Supervised work related learning experiences to be performed on the job following materials presented in the classroom from Dietary Manager Seminar III - 2293. Lab fee: \$15.00 Prerequisites: 2291, 2292, 2294 & 2295 Concurrents: 2293 & employment

Interpreting/Transliterating Technology

7701 Introduction to Interpreting/Transliterating (A) 3-0-3
A course designed to acquaint students to the basics of interpreting; includes the interpreter's role, sign language systems in use in this country, terminology used in the interpreting field, and career options in the field of interpreting.

7702 English for the Interpreter* (W) 3-0-3
This course focuses on the grammar errors made during the voicing process and ways to remedy these errors. It also focuses on English vocabulary expansion and sign vocabulary expansion. Prerequisite: 7701

7703 Physical Aspects of Interpreting/Transliterating* (SU) 2-0-2
This course takes a look at the physical characteristics of the interpreting situation. Discussion and analysis of the following are included: Lighting, visual background, distance and placement of the interpreter and consumers, and the stamina needed for various interpreting assignments. Prerequisite: 7701

7704 Special Problems in Interpreting/Transliterating* (A) 3-0-3
A course that utilizes various techniques to help the interpreter develop the skills and poise needed to handle the frustrations and problems that arise in interpreting situations; works on dealing with the nonhuman entity of interpreting. Prerequisite: 7701

7705 Legal and Ethical Aspects of Interpreting/Transliterating* (SP) 3-0-3
Analysis of the rid code, "professional" ethics, confidentiality vs. privilege, legal liability, and the role of the interpreter. Prerequisite: 7701

7706 Signs Systems Vocabulary* (W) 3-0-3
Compares signs used in codes, systems, and in ASL; analyzes signs from both conceptual and philosophical viewpoints. Prerequisite: 7781

7707 Specialized Interpreting/Transliterating* (SP) 3-0-3
This course covers the special vocabulary and techniques needed to interpret in special situations. Some of these situations include interpreting for deaf-blind persons, oral-deaf persons, and interpreting in the legal, medical and educational settings. Prerequisite: 7701

7715 Linguistics of ASL* (A) 2-2-3
"Linguistics of American Sign Language" is an in-depth linguistic study of the structure, diachronic evolution, and major grammatical systems of American Sign Language. Prerequisites: 7754

7716 Artistic Interpreting* (A) 3-0-3
Covers conceptually signing songs, poems, etc., as these relate to platform and performing arts interpreting; opportunities are provided for group glossing, individual glossing, and critiques. Prerequisite: 7754

7721 Orientation to Deafness (A) 3-0-3
Discusses the psychological, social, and cultural aspects of deafness; looks at population, employment, and marriage patterns.

7722 Patterns of Language Development (W) 3-0-3
This course compares the normal patterns of language development of hearing children, prelingual deaf children and post lingual deaf children. Theories of language are discussed. Influences of total communication and oral education are also discussed.

7723 Speech and Audiology (W) 3-0-3
Speech and audiology will provide the student with an adequate knowledge of the field of audiology and the areas of speech and language development. Normal and impaired functions are discussed with implications for the hearing impaired individual. Emphasis will be placed upon principles rather than fine details of speech and hearing.

7741 Interpreting/Transliterating Practicum Seminar I* (A,W,SP,SU) 1-0-1
Group discussions of experiences arising during field experiences. Concurrent: 7743

7742 Interpreting/Transliterating Practicum Seminar II* (A,W,SP,SU) 1-0-1
Group discussions of experiences arising during field experiences. Prerequisite: 7741 Concurrent: 7744

7743 Interpreting/Transliterating Practicum I* (A,W,SP,SU) 0-20-4
Using in the field the concepts learned in the classroom, students will be assigned to work in a variety of situations on a part-time basis. Concurrent: 7741

7744 Interpreting/Transliterating Practicum II* (A,W,SP,SU) 0-20-4
Using in the field the concepts learned in the classroom, students will be assigned to work in a variety of situations on a part-time basis. Prerequisite: 7743 Concurrent: 7742

7751 Introduction to American Sign Language* (A) 0-6-3
This course begins with a series of visual readiness activities as a way of introducing the students to and preparing them for a language in a visual modality. The course utilizes a practical approach to teaching vocabulary, grammar, and the cultural aspects through "real life" conversational experiences. The student is further acclimated to the new modality of this language via classroom experiences conducted without voice. Additional information about the deaf community is introduced via outside readings and class discussion. Lab fee: \$5.00

7752 American Sign Language I* (WI) 0-6-3
ASL I, as a continuation of 7751, further acclimates the students to the visual/gestural modality of this new language. The course utilizes a practical approach to teaching vocabulary, grammar, and cultural aspects through "real life" conversational experiences. More attention is given to the student's production of the language than in 7751, while receptive/comprehension skills continue to be emphasized. Additional information about the deaf community is introduced via outside readings and class discussions. Lab fee: \$5.00 Prerequisite: 7751

7753 American Sign Language II* (SP) 0-6-3
ASL II provides the students additional opportunities to expand their ability to produce and comprehend the language as used in everyday conversational settings. Students continue to recognize the fact that communication is governed by culturally-bound rules as they continue to study the culture of the deaf community. Lab fee: \$5.00 Prerequisite: 7752

7754 American Sign Language III* (SU) 0-6-3
In ASL III, students' production and comprehension skills continue to develop qualitatively and quantitatively as they are exposed to a greater variety of interaction activities. Whereas these activities are based on cultural values of the deaf community, the students' knowledge of this unique community is expanded. Lab fee: \$5.00 Prerequisite: 7753

7755 American Sign Language IV* (A) 0-6-3
As the final course in this five course series, 7755 provides students opportunities to expand their production and comprehension skills with American Sign Language. Communication activities focus on advanced functions of language usage. Study of the cultural aspects of the deaf community is continued. Lab fee: \$5.00 Prerequisite: 7754

7761 Fingerspelling* (SP) 1-2-2
This course offers students the opportunity to work on expressive and receptive fingerspelling. The emphasis of this course is on using fingerspelling in context. Opportunities are provided for the students to work with videotaped materials as well as live models. Lab fee: \$5.00

7765 Introduction to Sign English (A,W,SP,SU) 3-0-3
Course emphasizes the use of signs in the straight English context. In addition to fingerspelling, numbers, and a sign vocabulary of 350 words, this course covers the basic principles of manual communication through nonverbal techniques and concept development. Lab fee: \$5.00 for videotapes

7766 Sign English I (A,W,SP,SU) 3-0-3
Course emphasizes the use of signs in straight English context. The course covers an additional vocabulary of 500 words. In addition to vocabulary building, course concentrates on signing idioms and increasing receptive skills. Lab fee: \$5.00 for videotapes. Prerequisite: 7765

7771 Interpreting I* (SP) 2-2-3
This course is a theoretical and practical "hands-on" approach to the process of sign language interpreting. The student will be actively learning how to render a signed message in ASL into spoken English, as well as render a spoken message in English into ASL. Lab fee: \$5.00 Prerequisite: 7702

7772 Interpreting II* (SU) 1-5-3
This course is a continuation of 7771. As such, the students continue the process of actively learning how to render a signed message in ASL into spoken English,

as well as how to render a spoken message in English into ASL. This course places more emphasis on the practical "hands-on" approach to the process of sign language interpreting. Lab fee: \$5.00 Prerequisite: 7771 Concurrent: 7754

7773 Interpreting III* (WI) 1-5-3
As the final course in the three (3) course interpreting sequence, this course continues to increase students' knowledge and skills in the sign language interpretation process. Increased focus is placed on "real life" situational experiences involving actual consumers. Lab fee: \$5.00 Prerequisite: 7772

7781 Transliterating I* (SU) 2-2-3
This course is a theoretical and practical "hands-on" approach to the process of sign language transliterating. The student will be actively learning how to render a signed message in PSE into spoken English, as well as render a spoken message in English into PSE. Lab fee: \$5.00 Prerequisite: 7702 Concurrent: 7754

7782 Transliterating II* (A) 1-5-3
This course is a continuation of 7781. As such, the students continue the process of actively learning how to render a signed message in PSE into spoken English, as well as how to render a spoken message in English into PSE. This course places more emphasis on the practical "hands-on" approach to the process of sign language interpreting. Lab fee: \$5.00 Prerequisite: 7781

7783 Transliterating III* (SP) 1-5-3
As the final course in the three (3) course transliterating sequence, this course continues to increase students' knowledge and skills in the sign language transliteration process. Increased focus is placed on the "real life" situational experiences involving actual consumers. Lab fee: \$5.00 Prerequisite: 7782

Law Enforcement Technology

7801 Introduction to Criminal Justice* (A,W) 3-0-3
A survey of law enforcement, its role, history, and development of English common law. An introduction to modern police practices and the functions of other agencies involved in the administration of criminal justice. An introduction to local, state, and federal court procedures.

7802 Crime Prevention Techniques* (On Demand) 3-0-3
Survey of the use of patrol procedures in crime prevention. Included are the purpose and types of patrol, deviant behavior, police communications including radio, teletype and computerized communication systems. Observation and perception, identification and description of individuals and property, a summary of the use and types of weaponry and techniques by call, required by requests for police service.

7803 Traffic Administration* (On Demand) 3-0-3
An orientation to highway traffic administration. Discusses the responsibilities of agencies involved in the highway transportation system with emphasis on the police function. Included are supervision enforcement definitions and rates, accident prevention and control problems, basic principles of traffic law enforcement, and the federal standards for highway safety that have a direct bearing on police operations.

7804 Juvenile Procedures* (A,SU) 4-0-4
Organization, functions, and jurisdiction of juvenile agencies. Processing and detention of juveniles. Statutes and court procedures relating to juveniles. Police services for juveniles and neglected children. Rights and liabilities of minors and their parents.

7805 Ohio Criminal Code* (W,SU) 5-0-5
The study of the statutes of Ohio that apply to crime and criminal procedures, with emphasis on the specific elements necessary to constitute individual crimes.

7806 Patrol Procedures* (W) 2-2-3
A study of patrol strategies and techniques. The major emphasis of this course is on the skills needed by officers in answering calls for service and safety of all parties in making citizen contacts and arrests.

7807 Criminal Investigation I* (A) 3-2-4
Principles and techniques of criminal investigation, including those techniques and skills used in the investigation of major crimes such as: Homicide, burglary, robbery, auto theft, arson and sex offenses.

