Academic Success

ACAD 1100 Student Success Seminar 1 Credit, 1 Class Hour
This course is designed to assist students in making a transition to college during the freshman year. It introduces students to college functions and resources outlining the student's role in acquiring essential academic survival skills, including gaining an understanding of the learning process, establishing support groups, increasing the student's sense of affiliation, and assisting the student in defining personal and academic goals are covered. 1 hr lecture, group work. Required of all first time college students.

TE 1000 Academic Success 1 Credit, 1 Class Hour
Academic success is designed to empower students with strategies to successfully accomplish the transition to college life. Specifically, course work and assignments will focus on career preparation, goal setting, academic expectations and management of personal values and relationships. This course is required of all first time college students.

TE 1101 Technical Education 3 Credits, 3 Class Hours
This course provides an orientation to the college environment with emphasis on academic skills necessary for college success. This is a three credit-hour course limited to degree-seeking students who have accumulated fewer than 25 semester hours.

Accountancy

ACCT 1210/ AT 1005 Principles of Accounting I 3 Credits, 3 Class Hours
This course is the first of a two-semester course designed to introduce the student to accounting principles, practices and techniques. Emphasis is placed on accounting for a proprietorship. The accounting cycle, financial statements, control of cash, inventories, plant assets, current liabilities, and payroll accounting are covered.

ACCT 1220/ AT 1013 Principles of Accounting II 3 Credits, 3 Class Hours
This course is a continuation of Principles of Accounting I with an emphasis on corporations, financial analysis and managerial accounting. Content includes corporate organization, operations, earnings per share and dividends; long-term obligations and investments; statement of cash flow; analysis of financial statements; departments and branches; cost accounting systems; cost-volume-profit analysis; budgeting and standard cost, and decision making. Prerequisite: Principles of Accounting I (ACCT 1210 or AT 1005)

ACCT 1540 Computer Accounting 3 Credits, 3 Class Hours
This course introduces double entry accounting using computer software with continuing applications of several types of businesses. Prerequisite ACCT 1210, Prin. Acctg I, or permission of the instructor.

ACCT 1610 Microsoft Excel 3 Credits, 3 Class Hours
This course introduces the student to Microsoft's basic spreadsheet software. Major topics include spreadsheet vocabulary, command menu structure, spreadsheet design, introduction to database and graph design and production. Prerequisite: keyboard proficiency, CMPT 1010 Computers in Business or permission of instructor.

ACCT 1650 Advanced Microsoft Excel 3 Credits, 3 Class Hours
This course is a continuation of ACCT 1610 Microsoft Excel with advanced accounting applications. The concepts, features, and commands of a spreadsheet are applied to a variety of business situations. Prerequisite: ACCT 1610 Microsoft Excel or permission of instructor.

ACCT 1660 Microsoft Access 3 Credits, 3 Class Hours
This course is an introduction to state-of-the-art database management software. Prerequisite: CMPT 1010 Computers in Business or permission of instructor. 3 hrs lecture.

ACCT 2210/ AT 2004 Intermediate Accounting I 4 Credits, 4 Class Hours
This course provides an in-depth study of accounting records and reports, end-of-period procedures, and net income concepts. Content includes financial statement interpretation and preparation, receivables, systems, and controls, inventories, plant and intangible assets, and investments. Prerequisite: Principles of Accounting II (ACCT 1220 or AT 1013)

AT 1003 Accounting for Managers 3 Credits, 3 Class Hours
This course approaches accounting from the non-accountant's point of view. Emphasis is on the importance of financial information in the proper allocation of resources within the organization. This is accomplished by an in-depth study of four basic financial statements, their relation to each other and the ways in which they may be used in the decision-making process. Financial analysis and budgeting are integral parts of the course.

AT 1035 Tax Concentration I 4 Credits, 4 Class Hours
This course is the first of a two-semester, in-depth look at individual income taxation from a theoretical, as well as practical point of view. Some of the topics covered include: basic research techniques; exemptions; gross income concepts; inclusions and exclusions; deductions and losses in general; passive activity losses; business expenses and losses; depreciation; employee expenses; and the manner in which these items are presented to the government on Internal Revenue Service tax forms. Prerequisites: DM 0084, DR 0084, DE 0083 or equivalent

AT 1034 Income Tax I 4 Credits, 4 Class Hours
This course is designed to provide a comprehensive understanding of the federal income tax structure as it relates to individuals. Further, it provides a well-rounded tax education, not mere tax training, in the application of tax principles to specific problems. Tax forms currently in use are highlighted. Prerequisite: AT 1005 or ACCT 1210

AT 1044 Tax Concentration II 4 Credits, 4 Class Hours
This course is the second part of a two-part theory and forms course dealing with the Internal Revenue Code and how the taxpayer complies with the tax laws by submitting the exact form specified for the tax event. Topics included in this course include: itemized deductions; the alternative minimum tax; tax credits; property transactions; accounting periods and methods and deferred compensation. As in the first part of the course, the relevant tax forms, including Tennessee, Arkansas and Mississippi state forms are covered in detail. Prerequisite: AT 1035
AT 1104 Personal Financial Management
This course deals with personal financial survival strategies necessary to meet the changing financial needs in life. These strategies include cash management, budgeting, insurance, credit, savings, investments, and taxes.

AT 2014 Intermediate Accounting II
This course is a continuation of Intermediate Accounting I with emphasis placed on the formation and operation of the corporate form of business organization. Content includes liabilities and reserves, analysis of financial statements and working capital, dividends, earnings per share, income tax allocation, and revenue recognition. Prerequisite: AT 2004/ACCT 2210

AT 2024 Cost Accounting
This course is a study of the fundamentals of cost accounting within an industrial organization. The accounting functions relative to materials, labor, and factory overhead are treated in detail. Job order and process cost systems are fully explored. Standard cost systems, budgeting, and managerial control functions are also discussed. Prerequisite: AT 1013/ACCT 2210

AT 2035 Tax Concentration III
This course introduces tax students to corporations that are taxed at the corporate level as opposed to the shareholder level. Some of the topics covered include: organization and capital structure; earnings and profits and dividend distributions; redemptions and liquidations; the corporate alternative minimum tax; penalties; reorganizations; consolidated tax returns; and international transactions. All related federal and state (Tennessee, Arkansas, and Mississippi) tax forms are covered in detail. Prerequisite: AT 1044

AT 2034 Income Tax II
This course is a continuation of Income Tax I emphasizing the Internal Revenue Code and Regulations as they pertain to corporations, partnerships, decedents, estates, and trusts. Prerequisite: AT 1034

AT 2045 Tax Concentration IV
The theory of taxation of the income of partnerships, S corporations, fiduciaries, as well as the tax consequences of lifetime and testamentary property transfers, and the related forms and schedules are discussed in the course. Prerequisite: AT 1044

AT 2044 Governmental Accounting
The accounting theory of analyzing, recording, summarizing, reporting, and interpreting the financial transactions of governmental units and agencies is studied in this course. Emphasis is on state and local governments. Prerequisite: AT 1013/ACCT 1220

AT 2055 Accounting Applications for Microcomputers
The solution of accounting problems by using the microcomputer is emphasized in this course. Hands-on experience with state-of-the-art hardware and software familiarizes the student with spreadsheets and current general ledger programs. Prerequisite: AT 1013/ACCT 1220 for Accounting and Office System Financial Administrative Assistant majors

AT 2064 Auditing
The special place of the auditor in accounting is examined on an organization level, an ethical level, and a legal liability level. Emphasis is placed on the tools of the auditor, including statistical sampling techniques and the use of computerized audit programs. Laboratory periods permit actual preparation of audit work papers in a realistic environment. Prerequisite: AT 2004/ACCT 2210

AT 2074 Advanced Accounting
Current accounting problems relating to partnerships, installment sales, consolidations, foreign subsidiaries, and fiduciary accounting are examined by the students in this course. The formation, income division and liquidation of partnerships, cost and equity accounting for subsidiaries and consolidation on a purchase or a pooling of interests basis are examined in depth. Prerequisite: AT 1013/ACCT 1220

AT 2095 Advanced Accounting Applications for Microcomputer
The advanced student is given the opportunity in a hands-on environment to develop and use computer skills to solve more difficult accounting problems. Basic computer skills are enhanced as a secondary objective. Prerequisite: AT 2055

AT 2145 Tax Concentration V
This course is designed to allow the student to apply the theory and form preparation skills learned in earlier courses using commercial tax-compliance software. The student is also introduced to the concept of electronic filing. Prerequisite: AT 2045

AT 9013 Cooperative Education Work Experience I
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs that it provides, plus the impact it has on today’s society. Prerequisite: Co-op advisor’s approval

AT 9014 Cooperative Education Work Experience I-A
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs that it provides, plus the impact it has on today’s society. Prerequisite: Co-op advisor’s approval

AT 9023 Cooperative Education Work Experience II
The student spends one semester in employment in industry. Work duties are in the area of finance performing write-up work, data summarization and reporting. The student acquires a basic understanding of source documents and how these data are recorded and utilized in reports to management for decision making by them. Prerequisite: AT 9013

AT 9024 Cooperative Education Work Experience II-A
The student spends one semester in employment in industry. Work duties are in the area of finance performing write-up work, data summarization and reporting. The student acquires a basic understanding of source documents and how these data are recorded and utilized in reports to management for decision making by them. Prerequisite: AT 9014
AT 9033 Cooperative Education Work Experience III 3 Credits, 225 Laboratory Hours
The student spends one semester in employment in the accounting and financial offices of an enterprise. Work duties are in the area of recording, summarization, and analysis of data used in reports to management from the accounting department. Helpful, also, is experience in the organization and flow pattern of data constituting the input to the accounting department of the enterprise. The third semester is optional if the student and the employer mutually agree that employment will continue. Credit earned will be additive; substitute credit will not be awarded. Prerequisite: AT 9023

AT 9034 Cooperative Education Work Experience III-A 4 Credits, 300 Laboratory Hours
The student spends one semester in employment in the accounting and financial offices of an enterprise. Work duties are in the area of recording, summarization, and analysis of data used in reports to management from the accounting department. Helpful, also, is experience in the organization and flow pattern of data constituting the input to the accounting department of the enterprise. The third semester is optional if the student and the employer mutually agree that employment will continue. Credit earned will be additive; substitute credit will not be awarded. Prerequisite: AT 9024

Aerospace Studies

AS 1100 U.S. Air Force Today Leadership Laboratory (Fall) 0 Credit
Corequisite: AS 1101

AS 1101 The Air Force Today I (Fall) 1 Credit
This survey course is designed to introduce students to the United States Air Force and Air Force ROTC. Topics include Air Force mission and organization, customs and courtesies, officer opportunities, problem solving, and communication skills. Corequisite: AS 1100

AS 1110 U.S. Air Force Today II Lab (Spring) 1 Credit
Corequisite: AS 1111

AS 1111 U.S. Air Force Today II (Spring) 1 Credit
This course is a continuation of AS 1101. Corequisite: AS 1110

AS 2200 The Air Force Way I Lab (Fall) 0 Credit
Corequisite: AS 2201

AS 2201 The Air Force Way I (Fall) 1 Credit
This course is designed to facilitate the transition from AFROTC cadet to officer candidate. Topics include Air Force Heritage and leaders, Quality Air Force, ethics and values, leadership, group problem solving, and communication skills. Corequisite: AS 2200

AS 2210 The Air Force Way II Lab (Spring) 0 Credit
Corequisite: AS 2211

AS 2211 The Air Force Way II (Spring) 1 Credit
This course is a continuation of AS 2201. Corequisite: AS 2210

Allied Health Sciences

AHS 1050 Introduction to Health Careers 1 Credit, 1 Class Hour
Health career information is contained in this course. The focus is on the role, function, and relationships among various careers and the necessary educational/training requirements for career preparation and opportunities for job employment. Emphasis is placed on health career delivery systems and the legal and ethical dimensions related to health care. Students will also explore the impact of illness on the individual and the family.