- 7808 Criminal Investigation II* (W)** 3-2-4
A continuation of the study begun in Criminal Investigation I. Emphasis will be placed upon the scientific analysis of evidence and proper methods for collection and preservation of trace evidence.
- 7809 Emergency Dispatching* (SP)** 2-2-3
A comprehensive examination of the communication process, including interpersonal as well as technological communication. The role and function of dispatchers dealing with emergency situations will be explored.
- 7811 Criminal Evidence and Procedures I* (A,SU)** 4-0-4
Analysis of statutes and court decisions on the accumulation, presentation, and admissibility of criminal evidence. The origin, development, and philosophy of the rules of evidence. Concurrent: 7861
- 7812 Criminal Evidence and Procedures II* (W,SU)** 4-0-4
Tests for admissibility of evidence and types of evidence. Arrest, search, entrapment, and opinion testimony. Prerequisite: 7811 Concurrent: 7862
- 7813 Traffic Accident Investigation* (SP)** 4-2-5
An in depth study of the procedure and objectives in accidents and investigations. Gathering facts from road, vehicle and witnesses, hit and run investigation, measurements and diagrams, utilization of skid mark evidence, proper methods of recording accident data, use of accident template and a practical application of the recommended method of submitting the Ohio state traffic crash report. Lab fee: \$3.00
- 7814 Criminal Law* (A,SU)** 3-0-3
A study of the development of criminal law in the United States. The common law theories upon which law in this country is based will be explored. Specific topics will include: Parties to crime; capacity to commit crimes; and defenses and the laws defining specific crimes.
- 7815 Criminal Procedure* (SP)** 3-2-4
A study of the rules of procedures as they apply to criminal cases and affect the ability of the officer to have the evidence he collects or prepares presented in court.
- 7816 Case Preparation* (On Demand)** 3-2-4
A study of the necessary reports, review of case and conference with prosecutor, witnesses and technical reports. Proper submission of physical evidence, psychology of courtroom testimony. Participation in mock trials followed by actual courtroom trial visitations.
- 7818 Criminal Evidence and Trial* (SP)** 2-2-3
In this course the student will study the rules of evidence as they relate to the introduction of evidence at trial. In addition to the study of rules, students will participate in a mock trial in which evidence they have collected, preserved and processed will be presented.
- 7819 Supervision of Public Service Personnel* (W)** 3-0-3
Supervision techniques applied to public service personnel. The study of the need for job descriptions and job procedures, civil service requirements, reports, oral and written directions, work evaluation, conference leadership. Methods of instruction effective in teaching and motivating personnel.
- 7821 Local Government (A,W)** 3-0-3
The role of local government in the community; its structure, organization, and responsibility. Local government politics and the community. Methods and principles of local budgeting. Urban, suburban, rural and community structure.
- 7822 Police Community Relations (SP)** 2-3-3
The psychology of relations between law enforcement officers and the general population. Policies and practices of community relations as they apply to law enforcement agencies. Current national and local community problems. Community crime prevention programs are emphasized.
- 7824 Investigation and Interviewing (A)** 3-0-3
An analysis of the use of interviewing as a tool in investigation. Covering preparation of an interview, types of interviews, interview techniques and their psychological application in obtaining accurate and admissible statements.
- 7825 Constitutional Law* (A,SU)** 3-2-4
A study of federal and state constitutional law and the bill of rights with emphasis on the right to due process of law, equal protection of the law, jury trial, and assistance of counsel. Interpretation of the constitution by the United States Supreme Court as given in their decisions.
- 7826 Police Administration (SP)** 3-0-3
The contemporary local law enforcement agency, its functions, structure, and operational techniques. Principles of organization, staffing, budgeting, controlling, coordination, planning and research. The development and maintenance of liaison between agencies.
- 7827 Criminology (W)** 3-0-3
An eclectic approach to the crime problem. Some of the topics are: Crime and the population, the handling of the problem, the role of the victim, explanation of crime, treatment methods.
- 7828 Municipal Finance* (On Demand)** 3-0-3
An administrative view of municipal finance. A summary of budgeting, cost accounting, salaries, taxes, monthly allocation, balance sheets, operating expenses, purchasing and requisitioning are studied. Prerequisite: 7819 or 7826
- 7831 Police Photography* (SP)** 1-4-3
Photography at specific crime scenes. Photography of criminal evidence. Micro and macro photography. Preparing the court exhibit. Darkroom techniques. Use and care of photographic equipment. Lab fee: \$4.00
- 7832 Fingerprinting* (W)** 3-0-3
A study of fingerprinting recognition and classification procedures. Analysis of distinguishing features of fingerprint patterns. Instruction in photography of latent prints prior to lifting. Proper methods of lifting and preserving evidence. Lab fee: \$1.00
- 7833 Police Department Intelligence* (W)** 3-0-3
The collection and evaluation of information dealing with security and safety of the municipality. Methods of observation of criminal and subversive organizations, checking on rumors, intro-police communications, and the use of informants.
- 7834 Police Department Organization* (SP)** 3-0-3
An introduction to the principles governing the organization and administration of law enforcement organizations. Included for study are: Functions and activities, development of policy, significance of community relations in effective police work, and training and control of police forces.
- 7835 Crisis Intervention* (W)** 3-0-3
An analysis of the changing role of the law enforcement officer. Police have historically dealt with problems on the basis of keeping the peace. The police officer must resolve more than just the disturbance. A study of the methods and procedures of crisis intervention.
- 7836 Juvenile Delinquency* (SP)** 3-0-3
The philosophy and methods of police programs for the prevention and control of juvenile delinquency and youth crime. Emphasis on specific techniques and consideration of the issues and problems to be resolved by police.
- 7838 Vice Squad Operations I* (SP)** 3-0-3
Methods of law enforcement related to illegal traffic in liquor, gambling morals, and prostitution.
- 7839 Vice Squad Operations II* (A)** 3-0-3
A study of narcotics and hallucinogenics, with emphasis on the addict, the drugs, controls, local, state, and federal and United Nations efforts to control drugs. The illegal sale and use of drugs, and drug addiction.
- 7841 Major Crime I* (SU,A)** 3-0-3
Principles and techniques of investigation and prosecution of major crimes. Emphasis on methods involving homicide, suicide, assault and rape. Human physiology as applied to police investigation.
- 7842 Major Crime II* (W)** 3-0-3
Principles and techniques of investigation and prosecuting of major crimes. Emphasis on methods, involving auto theft, burglary, and grand larceny. "methods of operation" techniques.
- 7843 Techniques of Instruction (W)** 3-0-3
Methods of instruction, application of audio visual equipment, testing, and evaluation, and preparation of materials are introduced. Special emphasis is placed upon planning an organizational training program. Methods of evaluation. Lab fee: \$3.00
- 7844 Safety Education* (A)** 3-0-3
Methods of motivation and instruction of children and adults with emphasis on the subject of safety education. Principles of automobile, bicycle, motorcycle, pedestrian and firearm safety. Lab fee: \$5.00
- 7845 Penology* (SP)** 3-0-3
A study of the admitting, quartering, and releasing of prisoners. Emphasis on city and county systems for handling prisoners.
- 7846 History of Law Enforcement* (SP)** 3-0-3
A study of law enforcement from early civilization through the modern police department. Reference to notable crimes in history, their particulars, and results in law enforcement procedures change. Scientific advances and their role in law enforcement. An appreciation for the profession of law enforcement.

7847 Police Records* (SU) 3-0-3

The necessity, techniques, and details of keeping records in a police department. Criminal records, filing, and cross-reference system. Officer report writing.

7849 Crime Laboratory Techniques* (TBA) 3-0-3

A study of special chemical and physical procedures used in the crime laboratory. The use of specialized instrumentation; microscope and microphotography, x-ray equipment, and spectrophotometers. Lab fee: \$4.00

7851 Correctional Internship I* (TBA) 0-10-1

On-the-job training in the field of corrections. The student will work in a correctional agency. The course includes the interviewing of convicted felons, verification of the information received, and various other duties connected with probation and parole. Prerequisite: 7872 Concurrent: 7852

7852 Corrections Seminar I* (TBA) 1-0-1

This seminar will cover the pre-sentence investigation report, purpose and how compiled. Members of the internship program will be able to discuss the problems and events that they have encountered during their work at the probation office with each other and the instructor. Prerequisite: 7872 Concurrent: 7851

7853 Correctional Internship II* (TBA) 0-10-1

On-the-job training in the corrections setting. The student will work in a correctional agency. The course will consist of making background investigations for parole board, checking of inmates at various halfway houses, and interviewing persons on parole. Prerequisite: 7851 Concurrent: 7854

7854 Corrections Seminar II* (TBA) 1-0-1

This course is run in conjunction with 7853 in corrections. A discussion of what has occurred on the job and clarification of problems. Assignment of project and explanation of reason for the project. Prerequisite: 7852 Concurrent: 7853

7861 Criminalistics I* (SU,A) 0-4-2

The laboratory include the recognition, collection, and preservation of evidence and its preparation for court presentation. An introduction to fingerprint comparison. Lab fee: \$5.00 Concurrent: 7811

7862 Criminalistics II* (W,SU) 0-4-2

The laboratory includes examination techniques for blood, hair and fiber, firearms identification, toolmark comparison, latent fingerprints, questioned document examination and trace evidence. Lab fee: \$5.00 Prerequisites: 7811 & 7861 Concurrent: 7812

7871 Correctional Law* (A) 4-0-4

This course will cover the various supreme court rulings that deal with the care and treatment of prisoners confined in institutions. It will include the use of force, the right to have visitors, receive mail, attend religious functions, and the right to treatment. It will cover due process of law.

7872 Contemporary Corrections* (A) 3-0-3

This course covers the history of corrections, including the various philosophies that influenced correctional behavior, the development of the penitentiary system, the effect of court rulings on the operation of the institutions, and an insight into the future of the correctional system.

7873 Community Based Corrections* (W) 3-0-3

This course will investigate alternative models of corrections in place of institutionalizing the offender. Several leading authors will discuss various alternatives and the benefits that will derive from the placing of the offender back in the community rather than in an institution.

7874 Insitutional Corrections* (W) 3-0-3

This course will cover some of the problems of corrections today and their solutions. It will deal with the treatment of offenders, past and present, and with future trends in this field.

7875 Counseling - Probation & Parole* (SP) 4-0-4

This course covers the responsibilities and duties of the correctional counselor and case worker. Emphasis is placed upon the application of professional standards of casework in the correctional setting. Extra stress is placed on the functions of the parole and probation officers.

7876 Correctional Administration* (SP) 3-0-3

This course will cover the various phases of administration as they relate to corrections. Three basic stages are covered; executive, mid-management, line operations. Each of these levels will be discussed as they relate to institutions, community-based institutions, and operation of probation and parole. The problems and possible solutions to them will be covered for each division of corrections.

7881 Introduction to Security* (A) 3-0-3

This course is designed to provide a general background in security for the beginner. It covers some of fundamental systems used for loss prevention, fire destruction, and personnel safety. It covers the basic idea of construction for

security reasons as well as beauty and functionalism. It helps to relate security to all members of a company and the responsibility each has to the prevention of loss, both material and human.

7882 Security* (W) 3-0-3

This course will combine the practical with the theoretical as it examines the nature of crime, criminals, and selected criminal offenses; major security concerns; and the techniques, sophisticated hardware, and personnel utilized to reduce or eliminate security problems.

7883 Industrial Security* (W) 3-0-3

A study of the various types of security available to the business community. It covers the development of a proprietary security system, internal controls and external threats and special problems. Special emphasis will be placed on the use of electronic aide in security communications, and automatic access controls.

7884 Collateral Duty and Safety* (SP) 4-0-4

A basic introduction to problems and practices of collateral duty and safety personnel.

7885 Development of A Security Program* (SP) 3-0-3

This course is designed to inform the student how to conduct various surveys of a corporation to determine its vulnerability to theft and other hazards. It describes the various methods of conducting these surveys by questionnaires, study of procedure manuals and survey forms. Demonstrates how procedures and standards are prepared.

7886 Security Management* (W) 3-0-3

Introduction of the dynamics of corporate crime prevention. An in depth analysis of the techniques of risk management in the formulation of definitive corporate security policies and examines the impact of crime on corporate productivity and profits.

7887 Security & Guard Services* (On Demand) 3-0-3

This course is divided into two sections. The first covers retail store security, particularly shoplifting, shopping services and search laws. The second part of the course covers industrial security, guard services, alarm systems and premise protection.

7888 Security Research* (On Demand) 3-0-3

This course covers the writing of reports, the locations of sources of information on individuals, and the types of information needed for various investigations conducted by the private security sector.

Mathematics

1105 Introduction to Algebra (D & E-A,W,SP,SU) 4-0-4

A transition from arithmetic to algebra: The real number system; signed numbers; elementary algebraic operations; linear equations and formulas; problem solving by equations; factoring; the rectangular coordinate system, and graphs of linear equations. Prerequisite: 1842 or placement by ASSET. Not open to students with credit for 1108, 1145 or above.

1108 Intermediate Algebra (D & E-A,W,SP,SU) 4-0-4

Systems of linear equations; operations with algebraic fractions; factoring; exponents, radicals, and radical equations; solving quadratic equation by factoring, completing the square, and by formula; inequalities and their graphs. Prerequisite: 1105 or placement by ASSET. Not to open to students with credit for 1111, 1121, 1141 or 1181.