AHS 2980 Cardiovascular Technology 4 Credits, 3 Class Hours, 1 Lab Hour
This course is a comprehensive study of the basic 12 lead EKG. The course covers all aspects of fundamental EKG interpretation. It is designed for the individual just entering the field or those who want to expand their cardiovascular technology knowledge. The Marquette Mac-12 machine will be used along with lecture material. The course provides technical assistance in cardiovascular technology and information about job opportunities.

AHS 2990 Special Topics in Health Careers 1-3 Credits, 3 Class Hours
This course provides an in-depth study of selected topic(s) related to various aspects of health occupations to further develop job seeking skills. Field trips, guest speakers, and individual projects are included. Emphasis is on personal health/development.

Anthropology

ANTH 2010/SC 1409 Cultural Anthropology 3 Credits, 3 Class Hours
This course is the study of the origin and development of human culture including social relations, language, government, religion, and rituals, and the problems of developing nations and minority groups in the modern world. Prerequisite: DE0083, DR0084 or equivalent
Architectural Engineering Technology

AR 1124 Architectural Drawing 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is an introduction to the fundamentals of graphic representation of subjects that are architectural in nature. Drafting expressions and light construction principles are stressed to increase the student’s knowledge and proficiency in drawing architectural plans and details. Corequisite: DM 0084

AR 1224 Contract and Construction Documents 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is a continuation of Architectural Drawing with emphasis on the production of architectural working drawings. Drawings are made of typical floor plans, building elevations and sections following a study of structural relationships, utility needs, and aesthetic aspects. Students will use the computer to produce drawings. Prerequisite: AR 1124, AR 2644, or permission of the program coordinator.

AR 1244 Materials and Methods 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course familiarizes the student with physical properties, grades, and uses of materials generally employed in residential and commercial construction. Prerequisites: AR 1124 or ME 1194

AR 2644 Computer Aided Drawing 4 Credits, 3 Class Hours, 2 Laboratory Hours
This is an introduction to basic computer concepts and software applications for creating computer aided drawings for architectural activities. The emphasis will be in AutoCad software. Prerequisites: DM 0084

AR 2714 Mechanical Equipment 4 Credits, 2 Class Hours, 2 Laboratory Hours
This course presents the basic theories of design, installation, and operation principles of water supply, plumbing, sewage disposal, fire protection, ventilation, heating and cooling, and electrical requirements for buildings. Students will use computer spreadsheet software in the course. Prerequisites: AR 1244

AR 2735 Building Codes in the Design Process 2 Credits, 1 Class Hour, 2 Laboratory Hours
This course involves the study of building codes and zoning ordinances from the perspective of one designing a building or other structure. Building codes and zoning ordinances protect the lives and health of the public and positively impact the aesthetic aspects of the community.

AR 2736 Principles of Construction Specifications 2 Credits, 1 Class Hour, 2 Laboratory Hours
A fundamental understanding of written construction documents is essential for organizing, preparing, using, and interpreting written construction documents, including specifications used in the design and construction industry. This course includes a study of bidding requirements, contract requirements, and specifications. Also included are content, language, and format used in specification writing and the role of material selection and evaluation in the specification writing process. Prerequisite: AR 1124

AR 2744 Architectural Design 4 Credits, 3 Class Hours, 2 Laboratory Hours
The study of architectural design is recommended to the technicians to encourage the understanding of the art of architecture, the elements of form and space, and the ordering of our built environment. The architectural engineering technician needs the vocabulary of design in order to understand and transmit graphical information and instruction from the architect or engineer to the drawings. Prerequisite: AR 1124

AR 2824 Construction Estimates 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course acquaints the student with the basic principles and current practices employed in estimating construction costs. The student prepares material and labor quantity surveys from working drawings and specifications for residential and commercial buildings. The principles of bid procedures and requirements of construction projects are introduced. Students will use computer estimating software in the course. Prerequisites: AR 1244

AR 2844 Advanced AUTO CAD 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course focuses on the continued development of AutoCAD skills, both basic as well as advanced. Some of the areas covered include general computer system management, typical office standards for CAD production consistency, customization techniques for optimizing efficiency, and overview of 3D modeling processes. Prerequisites: AR 2644

AR 2845 AutoCad and GIS 3 Credits, 2 Class Hours, 2 Laboratory Hours
This course is a continuation course for AutoCAD users and Geographic Information Systems (GIS) users utilizing AutoCAD Map. The course gives students automated mapping and GIS skills to create and maintain maps for GIS purposes within AutoCAD software. Students develop skills for presentation, query, and analysis of GIS.

AR 9013 Cooperative Education Work Experience I 3 Credits, 225 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today’s society.

AR 9014 Cooperative Education Work Experience I-A 4 Credits, 300 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today’s society.

AR 9023 Cooperative Education Work Experience II 3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the architectural field. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: AR 9013 or AR 9014

AR 9024 Cooperative Education Work Experience II-A 4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the architectural field. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: AR 9013 or AR 9014
AR 9033 Cooperative Education Work Experience III  3 Credits, 225 Laboratory Hours
The student acquires work experience in the architectural field under the supervision of an architect/engineer or senior technician. The student utilizes knowledge gained in any or all architectural courses to accomplish tasks as assigned by the architect/engineer. Prerequisite: AR 9023 or AR 9024

AR 9034 Cooperative Education Work Experience III-A  4 Credits, 300 Laboratory Hours
The student acquires work experience in the architectural field under the supervision of an architect/engineer or senior technician. The student utilizes knowledge gained in any or all architectural courses to accomplish tasks as assigned by the architect/engineer. Prerequisite: AR 9023 or AR 9024

Art

ART 1050/ AH 1010 Art Appreciation  3 Credits, 3 Class Hours
Art Appreciation is a study of the visual arts designed to teach visual awareness by examining a variety of styles from various periods and cultures. Emphasis is placed on the development of a common visual language in order to assess, discuss, and enjoy works of visual arts from diverse media, cultures, and periods. This course fulfills the Fine Arts/Humanities requirement for the General Education core.

AH 1020 History of Architecture  3 Credits, 3 Class Hours
This course is designed to give the beginning student a solid basis in the fundamental terminology of architecture and the principles of architectural history. Emphasis is placed on the ability to discern between the styles and periods of architecture. By the end of the course, each student is expected to demonstrate a basic knowledge of the various styles of architecture, as well as a general knowledge of the history of architecture. Prerequisite: DR 0084/READ 0800, DE0083/ENGL0800 or equivalent

ART 1070 Color Fundamentals  3 Credits, 6 Studio Hours
This course is a study of color perception, systems of color organization and studio exercises in color mixing, interaction, and color harmony.

ART 1080 Computer Graphics  3 Credits
This course is an introduction to principles and theory of graphic design, using the computer as a medium for drawing and design. Experimentation with line, shape, texture, form, pattern, and composition.

ART 1110 Basic Design  3 Credits, 6 Studio Hours
This course is a study of the elements of design, line, texture, and form in space using a variety of materials and methods.

ART 1150 Basic Photography  3 Credits, 6 Studio Hours
This course is an introduction to the optics, physics, and chemistry of photography. Basic lessons in the theory and practice of photographing, developing, copying, and enlarging are presented.

ART 1170 Creative Photography  3 Credits, 6 Studio Hours
This course is a continuation of Basic Photography with further exploration of black and white photography as vehicle for personal expressive statement. Students should have their own 35mm camera. Prerequisite: ART 1150 Basic Photography or permission of instructor.

ART 1550 Drawing I  3 Credits
This course is a studio course for beginners with emphasis on developing the student's confidence in representing and expressing physical as well as mental images. Experience in line, shape, gesture, contour, proportion, perspective, and design will be offered. Demonstrations will be given by the instructors of the various methods of drawing.

ART 1560 Drawing II  3 Credits
This course is a studio course for students interested in furthering their experiences in drawing. Emphasis will be on the human figure gesture, contour, volume, and structure. Prerequisite: ART 1560 Drawing I or permission of instructor.

ART 1910 Painting I  3 Credits
This course is a studio course for beginners with emphasis on using materials, learning painting techniques and color mixing fundamentals, and preparing painting surface.

ART 1920 Painting II  3 Credits
This course is a continuation of Painting I. It involves more extensive exploration of form, color and subject relationships. Personal creativity stressed. Prerequisite: ART 1910 Painting I or permission of instructor.

ART 2830 Individual Problems  1-3 Credits
This course is for art majors with advanced standing or high competence. It is designed to offer investigation in areas of specialized nature which are not offered in the curriculum. Course content will be decided between instructor and student. Prerequisite: permission of the instructor.

Astronomy

PHYS 1020 (Introduction to Astronomy LEC)/ PH 1102 (Survey of Astronomy I LEC/ LAB)  3 Credits, 3 Class Hours
A survey course for non-science majors and/or for personal enrichment that provides a systematic understanding of the universe. Topics include basic principles and methods of astronomy, for formation and features of solar system, the properties and the evolution of stars, galaxies, cosmology and the life in universe. Laboratory experiments and exercises are included.
Automotive Service Technology

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This course is for experienced technicians and others with previous transmission training and/or experience. The course will cover diagnosis, disassembly and repair of the General Motors 4T60 automatic transaxle and the 4L60 automatic transmission systems. Emphasis will be placed on the operation, diagnosis and repair of these transmissions using operational knowledge, service manuals, and scan tool information.

This course introduces shop operations, customer relations, service manuals, general servicing, flat rate manuals and safety and fire prevention. Automotive fasteners, measuring instruments and general shop tools are covered. Light duty service, minor repairs, tire and battery and wheel service are covered.

The operational theory and servicing of an internal combustion engine are explored in this course. Emphasis is placed upon the proper use of hand tools, specialized tools, measuring instruments and test equipment. Corequisite: DM 0084 or equivalent

This course explores the theory, function, and utilization of electrical and electronic devices in automotive control and display circuits. Included are batteries, wiring, diodes, transistors and other devices. Circuit design utilizing ICs, basic test equipment and the application and operation of basic electricity and electronics is covered. Corequisite: DM 0085 or equivalent

This course covers the various types of automotive hydraulic brake systems and the recommended service and repair procedures, including bleeding, flushing, and leak testing. Anti-lock brake systems (ABS) diagnosis and repair and general tire and wheel servicing are covered. Corequisite: AM 1124

This course covers the cooling and lubrication systems of the automotive engine. Included are water pumps, hoses, thermostats, radiators, friction oils, filters, and types of lubricating systems. Electronic and conventional ignition systems are covered. Utilization of standard test equipment is covered. Prerequisite: AM 1114 Corequisite: AM 1124

This course covers the automotive electrical system including the battery, wiring, lights, generators, starters and voltage regulators. The use of electrical schematics and general purpose test equipment is covered. Prerequisite: AM 1124

This course covers the fundamental operations of air conditioning and heating systems. Troubleshooting, servicing, evacuation and charging are covered. Emphasis is given to the troubleshooting and repair of electronic climate control systems. Refrigerant recovery, recycling, and handling are covered. Prerequisite: AM 1124

This course is a study of torque and gearing as applied to manual transmissions, manual transaxles, differentials, drive axles, clutches, and four-wheel drive components. Also covered are the diagnosis and repair of these units. Corequisites: AM 1114, MA 1012

This course covers the purpose and function of the various fuel systems, the exhaust system, and the diverse emission control systems used on the automobile. Carburetors and fuel injection systems are discussed; emission control systems are studied in depth. The use of tools and equipment for proper diagnosis and repair is stressed. Prerequisite: AM 1204 Corequisite: MA 1012

This course covers the various types of suspension and steering systems, both manual and power-assist units. The recommended diagnosis and repair procedures for each system are covered. The principles and procedures of four-wheel alignment are also covered, along with advanced wheel and tire service and repair. Corequisites: AM 1143, MA 1012

This course covers the myriad of specialized electronics utilized for comfort heating and cooling, suspension leveling, light dimming and control, fiber optics, trip computer, and other auxiliary systems. Prerequisite: AM 1124

This course covers the operation of a typical automotive computer system and the techniques used to isolate and repair circuit malfunctions. Measurement principles applicable to sensor inputs are covered. Troubleshooting of input levels and schematic tracing is also covered. Prerequisite: AM 1124

This course covers the engine, sensors, and computer as an integrated machine. Troubleshooting utilizing state-of-the-art test equipment is stressed. Prerequisites: AM 1214, AM 2154, MA 1012

This course is an extensive review designed to prepare the graduate to take the National Institute for Automotive Service Excellence Certifications Test. Prerequisites: Advanced standing.
AM 2244 Automatic Transmissions 4 Credits, 3 Class Hours, 2 Laboratory Hours
The theory, operation, and diagnosis of automatic transmissions and transaxles are covered. Diagnosis, maintenance, adjustment, and repair of automatics are studied. Prerequisites: AM 1114, MA 1012

AM 9014 Cooperative Education Work Experience I 4 Credits, 300 Laboratory Hours
The student participates in a directed work experience that supplements and reinforces the subjects covered in the semester. The specific competencies to be gained during the work experience are identified through coordination of the student's college department chairperson and the employing company. These competencies are related to the student's most recent instruction.

AM 9024 Cooperative Education Work Experience II 4 Credits, 300 Laboratory Hours
This course is a continuation of the Cooperative Education Work Experience. Prerequisite: AM 9014

AM 9034 Cooperative Education Work Experience III 4 Credits, 300 Laboratory Hours
This course is a continuation of the Cooperative Education Work Experience. Prerequisite: AM 9024

AM 9044 Cooperative Education Work Experience IV 4 Credits, 300 Laboratory Hours
This course is a continuation of the Cooperative Education Work Experience. Prerequisite: AM 9034

AM 9054 Cooperative Education Work Experience V 4 Credits, 300 Laboratory Hours
This course is a continuation of the Cooperative Education Work Experience. Prerequisite: AM 9044

Biology

BIOL 1010/BI 1010 Introductory Biology I 4 Credits, 3 Class Hours, 3 Lab Hours
This is the first of a two-semester science course sequence for non-majors. An overview of the following is covered: chemistry of life, cell structure and function, cell division, protein synthesis, metabolism, photosynthesis, and tissues. In addition several organ systems are examined.

BIOL 1020/BI 1020 Introductory Biology II 4 Credits, 3 Class Hours, 3 Lab Hours
This is the second of a two-semester science course sequence for non-majors. Students will study structure and function of organisms, diversity of life, ecology, and evolution. Prerequisite: BIOL 1010, BI 1010, or NSCI 1000.

BIOL 1110/BI 1014 General Biology I 4 Credits, 3 Class Hours, 3 Lab Hours
This is the first of a two-semester laboratory science course sequence for biological science majors. The following concepts are included: chemistry of life, cell structure and function, metabolism, cell reproduction, genetics, evolution, the chemical basis of heredity and protein synthesis. Through lecture, demonstration, and laboratory activities, the course will foster an understanding of and appreciation for the fundamentals of biology and the scientific process. No prerequisites.

BIOL 1120/BI 1024 General Biology II 4 Credits, 3 Class Hours, 3 Lab Hours
This course is a continuation of General Biology I and provides information and laboratory techniques to help students understand the origin and diversity of life, and the structure, function, and ecology of organisms. Prerequisite: BIOL 1110 or BI 1014

BIOL 1310 (Principles of Anatomy & Physiology I)/BI 1124 (Anatomy & Physiology I) 4 Credits, 3 Class Hours, 3 Lab Hours
This is the first of a two-semester laboratory science course sequence for students meeting Allied Health curriculum requirements. Students will receive a brief review of cell biology. They will study the organization of the human body, tissues, and the structure and function of the integumentary, skeletal, muscular, nervous system and special senses. Either BIOL 1110/BI 1014, or BIOL 1010. BI 1010 is strongly recommended for students whose biological science background is inadequate.

BIOL 1320 (Principles of Anatomy & Physiology II)/BI 1134 (Anatomy & Physiology II) 4 Credits, 3 Class Hours, 3 Lab Hours
This is the second of a two-semester laboratory science course sequence for Allied Health curriculum requirements. Students will study the structure and function of the endocrine, reproductive, respiratory, cardiovascular, lymphatic, digestive, and urinary systems. Fluid, electrolyte and acid-base homeostasis are reviewed. Prerequisite: BIOL 1310 or BI 1124

BIOL 2410/BI 1154 Microbiology 4 Credits, 3 Class Hours, 3 Lab Hours
This course provides study of microorganisms with emphasis on their relationship to pathogenesis, disease prevention and principles of immunology. Included are basic laboratory techniques and procedures. Prerequisite: BIOL 1010/BI 1010; or BIOL 1110/BI 1014; or BIOL 1310/BI 1124

Biomedical Engineering Technology

BE 1224 Physiology for Technicians 4 Credits, 3 Class Hours, 2 Laboratory Hours
The physiology of the systems of the human body is studied with emphasis on the engineering principles of the Man-Instrument System.

BE 2114 Biomedical Electronics 4 Credits, 3 Class Hours, 2 Laboratory Hours
The student is introduced to the Man-Instrument System. This course covers the origin of biopotentials, electrode theory, and the problems
encountered in taking measurements from a living organism. Amplifier principles and signal processing are discussed as part of the system. Physiological parameters of the major systems of the human body and the instrumentation used to measure these parameters are a major part of the course. Prerequisite: ET 1124

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BE 2224</td>
<td>Microprocessor Based Medical Instrumentation</td>
<td>4</td>
<td>3 CH</td>
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<td>In this course the student studies the application of microprocessors to medical instrumentation including, resistive, capacitive, and inductive transducers are. The mathematical relationship between the parameter being measured and the electronic circuit is developed. Both hardware and software principles are emphasized. In the laboratory, the student builds instrumentation to measure given parameters. In addition to the assigned laboratory exercises, a project of the student’s own choice is developed. Report writing is emphasized in this course by having the student write a minimum of three reports. Prerequisite: BE 2114, CE 2114</td>
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<tr>
<td>BE 2243</td>
<td>Directed Work Experience</td>
<td>3</td>
<td>1 CH</td>
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<td>In this course the student receives supervised work experience in biomedical engineering technology at a local hospital. Emphasis is placed upon the job experience with hospital-related biomedical electronic equipment. AAMI, NFPA, electrical safety of medical equipment, and professional organizations are also covered. Prerequisite: Advanced standing</td>
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<tr>
<td>BE 9013</td>
<td>Cooperative Education Work Experience I</td>
<td>3</td>
<td>225 L</td>
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<td>From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.</td>
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<tr>
<td>BE 9014</td>
<td>Cooperative Education Work Experience I-A</td>
<td>4</td>
<td>300 L</td>
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<td></td>
<td>From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.</td>
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<tr>
<td>BE 9023</td>
<td>Cooperative Education Work Experience II</td>
<td>3</td>
<td>225 L</td>
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<td>In this course the student receives supervised work experience in any of the many facets of biomedical engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: BE 9013 or BE 9014</td>
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<tr>
<td>BE 9024</td>
<td>Cooperative Education Work Experience II-A</td>
<td>4</td>
<td>300 L</td>
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<tr>
<td></td>
<td>In this course the student receives supervised work experience in any of the many facets of biomedical engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: BE 9013 or BE 9014</td>
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<tr>
<td>BE 9033</td>
<td>Cooperative Education Work Experience III</td>
<td>3</td>
<td>225 L</td>
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<td>The student acquires work experience in the biomedical engineering technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all biomedical engineering technology courses to accomplish tasks as assigned by the engineer. Prerequisite: BE 9023 or BE 9024</td>
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<tr>
<td>BE 9034</td>
<td>Cooperative Education Work Experience III-A</td>
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<td>300 L</td>
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<td></td>
<td>The student acquires work experience in the biomedical engineering technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all biomedical engineering technology courses to accomplish tasks as assigned by the engineer. Prerequisite: BE 9023 or BE 9024</td>
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**Business and Commerce**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ECON 2010/ BF 2110</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
<td>3 CH</td>
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<tr>
<td></td>
<td>The study of economics necessitates an understanding of the principles which govern the operation of the economic system. This course focuses attention on the aggregate (macro) relationships and gives attention to the central problems of economic organization, the functioning of the price system, the economic role of government, the determination of national income and a brief glance at economic policy.</td>
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<tr>
<td>ECON 2020/ BF 2120</td>
<td>Principles of Microeconomics</td>
<td>3</td>
<td>3 CH</td>
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<td>Attention is focused on the micro concept of economic analysis and primary attention is given to the theory of the firm and partial equilibrium problems arising within any enterprise economy. Attention is also given to government regulations of business, the theory of income distribution as it pertains to the determination of wages, rent, and profits, and international trade.</td>
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<tr>
<td>FIR 1700/ BN 1400</td>
<td>Principles of Insurance</td>
<td>3</td>
<td>3 CH</td>
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<td>This course is intended to meet the needs of a wide range of clerical, technical and managerial majors, including those seeking employment with insurance companies, agencies, brokerage houses and adjustment firms. Designed primarily for students who are new to the study of insurance, the course is appropriate for newcomers to the business as well as for more experienced students with limited formal insurance education who would benefit from a general understanding of how the property-liability insurance business works. Through this course, students will learn how their work complements the work of others. Examples, anecdotes and illustrations demonstrate the importance of each insurance role. While describing the various people in insurance, the course also introduces a number of property-liability insurance policies and principles.</td>
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<tr>
<td>FIR 2100/ BN 1700</td>
<td>Principles of Finance</td>
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<td>3 CH</td>
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<td>This course is a study of the commercial banking system’s role in meeting short-and long-term business demands for funds. It includes practices and procedures investigation used by other financial institutions in providing credit. The student practices various financial techniques for decision-making including present value calculations and analysis of financial statements. Prerequisite: Principles of Accounting I (ACCT 1210 or AT 1004) and College Algebra (MATH 1420 or MA 1012).</td>
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<tr>
<td>FIR 2220/ BN 1720</td>
<td>Personal Financial Management</td>
<td>3</td>
<td>3 CH</td>
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<td>This course is an analysis of the economic problems which typically affect consumers. Emphasis is placed on individual decision making processes in evaluating needs, wants, and resources and in utilizing resources including time, money, and energy.</td>
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</table>
This introductory course presents commercial banking as an industry and an occupation. Bank functions, services and job opportunities are prepared emotionally and psychologically for management responsibilities.

**BF 1289 Work Experience 6 or 12 Credits**

To receive work experience credit, a student must have documented work experience in a financial services institution for 3 years but less than 5 years to receive 6 hours credit, and more than 5 years to receive 12 hours credit.
BF 1500 Money and Banking
3 Credits, 3 Class Hours
What is money? From where does money come? How and why do we use money? These questions and the role of commercial banks, other financial intermediaries, and the Federal Reserve System are all addressed.

BF 1600 Consumer Lending
3 Credits, 3 Class Hours
Consumer credit and its history, evolution, and role in contemporary society and economics are examined. Also considered in this large and important market are institutional products, policies, and procedures. Case studies and role-playing are used to supplement text material.

BF 2300 Electronic Payment Systems
3 Credits, 3 Class Hours
This course is a comprehensive survey of the major electronic payments systems currently available for the electronic business. Students will learn the characteristics of Secure Electronic Transactions (SET), Digital Cash Systems, and the role of Digital Certificates. This course provides the background needed to understand how different types of payment systems work, as well as how to select an appropriate payment system and financial software to best suit a specific company's needs. Prerequisites: EN 1005, BN 2650, IT 1001 or permission of advisor.

BF 2500 Bank Management
3 Credits, 3 Class Hours
New trends that have emerged in the philosophy and practice of bank management are presented. Additionally, the study and application of banking principles provide new and experienced bankers with a working knowledge of contemporary bank management. Case studies are used to supplement the textbook.

BF 2600 Commercial Lending
3 Credits, 3 Class Hours
An introduction to the commercial banking industry leads students to the examination of an element of the important credit function of banking and commercial lending. To whom, for what amount and purpose, and on what basis and terms are concerns demanding considerable attention. Types of loans, customers, collateral, policies, procedures, and legal parameters are emphasized.