1111 Technical Mathematics I (D & E-A,W,SP,SU) 3-2-4

A brief review of scientific notation, roots and radicals, and other algebraic concepts; an introduction to computer programming in BASIC; solutions to linear equations and formulas; ratio-proportion, direct and inverse variations; algebraic functions and rectangular coordinates; solutions to 2x2 and 3x3 linear systems, including Cramer's rule; right triangle solutions. Lab fee: \$5.00 Prerequisite: 1108 or placement by ASSET

1112 Technical Mathematics II (D & E-A,W,SP,SU) 3-2-4

A continuation of the discussion of BASIC; periodic functions with emphasis on graphing the sine and cosine curves; exponential and logarithm functions; complex numbers, including Demoiivre's theorem; vectors and oblique triangles using the law of sines and the law of cosines; and solutions to quadratic equations. Lab fee: \$5.00 Prerequisite: 1111

1113 Technical Mathematics III (D & E-A,W,SP,SU) 3-2-4
Higher-degree equations, synthetic division, remainder and factor theorems; linear, quadratic, and rational inequalities; systems of inequalities; matrix operations and inverse matrices; trigonometric identities and equations; the straight line, circle, parabola, ellipse, hyperbola, and translation of axes, computer applications using BASIC. Lab fee: \$5.00 Prerequisite: 1112

1114 Differential and Integral Calculus I (D & E-SP,SU) 4-0-4
An introduction to differential and integral calculus with related applications; curvilinear motion; related rate; maxima and minima; areas under curves and volumes of revolution; derivatives of trigonometric, logarithmic, and exponential functions. Prerequisite: 1113

1115 Differential and Integral Calculus II (On Demand) 4-0-4
Differentiation and integration in polar coordinates. Infinite malaurin, taylor, and fourier series. First order differential equations. Partial derivatives and double integrals. Integration; logarithm forms, tables, power rule, trigonometric, substitution, by parts, exponential form, and inverse trigonometric forms. Prerequisite: 1114

1121 Computer Science Math I (D & E-A,W,SP,SU) 4-0-4
A study of fixed and floating-point real numbers, significant digits, scientific and normalized notations; a look at algorithm flowcharts and pseudocode forms and decision tables; a comparison of decimal, binary, octal, and hexadecimal numeration systems, conversions, and arithmetic in those systems; definitions, symbols, and operations in set theory; a review of intermediate algebra including quadratic inequalities; a study of linear and nonlinear relations and functions. Prerequisite: 1108 or placement by ASSET

1122 Computer Science Math II (D & E-AU,W,SP,SU) 4-0-4
A look at logical operators with truth tables and flowcharts; boolean algebra properties and operations; systems of equations and solutions by algebraic, gaussian, determinant, and matrix methods; linear programming solutions by graphing, algebraic, matrix, and simplex methods. Prerequisite: 1121

1126 Probability and Statistics (D & E-A,W,SP,SU) 3-2-4
An introduction to programming using BASIC and micro-computers: The description of sample data; numerical methods of analyzing data; percentiles, quartiles and Z-Scores; probability; the binomial distribution and the normal distribution; linear correlation and regression; sampling including the central limit theorem. Lab fee: \$5.00 Prerequisite: 1122

1131 Business Mathematics (D & E-A,W,SP,SU) 3-2-4
Ratio, proportion and percents; checking accounts and gross earnings; FICA and withholding; sales and property tax; discounts; markup and markdown; simple and compound interest; discounting notes; present value and amortization; depreciation schedules. An introduction to descriptive statistics; mean, median, mode and standard deviation. Applications modules using LOTUS 1-2-3. Lab fee: \$5.00 Prerequisite: 1841 or ASSET placement

1141 Business Statistics (D & E-A,W,SP) 3-2-4
An introduction to the basic language; descriptive statistics; probability distributions; sample statistics; statistical inference; estimation with application to business problems. Lab fee: \$5.00 Prerequisite: 1105 or placement by ASSET

1145 Technical Algebra (D & E-A,W,SP) 4-0-4
An introduction to percents and their uses to include percent increase or decrease; a discussion of dimensional units and unit conversions, including the metric system; equation solving and formula evaluation; powers and roots; quadratic equations and the quadratic formula; bar, line, and circle graphs and graphs of linear equations. Prerequisite: 1108 or placement by ASSET not open to students with credit for 1111, 1112, or 1113.

1146 Technical Geometry/Trigonometry (D & E-A,W,SP) 4-0-4
Solutions to 2x2 systems of equations; geometric concepts and their applications to determining perimeters and areas of plane figures, surface areas, and volumes of solid figures including prisms, cylinders, cones, and spheres; solutions to right triangles; vectors, and angles greater than 90 degrees. Prerequisite: 1145

1151 Intro to Microcomputers (D & E-A,W,SP,SU) 2-2-3
A historical development; the role of computers in society and future directions. Software: Programming in BASIC, the IBM operating system; applications to spread sheets, word processing, data base and robotics. Lab fee: \$5.00

1155 Computer Application to Mathematics (D-A,W,SP,SU) 2-2-3
BASIC language, using microcomputers, writing computer programs in BASIC, solving typical mathematical problems, and writing programs related to the student's own technology. Lab fee: \$5.00

1181 Mathematics for Health Technologies (D & E-A,W,SP,SU) 3-2-4
An introduction to computer programming in BASIC; a review of algebraic expressions and operations; solutions to linear equations; the metric system; functions and their graphs; ratio and proportion; logarithms; an introduction

to descriptive statistics. Lab fee: \$5.00 Prerequisite: 1108 or placement by ASSET

1185 Calculations and Dosages (D & E-A,SP) 2-0-2
A review of the fundamental operations of arithmetic with fractions; scientific notation; an introduction to the metric system; ratioproportion and percents; an introduction to the apothecaries' system of measure; household measures. Prerequisite: 1841 or placement by ASSET

Mechanical Engineering Technology

4601 Mechanical Drafting I* 0-6-3
A beginning course including principles of orthographic, isometric, and oblique projection. Dimensioning, sectioning, and applied descriptive geometry. Emphasis on making complete detail and assembly drawings. Lab fee: \$10.00 Prerequisite: 4608

4602 Mechanical Drafting II* 0-6-3
Course is a continuation of Mechanical Drafting I, including advanced drafting practices, industrial standards, and the drawing of machine elements. Lab fee: \$10.00 Prerequisite: 4601

4603 Computer Aided Drafting* I 0-6-2
Computer Aided Drafting I will introduce the student to current means of generating orthographic drawings with the aid of a computer system. Lab fee: \$10.00 Prerequisite: 4602

4604 Basic Mechanisms* 0-6-4
This course is a graphical study of basic mechanisms used in the construction of industrial machinery, such as linkages, cams, and gear trains. Lab fee: \$6.00 Prerequisites: 1113

4606 Tool Machine Design* 0-8-4
A study of the principles of design of production tooling, including jigs, fixtures, and various types of dies. Lab fee: \$15.00 Prerequisite: 4602

4608 Introduction to Manufacturing Technology* 2-3-3
Introduction to Manufacturing Technology will introduce the student to engineering terminology and basic engineering calculations, with the use of orthographic representations to describe problems. Prerequisite: 1108

4609 Computer Aided Drafting II* 0-6-2
Computer Aided Drafting II is an extension of Computer Aided Drafting I. This course is designed to enhance skills learned in the previous CAD course and introduces additional system capabilities. Lab fee: \$20.00 Prerequisite: 4603

4611 Machine Tools* 2-6-4
A study of the operations of the basic machine tools and the related theory. Cutting tool materials, cutting tool geometry, machine time, indexing, and gear milling are major topics. The course also stresses quality control and safety. Lab fee: \$25.00 Prerequisite: 4612

4612 Manufacturing Process* 3-2-4
This course is designed to be an introduction to basic manufacturing processes and techniques used in American industry today. The topics to be covered fall into three general categories: 1) manufacturing materials, characteristics, and structure; 2) metals, extraction, refining, and molding; 3) basic production machine tools.

4615 Materials Science* 2-3-3
A basic course in the structure, properties and use of various materials used in the engineering discipline. Prerequisite: 1112, 4612

4626 Hydraulics and Pneumatics* 2-3-3
A course in the elementary theory of fluid flow and power transmission in hydraulic machines. Emphasis is on the design, the principles of operation, and the use of components in hydraulic circuits in industry. Lab fee: \$10.00 prerequisites: 1113

4634 FORTRAN IV* 1-6-3
Designed for the beginning programmer, offering instruction and lab exercises in the FORTRAN IV language as written for the IBM 360/370 compiler. Students will design, flowchart, code, run, and debug programs in this course. Lab fee: \$7.00 Prerequisites: 1113

Medical Laboratory Technology

4635 Numerical Control/Computerized Numerical Control* 2-6-4

Course is designed for the beginning student and will cover manual numerical control programming. Each student will prepare numerical control programs in fixed block, tab sequential, and work address formats, in both absolute and incremental positioning systems. Students will program for a state-of-the-art computerized numerical control milling machine and use simulation type computerized numerical control lathes. Each student will prepare punched paper tape of a final milling project using a computerized tape preparation system. Lab fee: \$15.00 Prerequisites: 1113

4644 Statics & Strength of Materials* 2-3-3

Course deals with the principles of trusses, frames and machines. The course will also deal with the application of external loads to rigid bodies and the analysis of the resulting stresses produced within those bodies. Prerequisites: 1113

4651 Mechanical Drafting III* 0-6-3

This course is an extension of Mechanical Drafting I and II, including drafting of part details. Prepares students for competent mechanical drafting and detailing of industrial parts. Lab fee: \$10.00 Prerequisites: 4602

4652 Computer Applications for Manufacturing* 2-3-3

Computer Applications for Manufacturing is an introduction to the microcomputer for students in manufacturing. Students will be instructed in the basics of the personal computer machine operations, PC-DOS, disk storage, along with basics of how a computer works. Students will learn and write applications for LOTUS 1-2-3, PFS:Write, D—Base-II, and TK-Solver. Also write program in the BASIC programming language solving for elementary engineering problems. Lab fee: \$10.00 Prerequisite: 1105

4653 Robotics* 2-3-3

Course will teach the student how to understand robot "language" and how the mechanical reports of a robot operate. Lab fee: \$10.00 Prerequisite: 4652

4654 Statistical Process Control* 2-3-3

Provides a broad overview of the statistical process control function in the industrial environment. Course includes presentation of the philosophy and practices of modern quality control principles, basic probability, control chart applications, acceptance sampling, plans, frequency distributions, and process capability studies. Prerequisite: 1113

4655 Computer Aided Manufacturing* 2-6-4

This course is designed to provide a comprehensive presentation of the fundamentals of CAM technology. The course covers the development, implementation and projected future of computer utilization in the areas of monitoring and control of manufacturing processes. In addition, various support applications will be presented for which there are no direct interfaces to existing processes. Lab fee: \$15.00 Prerequisite: 4603

4402 Machine Shop II* 2-6-4

The machine families of shapers and planer, grinding machines, and horizontal boring, drilling and milling machines are studied. Emphasis is placed on types and major components, operations and the cutting tools tool and work holding devices and safety on the machines. Speed and feed calculations as applied to those machine families are also discussed to give the student a better understanding of the machines. Lab fee: \$20.00 Prerequisite: 4611

4403 Machine Shop III* (A,W,SP,SU) 2-6-4

This course is designed to give the student a high level knowledge of the growing demands in machine shop technology. Emphasis is placed on machining to close tolerances to obtain precision in reproducing of machine parts. The student is also introduced to technical developments that are occurring in industry. Lab fee: \$25.00 Prerequisites: 4402

4451 Machine Repair I* 2-6-4

Course will offer the student the opportunity to diagnose problems with malfunctioning machinery such as lathes, drill presses, mills, etc. Lab fee: \$25.00 Prerequisite: 4611

4452 Machine Repair II* 2-6-4

A continuation of Machine Repair I (4451) with the majority of hours spent doing scraping of ways, both manually and with an electric scraper. Lab fee: \$25.00 Prerequisite: 4451

4453 Automation Equipment* 2-6-4

The contents of the course describes the function of computer-controlled and dedicated tooling equipment used in the manufacturing of products. Lab fee: \$10.00 Prerequisite: 4653

8001 Medical Technology I* (A,SP) 0-6-3

Orientation to the field of medical technology; defining the role of the medical laboratory technician, overview of working conditions and places of employment, medical terminology, reporting methods, medical ethics, medical legal responsibilities and the collection of blood specimens. Lab fee: \$35.00 Prerequisite: Admission to program

8002 Medical Technology II* (W,SU) 2-4-4

A study of laboratory safety, spectrophotometry, quality control and the use and maintenance of laboratory equipment including the bright field and dark field microscopes, spectrophotometer, autoanalyzer, centrifuge, analytical balance, PH meter and other instruments. Emphasis is also placed on laboratory mathematics, particularly in solution preparation and dilutions. Lab fee: \$35.00 Prerequisite: 8001 and 8023 or permission of chairperson

8005 Blood Banking* (A,SP) 3-15-8

Procedures are stressed in ABO and RH typing, antibody screening, and cross-matching of patient and donor bloods. Studies and laboratory techniques also include discussion of most all blood group systems, phenotyping, identification of atypical antibodies, and the selection of proper donor blood in cases of crossmatching incompatibilities. Sufficient time is also spent studying transfusion therapy, the problems concerning fetal-maternal blood incompatibilities, and various other immunological procedures. Lab fee: \$70.00 Prerequisite: 8019 and 8002 or permission of chairperson

8017 Microbiology I* (W,SU) 0-20-7

A practical introduction to the laboratory identification of microbial agents associated with infectious disease in man. The course deals with the techniques necessary to isolate, identify and evaluate the presence of clinically significant microorganisms. The course also includes a brief introduction into medical mycology and parasitology. Lab fee: \$70.00 Prerequisite: 8005 or permission of chairman

8018 Coagulation* (W,SU) 2-6-4

Mechanisms of hemostasis are studied which include the evaluation of platelet function, vascular integrity, and the four stages of the coagulation system. Disorders of hemostasis are studied and the procedures used to identify and evaluate these disorders. Examples of procedures are as follows: Bleeding time, clot retraction, prothrombin times, partial thromboplastin times, substitution testing, and slide agglutination testing for fibrin degradation products. Lab fee: \$35.00 Prerequisite: 8025 or permission

8019 Cellular Hematology* (W,SU) 3-12-7

The origin, formation, and differentiation of blood formed elements are studied. This includes techniques in counting the following: red cells and white cells both automated and manual, platelets, reticulocytes, and eosinophils. The preparation of stained blood smears for the identification of blood cells which aid in the diagnosis of anemias, leukemias, hemoglobinopathies, and infectious states. Hemoglobin studies are performed to evaluate both quantity and types. Lab fee: \$35.00 Prerequisite: 8023 and or 8001 permission of chairperson