BN 1050 Using the Internet in Business
3 Credits, 3 Class Hours
This course explores how the Internet is being utilized by today's organizations, both private and public, in the performance of business activities. Students cover basic Internet terminology and concepts, and then, through directed activities and independent projects, learn valuable skills to carry on business. Topics covered include: intranets, extranets, business security issues, corporate presence on the net and E-Commerce. Prerequisites: DR 0084 or equivalent

BN 1400 Commercial Insurance
3 Credits, 3 Class Hours
This course introduces the student to commercial coverage including property, business income, inland and ocean marine, crime, boiler and machinery, general liability, business and auto, worker's compensation and farm and business owners. The course also covers other liability coverage, as well as surety bonding and excess and surplus lines of insurance.

BN 1420 Personal Insurance
3 Credits, 3 Class Hours
This course offers a review of personal loss exposures and personal insurance coverages. Topics include homeowners and other dwelling coverages, comprehensive personal liability, inland marine floater policies, automobile, life, health and applicable government programs. This course will prepare the student to take the National Examination for the INS 22 course which leads to a certificate in General Insurance from the Insurance Institute of America. Passing the exam will earn 25 continuing education hours of credit in Tennessee.

BN 1450 Principles of Life and Health Insurance
3 Credits, 3 Class Hours
Nature and handling of risk in personal and business situations are covered in this course. Emphasis is placed on life and health exposures to loss.

BN 1500 Money and Banking
3 Credits, 3 Class Hours
What is money? From where does money come? How and why do we use money? These questions and the role of commercial banks, other financial intermediaries, and the Federal Reserve System are all addressed.

BN 1580 Managing Diversity in the Workforce
3 Credits, 3 Class Hours
Today's workforce consists of employees of different gender, race, nationality, and cultural background. Whether a company is successful and competitive in corporate America today depends upon the ability of its managers to get their employees with diverse backgrounds to work together effectively and harmoniously. This special course discusses problems created by this diversity in the workforce and explores solutions to these problems.

BN 1800 ISO 9000
3 Credits, 3 Class Hours
The International Organization for Standardization is a consortium of virtually all industrialized trade. This course teaches these standards to meet customer expectations and requirements. It also teaches how to develop a Quality Manual.

BN 1850 Introduction to Quality
3 Credits, 3 Class Hours
This course covers major approaches to quality assurance and productivity management including the Deming, the Juran, the Ishikawa, and the Crosby approaches. Readings and discussions on these philosophies are an integral part of the course. Introduction to the tools and methods of quality improvement is provided.

BN 1900 Principles of Transportation
3 Credits, 3 Class Hours
This is an introductory course providing an overview of the transportation and distribution industry. Historical development, legislation, and
This course offers an overview of the structure and management of a physical distribution system. Course content includes warehousing, order processing, packaging, inventory control, physical location analysis, classifications and material handling. **Prerequisite: BN 1900 or approval of advisor**

**BN 1970 Survey of World Regions**

This course includes a survey of the economic, cultural, and physical traits that are characteristic of developing and developed nations. The focus is on geographic problems and aspects of the development of Third World nations in Latin America, Africa, Asia, and Oceania. The course also focuses upon the global position of the world's developed nations (Commonwealth of Independent States, Western Europe, Great Britain, North America, Japan, Australia) and the geographical landscapes of those regions.

**BN 2000 Operations Management**

Interdependence and the importance of operations in strategy decisions, in both manufacturing and service industries, are considered. Also addressed is the integration of various techniques of problem solving for operations planning and control. Discussion questions, cases, and problems are used. **Prerequisite: MA 2012 or approval of advisor**

**BN 2100 Labor & Management Relations**

The history of the American labor movement, wage policy, productivity, collective bargaining, labor mobility, and government regulations of management and unions are explored.

**BN 2120 Compensation Management**

This course covers the four basic policies that every employer must consider in managing compensation: 1) internal consistency; 2) external competitiveness; 3) employee contributions; and 4) administration of the pay system. The integrating of these four factors plus compliance, the Government's role in compensation, pay discrimination, managing the system, and the role unions play in salary administration are discussed.

**BN 2200 Purchasing and Materials Management (P/M)**

This introductory course addresses modern practices and techniques of the P/M function. Included in the coverage of P/M are organization, quality, supplier selection, price determination, inventory and disposal, foreign purchasing, acquisition of capital assets and strategy. **Prerequisites: DM 0085 or equivalent, and BN 1020**

**BN 2400 Global Internet Marketing & Advertising**

This course investigates the strategic implications of using the Internet for marketing and advertising. It develops the concepts and techniques of planning, implementing, and controlling the marketing function. Monitoring environmental conditions, assessing opportunities, delineating strategies for global network environment are also stressed. These topics are followed by a detailed study of the marketing mix and its management, with product, promotions, and pricing components being emphasized. **Prerequisites: EN 1005, BN 2650, or permission of an advisor**

**BN 2450 Electronic Business Security, Risk Management & Control**

This course provides a comprehensive survey of strategies for the management of network and Internet applications and standards. The course provides information on various threats to security, guidelines for developing a security policy, planning security strategies, and the methods of securing E-mail and network resources. This course also teaches students how to perform different phases of a security audit, including discovery and penetration, as well as plans for deterring hackers from bypassing security measures on company networks. Students will also learn how to generate effective audit reports that can help organizations improve their security and become current with industry standards. **Prerequisites: EN 1005, BN 2650 or permission of an advisor**

**BN 2650 Electronic Commerce**

The objective of this course is to provide students with an understanding of the growing use of electronic methods for conducting business. Topics covered include both technical and business issues for implementation and strategies of electronic marketing, sales, promotion, purchasing, logistics, and support activities. Legal and ethical issues are also discussed. Case studies and individual projects will be used to provide business examples from conceptual models and real-world events. **Prerequisites: DR 0084 and DE0084 or equivalent, BN 1020, BN 1050 or permission of an advisor**

**BN 2720 Organizational Behavior**

This course investigates personal and group behavior at work while pursuing the nature of group dynamics and corporate culture. Positive and negative behavioral motivation is investigated. Principles of effective psychological work attitudes are developed using contemporary concepts of organizational behavior authorities. **Prerequisite: DR 0084 or equivalent**

**BN 2755 Introduction to Management Information Systems**

This course is designed to teach students how MIS concepts are applied in a business environment. An introductory framework that stresses the most current and common business applications of technology is developed through case studies and projects. Topics covered include: hardware and software, business data communications, strategic uses of information systems, and how information systems can solve day-to-day business problems.

**BN 2825 Quality Improvement**

This course emphasizes the theory and practical techniques needed to statistically measure and control a process, whether in manufacturing or in service organizations. This course covers various types of control charts, acceptance sampling procedures and concepts relating to normal distributions, measures of central tendency, and dispersion. **Prerequisite: BN 1850**

**BN 2830 Strategic Planning**

This course provides an introduction to strategic planning with an emphasis on the integration of quality as an integral part of that plan. Included is a study of how Cost of Quality systems can point the way to problem areas. Emphasis is placed on the link between strategic planning and leadership and customer and market focus. **Prerequisites: BN 1650, BN 1850, BN 2825**
This course is an analysis of business ethics and the responsibilities of business firms to employees, owners, consumers, and society. **Prerequisites:** DR 0084 or equivalent **Corequisites:** EN 1010 or EN 1005

**BN 2855 Quality Information Systems**
3 Credits, 2 Class Hours, 2 Laboratory Hours
This course covers recording data, forms, data communication, storage and retrieval of data, and system design, as related to total quality improvement. Students use personal computers and software systems to develop information systems and data analysis. **Prerequisites:** BN 1850, BN 2825, IT 1004

**BN 2860 Managing for Quality**
3 Credits, 3 Class Hours
This course covers process analysis and control systems, problem-solving techniques, and the body of knowledge for the (CQM) Certification for Quality Manager exam. A methodology for implementing Total Quality is also discussed. **Prerequisites:** BN 1650, BN 1850, BN 2825, BN 2830

**BN 2900 Warehousing**
3 Credits, 3 Class Hours
This course offers theories of warehousing systems, documentation, layout, inventory management, materials handling, hazardous materials storage and shipping, and receiving fundamentals.

**BN 2901 Freight Claims**
3 Credits, 3 Class Hours
This course is designed for transportation and distribution professionals and covers freight loss and damage claims in a practical manner. Documentation principles and practices are also explained.

**BN 2930 International Documentation**
3 Credits, 3 Class Hours
This course focuses on export documentation, letters of credit, and international business procedures. Also, the role of the traffic administrator in the world market is emphasized.

**BN 9013 Cooperative Education Work Experience I**
3 Credits, 225 Laboratory Hours
This work experience affords the student participation in the employer/employee relationship. By being an integral part of the work environment, the student encounters the true meaning of work, experiences the physical and psychological security work provides, and should gain an appreciation of the impact work has on today's society. **Prerequisite:** Completion of one semester of technical course work

**BN 9023 Cooperative Education Work Experience II**
3 Credits, 225 Laboratory Hours
This course consists of supervised employment in the student's chosen field. The student should acquire knowledge of the importance and use of data processing in industry, accounting systems used, and witness the practical application of management principles. **Prerequisite:** BN 9013

**BN 9033 Cooperative Education Work Experience III**
3 Credits, 225 Laboratory Hours
Supervised employment continues in the student's chosen field. The assumption of limited responsibilities should offer the student an opportunity to make a valuable contribution to the accomplishment of the organization's objectives and goals. **Prerequisite:** BN 9023

**BN 9103 Externship in Quality Improvement**
3 Credits, 50 Laboratory Hours
Students participate in quality improvement projects in both local businesses and government. **Prerequisites:** BN 1650, BN 1850, BN 2825, BN 2830

**MRKT 2180 Principles of Advertising**
3 Credits, 3 Class Hours
This course introduces origins and development of advertising. It also discusses trademarking, packaging, legal structuring, ethics, and targeting. Emphasis is on the media including advantages, disadvantages, selection, and evaluation.

**MGMT 2050 Business Communication**
3 Credits, 3 Class Hours
This course is a study of logical, effective and creative methods of business communication. It also includes business writing style; proper physical presentation of written communication; selected business letter types, memoranda and reports; and resume and application letters. **Prerequisite:** ENGL 1010 English I.

**GBUS 1990 Special Topics in Business**
1-3 Credits
This is an-depth study of selected business administration topic(s) designed to reinforce basic business knowledge and to further develop problem-solving and research skills. It explores specific business issues in which to apply basic problem-solving techniques and skills.

**IBUS 2100 International Marketing and Distribution**
3 Credits, 3 Class Hours
Emphasis is on understanding relevant concepts, the analytical framework and scope, marketing activities on important managerial functions and influential social and cultural forces in the international business community in this course.

**CH 1114 Principles of Chemical Processes**
4 Credits, 3 Class Hours, 2 Laboratory Hours
This course covers mass and energy balances under steady state conditions. Topics include measurement, behavior of gases, steady state material balances, energy conservation, thermodynamics including thermal and thermophysical relations, and application of energy balances. An introduction to Hysys computer process simulation is included. **Prerequisites:** CH 1014 and qualified to enroll in MA 1111

**CH 2124 Unit Operations I**
4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is a study of chemical processing equipment, heat transfer, fluid flow, instrumentation, and evaporation with emphasis on the needs of the chemical processing industry. A minimum of three written formal and/or informal laboratory reports must be prepared. Oral reports are required, graded and included in the final grade. Applications of Hysys and FLO-SERIES computer software are included. **Prerequisites:** CH 1114, MA 1131, or approval of the instructor

**CH 2134 Unit Operations II**
4 Credits, 3 Class Hours, 2 Laboratory Hours
Staged operations including distillation, humidification, dehumidification, absorption, and extraction are studied. Physical operations such as filtration and drying are included along with an introduction to economics. Application of instrumentation is covered along with simulated maintenance and repair of process equipment. Written laboratory reports must include at least one formal report. Oral reports are required, graded, and included in the final grade. Applications of Hysys computer software are included. **Prerequisite:** CH 2124 or approval of the instructor
CH 2313 Industrial Quantitative Analysis  
This course is a study of quantitative lab techniques, stoichiometry, acid-base titrations, statistical treatment of data including precision and accuracy in test methods, precipitation titrations, complex ion titrations, redox titrations, and gravimetric methods of analysis. A detailed notebook must be maintained in this course. Prerequisite: CH 1024

CH 2323 Industrial Instrumental Analysis  
Topics include theory, application, operation, and various means of calibration of standard analytical instruments including UV-visible, infrared, and atomic absorption spectrophotometers, as well as gas and liquid chromatographs. Prerequisites: CH 1024

CH 9013 Cooperative Education Work Experience I  
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

CH 9014 Cooperative Education Work Experience I-A  
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

CH 9023 Cooperative Education Work Experience II  
In this course the student receives supervised work experience in any of the many facets of chemical engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: CH 9013 or CH 9014

CH 9024 Cooperative Education Work Experience II-A  
In this course the student receives supervised work experience in any of the many facets of chemical engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: CH 9013 or CH 9014

CH 9033 Cooperative Education Work Experience III  
The student acquires work experience in chemical engineering technology under the supervision of an engineer or senior technician. The student utilizes the knowledge gained in any or all Chemical Engineering Technology courses to accomplish tasks as assigned by the engineer. Prerequisite: CH 9023 or CH 9024

CH 9034 Cooperative Education Work Experience III-A  
The student acquires work experience in chemical engineering technology under the supervision of an engineer or senior technician. The student utilizes the knowledge gained in any or all Chemical Engineering Technology courses to accomplish tasks as assigned by the engineer. Prerequisite: CH 9023 or CH 9024

Chemistry

CHEM 1010 (College Chemistry I)/CH 1914 (General Chemistry I)  
The first of a two-semester course sequence designed for nursing majors, allied health and other paramedical students. This course may be used as a preparatory course for CHEM 1111. This course is NOT intended for science, engineering, or engineering technology majors. The course covers basic concepts of inorganic chemistry with focus on health sciences. The impact of chemistry on society is emphasized along with writing skills. Prerequisites: Demonstrated proficiency in elementary algebra confirmed by placement test scores or completion of appropriate college math scores.

CHEM 1020 (College Chemistry II)/CH 1924 (General Chemistry II)  
This is a continuation of CHEM 1010, College Chemistry I. The course is designed primarily for nursing majors, allied health, and other paramedical students. This course is NOT intended for science, engineering, or engineering technology majors. The course emphasizes elementary organic chemistry and biochemistry.

CHEM 1111/CH 1014 Principles of Chemistry I  
This is the first course in a two-semester sequence for science majors, pre-professional students and pre-engineering students. The course covers fundamental concepts including measurements, language and stoichiometry, atomic and molecular structure, ionic and covalent bonding, states of matter, the gas laws, solutions, and thermochemistry. This course meets prerequisites for further study in chemistry in baccalaureate programs. Prerequisite: Demonstrated mastery of high school algebra or equivalent college course(s) confirmed by placement exams, ACT scores or previous post secondary enrollment.

CHEM 1112/CH 1024 Principles of Chemistry II  
This is a continuation of CHEM 1111/CH 1014—Principles of Chemistry I. This course covers thermodynamics, chemical kinetics, ionic and molecular equilibrium, acids and bases, electrochemistry including oxidation-reduction principles, nuclear chemistry, and environmental chemistry. The course meets prerequisites for further study in chemistry in baccalaureate programs. Prerequisite: CHEM 1111 or CH 1014

CHEM 2410 (Gen. Organic Chemistry I LEC)  
This is the first of a two-semester science course for science majors and pre-professional students. The systematic study of the fundamental principles of organic chemistry fundamental principles with interpretations of structure and properties based upon modern atomic and molecular theory. Topics include aliphatic hydrocarbons, stereochemistry, nucleophilic substitutions and eliminations, spectroscopy, and aromatic hydrocarbons. Prerequisites: CHEM 1112 or CH 1024. 3 hrs lecture, 3 hrs laboratory.
In this course, the student studies the following topics: stress and strain, direct and shearing stresses, torsion, bending, bolted and riveted connections.

Civil/ Construction Engineering Technology

CI 1114 Surveying I 4 Credits, 2 Class Hours, 4 Laboratory Hours
This course covers the fundamentals of plane surveying, with practice in the use of the tape, level, and transit in making horizontal and vertical measurements. Field work includes boundary surveying, topographic, profile and benchmark leveling with procedures of keeping field notes and note reduction. Construction layout is covered. Corequisite: MA 1131

CI 1134 Civil Drafting 4 Credits, 2 Class Hours, 4 Laboratory Hours
This course introduces the student to drafting practices pertinent to the field of civil engineering technology. Work is done on topographic drawings, land layout, utilities, plan and profile and earthwork cross-sections, including calculations. Construction and fabrication drawings are covered. Prerequisites: ME 1194, CI 1114

CI 2123 Construction Planning, Equipment and Methods 3 Credits, 2 Class Hours, 3 Laboratory Hours
This course introduces the student to fundamentals in the planning, selection of equipment and methods for various construction operations. Prerequisite: ME 1134

CI 2154 Surveying II 4 Credits, 2 Class Hours, 4 Laboratory Hours
The student studies various types of route locations and surveys in this course. Both classroom and field work in horizontal and vertical curves, and slope-staking are covered. The student has hands-on use of theodolites and electronic distance-measuring equipment. Computer computations are introduced to the student including traverse closure by the DMD method. The student is also introduced to Global Positioning System (GPS) equipment and software. Prerequisite: CI 1114

CI 2203 Strength of Materials 3 Credits, 2 Class Hours, 3 Laboratory Hours
In this course, the student studies the following topics: stress and strain, direct and shearing stresses, torsion, bolted and riveted connections, basic design of timber and steel beams and timber and steel columns, beam deflections, and statically indeterminate beams. Prerequisite: ME 1134

CI 2614 Structural Design 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course introduces the student to design practices applicable to simple steel and timber members including connections and reinforced concrete beams, slabs, and columns. Prerequisite: CI 2203

CI 2623 Concrete Technology 3 Credits, 2 Class Hours, 3 Laboratory Hours
This course introduces the student to fundamentals of mix design and the inspection concerned with the manufacture and testing of concrete as a construction material. The following topics are covered: basic properties of cement and the relationships between cement, water and aggregates; properties desired in plastic and hardened concrete; proportioning mixes; sampling and field and lab testing. Prerequisite: ME 1134

CI 2633 Soils and Foundations 3 Credits, 2 Class Hours, 3 Laboratory Hours
This course acquaints the student with the importance of soils as a construction material. The following topics are covered: basic properties of cement and the relationships between cement, water and aggregates; properties desired in plastic and hardened concrete; proportioning mixes; sampling and field and lab testing. Prerequisite: MA 1131

CI 9013 Cooperative Education Work Experience I 3 Credits, 225 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

CI 9014 Cooperative Education Work Experience I-A 4 Credits, 300 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

CI 9023 Cooperative Education Work Experience II 3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of civil/construction engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: CI 9013 or CI 9014

CI 9024 Cooperative Education Work Experience II-A 4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of civil/construction engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: CI 9013 or CI 9014

CI 9033 Cooperative Education Work Experience III 3 Credits, 225 Laboratory Hours
The student acquires work experience in the civil/construction engineering technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all Civil/Construction Engineering Technology courses to accomplish tasks as assigned by the engineer. Prerequisite: CI 9023 or CI 9024

CI 9034 Cooperative Education Work Experience III-A 4 Credits, 300 Laboratory Hours
The student acquires work experience in the civil/construction engineering technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all Civil/Construction Engineering Technology courses to accomplish tasks as assigned by the engineer. Prerequisite: CI 9023 or CI 9024
Computer Engineering Technology

CE 1104 Microcomputer Applications for Technicians 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course introduces the student to the hardware components and operation of a microcomputer. Additionally, the student studies various application programs that are essential in engineering technology course work, as well as useful in an engineering technician’s job tasks. Windows-based applications include word processing, electronic spreadsheet, and Electronic WorkBench. An introduction to the C++ programming language is included in the course.

CE 1124 Digital Circuits 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course presents procedures for analyzing and designing fundamental digital circuits. Topics included are number systems, Boolean algebra, Karnaugh mapping, combinational logic, arithmetic circuits, flip-flops, counters and sequential circuits. In the laboratory, students verify digital principles by constructing and testing various digital circuits. Prerequisite: EE 1101

CE 1144 C++ for Technicians 4 Credits, 3 Class Hours, 2 Laboratory Hours
This introductory course in the C++ programming language begins with an explanation of a general program development procedure using an Integrated Development Environment. Some specific C++ language elements covered include looping statements, functions, arrays, input/output operations, and classes. Emphasis is placed on effective program development practices, including flowcharting and debugging techniques. Prerequisite: CE 1104 Corequisite: MA 1131 or permission of the program coordinator

CE 2114 Microcontroller Systems Design 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course presents the essential elements required to design and analyze microcontroller-based systems (embedded systems). Motorola and Intel microcontroller chips are covered. Students use a personal computer as a single-user microcontroller development station when designing their hardware/software projects. All students are required to construct a working embedded system and develop software to control the system. Student software is written in assembly language and C. Prerequisite: CE 1124

CE 2114 Microcontroller Systems Design 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course utilizes digital circuits theory to study the organization, operation, and programming of digital computers. Students use a single-board microcomputer to investigate the operation of a microprocessor and various microcomputer support components. Programs are written in microprocessor assembly language and developed through the aid of a text editor and a cross-assembler. Students interface application hardware to the computer system and write their own software drivers. Prerequisite: CE 1124 Corequisite: CE 1144

CE 2214 Microcontroller Systems Design 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course utilizes digital circuits theory to study the organization, operation, and programming of digital computers. Students use a single-board microcomputer to investigate the operation of a microprocessor and various microcomputer support components. Programs are written in microprocessor assembly language and developed through the aid of a text editor and a cross-assembler. Students interface application hardware to the computer system and write their own software drivers. Prerequisite: CE 1124 Corequisite: CE 1144

CE 2314 Digital Communication Systems 4 Credits, 3 Class Hours, 2 Laboratory Hours
Data communications involving the transmission of digital information is covered at an introductory level in this course. Topics included are the telephone system, digital codes, transmission protocols, error detection and correction schemes, RS232 and other data transmission interfaces, and modems. Asynchronous transmission is given primary emphasis in both lecture and laboratory exercises. Technical writing is stressed in this course with the requirement of written reports. Prerequisite: CE 1124

CE 2324 Computer Networks and Systems 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course provides an introduction to the technical aspects of computer networks. Course topics include the OSI Reference Model, the hardware and software components required to implement some of the IEEE 802 local area network (LAN) protocols, and TCP/IP. Laboratory assignments make use of network test tools and give the student experience with Windows NT peer-to-peer and client/server networking.

CE 2314 Digital Communication Systems 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course provides an introduction to the technical aspects of computer networks. Course topics include the OSI Reference Model, the hardware and software components required to implement some of the IEEE 802 local area network (LAN) protocols, and TCP/IP. Laboratory assignments make use of network test tools and give the student experience with Windows NT peer-to-peer and client/server networking.

CE 2804 Special Topics I 4 Credits, 3 Class Hours, 2 Laboratory Hours
General concepts in digital systems, hardware and software, not offered in other courses in the program are presented here.

CE 2824 Special Topics II 4 Credits, 3 Class Hours, 2 Laboratory Hours
General concepts in digital systems, hardware and software, not offered in other courses in the program are presented here.

CE 9013 Cooperative Education Work Experience I 3 Credits, 225 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today’s society.

CE 9014 Cooperative Education Work Experience I-A 4 Credits, 300 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today’s society.

CE 9023 Cooperative Education Work Experience II 3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the computer engineering technology field. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: CE 9013 or CE 9014

CE 9024 Cooperative Education Work Experience II-A 4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the computer engineering technology field. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: CE 9013 or CE 9014

CE 9033 Cooperative Education Work Experience III 3 Credits, 225 Laboratory Hours
The student acquires work experience in the computer engineering technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all Computer Engineering Technology courses to accomplish tasks as assigned by the engineer.