8023 Urinalysis* (A,SP) 2-4-4

The study of this course includes the complete laboratory procedures, qualitative and quantitative for the routine examination of urine chemically, physically, and microscopically. The theory and application of kidney function are included. Lab fee: \$35.00 Prerequisite: Admission to program

8025 Clinical Chemistry* (A,SP) 0-20-7

Clinical Chemistry is the application of the science of chemistry to the understanding of the human in health and disease. This course presents the analytical principles of methods necessary to determine chemical constituents in blood, urine and other body fluids and integrates them with instrumentation and manual techniques. The chemical principles of the methods utilized will be discussed as well as the physiological and biochemical changes associated with related disease states. Lab fee: \$70.00 Prerequisite: 8017 or permission of chairperson

8031 Special Topics in Medical Laboratory* (A,W,SP,SU) 1-0-1

8032 Special Topics in Medical Laboratory* (A,W,SP,SU) 2-0-2

8033 Special Topics in Medical Laboratory* (A,W,SP,SU) 3-0-3

Advanced study for the medical laboratory student in the areas of laboratory management, laboratory instrumentation of technical areas of hematology, immunology, blood banking, microbiology, clinical chemistry and urinalysis. Prerequisite: Permission of chairperson

8082 Clinical Experience I* (W,SU) 0-20-5

Two-quarter internship providing a practical application of the skills and abil-

ities learned during the previous five quarters. The students are assigned to a laboratory as a trainee. Students will apply their talent as members of the laboratory department. The student will be involved for three weeks each in the hematology section; four weeks each in the bacteriology and serology section; clinical chemistry section and the blood banking section of the laboratory; and will spend one week each urinalysis and immunology. Prerequisite: 8025 Concurrents: 8018, 8084

8083 Medical Laboratory Clinical Experience II* (A,SP) 0-36-9
Continuation of 8082. Lab fee: \$70.00

8084 Medical Technology Case Studies* (W,SU) 1-3-2
Review of all technical areas immediately prior to clinical placement through the use of case study presentations and accompanying laboratory work. Lab fee: \$35.00 Prerequisite: 8025 or permission of chairperson Concurrent: 8018

8085 Special Problems in Medical Laboratory Technology I* (W,SU) 1-0-1

8086 Special Problems in Medical Laboratory Technology II* (A,SP) 1-0-1
During the internship period, the student will keep a weekly log indicating scope and degree of activity in the laboratory. A copy of this work will be filed with the institute. A problem of special interest to the student, requiring library and/or laboratory study will be selected by the student and the faculty coordinator. This course includes open discussion of intern related problems, lectures on laboratory management, demonstration of other employment opportunities, interviewing techniques and case studies. Prerequisite: All medical laboratory courses

Mental Health and Mental Retardation Technology

8401 Principles of Human Services* (A,W, SP) 2-0-2
Overview of history and development of mental health services; theories of mental health; mental health care delivery system; roles and functions of the traditional and nontraditional mental health worker; a basic understanding of community based mental health; mental health needs of residents of Columbus and Franklin County; contemporary legislation; medical model vs. human service model. Lab fee: \$7.00

8405 Interviewing (A,W,SP) 2-2-3
This course focuses on students developing basic interviewing and active listening skills using simulations. The student will develop a beginning understanding of the process and principles establishing effective helping relationships, gathering data and interpreting data. Lab fee: \$7.00 Prerequisite or Concurrent: 8401, 8411 and 8421 or permission of the instructor.

8411 Introduction to Mental Retardation And Developmental Disabilities* (A,W,SP) 3-0-3
This is an introductory course covering terminology, history, assessment, legal rights, classifications, normalization, and community resources in relation to mental retardation and developmental disabilities. The student will visit several community agencies serving the MR/DD population. Beginning concepts related to working with families of persons who are mentally retarded or developmentally disabled are also covered. Lab fee: \$7.00

8416 Counseling Skills III: The Group* 4-0-4
Dual focus on knowledge and experiential learning using group as the unit of attention. Includes formation, process and content, stages of development, leadership skills and problematic issues of the group. Student will participate as a member in a peer group to compliment classroom theoretical constructs. Lab fee: \$7.00 Prerequisites: Second year standing or permission. Concurrent: 8496 Or 8497 or 8498.

8421 Values and Attitudes for the MHT* (A,W,SP) 0-2-1
Focus is on the values, beliefs, and attitudes necessary for effective helping relationships. Values clarification and self-exploration for the beginning student. Conducted through a small group experience to facilitate interpersonal understanding. Lab fee: \$7.00

8422 Counseling Skills I* (A,SP) 4-0-4
This is one of a three-part modular series of intermediate courses designed to expand on interviewing and counseling skills, learn a model of data collection, assessment and treatment intervention, and crisis intervention with problem solving component. Also provides a model of grief and loss while focusing on the identification of feelings as relates to the helping process. Lab fee: \$7.00 Prerequisite: 8401, 8405, 8411, and 8421. Concurrent: 8492.

8423 Residential Treatment* (W,SU) 4-0-4
This is one of a three-part modular series of intermediate courses designed to provide the student with knowledge of key concepts and theories as well as specific skills related to treatment in a residential facility. Contemporary concepts of 24 hour-a-day care, activity therapy, rehabilitation, psychotropic medication, impact of institutionalization, and problems of community acceptance will be taught. Lab fee: \$7.00 Prerequisite: 8401, 8405, 8411, and 8421 Concurrent: 8493

8424 Principles of Behavior Management* (W,SP) 4-0-4
This is part of a series of intermediate courses designed to coordinate clinical (practical) experiences with theoretical and academic knowledge. Focus is on behavior management theory and application in a variety of settings. The student will develop skills in using a behavioral approach to work with clients. This course will also focus on data collection, assessment, and treatment planning with an MR/DD population. Lab fee: \$7.00 Prerequisite: 8401, 8405, 8411, and 8421. Concurrent: 8494

8426 Social Policy and Programs 4-0-4
Social policy and its relationship to the work of helping persons. Overview of U.S. social welfare institutions: Family church, government, economic institutions. This course examines social welfare policies/programs at national, state and local levels in areas of housing, health care, and income maintenance. Skills in use of model for agency analysis and social action for social change. Lab fee: \$8.00 Prerequisite: 2nd year standing or permission. Concurrent: 8495 or 8496 or 8497 or 8498

8434 Counseling Skills II: The Individual* 4-0-4
This is an intensive course in the theoretical and practical aspects of effective helping through the counseling relationship. There is a heavy emphasis on practice of data gathering, assessment and treatment planning skills using the laboratory, videotape, small study groups and role-play sessions. Lab fee: \$7.00 Prerequisite: 2nd year standing or permission Concurrent: 8495 or 8496 or 8497 or 8498

8438 Chemical Dependency: Alcohol and Other Drugs* (W,SU) 4-0-4
An overview course designed to acquaint the student with assessment, intervention strategies, and treatment of the identified dependent person. Also provides an introduction to family systems and addresses needs of minority groups, elderly, women and youth. Lab fee: \$7.00 Prerequisite: None Concurrent: None, but can be taken with 8498

8492 Clinical Practice I 2-12-4
This is one of a three-part series of clinical experiences, designed to give the trainee a broad overview of modalities of delivery of mental health services. To give the trainee an opportunity to observe all service components of a facility which gives a range of mental health services and to practice basic skills under close supervision. Lab fee: \$5.00 Prerequisite: 8401, 8405, 8411, and 8421. Concurrent: 8422

8493 Clinical Practice II 2-12-4
This is one of a three part series of clinical experiences for 1st year MH/MR students designed to give the trainee a broad overview of modalities of delivery of mental health services. To give the trainee an opportunity to observe all service units of a residential treatment facility and to practice basic skills under close supervision. Lab fee: \$5.00 Prerequisite: 8401, 8405, 8411, and 8421 Concurrent: 8423

8494 Clinical Practice III 2-12-4
This is one of a three-part series of clinical experiences for 1st year students. An overview of modalities of delivery of MH/MR. To give the trainee an opportunity to observe all service components of a facility which give a range of services to MR/DD population. Provides opportunities to practice basic skills under close supervision. Lab fee: \$5.00 Prerequisite: 8401, 8405, 8411, and 8421 Concurrent: 8424

8495 Advanced MH/MR Clinic I Lab fee: \$5.00 (On Demand) 2-15-5

8496 Advanced MH/MR Clinic II Lab fee: \$5.00 (On Demand) 2-15-5

8497 Advanced MH/MR Clinic III Lab fee: \$5.00 (On Demand) 2-15-5

Three advanced clinical experiences for the second year student which take place in settings that will match the student's interest and training needs. The student has solid grounding in the fundamental skills requisite for being an effective helper and works with a minimal to moderate amount of supervision. The student plans an extended placement of 2 or 3 consecutive quarters in the same agency in order to carry a small caseload and become involved in ongoing work with clients. The student acts as part of the agency staff and is responsible for professional conduct and regular work habits.

8498 Field Placement Elective (On Demand) 2-12-4
A specifically arranged clinical experience for students desiring to 1) pursue in-depth training in special areas, 2) strengthen areas of clinical performance as recommended by faculty, or 3) enhance their program with additional practical experience. Application must be made during the prior quarter. Lab fee: \$5.00 permission of faculty is required.

Multi-Competency Health Technology

8801 Basic Electrocardiography (EKG)* 5-0-5
This course will cover anatomy and physiology of the heart, basic operation of the electrocardiography, pathology of the heart and basic arrhythmias. Concurrent: 8811

8802 Tissue Identification* (A) 1-6-3
This course will cover the use of the microscope and cellular structure. Tissues, such as epithelium, connective (cartilage, bone, blood), muscle, and nervous, will be examined and studied. Lab fee: \$15.00 Prerequisite: Acceptance in program Concurrent: 8801

8803 Chemistry of Stains 3-2-3
This course will cover the tissue and cellular stains. Stains, such as hematoxylin-eosin, L.A.P., gram's, giemsa, acid fast, and sudan, will be used and their advantages, disadvantages, precautions and special uses will be discussed and practiced. Lab fee: \$25.00 Prerequisite: 8802

8804 Instrumentation* (W) 3-0-3
The use, maintenance and safety of the instruments involved in histology will be discussed. The physics and/or chemistry involved in the use of such instruments as the tissue processor, automatic stainers, ovens, waterbaths and the various types of microtomes must be understood. Lab fee: \$25.00 Prerequisite: 8802

8805 Basic Histology Technics* (W) 0-24-8
The processing and cutting of tissues or organs, such as skin, digestive tract, bone, kidney, liver and pancreas, will be practiced. The sections cut will then be stained using both routine and special stains and prepared for examination by a physician. Lab fee: \$25.00 Prerequisite: 8802

8806 Histology Laboratory Regulations* (W) 2-0-2
The safe use of the equipment will be reviewed and expanded upon. The federal and state regulations regarding the use of the chemicals involved with tissue processing will be discussed. Prerequisite: 8802

8807 Case Study Review* (SP) 3-2-3
Technicians and physicians from the hospital will review surgical and autopsy cases from the gross review of the tissues removed through the microscopic examinations of tissues and relate the findings to the disease entity. Prerequisite: 8805 Concurrent: 8812

8808 Seminar* (A) 3-2-3
This seminar will direct the student toward the proper methods for seeking employment. Resume writing, cover letters, and interviewing technics will be discussed. Advanced case studies will be presented. Prerequisite: 8812 Concurrent: 8813

8809 Basic Histology Theory* (SU) 4-0-4
This course is divided into two major units of study. Emphasis is first placed on mathematics applicable to reagent preparation in a functioning histology laboratory. The safe use of the equipment will be reviewed and expanded upon. The federal and state regulations regarding the use of the chemicals involved with tissue processing will be discussed. JCAH, cap regulations will be discussed. Prerequisite: 8802

8811 Electrocardiography Clinical Practice* 0-8-2
This course consists of lab demonstrations and clinical practice of EKG in a local hospital. Concurrent: 8801

8812 Clinical Practicum I*(SP) 0-24-6
The students will have clinical experience in hospital histology laboratories under the supervision of registered histology technicians. They will cut, process and stain both surgical and autopsy tissues as well as work with cryostat (frozen tissue) and in some instances, observe the newest laser technology.