**Prerequisite:** CE 9023 or CE 9024

### Computer Literacy

**COMP 1010 Computer Literacy**

3 Credits, 3 Class Hours

This is a first course in computer science. Introduction to uses, history, ethics, hardware, software, languages, networks and the internet. Also, applications in word processing, spreadsheet and data base are developed through laboratory work. Prerequisite: MATH 0700 Basic Mathematics or proficiency on the placement examination.

### Court Reporting

**CR 1001 Legal Terminology**

3 Credits, 3 Class Hours

This course is designed to familiarize the student with the meaning and spelling of Latin and English legal terms that legal professionals encounter.

**CR 1010 Machine Shorthand Theory I**

3 Credits, 2 Class Hours, 2 Laboratory Hours

This course covers the introduction and mastery of basic stenotype concepts for all one-syllable words and simple two-syllable words written by sound, beginning number writing, all marks of punctuation, one- and two-letter brief forms, two- and three-letter phrases, reading from stenotype notes, and dictation at 40 words per minute. Students begin the development of recording and transcribing live dictation with the use of computer-aided transcription (real-time translation). Mastery of the beginning principles of the touch method are emphasized as well as an understanding of the court reporting profession. **Prerequisite:** Student must obtain machine and other equipment (paper, cassette recorder and cassette tapes) to be prepared to work on first night of class.

**CR 1020 Machine Shorthand Theory II**

3 Credits, 2 Class Hours, 2 Laboratory Hours

This course covers the introduction and mastery of advanced stenotype concepts for word beginnings and word endings (words of two or more syllables), advanced number concepts, homonyms, reading from stenotype notes, dictation at 40-60 words per minute, and introduction to beginning speed building principles. **Prerequisite:** CR 1001, CR 1010

**CR 1025 Machine Shorthand Theory III**

3 Credits, 2 Class Hours, 2 Laboratory Hours

This course covers the introduction and mastery of advanced stenotype concepts for word beginnings and word endings, advanced number concepts, reading from stenotype notes, dictation at 60-100 words per minute, and introduction to beginning speed building principles. **Prerequisite:** CR 1020

**CR 2010 Elementary Speed Building**

3 Credits, 2 Class Hours, 2 Laboratory Hours

Dictation practice and testing for speeds 100–140 words per minute are included in this course. The student must pass three tests of Q & A, Jury Charge (Legal Opinion), and Literary at each speed (100–140) with 95 percent accuracy (five-minute tests). Computer-aided transcription systems, word processing systems, and video applications for the court reporter are also covered in this course. **Prerequisites:** CR 1001, CR 1025

**Corequisite:** OS 1030

**CR 2015 Computer-Aided Transcription**

3 Credits, 2 Class Hours, 2 Laboratory Hours

Computer-aided transcription systems, word processing systems, and video application for the court reporter are covered in this course.

**Corequisite:** CR 2010

**CR 2020 Intermediate Speed Building**

3 Credits, 2 Class Hours, 2 Laboratory Hours

Dictation practice and testing for speeds 140–180 words per minute are included in this course. The student must pass three tests of Q & A, Jury Charge (Legal Opinion), and Literary at each speed (140–180) with 95 percent accuracy (five-minute tests). Computer-aided transcription systems, word processing systems, and video applications for the court reporter are also covered in this course. **Prerequisites:** Typing speed of 60 words per minute, CR 2010

**CR 2025 Court Reporting Grammar and Punctuation**

3 Credits, 3 Class Hours

This course contains specialized English topics as they apply to the reporting profession. Grammar for court reporters emphasizes parts of speech and parts of structure of sentences. This course lays an essential foundation for study of the sophisticated punctuation rules that follow, which enable the reporter to produce verbatim transcripts with emphasis on proofreading techniques. **Prerequisites:** CR 1020, EN 1005

**CR 2030 Advanced Speed Building**

3 Credits, 2 Class Hours, 2 Laboratory Hours

This course includes dictation practice and testing for speeds 180–225 words per minute. The student must pass three tests of Q & A at each speed (180–200–225), Jury Charge (Legal Opinion) at each speed (180–200), and Literary at 180 with 95 percent accuracy (all five-minute tests). Computer-aided transcription systems, word processing systems, and video applications for the court reporter are also covered in this course. **Prerequisites:** CR 2020, CR 2025

**CR 2035 Court Reporting Applications**

3 Credits, 2 Class Hours, 2 Laboratory Hours

The student receives instruction into forms and formats for different reporting situations; reporting interrogatories, statements, depositions, court proceedings; set up of court reporter's office and records kept for both official and freelance reporting; developing a reference library; writing legal cites, forms of address, handling read backs; handling exhibits; testifying from past proceedings; notary depositions, preliminary hearings, motions, pretrial hearings, coroner inquests, trials, petitions, conventions, and meetings. **Prerequisites:** CR 2025
CR 2050 Professional Certification Review 2 Credits, 2 Class Hours
Students receive intense review in preparation for the court reporting exam given in May and November. Prerequisites: CR 2010
Corequisites: CR 2020, CR 2035

CR 2070 Court Reporting Internship 3 Credits, 3 Class Hours
The student practices the skills needed to be a court reporter (freelance, official, closed-captioned, conference). More than 60 clock hours of practical experience, on an individual basis, in the courtroom or in a deposition situation under the supervision of a working court reporter are required. From this actual experience, the student submits an acceptable 50-page transcript. This internship commences after the student is writing 200 words per minute. Prerequisites: CR 2020, CR 2025, LA 2031

NOTE GRADUATION REQUIREMENT: Students in Court Reporting must pass two 225 words per minute Q & A tests, two 200 words per minute Jury Charge tests, and two 180 words per minute Literary tests with 95 percent accuracy; achieve typing speed of 60 words per minute; and complete 60 plus hours of internship reporting (CR 2070).

Criminal Justice Studies

CJST 1010 Introduction to Criminal Justice 3 Credits, 3 Class Hours
This course presents an overview of the American criminal justice system tracing its historical and legal development including the role of law enforcement, courts, and corrections in national, state, and local application.

CJST 1020 Criminal Investigation 3 Credits, 3 Class Hours
This course is a basic fundamentals of criminal investigation. It includes the practical aspect of exploring preliminary investigative techniques; identifying, collecting, and processing physical evidence, and studying the elements of specific offense.

CJST 1050 Contemporary Issues 3 Credits, 3 Class Hours
This course is a review and in-depth examination of current issues and trends concerning the criminal justice process with emphasis on problems impacting local criminal justice agencies and personnel.

CJST 1060 Psychological Aspects of Criminal Behavior 3 Credits, 3 Class Hours
This course is a study of deviant behavior with emphasis on dealing with the mentally disturbed, sexual deviates, and drug addicts. It examines the role of the psychologist in criminal justice cases.

CJST 1080 Standards and Principles in Criminal Justice 3 Credits, 3 Class Hours
This course is a survey of ethics and principles within various criminal justice organizations. The course will examine basic ethical, legal, and moral questions relating to crime and justice, the role of police, the role of the prosecutors, the role of the judges, and the role of victims and their participation in the legal process.

CJST 1160 Juvenile Justice 3 Credits, 3 Class Hours
This course will cover juvenile problems and causes, court functions, corrective measures, preventive techniques along with responsibilities, capabilities, programs, and techniques of court personnel in delinquency prevention and local, state, and federal juvenile statute laws.

CJST 1300 American Legal System 3 Credits, 3 Class Hours
This course reviews basic laws governing the maintenance of a democratic society, and how criminal, constitutional, consumer, environmental, housing and family laws meet the challenge of American society.

CJST 1320 Introduction to Law and the Legal Systems 3 Credits, 3 Class Hours
This course is a comprehensive overview of the American legal system to provide the student with a basic knowledge about the law, an examination of what the law entails, the judicial system, judicial decision-making and remedies, civil procedures, contracts, and property law.

CJST 1910 Criminal Justice Field Experience I 3 Credits, 1 hr lecture, 2 hrs laboratory
Students are assigned to a criminal justice setting requiring 135 hours with the agency and 10 hours classroom and/or individual instruction. Reports and evaluations are required. This course is open to preservice students with 12 credit hours at STCC with at least 6 hours in Criminal Justice Studies. In-service students may apply for credit after completing 12 credit hours at STCC and employer certification showing one year of continuous criminal justice employment.

CJST 1920 Criminal Justice Field Experience II 3 Credits, 1 hr lecture, 2 hrs laboratory
Students are assigned to a work project/site consisting of 135 hours casework/program development and 10 hours classroom activity of independent study. Reports and evaluations are required. This course is open to preservice students with 21 credit hours at STCC with at least 9 hours in Criminal Justice. In-service students may apply for credit after completing 21 credit hours at STCC and employer certification showing three years of continuous criminal justice employment.

CJST 2000 Criminology 3 Credits, 3 Class Hours
This course is a systematic study of crime, criminals and the criminal justice system. It explores the fundamental elements of criminology through a study of the causation and criminal behavior theories and examines the relevant activities of the criminal justice system. Prerequisite: CJST 1010 Introduction to Criminal Justice.

CJST 2040 Investigative Report 3 Credits, 3 Class Hours
This course focuses on preparing analytical investigative reports and explores techniques of organizing, structuring, and investigating the report to comply with proper guidelines. 

**Prerequisite: ENGL 1010 English I.**

**CJST 2080 Drug Abuse and Law**
3 Credits, 3 Class Hours
This course is a socio-legal guide to the drug abuse phenomenon and examines the psycho-social dynamics and pharmacological risks leading to psychoactive drug misuse as well as law enforcement and alternative intervention techniques in sentencing the drug offender.

**CJST 2210 Criminal Law**
3 Credits, 3 Class Hours
This is a study of criminal law legal principles, purposes and rules and includes specific offenses, incomplete crimes, accomplices, accessories and criminal liability defenses and covers classifications of crimes, criminal intent, and corpus delicti.

**CJST 2410 Introduction to Criminal Justice Research**
3 Credits, 3 Class Hours
This introductory course in Criminal Justice Research provides the student with opportunities for active learning through the use of the computer to examine and compile statistical information relating to criminal justice and to examine the nature of crime in society. Restricted to students enrolled in the Honors program.

**CJST 2420 Advanced Criminology: The City As A Text**
3 Credits, 3 Class Hours
This honors level course in Applied Criminological Research provides the student with the opportunity for active learning through the examination of statistical data relating to criminal justice in the Memphis, Shelby County community. Restricted to students enrolled in the Honors program.

**CJST 2990 Special Topics in Criminal Justice**
1-3 Credits
This course addresses specific topics to meet the needs of criminal justice personnel.

**Developmental Studies**

**ENGL 0710/DE 0074 Basic Writing**
3 Credits, 3 Class Hours
This is a course in paragraph writing. Topics include grammar, usage, spelling, punctuation, and other mechanics of English. 

**Prerequisite: appropriate placement test score**

**ENGL 0800/DE 0083 Developmental Writing**
3 Credits, 3 Class Hours
This is a course in basic essay writing. Topics include unity, organization, and development of essay, rhetorical modes, grammar and mechanics. 

**Prerequisite: ENGL 0710/DE0074 or appropriate placement test score**

**MATH 0700/DM0074 Basic Mathematics**
3 Credits, 3 Class Hours
This course covers basic mathematical topics of whole numbers, fractions, decimals, signed numbers, powers and roots, percents, proportions, systems of weights and measurers, geometric measurers, graphical interpretation, elementary statistical concepts, estimation and problem solving. 

**Prerequisite: Appropriate score on the placement exam.**

**MATH 0800/DM0084 Elementary Algebra**
4 Credits, 4 Class Hours
This course covers the fundamentals of elementary algebra: operations with integers, solution of first-degree equations, ratio and proportion, applied problems, evaluation and simplification of expressions and formulas, roots, radicals, complex numbers, operations on polynomials and factoring. 

**Prerequisite: MATH 0700/DM0074 or an appropriate score on the placement exam.**

**MATH 0810/DM0085 Intermediate Algebra**
4 Credits, 4 Class Hours
This course covers the fundamentals of intermediate algebra: rational expressions, quadratic equations, inequalities and absolute value, graphing linear and quadratic equations, graphing inequalities, relations and function, systems of equations, exponential and logarithmic functions. 

**Prerequisite: MATH 0800/DM0084 or an appropriate score on the placement exam.**

**READ 0710/DR 0074 Basic Reading**
4 Credits, 4 Class Hours
Basic Reading is a course which provides a foundation in reading comprehension, critical reading, and vocabulary development. 

**Prerequisite: appropriate score on the placement test.**

**READ 0800/DR 0084 Developmental Reading**
4 Credits, 4 Class Hours
Developmental Reading is a course designed to improve a student's overall reading skills to college level. Emphasis is placed on comprehension development including literal, inferential and critical reading, along with vocabulary enhancement. 

**Prerequisite: READ 0710/DR0074 or appropriate score on placement test.**

**STSK 0820/DS 0074 Study Skills**
3 Credits, 3 Class Hours
This course acquaints students with study skills and prepares them to integrate traditional study skills with college content areas. Topics include time management, textbook studying, preparing for and taking exams, research paper/report writing, note-taking, using the library, career exploration, and learning about college resources.

**DM 0088 Elementary Algebra/Intermediate Algebra**
8 Credits, 8 Class Hours
This course is a rigorous, fast-paced review of elementary and intermediate algebra, including signed numbers, linear equations, powers, square roots and radicals, formula evaluation and rearrangement, fractional exponents, products and factoring, quadratic equations, graphs of equations and inequalities, systems of equations, and other algebraic topics. It is intended for students who are highly motivated and have ample time to concentrate daily on mathematics. 

**Prerequisites: DM 0074 or COMPASS placement in DM 0084 and approval of DM chairperson.** Satisfactory
Dietetics

DIET 1310/ HM 1120 Nutrition  
This course is an introduction to nutrition including nutritive value of foods, factors influencing body food requirements, their importance in promoting health and preventing disease and the body processes, and their relation to total nutrition. Nutritional requirements throughout the human life cycle with attention to various food cultures and application of nutrition requirements to the basic food groups are also covered.

DIET 1110 Techniques of Food Preparation and Service  
This course introduces students to principles and procedures related to food selection preparation and services for family and social occasions and develops skills in planning menus for various types of commercial, industrial, and school service.

DIET 1130 Quantity Cookery  
This course is a study of institutional food service with 150 hours practical experience in preparing and serving large food quantities with 1 hour lecture per week. Prerequisite: DIET 1110 Techniques of Food Preparation and Service and DIET 1820 Equipment, Care, Safety and Layouts, or permission of instructor.

DIET 1210 Nutritional Care Laboratory I  
This course is held concurrently with Principles of Nutrition in providing coordinated and continuing nutritional care in health delivery systems and is designed for Dietetic Technician students.

DIET 1220 Nutritional Care Laboratory II  
This course is held concurrently with Medical Nutrition Therapy in providing coordinated and continuing nutritional care in health delivery systems. It is designed for Dietetic Technician students. Prerequisite: DIET 1210 Nutritional Care Laboratory I or permission of the instructor. 3 hrs lecture and 30 hours practical experience.

DIET 1310 Principles of Nutrition  
This course is an introduction to nutrition including nutritive value of foods, factors influencing body food requirements, their importance in promoting health and preventing disease and the body processes, and their relation to total nutrition. Nutritional requirements throughout the human life cycle with attention to various food cultures and application of nutrition requirements to the basic food groups are also covered.

DIET 1330 Medical Nutrition Therapy  
This course is a study of medical nutrition principles with focus on the human body, various medical and surgical problems, and the dietary modifications necessary for unusual and abnormal cases. The student gains practice in writing routine hospital diets, planning and calculating special diet prescriptions, and analyzing the procedures, organization and functions of a hospital or other health care facility. Prerequisite: DIET 1310 Principles of Nutrition or permission of instructor.

DIET 1350 Nutrition For Child Care  
This course covers the basic principles of nutrition and the nutritive value of food with emphasis placed on children's nutritional needs including the influence diet has on physical and mental development. Attention is given to the practical problems faced in assisting children to develop better attitudes and dietary habits.

DIET 1360 Community Nutrition  
Nutritional practices of various ethnic, age and socio-economic groups are discussed along with a study of the community and agencies concerned with meeting the needs of these groups. Prerequisites: DIET 1310 Principles of Nutrition. Concurrent enrollment in DIET 2030, Dietetic Field Experience III.

DIET 1370 Advanced Nutritional Care  
This course presents a study of the nutrients and their utilization in the body. Nutrition care for diseases and health conditions which include stress conditions, liver and kidney disease, eating disorders, mental health and disease of infancy and childhood. Documentation of nutrition care given and quality assurance in nutrition components are included. Prerequisites: DIET 1330 Medical Nutrition Therapy and DIET 1920 Dietetic Field Experience I.

DIET 1450 Nutrition for the Handicapped Child  
This course enhances and broadens opportunities for students who are interested in the handicapped child as well as in providing a service for the community. All aspects are covered.

DIET 1810 Sanitation Measures  
This course is a study of the practical problems in protecting health, preventing food spoilage, and covering sanitation laws and regulations. This course includes the control of bacteria in the food service industry through good housekeeping practices, sanitary food handling, and personal hygiene using the HACCP approach to food safety. A Food Service Sanitation Certificate will be awarded to successful completers.

DIET 1820 Equipment, Care, Safety, and Layouts  
This course is a study of the use, operation, cleaning, care, space and equipment requirements, and arrangements which provide an efficient operation in coordinating with job descriptions appropriate for institutional food services. Aspects of kitchen receiving and storage, dining room equipment, capacity rating and the principles of furnishing food service units are included.

DIET 2010 Dietetics Field Experience I  
Lecture, 135 hours supervised observation, and practical experience in selected facility provide the student with firsthand understanding of management systems in selected food services. This course covers use, care, space requirements, and arrangement for efficient operation in
This course offers 60 hours of practical experiences relating to content in other required early childhood courses. Prerequisites: ECE 1010, and ECE 2810 Early Childhood Education Practicum 2 Credits, 1 Hour for TECTA?? ECE 1650 Infant Toddle Care and departmental approval.

Approximately 100 hours of supervised experience in a child care setting with infants and toddlers and in seminar are required. Co-requisite: ECE 2800 Infant/Toddler Care: Practice 3 Credits, 100 Lab Hours.

Instruction techniques include discussion groups, guest speakers, films, projects, role-playing, lecturing, and hands-on computer simulations. This course also includes assessment, prescriptive planning based on the child's level and individual needs. Co-requisite: ECE 2800 Infant Toddler Care: Practicum.

This course presents a study of development techniques, equipment and materials for use with infants and toddlers. Emphasis is on assessment and prescriptive planning based on the child's level and individual needs. Co-requisite: DIET 2020 Dietetic Field Experience II.

This course gives a review of new trends in the food service field and their implications for food service operations. Opportunities for employment and advancement are discussed in addition to the procedures relating to application and acceptance of supervisory positions. 1-3 hrs lecture.

As an introduction to food service management this course includes qualities and responsibilities of an effective food service manager; organization of a food service operation; technique of management; selection and training of personnel; quality, production and cost control; and ethics of buying practices. This course also includes a review of purchasing procedures, methods and selection of food by written specification and the consumer. Prerequisite: DIET 2510 Quantity Food Service Management I. Co-requisite: DIET 2030 Dietetic Field Experience III.

This course is a study of the types of food service systems, planning, and control of quantity food production. This course includes menu planning, purchasing, storage, sanitation and physical facilities. Co-requisite: DIET 2020 Dietetic Field Experience II.

This course is a study of ordering, organizing, and supervising custom preparation and service practice. Emphasis is on special menu plans, dining room arrangement, artistic production and service, and alternate menu cost calculations. A minimum of 150 hours supervised experience. Prerequisite: ECE 1130 Nutrition. Co-requisite: DIET 2030 Dietetic Field Experience III.

This course is an introduction to the profession of early childhood education and the principles of developmental theories (physical, social, emotional, cognitive, creative and communication) and appropriate practices in various types of early childhood programs guiding children, birth to eight years of age. It includes observations and field trips to a variety of early childhood programs.

This course is an applied learning theory in relationship to the writing and language abilities of the young child, his state of readiness, perception, creative insight and common speech/hearing/visual problems. It also reviews literature for the teacher and for preschool children through eight years of age.

This course is an integrated approach to the theory and practice of teaching young children through psychomotor development and the affective domain using music, movement, drama and art expressions. It is also an exploration of play in child-centered curriculum involving wonder, discovery and experience. Field experiences included.

This course presents a study of development techniques, equipment and materials for use with infants and toddlers. Emphasis is on assessment and prescriptive planning based on the child's level and individual needs. Co-requisite: ECE 2800 Infant Toddler Care: Practicum.

This course is an examination of the various aspects of administering an early childhood day care program including planning, staffing, operating, involving parents, budgeting, evaluating, and recognizing legal responsibilities. Instruction techniques include discussion groups, guest speakers, films, projects, role-playing, lecturing, and hands-on computer simulations.

This course offers 60 hours of practical experiences relating to content in other required early childhood courses. Prerequisites: ECE 1010, and
ECE 2820 Methods and Materials in Early Childhood Education 4 Credits, 45 Hours Practicum
A study of developmentally appropriate methods and materials in an early childhood setting is provided. Emphasis is on development of competencies in the 13 Child Development Association areas, and on implementation of objectives in the cognitive, psychomotor and affective domains; 45 hrs of practicum experiences included. Prerequisite(s) ECE 1010 and ECE 1240 or ECE 1370.

ECE 2900 Early Childhood Education Seminar 1-3 Credits
Current theories, methodologies or other special topics in early childhood education are covered.

ECE 2930 Early Childhood Education Field Experience 4 Credits, 1 Class Hour, 3 Lab Hours
This course requires approximately 120 hours of supervised experience in a day care center to apply developed ECE competencies. Reports and evaluation are also required. Prerequisite: department approval.

ECE 2990 Early Childhood Education Workshop 1-3 Credits, 1-3 Lecture Hours
This course is designed to address specific topics of interest to early childhood education personnel.

### Education

**EDUC 1010 Introduction to Education** 3 credits, 3 Class Hours
This course offers a survey of the profession of education, its history in the United States and influence as a social institution, philosophical schools of thought, and an examination of current issues, including educational reform. Supervised teaching experience.

**EDUC 1310 Introduction to Exceptional Learners** 3 credits, 3 Class Hours
This course is a survey course emphasizing the identification, classification, and educational implications of exceptional learners. Students are exposed to the development of IEP's in the required supervised field experience.

**EDUC 1680 Home School Relations** 1 credit, 1 Class Hour
This course presents methods of involving parents and community in partnerships with schools to foster the holistic development of the child and explores theory and practical application through interaction with agencies, on site visits and interviews, development of common goals and strategies (leading to successful models), and an inclusive individual professional plan.

**EDUC 1700 Parenting Skills** 1 credit, 1 Class Hour
Application of state-of-the-art educational technology to the field of parenting education is presented. Emphasis is on family likenesses, common parenting skills and concepts in a democratic society, and modification for particular populations of parents to improve communication at home and in a network for prevention through a synergistic learning experience.

**EDUC 1990 Education Seminar** 1-3 credits, 1-3 Class Hours
This course is a study of current theories, methodologies, or other topics in education.

**EDUC 2010 Child Psychology** 3 credits, 3 Class hours
This course is an exploration of child development from conception through puberty. Emphasis is on theories, concepts, practices and research applications integrating psychological, sociological, and medical areas as related to cognitive, physical, moral, social, and emotional growth. Insights into behaviors, self-awareness, and education of the developing child are presented. Observation and practicum.

**EDUC 2050 Schooling in Multi-cultural Settings** 3 credits, 3 Class hours
This course introduces the student to roles and responsibilities of teachers in multicultural settings; the class evolution of educational policies and practices with attention to the organization and structure of schools and multicultural issues and the study of schools as cultural systems.