8813 Clinical Practicum II* (A) 0-24-6
The students will have clinical experience in hospital histology laboratories under the supervision of registered histology technicians. They will cut, process and stain both surgical and autopsy tissues as well as work with the cryostat (frozen tissue) and in some instances, observe the newest laser technology. Prerequisite: 8812 Concurrent: 8808

8815 Phlebotomy* (A) 2-6-4
This course is designed to provide the student with a knowledge of blood collection through the use of capillary and venipuncture techniques. The anatomy necessary for the performance of the collection, the anticoagulants and clinical relevance, the preparation of all specimens for laboratory use, and the preservation of specimens are in integral part of the course. Medical ethics, medical legal responsibilities, safety and professionalism are integrated throughout the sessions. Problems encountered in phlebotomy in addition to special specimen collection for transfusion service, blood cultures, coagulation test, and timed tests are reviewed. Lab fee: \$25.00

8821 Med Lab Skills I*(SP) 2-4-3
This course is an introduction to basic skills routinely performed by the laboratory in emergency care centers and doctor's offices. Emphasis will be in clinical chemistry and immunology, with an introduction to obtaining vital signs and medical office skills. Skills for performing routine tests on basic laboratory instruments, quality assurance, blood typing, pregnancy, syphilis and infectious mononucleosis tests will be included. Skills for obtaining correct vital signs and completing insurance forms will also be included. Lab fee: \$30.00 Prerequisite: 8021/or permission

8822 Med Lab Skills II*(A) 2-4-3
This course is an introduction to basic skills routinely performed by the laboratory in emergency care centers and doctors offices. Emphasis will be in hematology and microbiology with an introduction to x-ray positioning. Skills for performing a complete blood count, preparation and staining of blood smears, white cell differential, quality control, gram stain, wet prep, and microbiological plating and identification of some specimens on media will be included. Lab fee: \$30.00 prerequisite: 8021/permission

8823 Basic Urinalysis* (SU) 2-2-2
Basic urinalysis is the study of the composition of urine and its clinical significance through physical properties, routine chemical tests and microscopic evaluation. This course is not tech-restricted and is not intended for Medical Laboratory students.

Nursing Technology

8541 Introduction to Nursing* (A,SP) 2-9-5
The student is introduced to the role of the associate degree nurse within the health care system. An overview of the nursing process is presented, as well as the wellness-illness continuum. The human needs focus for all ages will be safety, activity, rest, sleep, and love and belonging. Learning experiences focus on skills used to promote health in the elderly client in an extended care setting. Lab fee: \$15.00 Prerequisite: Admission to nursing Concurrents: 1313,1361,1185

8544 Nursing Concepts of Wellness I* (W,SU) 2-12-6
The student is introduced to the role of the associate degree nurse within the acute health care facility. Human needs of air, food, fluids and neurological function are related to psychological, sociological, and spiritual aspects of all age groups. Focus of the nursing process is on the assessment phase. Learning experiences focus on skills used to promote wellness in the adult client and the family. Lab fee: \$15.00 Prerequisites: 8541,1313,1361,1185 Concurrents: 8545,1315,1366

8545 Concepts of Pharmacology* (W,SU) 2-0-2
The student is introduced to the general principles of pharmacology as related to man and his basic needs. Major drug classifications and their relationship to the concepts of health, society and nursing will be emphasized. Lab fee: \$5.00 Prerequisites: 8541,1313,1361,1185 Concurrents: 8544,1315,1366

8547 Nursing Concepts of Wellness II* (SP,A) 2-12-6
The student is introduced to the role of the associate degree nurse in providing nursing care for families during the childbearing process. The student will continue to utilize the nursing process in promoting wellness of holistic man during childbearing years. Lab fee: \$15.00 Prerequisites: 8544,8545,1315,1366 Concurrents: 1522,1367,1585

8549 Nursing Concepts of Health Alterations I* (SU,ASU,W) 3-15-8
The student is introduced to the role of the associate degree nurse in relation to clients with common recurring health alterations. The needs for food, fluid, and regulation of internal environment are addressed as they relate to illness. The nursing process is expanded by broadening the assessment base to include pathophysiology and the emphasis shifted to the planning, implementing and evaluating phases. Learning experience emphasizes nursing skills that promote adaptation and optimum wellness in pediatric and adult clients and their families in the acute care facility lab fee: \$15.00 Prerequisites: 8547,1585,1522,1367 Concurrents: 1368,1002

8551 Nursing Concepts of Health Alterations II* (A,W,A,SP) 3-15-8

The student will continue to focus on the role of the associate degree nurse in relation to clients with common recurring health alterations. The needs of air, activity, and rest are addressed as they relate to illness. All aspects of the nursing process are incorporated in care of the client. Learning experiences emphasize nursing skills that promote wellness in pediatric and adult clients and their families in the acute care facility. Lab fee: \$15.00 Prerequisites: 8549, 1368, 1002 Concurrent: 1003, 1024

8553 Nursing Concepts of Mental Health* (W,SP,W,SU) 3-9-6

The student is introduced to the role of the associate degree nurse in relation to clients experiencing mental health alterations. The needs of safety and security, love and belonging, self-esteem, and self-actualization are related to the mental health illness continuum. The nursing process is utilized in providing holistic care for clients. Clinical and laboratory experiences are provided in community and hospital settings. The student is encouraged to explore their own adaptive behaviors in order to enhance personal and professional growth. Lab fee: \$15.00 Prerequisites: 8551,1003,1024 Concurrents: 1004, or 1014, 1514

8555 Role/Function of the Associate Degree Nurse* (SP,SU,SP,A) 2-21-9

The purpose of the course is to incorporate principles for nursing practice from previous courses in realistic client - care situations. At the end of the course, students are expected to demonstrate the competencies expected of a beginning associate degree nurse. Learning opportunities include providing technical nursing care to clients of all ages with common recurring health alterations. A variety of acute health care settings will be utilized. Lab fee: \$15.00 Prerequisites: 8553,1514,1004 or 1014 Concurrents: 8556, elective

8556 Perspectives in Nursing* (SP,SU,SP,A) 2-0-2

The course will focus on contemporary trends and issues, in historical perspective, that influence the future of nurses and nursing. The student will synthesize concepts of man, society, health, and nursing in relation to the CTI Nursing Technology philosophy and knowledge gained during the past six quarters. This synthesis will lead the student to development of a personalized philosophy of associate degree nursing. Lab fee: \$5.00 Prerequisite: 8553 or permission of instructor Concurrent: 8555, elective

Real Estate Technology

3601 Real Estate Principles and Practices I (A,W,SP,SU) 3-0-3

An introduction to the language of real estate, the economics of the real estate business and the general practices performed in the listing and selling of real estate. Provides a basic knowledge of the real estate business. Course covers the physical, legal, locational and economic characteristics of real estate, real estate markets, regional and local economic influences on real estate values, evaluation, financing, licensing and professional ethics. Meets all state requirements for licensing and graduate realtor's institute designation (GRI). (see 3621) Lab fee: \$1.00

3602 Real Estate Law (A,W,SP,SU) 3-0-3

Real Estate Law includes all of the areas of law of common concern to the typical real estate practitioner and investor-consumer. Among topics covered are the law of agency as applied to real estate brokers and salespersons, law of fixtures, estates (including leases), conveyancing of real estate, real estate managers, licensure laws of Ohio, zoning, cooperatives and condominiums. Meets state requirements for licensing and Graduate Realtor's Institute designation (GRI). (see 3621) Lab fee: \$1.00

3603 Residential Sales Practices (A,W,SP,SU) 3-0-3

A "how to" course providing a step-by-step approach for success as a real estate professional based on sound principles and acceptable techniques. Course sets forth basic fundamentals which must be mastered by real estate practitioners regardless of their specialization or type of property involved. Underlying theme is communication. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00 Prerequisites: 3601 & 3602 or real estate license

3604 House Style and Design (W) 3-0-3

An in-depth look at communities, neighborhoods and sites, land use planning and fair housing regulations. Studies house types by structural configuration and the fundamentals of good and bad design. Provides a visual description of nine fundamental or basic styles, 75-100 substyles and historical influences relating directly to American house styles since the 17th century. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00

3605 Real Estate Advertising* (SP) 2-0-2

A contemporary study of real estate advertising: The way we advertise to reach and motivate prospective buyers, to target markets, to use additional or sub-

stitute media, and to be creative in design and application of advertising techniques emphasizing company identity. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00 Prerequisite: 3601 or real estate license

3606 Real Estate Brokerage (SP) 3-0-3

Emphasizes the business and management aspects of running a real estate brokerage office or company. Covers relationship between broker and client and broker and salesperson. Views the brokerage as an industry having characteristics that lead to unique business practices. Trends are reviewed and developments in the industry are discussed. Office management, selection and training of personnel. Salesperson-manager relationship, policy and procedure manuals and money management activities are discussed. Meets state requirements for licensing and GRI designation. Lab fee: \$1.00 Prerequisite: 3601 or real estate license

3607 Real Estate Finance* (A,W,SP,SU) 3-0-3

Covers 4 major concerns of real estate financing: 1) financing instruments and creative financing techniques; 2) in-depth mortgage payment patterns and concepts, economic characteristics and standards, and financing of single and income-producing properties; 3) sources and availability of mortgage money and credit and the impact of various factors on the mortgage market; and 4) special government activities having an impact on real estate financing. Meets requirements for licensing and GRI designation. Should not be taken before sales license exam. Lab fee: \$1.00 Prerequisite: 3601 or real estate license

3609 Condominium Communities* (A) 3-0-3

A guide to condominium ownership and legal obligations assumed by purchase into the condominium community. Condominium ownership is defined and responsibilities are discussed in detail from the condominium association that governs the community to management, maintenance problems and costs, rights, restrictions, social interdependence and self government. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00

3611 Real Estate Appraisal* (A,W,SP,SU) 3-0-3

Stresses the methodology of appraising the single family residential property and the theory underlying appraisal techniques. The three basic techniques of appraising; market comparison; penalized cost of replacement; and income approach (GMRM) are covered. A term appraisal project is assigned to give the student practical experience in applying these techniques. Meets state requirements for licensing and GRI designation. Should not be taken before sales license exam. Lab fee: \$1.00 Prerequisites: 3632 & 3601, or real estate license

3612 Income Property Appraisal* (W) 3-0-3

A selective research into specific income producing property for applying appropriate analytical techniques. Studies the principles of anticipation and use of the capitalization process, and translates income projection into a present capital value indication. A term appraisal project is required. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00 Prerequisite: 3611

3613 Essentials of Real Estate Investments* (W) 3-0-3

An overview of the scope and nature of real estate investments. Discusses advantages and disadvantages, individual versus group forms of realty ownerships, financing investments, tax ramifications and mathematical analysis. Different types of opportunities are discussed from vacant lots to land, houses, apartments, shopping centers, industrial developments and government sponsored projects. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00 Prerequisites: 3611,3612 (3612-may be taken concurrently.)

3614 Marketing Investment Analysis for Real Estate (SP) 3-0-3

An analysis and guide for investigating real estate opportunities, covering the problems of residential, office and retail properties. Details of conducting market and feasibility studies, analyzing materials and data collected and evaluating the relevancy of the studies are studied. A term project is to prepare a detailed market investment analysis for a user-client. Course may meet continuing education requirement (see advisor). Lab fee: \$2.00 Prerequisite: 3613

3615 Real Estate Special Topics* (SP) 3-0-3

A complex, open-ended course serving as a "capstone" offering to review, coordinate and synthesize the subject matter of the prerequisite courses. Presents new material not covered in other offerings, or expands some areas not given sufficient depth. Provides exposure to more technical aspects of real estate and advanced subject matter beyond introductory principles addressed in brokerage management, appraisal and finance. The instructor is free to conduct the class as he deems appropriate. Meets requirements for GRI designation. Lab fee: \$1.00 Prerequisites: 3601, 3602, 3606, & 3607

3616 Real Estate Commercial Investment* (A,W,SP,SU) 5-0-5

The practical application of real estate investment concepts used in daily real estate practice. A step-by-step approach through a typical case study involving, a typical client beginning with investment in general, yield analysis, taxation, then continuing through property analysis, tax deferred exchange, the installment sale and alternative investments. Course may meet continuing education requirement (see advisor).

3617 Professional Property Management* (A,SP) 3-0-3

A course studying decision-making as it affects management of residential commercial and industrial property. The emphasis shall be on the practical application of theory to actual management problems. Specific topics include: Ohio tenant landlord act, forcible entry and detainer, typical leases, office management, hiring, merchandising, advertising, collection problems, taxes, insurance and maintenance. An alternate course for licensing as a real estate broker (see advisor). Course may meet continuing education requirement (see advisor). Lab fee: \$1.00 Prerequisite: 3601

3618 Real Estate Leasing (On Demand) 3-0-3

An introduction to the language of office, industrial, and retail real property leasing, the economics of the leasing, general practices performed in listing, advising, and the leasing of available lease space. Provides a basic knowledge of the building owner's goals and objectives and fundamentals relating to characteristics of office, industrial, and retail real property. The impact of real estate markets, economic influences on real estate values, evaluation, financing, and professional ethics on leasing activities is also covered. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00 Prerequisite: 3601 or real estate license, 3612, or 3617

3621 Real Estate Principles & Practices/Real Estate Law* (A,W,SP,SU) 6-0-6

A combined course which includes material from 3601 and 3602. An introduction to the language of real estate, the economics of the real estate business and the general practices performed in the listing and selling of real estate. The course also covers real estate law commonly associated with the typical real estate practitioner. The course uses team teaching with practicing realtors and attorneys. It is designed to meet state requirements for licensing and the GRI designation. Lab fee: \$1.00

3632 Real Estate Mathematics* (A,W,SP,SU) 3-0-3

A review of arithmetic processes including common fractions, decimal fractions, and percentage. Topics include sale, list, net prices and commissions, unique problems in area and volume, principal, interest, and points computed on mortgages, taxes and transfer tax stamps, prorations of insurance, mortgage interest, and taxes to date of sale and preparation of closing statements. Course may meet continuing education requirement (see advisor). Lab fee: \$1.00

3633 Practical Financial Analysis (A,W,SP,SU) 3-0-3

Emphasis is on hand-held calculators as a tool to analyze the many financial problems that realtors encounter in the conduct of their practice. Deals with a special class of hand-held calculators, namely financial calculators, such as the HP-12C and TI Financial I and II calculators. Course may meet continuing education requirement (see advisor).

3681 Real Estate Today Seminar I* (On Demand) 1-0-1

A specially designed course which offers to meet the needs of the constantly changing real estate community, industry and the student population. Creative seminar topics are relative to today's market, and will provide flexibility in meeting a variety of needs. Course may meet continuing education requirement (see advisor).

3682 Real Estate Today Seminar II* (On Demand) 2-0-2

Continuation of 3681.

3683 Real Estate Today Seminar III* (On Demand) 3-0-3

Continuation of 3682.

Respiratory Therapy Technology

8602 Introduction to Respiratory Therapy Equipment* (W,SU) 4-4-6

A survey of the apparatus utilized in providing respiratory care, including manufacture, storage and safe handling of medical gas cylinders, regulators, flowmeters, nebulizers, humidifiers and intermittent positive pressure breathing equipment. Also to include the administration of oxygen; aerosol and IPPB therapy. Lab fee: \$25.00 Prerequisites: 1181, 1311, 1331 or 1344, 8621 or permission

8603 Respiration in Health and Disease* (SU) 4-0-4

A study of the physiologic and the pathologic processes which are seen in normal and abnormal cardiopulmonary conditions. Topics include pulmonary and cardiac anatomy, the physiology of ventilation and perfusion, renal anatomy and physiology, obstructive and restrictive lung disorders, and cardiac and vascular disorders. Prerequisite: 1344, 8621

8604 Cardiopulmonary Physiology* (SP) 3-0-3

A study of the anatomy and physiology of the cardiovascular and pulmonary systems. Topics included are pulmonary anatomy, mechanics of breathing, transport of oxygen and carbon dioxide, acid-base balance, heart anatomy, and cardiac mechanics. Prerequisites: 1331, 1332 or permission

8605 Pharmacology* (SU,A) 3-0-3

A study of the general principle of pharmacology, including drug types, dispensing, dosage, effects including contraindications and regulations. Drug groups relating to respiratory therapy will be emphasized to include bronchodilators, wetting agents, mucolytics, proteolytics, antibiotics, and aerosol solutions. Prerequisites: 8603 or 8604

8606 Clinical Specialties* (SU) 3-0-3

A study of cardiopulmonary disorders including clinical signs and symptoms, pathophysiology, diagnosis, and treatment. The course content includes evaluation techniques of the pulmonary system, obstructive and restrictive lung diseases, pulmonary vascular disorders, and respiratory and respiratory failure. Prerequisite: 8604 or permission

8607 Mechanical Ventilators* (A) 2-0-2

A course dealing with the equipment used to provide ventilator support, including ventilator classification, operation and adjuncts. Prerequisite: 8602

8608 Pulmonary Function and Blood Gas Analysis* (A) 3-0-3

A study of the equipment and the techniques utilized in pulmonary function testing and blood gas analysis. This course examines the types of analyzers used in performing lung volume tests, lung flow tests, and gas analysis test with a discussion of the advantages and disadvantages of such systems. Procedures used in each test are discussed including patient instruction and calculation of the data. Prerequisite: 8606 or permission Concurrent: 8683

8609 Organization and Administration* (SP) 2-0-2

A study of procedures of record keeping, budgeting, cost finding, personnel management, and policies and organization of a respiratory therapy department. Job descriptions and interviews will be discussed. Prerequisite: 8634 or permission

8611 Therapeutic Procedures I* (A) 2-0-2

A study of the goals, indication, contraindications and hazards associated with oxygen, aerosol and IPPB therapy and chest physiotherapy. Other topics include basic EKG's, incentive spirometry, suctioning and airway care. Prerequisites: 8602, 8603, 8641 Concurrent: 8642

8612 Therapeutic Procedures II* (W) 3-0-3

A survey of the aspects of mechanical ventilator support including types of ventilators, criteria for support and weaning, "Peep" therapy, and hemodynamic monitoring. Course content also covers the basic techniques in pulmonary function testing and arterial blood gas analysis, and an overview of neonatal and pediatric respiratory care procedures. Prerequisite: 8605, 8611, 8642 Concurrents: 8643, 8644

8621 Patient Care for Respiratory Therapy* (A,SP) 3-4-5

An introduction to respiratory therapy including discussion of the role of respiratory therapy in current medical practice, and duties, responsibilities, and professional liabilities of the therapist. Also a study of the procedures and skills of patient care as they apply to the respiratory patient in a clinical setting, including approach, rapport, and explanation of treatment to the patients. Laboratory instruction includes body mechanics, medical asepsis, and cardiopulmonary resuscitation. Lab fee: \$20.00 Prerequisite: Acceptance into the technology

8631 Respiratory Procedures I* (SP) 2-0-2

A discussion of the goals, indications, and hazards of oxygen and aerosol therapy. Other topics include basic EKG's, incentive spirometry, suctioning procedures, and airway care. Prerequisite: 8602, 8621 Concurrents: 8681, 8604

8632 Respiratory Procedures II* (SU) 2-0-2

A study of the goals, indications, contraindications, and hazards associated with IPPB therapy and chest physiotherapy. Course content also covers electrocardiogram study and artificial airways, including types, hazards, and care of these airways. Prerequisite: 8631, 8681, 8604 Concurrents: 8682, 8606, 8605

8633 Respiratory Procedures III* (A) 3-0-3

A study of the application of mechanical ventilatory support. The theory of operation of ventilators is covered including terms, abbreviations, classification, and flow characteristics. Patient application to ventilatory support is discussed, including indications for support, hazards of ventilatory support, maintenance procedures, monitoring techniques, and weaning procedures. Also included will be material on positive pressure therapy, hemodynamic monitoring, and other special topics. Prerequisite: 8632, 8605, 8606, 8682 Concurrent: 8683

8634 Respiratory Procedures IV* (W) 3-0-3

A study of the therapeutic procedures of respiratory care which are associated

with pediatric and neonatal patients. Course content includes evaluation and care of the newborn, neonatal mechanical ventilatory support, neonatal diseases, and pediatric diseases. Prerequisite: 8633, 8683, 8608 Concurrent: 8684

8641 Clinical I* (SU) 0-12-3
An introduction in the clinical setting for the respiratory technician. Practical application of oxygen and aerosol therapy and incentive spirometry; also, to include maintenance and sterilization of equipment. Lab fee: \$20.00 Prerequisite: 8621,8603 Concurrent: 8603,8602

8642 Clinical II* (A) 0-12-3
Practical application of IPPB and chest physiotherapy; also, to include airway management and emergency procedures. Lab fee: \$20.00 Prerequisite: 8641, 8602, 8603 Concurrents: 8611

8643 Clinical III* (W) 0-12-3
Instruction and practical application of mechanical ventilation. Lab fee: \$20.00 Prerequisite: 8642,8611,8605 Concurrents: 8612,8644

8644 Clinical IV* (W) 0-16-4
This clinical affiliation will allow the student to experience the practical application of skills presented during the previous three quarters. The student will be assigned to an accredited hospital to work 16 hours per week, and the student will have the responsibilities of a department member during this affiliation. Lab fee: \$25.00 Prerequisite: 8642 Concurrent: 8643

8681 Clinical Practice I* (SP) 0-12-6
An introduction in the clinical setting for the respiratory therapist. Practical application of oxygen and aerosol therapy and incentive spirometry; also to include maintenance and sterilization of equipment. Lab fee: \$20.00 Prerequisite: 8602 Concurrents: 8631, 8604

8682 Clinical Practice II* (SU) 0-12-6
Practical application of IPPB and chest physiotherapy. Also to include airway management and emergency procedures. Lab fee: \$20.00 Prerequisite: 8681, 8631, 8604 Concurrents: 8632, 8606, 8605

8683 Clinical Practice III* (A) 0-12-6
Instruction and practical application of mechanical ventilation. Clinical practice in the operation and maintenance of pulmonary function equipment and the drawing and analysis of blood gases. Lab fee: \$20.00 Prerequisite: 8682 Concurrent: 8633 & 8608

8684 Clinical Practice IV* (W) 0-12-6
A continuation of Clinical Practice III, with additional clinical rotations for pediatric respiratory care. Lab fee: \$20.00 Prerequisite: 8683, 8633, 8608 Concurrent: 8634

8685 Clinical Experience* (SP) 0-24-4
The clinical experience will allow the student to experience the practical application of the skills presented during the previous quarters. The student will be assigned to accredited hospitals to work 24 hours per week. During this clinical affiliation the student will gain experience needed to develop clinical judgement in preparation for employment. Lab fee: \$25.00 Prerequisite: 8684

Retail Management Technology

2901 Introduction to Retailing* (A,W,SP,SU) 4-0-4
Principles and methods of retail management, including organization policy making, and a survey of the functions of merchandising, sales promotion, finance and control, store operations and personnel.

2902 Sales Promotion* (W) 4-0-4
A study of the various sales promotion activities, including advertising retail display and the coordination of an effective sales promotion program. Prerequisites: 3801, 3815, 2901

2904 Retail Store Operations and Control* (SU) 4-0-4
The operation and control of retail establishments: Receiving stock, marking, warehousing, repair and alteration, delivery and customer service, maintenance, accounts payable and receivable, credit and collection, inventory control, and statistical analysis. Prerequisite: 3762

2913 Retail Buying I* (W) 5-0-5
A study of the nature, functions, and terminology of merchandising, merchandise information and decisions required in buying. Prerequisites: 2981, 2985

2914 Retail Buying II* (SU) 4-0-4
Buyer's methods of handling special merchandise and working with the other divisions within a retail organization. Prerequisites: 2981-2985

2981 Retail Internship I* (A,SP,SU) 0-25-4
Supervised on-the-job application of knowledge and skills acquired in the classroom. Prerequisite: Successful completion of first year curriculum

2982 Retail Internship II* (A,SP,SU) 0-25-4
A continuation of 2981. Prerequisite: 2981

2983 Retail Internship III* (A,SP,SU) 0-25-4
A continuation of 2982 Prerequisite: 2982

2985 Special Problems in Retailing I* (A,SP,SU) 0-6-2
The first of three courses in which the student applies his practical knowledge of retailing to specific areas on his job and submits reports to his coordinator-supervisor. Prerequisite: Successful completion of first year curriculum

2986 Special Problems in Retailing II* (A,SP,SU) 0-6-2
A continuation of 2985 Prerequisite: 2985

2987 Special Problems in Retailing III* (A,SP,SU) 0-6-2
A continuation of 2986. Prerequisite: 2986

Secretarial Science Technology

3301 Business Grammar Review (A,W,SP,SU) 2-3-3
This course is a structured program of grammar review for business students. It is designed to assist the student to become skillful in word choice, punctuation, vocabulary, capitalization, number expression, and spelling with particular emphasis on areas pertaining to the business office.

3311 Accounting Basics (A,W,SP,SU) 3-2-4
This course is designed to provide students with a basic understanding of accounting principles and procedures including journalizing, posting, and statement preparation. Also included are banking, payroll, and petty cash. Lab fee: \$5.00

3314 Introduction to Information Management* (W,SP,SU) 2-3-3
This course is designed to provide knowledge of efficient handling of business records, filing methods and systems, and principles for the selection of records systems and supplies.

3319 Typing Improvement (Recommendation By Instructor) (A,W,SP,SU) 1-4-3
This elective course is designed to provide students with increased skills in the operation of the keyboard. Greater speed and accuracy are the goals. The emphasis is on speed and accuracy using straight copy material. Lab fee: \$8.00 Prerequisite: 3325

3325 Typing 1 (Keyboarding)* (A,W,SP,SU) 2-3-3
Introduction to the touch keyboarding system with emphasis on correct techniques. Development of speed and accuracy on keyboard operations. Lab fee: \$8.00

3328 Typing 2 (Production I)* (A,W,SP) 2-3-3
Application of keyboarding operations with emphasis on development of proficiency in letters, reports, tabulations, and business forms. Lab fee: \$8.00 Prerequisite: 3325

3329 Typing 3 (Production II)* (SP,SU) 2-3-3
Further development of the student's ability to type letters, tabulations, reports, and other business forms and introduction to the use of machine transcription equipment. Lab fee: \$8.00 Prerequisite: 3328

3341 Shorthand (Beginning)* (A,W) 3-2-4
A foundation course in shorthand theory with emphasis on phonetics, word families, brief forms and phrases, and penmanship. Practice for speed and accuracy. Lab fee: \$4.00

3342 Shorthand (Intermediate)* (W,SP) 3-2-4
A course designed to perfect basic shorthand theory with emphasis on phonetics, word families, brief forms and phrases, and penmanship. Practice for speed and accuracy. Introduction to typewritten transcription. Lab fee: \$4.00 Prerequisite: 3341

3343 Shorthand (Advanced)* (SP,SU) 3-2-4
A continuation of Shorthand (Intermediate) intended to build accuracy and

speed. Introduction of short cuts. Development of typewritten transcription skill. Lab fee: \$4.00 Prerequisite: 3342

3355 Word Processing I* (A,W,SP,SU) 2-3-3
Introduction to menu-driven and command-driven text editing equipment and to the word processing concepts. Lab fee: \$30.00 Prerequisite: 3328 concurrent 3329

3356 Word Processing II* (A,W,SP,SU) 2-3-3
In-depth experience on a selected type of word processing equipment. Lab fee: \$25.00 Prerequisite: 3355

3364 Machine Transcription* (SP,SU) 3-2-4
This course is designed to provide secretarial students with increased skills in the use of machine transcription equipment. Mailable copy is the goal in transcribing machine dictation of business correspondence, technical reports, drafts, and other business communications in a broad range of business formats. Emphasis on the fundamentals of English in grammar, spelling, and vocabulary will reinforce transcription skills. Lab fee: \$8.00 Prerequisite or Concurrent: 3329.

3365 Office Simulation* (W,SU) 2-3-3
This is an on-campus work-experience program under simulated office conditions. Course provides development and refinement of office skills. Lab fee: \$10.00 Prerequisite: 3325

3366 Model Office* (A,SP) 2-8-5
This course is designed to approximate office conditions, standards, and secretarial functions. The student will perform business responsibilities in a simulated office setting. Students learn to work as an office team, set priorities, plan time, apply skills, and understand the office as an operating system. Lab fee: \$12.00 Prerequisite: 3325

3374 Executive Office Procedures I* (A) 5-5-7
Development of skills pertaining to secretarial work to include a complete review of typing and transcription and an introduction to job seeking skills and office procedures. Lab fee: \$15.00 Prerequisite: 3343 & 3329

3375 Executive Office Procedures II* (W) 5-5-7
Development of skills pertaining to secretarial work including typing and transcription, telephone usage, handling mail, composing correspondence, and assisting with travel and conference arrangements. Lab fee: \$15.00 Prerequisite: 3374

3376 Executive Office Procedures III* (SP) 5-5-7
Continuation of executive secretarial skill development with emphasis on mailable of written, machine, and oral input. To receive credit for this course students must have also met the following minimum skill competencies: Shorthand: 80 WAM 3 minute speed takes passed twice with 12 or fewer errors. Typing: Five-minute timings at a minimum speed of 60 WAM passed twice with 5 or fewer errors. Lab fee: \$15.00 Prerequisite: 3375

3378 Executive Secretarial Internship I* (W) 0-20-5
The student is placed in a secretarial position in a business that will provide application of as many phases of the theory taught in the secretarial science program as is practical for each individual. Students work four hours a day in an on-the-job experience supervised by an internship coordinator to aid in the student's growth and development. Prerequisite: 3374

3379 Executive Secretarial Internship II* (SP) 0-20-5
A continuation of 3378. The student is placed in a secretarial position in business working four hours a day. The on-the-job experience is supervised by an internship coordinator to aid in the student's growth and development. Prerequisite: 3378

3384 Legal Office Procedures I* (A) 5-5-7
Introduction to skills peculiar to law offices and legal ethics; complete review of typing and transcription skills. Introduction to court systems, types of law, civil and criminal procedures, and applicable legal terminology. Legal terminology includes shorthand outlines for frequently used terms. Lab fee: \$15.00 Prerequisite: 3343 or 3364 & 3329

3385 Legal Office Procedures II* (W) 5-5-7
Continuation of legal secretarial skill development including grammar, vocabulary, and spelling; study of domestic relations, probate, corporate, bankruptcy, and real estate law and applicable terminology. Lab fee: \$15.00 Prerequisite: 3384

3386 Legal Office Procedures III* (SP) 5-5-7
Continuation of legal secretarial skill development including grammar, vocabulary, and spelling; study of appellate procedures and appellate courts; study of legal filing, records management, timekeeping and billing procedures. To receive credit for this course students must have also met the following mini-

mum skill competency: Typing: Five-minute timings at a minimum speed of 60 WAM passed twice with 5 or fewer errors. Lab fee: \$15.00 Prerequisite: 3385

3388 Legal Secretarial Internship I* (W) 0-20-5
The student is placed in a secretarial position, preferably legal in nature, working four hours a day. The on-the-job experience is supervised by an internship coordinator to aid in the student's growth and development. Prerequisite: 3384

3389 Legal Secretarial Internship II* (SP) 0-20-5
A continuation of 3388 Secretarial Internship I. The student is placed in a secretarial position working four hours a day. The on-the-job experience is supervised by an internship coordinator to aid in the student's growth and development. Prerequisite: 3388

3394 Medical Office Procedures I* (A) 5-5-7
Development of skills pertaining to work as a medical secretary to include a review of typing, machine transcription, and proofreading. Also to include medicolegal responsibilities, receptionist duties, telephone procedures, appointment scheduling, job-seeking skills, and medical terminology, and medical reports transcribed on word processor. Lab fee: \$15.00 Prerequisite: 3343 or 3364 and 3329

3395 Medical Office Procedures II* (W) 5-5-7
Continuation of skill development pertaining to work as a medical secretary to include typing, machine transcription, and proofreading. Also to include patient records, professional reports, filing, office maintenance and management, medical communications, mail processing, medical terminology, and medical reports transcribed on word processing equipment. Lab fee: \$15.00 Prerequisite: 3394

3396 Medical Office Procedures III* (SP) 5-5-7
Continuation of skill development pertaining to work as a medical secretary to include typing, transcription, and proofreading. Also to include health insurance records; travel arrangements; drugs and prescriptions; fees, credit, and collection; payroll, banking, and bookkeeping procedures; medical terminology; and medical reports transcribed on word processing equipment. To receive credit for this course students must have also met the following minimum skill competency: Typing: Five-minute timings at a minimum speed of 60 WAM passed twice with 5 or fewer errors. Lab fee: \$15.00 Prerequisite: 3395

3398 Medical Secretarial Internship I* (W) 0-20-5
The student is placed in a secretarial position working four hours a day. The on-the-job experience is supervised by an internship coordinator to aid in the student's growth and development. Prerequisite: 3394

3399 Medical Secretarial Internship II* (SP) 0-20-5
A continuation of 3398. The student is placed in a secretarial position working four hours a day. The on-the-job experience is supervised by an internship coordinator to aid in the student's growth and development. Prerequisite: 3398

Social Services Technology

7503 Family Planning Services* (W) 3-0-3
This course provides the student with an overview of human sexuality from birth to death. Included are: Sexual reproductive systems, family planning methods and psycho-social implications of sexuality. Development of verbal ease in communicating about sexuality, responsive listening, exploring and accepting divergent views are the skills emphasized. Lab fee: \$2.00

7504 Case Work Practices* (A,SU) 3-0-3
This course is designed to expose the social service student to the unique importance of the professional interpersonal relationship between worker and client. The course defines, evaluates and analyzes this relationship via use of case studies, group practicums and role plays. Lab fee: \$2.00

7505 Categorical Disabilities* (W) 3-0-3
This course provides the student with an overview of six (6) major developmental disabilities. The major disabilities covered are mental retardation, autism, cerebral palsy, cerebral dysfunction, sensory dysfunction, sensory disorders, and epilepsy. Lab fee: \$2.00

7506 Mental Hygiene Services* (SP) 3-0-3
This course is designed to give the student insight into the three (3) health concepts of mental retardation, mental illness and mental health. The course explores these concepts via the use of video tapes, film strips, on site agency visitations, and group practicums. Lab fee: \$2.00

- 7508 Family Ecology* (A,SU)** 3-0-3
Family ecology views the family as an ecosystem and examines its interrelationships with the environment (biophysical, psychosocial, and technological) through the decision-making process. Emphasis is placed on family organization, family members, and their roles. Lab fee: \$2.00
- 7509 Family Health Care* (A)** 3-0-3
An introduction of the family in relation to wellness, illness, and prevailing treatment, the health care delivery system, health care providers, the methods for planning long range preventative care, and the social worker as a member of the health care delivery system. Lab fee: \$2.00
- 7512 Concepts of Counseling* (W,SU)** 3-0-3
An introduction to the field of counseling. A broad approach which involves how best to advise others to deal with their problems. Areas include health, education, economic, and social approaches. Lab fee: \$2.00
- 7513 Family Counseling* (SP)** 3-0-3
An in-depth approach on how to advise families to deal with specific problems. Students use resource materials to counsel actual families. A special emphasis on how one gains specific information to meet emergent needs; how to put this into action. Lab fee: \$2.00 Prerequisite: 7512
- 7515 Case Recording* (W,SU)** 3-0-3
This course is designed to teach the student the analytical thinking model (ATM) which would facilitate the student's learning process in the areas of analysis, diagnosis and case recording on social work case situations. Lab fee: \$2.00 Prerequisite: 7504
- 7516 Current Issues in Social Services* (SP)** 2-0-2
A seminar course that reviews the contemporary issues that affects the social work profession in the age of social, psychological and ecological crisis. Lab fee: \$2.00
- 7517 Aid-in-Crisis* (W)** 3-0-3
Course designed to acquaint the student with practical and innovative strategies of crisis intervention required for the social service occupations. Areas covered are personal trauma, legal jeopardy, property conservation and techniques on how to assist families experiencing life threatening events. Lab fee: \$2.00
- 7518 Basic Food Facts* (W,SP)** 3-0-3
This course is designed to present basic food facts with a consideration of nutritional needs for different age groups. Emphasis is placed on the importance of nutrition to total health. Planning and purchasing techniques to provide nutritionally adequate diets on low to moderate incomes are included. Lab fee: \$2.00
- 7519 Family Spending* (SP)** 3-0-3
A course designed to acquaint students with the problems of budgeting and spending the family income. Areas covered are planning, buying, borrowing, sharing and protecting. Lab fee: \$2.00
- 7521 Interview Techniques* (A,SU)** 3-0-3
How to interview, how to effectively use listening skills in gaining specific information, how to ask questions, how to observe, how to gain rapport and confidence in the families being contacted. Lab fee: \$2.00
- 7522 Introduction to Social Work and Social Welfare* (A,SU)** 3-0-3
A basic orientation course for the total program, designed to introduce students to the field of social welfare, to prepare them for future social work courses, and to provide the framework for working with people and arriving at policy decisions. Lab fee: \$2.00
- 7523 Theories and Treatment Methods in Social Work* (A,SU)** 3-0-3
This course is designed to give the student a conceptual framework for interpersonal helping that would enable the student to effectively utilize a selected treatment methods and be knowledgeable of various treatment modalities currently practiced in the field of social work. Lab fee: \$2.00
- 7524 Basic Gerontology* (A,SP)** 3-0-3
This course is designed as a general introduction to the field of aging. Students will acquire knowledge of the aging process and its consequent problems both with respect to their personal concerns as well as to their vocational interests. Lab fee: \$2.00
- 7525 Health Needs of the Elderly* (W)** 3-0-3
This course reviews the illnesses and diseases of the elderly. The emphasis is on counseling techniques related to mental health needs. Lab fee: \$2.00 Prerequisite: 7524
- 7526 Legal, Housing, and Recreation Needs of the Elderly (SP)** 3-0-3
This course examines the legal rights of the elderly in four main areas: Income service, medical services, housing employment consumerism. The second half
- of this course reviews housing on a continuum from independent living through hospice. Lab fee: \$2.00 Prerequisite: 7524
- 7527 Therapeutic Recreation for the Elderly* (A,SP)** 4-0-4
A survey course which includes an introduction to the philosophy of recreation; play and leisure; principles of program planning, assessment and documentation; activity modification; specific disabilities; volunteerism and community resources; budgeting. Lab fee: \$2.00
- 7533-34 Field Experience Seminars III, IV* (A,W,SP,SU)** 1-0-1
Group discussions of experiences arising during field experience. Integration of theory and practice. Individual reports. These seminars run concurrently with Social Services Field Experience III, IV (7583-7584). Prerequisite: Third quarter standing and/or 30 qtr. hrs. Lab fee: \$3.00
- 7535-36 Field Experience Seminars V,VI (A,W,SP,SU)** 1-0-1
Group discussion of experiences arising during field experience. Integration of theory and practice. Individual reports. These seminars run concurrently with Social Services Field Experience V, VI (7585-7586). Prerequisite: Third quarter standing and/or 30 qtr. hrs. Lab fee: \$3.00
- 7541 CDA Overview and Physical Environment* (A,W,SP,SU)** 2-6-3
The main focus of this course is the development of a portfolio that satisfies on of the requirements for the national child development credential and the familiarization of the ECD program at cti. Lab fee: \$15.00
- 7542 Cognitive Curriculum* (W)** 3-0-3
Empahsis on theoretical foundations for the young child's cognitive development. Techniques for promoting concept development as well as science, math and readiness skills in both indoor and outdoor programs. Addresses use of T.V., microcomputers, and audio-visual equipment in settings for young children. Lab fee: \$15.00 Prerequisite: 1531 Concurrents: 7564,7574
- 7543 Creative Curriculum*** 3-0-3
Course deals with the principles of creativity and its importance in the life of the young child. Focus is on sequence of development in child's use of creative materials. Techniques for art and must will be explored, demonstrated and implemented in the classroom. Lab fee: \$15.00 Concurrents: 7563,7573
- 7544 Self-concept and the Young Child* (W)** 3-0-3
Instruction, training and experience in individualizing an early childhood program to meet the needs of the children in a manner which develops a positive self-concept and individual strength. Lab fee: \$15.00 Prerequisite: 7561,7571
- 7545 Managing Children in Groups* (SP)** 3-0-3
Course deals with group management, planning and implementing the daily schedule in a preschool setting. Emphasis is placed on long range planning of behavioral objectives implemented through a play curriculum. Lab fee: \$15.00 Prerequisite: 7544 Concurrents: 7562,7572
- 7546 Parent Involvement in Early Childhood*** 3-0-3
Instruction training and experience in working effectively with parents of young children. Emphasis is on active participation of parents. Lab fee: \$15.00 Prerequisite: 7545 Concurrents: 7565,7575
- 7547 Child Care Administration* (SP)** 4-0-4
Course deals with the supervisory roles required to administer a program for young children. Focus is on planning for the child, the program, the staff, the parents and community involvement. Lab fee: \$10.00 Concurrents: 7566,7566
- 7548 Physical Development Curriculum* (WI)** 3-0-3
Theoretical foundations for the child's physical and motor development includes assessing individual child's motor skills, sequence for the development of motor skills, perceptual motor development, as well as, implementing small and large motor activities in both the indoor and outdoor setting. Lab fee: \$15.00 Prerequisite: 1531 Concurrents: 7562,7572
- 7549 Health and Safety* (A)** 2-0-2
Course gives training and practice in first aid as well as the recognition and management of communicable diseases within the group setting as required by Ohio rules and regulations for licensure. Also includes the emotional effects of illness or injury and health, safety and nutritional components of family living. Lab fee: \$15.00
- 7551 Language Experiences in Early Childhood Programs*** 3-0-3
Theories and sequence of language development. Analyzing factors that effect the role of the teacher in promoting the child's use of language. Course includes selection, evaluation and use of books to enhance child's language development, provide emotional support. Lab fee: \$15.00 Concurrents: 7563,7573
- 7552 Social Development Curriculum*** 3-0-3
Emphasis is placed on social development, encouraging children to work to-

gether. Sharing both experiences and responsibilities in a social atmosphere where children may express both positive and negative feelings. Key issues include sex stereotyping, prejudice, importance of family patterns, backgrounds, and the implications of play theory in programming for social development. Lab fee: \$15.00 Prerequisite: 7544 Concurrents: 7566,7576

7553 Guidance and Discipline in Early Childhood Programs* 3-0-3
In depth study of guidance and social learning theories. Focus is on resolving problem situations, changing behavior, moral reasoning and systems of assessment. Techniques and skills for working with the special needs child. Lab fee: \$15.00 Prerequisite: 7545 Concurrents: 7566,7576

7554 Child Care Staff* 4-0-4
In depth study of the dynamics of staff interaction in a setting for young children. Focus includes team functioning, problem solving, communication skills, motivating volunteers, personnel rights and responsibilities, policies and procedures, recordkeeping, staff orientation, in-service training, and evaluation as they pertain to child care personnel. Lab fee: \$15.00 prerequisite: 7542 Concurrents: 7566,7576

7561-7566 ECD Seminars I-VI* (A,W,SP,SU) 1-0-1
Group discussion of experience arising during ECD field placement integration of theory and practice. These run concurrently with specific courses as noted in course descriptions. Seminars focus on observing and recording the basic principles of guidance application of classroom studies in field. Lab fee: \$15.00

7571-7576 ECD Field Experiences I-VI* (A,W,SP,SU) 0-7-1
These courses are vital part of the ECD program, providing students opportunity to apply theory and practice under the guidance of early childhood professionals. These professionals guide and assist in the evaluation of the students performance. Lab fee: \$15.00

7583-7584 Social Services Field Experience III, IV* (A,W,SP,SU) 0-10-2
7585-7586 Social Services Field Experience V, VI* (A,W,SP,SU) 0-12-2
These courses involve the student in applying his classroom studies in the field. Students are accepted by local social service agency administrators and supervisors on a part-time volunteer basis. These professionals guide and evaluate the student performance. Lab fee: \$15.00 Prerequisite: 3rd quarter standing Concurrents: 7533-7536

modifying contact lenses, patient instruction on the care and handling of contact lenses, and special contact lens procedures. Lab fee: \$20.00 Prerequisites: 8203, 8205

8209 Orthoptics* (W) 1-3-2
The study of orthoptics (vision training) including instrumentation and procedures for orthoptics, assisting in the orthoptics evaluation and clinical training procedures. Prerequisites: 8281

8211 Clinical Observation* (A) 0-3-1
The course is the laboratory section of 8201. Students observe patient care in the general clinic and contact lens clinic at The Ohio State University College of Optometry. The observations cover patient testing, instrumentation and vision examination recording procedures. Concurrent: 8201

8212 Optometric Personal and Professional Development* (A) 2-2-3
This course is a survey of the vision care field. Included in this course are field trips to private optometric offices and vision care facilities. This also includes an introduction to the specialties within the field such as contact lenses, color, office management and low vision.

8213 Optometric Office Procedures* (W) 2-3-3
This course is designed to provide the student with knowledge of patient management, records management, vision insurance forms, office procedures and office finances. Practical experience with prescription pricing, pegboard accounting and office management through the use of a computer will be provided. Legal and ethical responsibilities in an optometric practice will be discussed. Also presented will be information on basic in-office first aid. Lab fee: \$5.00 Prerequisite: 8281

8214 Optometric Special Techniques and Emergency Procedures* (SP) 0-2-1
A study of special techniques and instruments used in the optometric field. This will also include the module on cardiopulmonary resuscitation. Lab fee: \$20.00 Prerequisite: 8282

8281 Optometric Clinical Experience I* (A) 0-12-4
Clinical experience at The Ohio State University College of Optometry includes patient assisting in general clinic and the dispensary/business office. Lab fee: \$20.00 Prerequisite: 8203, 8204

8282 Optometric Clinical Experience II* (W) 0-12-4
Clinical experience at The Ohio State University College of Optometry includes patient assisting in the pediatric clinic, contact lens clinic and the dispensary/business office. Lab fee: \$20.00 Prerequisite: 8206, 8208, 8281

8283 Optometric Clinical Experience III* (SP) 0-18-6
Clinical experience at The Ohio State University College of Optometry includes patient assisting in the contact lens clinic, general clinic, orthoptics/strabismus clinic, and the dispensary/business office. Lab fee: \$20.00 Prerequisite: 8282

Vision Care Technology

8201 Introduction to Optometric Technology* (A) 3-0-3
The course provides an overview of the optometric technician program. Optometric and vision care terminology will be presented along with names and familiarity with instruments and testing procedures. The vision examination terminology and appropriate recording procedures will be discussed. History and development of optometry and education of the optometrist and optometric technician will be included. Prerequisite: Program acceptance

8202 Optometric Technology I* (W) 4-4-6
Course includes properties of light, basic visual optics, eye defects, perception, color and eye movements. The mathematics of optics will also be covered. Lab fee: \$20.00 Prerequisite: 8201

8203 Optometric Technology II* (SP) 4-6-6
Techniques for gathering preliminary patient information such as case history, visual acuity, visual fields, tonometry and similar procedures. The laboratory portion will deal with applying these procedures in a clinical setting. Lab fee: \$20.00 Prerequisite: 8202

8204 Ophthalmic Optics I* (SP) 4-4-6
Measurement and inspection of ophthalmic lenses with emphasis on use of the lensometer will be presented. Spectacle repair and adjustments will be covered. Lab fee: \$20.00 Prerequisite: 8202

8205 Anatomy and Physiology of the Eye and Orbit* (SP) 3-2-4
A study of the anatomy and physiology of the eye and orbit. Related laboratory exercises are included. Lab fee: \$20.00 Prerequisites: 1331, 1332, 8202

8206 Ophthalmic Optics II* (A) 4-4-6
Course includes advanced theory and practice in fitting spectacles along with the cosmetic aspects of frame styling. Complete prescription verification is also covered. Lab fee: \$20.00 Prerequisite: 8204

8208 Contact Lenses* (A) 3-3-4
Course includes contact lens terminology and instrumentation, verifying and

Welding Technology

4743 Welding* 3-1-4
This course teaches basic skills of oxyacetylene cutting and welding, shielded metal ARC welding (SMAW), and gas metal ARC welding (GMAW), on joints encountered in the maintenance of automobile. Lab fee: \$25.00

4747 Welding Processes I* 2-6-4
This course is designed to give instruction in the following welding processes: Oxyacetylene, shielded metal ARC welding, gas metal ARC welding, and innershield welding. The student will develop a fundamental understanding and skills in the safe use of equipment. Welding and cutting operations will be performed on mild steel plate, making such welds as butt, tee, laps, and fillets in the flat horizontal position. Lab fee: \$25.00 Prerequisite: 4751

4748 Welding Processes II* 2-6-4
Students will receive instruction in four welding processes: 1) gastungsten arch welding; 2) plasma welding and cutting on various metals; 3) submerged ARC welding on mild steel, and 4) flux core and CO2 welding on mild steel. Lab fees: \$25.00 prerequisite 4747

4749 Welding/Brazing Codes, Specifications and Standards* 2-3-3
Instruction in understanding and applying government and industrial codes, specifications, and standards. Special project provides opportunity to demonstrate knowledge and applications of AWS, API, ASME, and MIC-STD codes, specifications, and standards to quality assurance practices.

4751 Introduction to Welding* 2-4-4

Presents the introductory basics as applied to the welding disciplines used in the industrial environment. Provides the practical information for the persons involved to obtain an overall awareness of the various materials joining processes. Lab fee: \$28.00

4753 Principles of Welding Power Supplies* 2-4-4

Provides studies in the functional aspects of the arc welding power supplies through equipment makeup, ARC fundamentals, and operating performance characteristics.

4754 Welding Metallurgy* 2-4-4

Study of weldability of metals and the application of basic metallurgy fundamentals to the ARC welding and brazing processes. Laboratory work includes preparation of welds for structure analysis examination techniques. Provides opportunity for metallurgical related investigations. Lab fee: \$15.00

4755 Weldment Fabrication and Production* 2-4-4

This course presents the theories and practices in developing and/or interpreting working drawings of steel fabrication and construction design considerations. Presentation and operation of metal-fabrication equipment and preparation of a bill of material ready for operation of metal-fabrication equipment and preparation of a bill of material ready for assembly as per specifications are included. GMAW, GTAW, GMAW, and QAW skills are used. Lab fee: \$25.00

4756 Welding Procedure Development and Performance Qualifications* 1-4-3

Course provides instruction and experience for student to obtain the skills and knowledge required to develop welding procedures and welding procedure specifications. Also includes testing practices for the performance qualification of welding and brazing personnel. Lab fee: \$25.00

4757 Welding Inspection and Tests* 2-4-4

A course presenting the fundamentals and applications of destructive and non-destructive testing techniques to complete welds and welded structures. Reviews welding inspector requirements. Student will learn to use tools and gages required for weld inspection. Prerequisite: 4754



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