### Electrical Engineering Technology

**EE 1050 Programmable Logic Controllers** 4 credits, 3 Class Hours, 2 Laboratory Hours
Students study the hardware configuration, I/O modules, memory organization, and instruction set of major manufacturer of programmable controllers. Students study ladder logic and apply it to several industrial control applications such as motor controls, storage tanks, conveyors, and industrial panels, and displays. This course also, content includes the use of WINDOWS-based programming software, a human-machine interface, and industrial networks.

**EE 1060 Advanced Programmable Logic Controllers & Lab** 4 credits, 3 Class Hours, 2 Laboratory Hours
This advanced course in PLCs will cover PLC memory organization, data types, math and other advanced instructions, configuring analog I/O, analog I/O applications, sampled data, open and closed loop control systems, PID instructions, industrial networks, human-machine interface concepts, message instructions, and WINDOWS based programming software. Prerequisite: EA 1030 or EE 2201

**EE 1101 Electric Circuits I** 4 Credits, 3 Class Hours, 2 Laboratory Hours
Electric Circuits I introduces the student to the fundamental principles of DC circuits. Emphasis is placed on the solution of circuit problems using series and parallel circuit definitions, Ohm’s law, Kirchhoff’s laws, and equivalent circuits. Inductance and capacitance are introduced as time constants in transient circuits. The course concludes with network analysis techniques including loop equations, Thevenin’s theorem, and superposition. Corequisite: MA1131

**EE 1201 Electric Circuits II** 4 Credits, 3 Class Hours, 2 Laboratory Hours
Electric Circuits II introduces the student to the fundamental principles of AC circuits and polyphase circuits. Students analyze steady state AC circuits and apply circuit analysis techniques to impedance networks. Students then study the frequency dependence of impedance and the design of resonant circuits. The course covers the basics of three-phase circuits. Prerequisites: EE 1101, MA 1131 Corequisite: MA 1141
EE 2111 Power Technology
3 Credits, 2 Class Hours, 2 Laboratory Hours
This course students study the theory of operation of electromechanical devices. The course includes DC shunt, series, and compound generators and motors, the basics of three-phase circuits, three-phase rectification, SCR and TRIAC motor controls, transformers, AC alternators, the theory of rotating magnetic fields, induction motors, synchronous motors, and various small AC motors. Students conduct laboratory exercises on the major types of motors, generators, and transformer connections. Prerequisite: EE 1201

EE 2112 Digital Industrial Controls
3 Credits, 2 Class Hours, 2 Laboratory Hours
Digital Industrial Controls applies the fundamental principles of digital logic circuits to instrumentation and control in industrial environments. Digital logic families are discussed with emphasis on CMOS. Basic logic gates, timers, counters, multiplexers, demultiplexers, and magnitude comparators are some of the CMOS integrated circuits covered. Applications include signal conditioning, digital interfacing, voltage translation, and conversion of ladder logic to solid-state logic. Motor speed controllers and switching power supplies are discussed using 555 timers. Prerequisites: CE 1124, ET 1124

EE 2201 Programmable Controllers
4 Credits, 3 Class Hours, 2 Laboratory Hours
Programmable Controllers, students study the hardware configuration, I/O modules, memory organization, and instruction set of an industry standard programmable controller. Students study ladder logic and apply it to several industrial control applications such as motor controls, storage tanks, conveyors, and industrial panels and displays. The course includes an introduction to communications and industrial networks. Laboratory exercises include programming the programmable controllers with Windows-based industry standard programming software. Prerequisites: CE 1124 or approval of program coordinator.

EE 2202 Microprocessor Based Instrumentation and Control
4 Credits, 3 Class Hours, 2 Laboratory Hours
Microprocessor Based Instrumentation and Control includes the principles of interfacing a microcontroller to industrial sensors and electromechanical devices. Emphasis is placed on applications in automation and robotics. Students study the instruction set of a microcontroller, programming peripherals, and communication protocols. Applications discussed include stepper motor and servo motor speed, direction, and position control. Laboratory exercises include assembly language programming on microcontrollers. Prerequisites: EE 1104, EE 2102

EE 2203 Robotics and Industrial Control Systems
4 Credits, 3 Class Hours, 2 Laboratory Hours
Robotics and Industrial Control Systems covers the essential topics of open and closed loop control systems. Emphasis is placed on automation and robotics. Signal conversion techniques are covered: A/D, D/A, frequency-to-voltage, voltage-to-frequency, V/I, and I/V. Position and velocity sensors such as optical shaft encoders and synchros are covered. Stepper motors are covered in detail. Closed loop control system topics include proportional, integral, and derivative control modes. Laboratory exercises include servo robot programming, combination analog and digital speed and position controllers, and process simulation and tuning using a programmable controller. Prerequisites: EE 1104, EE 2102

EE 9013 Cooperative Education Work Experience I
3 Credits, 225 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

EE 9014 Cooperative Education Work Experience I-A
4 Credits, 300 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

EE 9023 Cooperative Education Work Experience II
3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the electrical industry. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: EE 9013 or EE 9014

EE 9024 Cooperative Education Work Experience II-A
4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the electrical industry. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: EE 9013 or EE 9014

EE 9033 Cooperative Education Work Experience III
3 Credits, 225 Laboratory Hours
The student acquires work experience in the electrical industry under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all electrical courses to accomplish tasks as assigned by the engineer. Prerequisite: EE 9023 or EE 9024

EE 9034 Cooperative Education Work Experience III-A
4 Credits, 300 Laboratory Hours
The student acquires work experience in the electrical industry under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all electrical courses to accomplish tasks as assigned by the engineer. Prerequisite: EE 9023 or EE 9024

Electronic Technology

EA 1010 DC/AC Electronics
4 Credits, 3 Class Hours, 2 Laboratory Hours
This course covers the theory of electricity, current voltage and power in series, parallel and complex DC and AC circuits. Electronic component identification, schematic diagrams and the proper use of test equipment are part of the course. Laboratory experiments reinforce the classroom lectures. A working knowledge of high school mathematics is required for this course.

EA 1020 Solid State Electronic Devices
4 Credits, 3 Class Hours, 2 Laboratory Hours
The theory and principles of operation of solid state devices such as diodes, transistors, FETs, power amplifiers, operational amplifiers, SCRs, power supplies and regulators are examined in detail in the classroom and laboratory.
Electronic theory needed for successful completion of the FCC license through element three is covered. The student is given a thorough review of computer terminals and microcomputers which interface with mainframe computers. This course is a detailed examination of troubleshooting this multibus system in a logical method is becoming a must for modern electronic service personnel. This course continues with the basic logic gates used in microcomputers, such as counters, shift registers, encoders, decoders, and analog to digital convertors. In addition, it introduces the student to the complete microcomputer. The assembly language instructions are examined as well as memory expansion and peripheral devices. This course familiarizes the student with the essentials of programming and interfacing the microcomputer. Prerequisite: EA 1102

This course is an extension of Electronic Devices I. It continues to familiarize the student with audio frequency power amplifiers including complimentary symmetry, integrated circuit and CMOS power devices. In addition, it includes devices such as operational amplifiers, SCRs, phototcell, triacs, UJT, speed control circuits, voltage regulators, both series and shunt, and switching regulator circuits. Students examine the devices and circuits in both classroom and laboratory experiments. Prerequisites: EA 1100, EA 1101

This course continues with the basic logic gates used in microcomputers, such as counters, shift registers, encoders, decoders, and analog to digital convertors. In addition, it introduces the student to the complete microcomputer. The assembly language instructions are examined as well as memory expansion and peripheral devices. This course familiarizes the student with the essentials of programming and interfacing the microcomputer. Prerequisite: EA 1102

The student gains skills in circuit recognition, schematic reading, troubleshooting of solid-state and vacuum tube transmitter circuits, R.F. oscillators, harmonic generators, R.F. power amplifiers and audio modulator circuits. The student interprets voltage and resistance measurements to effect repairs. Usage of signal generators, oscilloscopes and frequency counters to analyze circuit failures is emphasized. The student gains the awareness of the usage of transmission lines and their application in communications. Emphasis is placed on the parameters associated with standing waves and the characteristic impedance of a transmission line. Prerequisites: EA 1200, EA 1201

This course is designed to help the student develop skills using the basic test equipment. Numbering systems, basic logic gates, and flip-flop circuits associated with microprocessors are explored in this course. Included is the use of truth tables, logic diagrams, and Karnaugh maps for circuit reduction. Laboratory experiments reinforce the material presented in lecture and provide hands-on experience with logic circuits and pertinent test equipment.

This course is designed to help the student develop skills using the basic test equipment. Numbering systems, basic logic gates, and flip-flop circuits associated with microprocessors are explored in this course. Included is the use of truth tables, logic diagrams, and Karnaugh maps for circuit reduction. Laboratory experiments reinforce the material presented in lecture and provide hands-on experience with logic circuits and pertinent test equipment.

EA 1030 Digital and Microprocessor Electronics

EA 1040 Electronic Communication

EA 1100 Electronic Circuits I

EA 1101 Electronic Devices I

EA 1102 Digital Circuits I

EA 1200 Electronic Circuits II

EA 1201 Electronic Devices II

EA 1202 Digital Circuits II

EA 2300 Electronic Communications

EA 2302 Miniature Component Repair Techniques

EA 2402 Troubleshooting Microprocessor Based Systems

EA 2403 Video Terminal Maintenance

EA 2625 FCC License Review
Emergency Medical Technician

**EMT 1040 Basic Medical Technology I**
7 Credits, 7 Class Hours
Fundamentals of pre-hospital emergency care used by the Emergency Medical Technician (EMT) are covered in this course. This course includes recognition and treatment of cardiovascular emergencies, unconscious states, burns, hazardous materials, environmental emergencies, and OB emergencies. Basic anatomy and physiology and patient assessment are covered. Co-requisite: EMT 1090, Intro to EMT.

**EMT 1050 Basic Emergency Technology II**
7 Credits, 7 Lab Hours
This course is a continuation of Basic Emergency Medical Technology I and further develops the student’s knowledge of pre-hospital care used by the Emergency Medical Technician (EMT). Recognition and treatment of bleeding and shock; soft tissue injuries; musculoskeletal care; and injuries to the head and spine and pediatric emergencies are covered. Also, instruction in ambulance operations, gaining access, and course outlines are included. Prerequisite: EMT 1040 Basic Emergency Medical Technology I and EMT 1090 Introduction to EMT.

**EMT 1090 Introduction to EMT**
3 Credits, 3 Class Hours
This course covers fundamentals of Basic Life Support as used by the Emergency Medical Technician (EMT). Instruction and certification of Cardiopulmonary Resuscitation (CPR), interfacing basic CPR with advanced life support methods such as automatic defibrillation, mechanical airway adjuncts, etc are included. An overview of the Tennessee EMS regulatory structure, including Tennessee Department of Emergency Medical Services Rules and Regulations are provided. Also instruction on the Memphis-Shelby County EMS system, personal safety and EMS equipment are covered. Co-requisite to EMT 2010.

**EMT 2010 Paramedic I**
17 Credits, 17 Class Hours
This course covers the fundamentals of pre-hospital emergency care used by the paramedic. Emphasis on understanding the EMS System, medical/legal considerations, major incident response, patient assessment, advanced airway management, shock treatment, pharmacology, trauma management, burn treatment, and cardiovascular emergencies. Prerequisite: Current Tennessee Basic EMT certification, eligible for Basic EMT. Must be accepted into the program.

**EMT 2020 Paramedic II**
17 Credits, 17 Class Hours
This is a continuation of the study of pre-hospital emergency care used by the paramedic. Emphasis is on understanding and treating endocrine emergencies, abdominal emergencies, anaphylaxis, toxicology, infectious diseases, geriatric emergencies, pediatric emergencies, OB/GYN emergencies, and behavioral emergencies. Prerequisite: EMT 2010 Paramedic I.

**EMT 2030 Paramedic III Clinical Experience**
4 Credits
Practical clinical experience in the treatment techniques learned in Paramedic II is presented. Prerequisite: EMT 2020 Paramedic II. Co-requisite: EMT 2040 Paramedic III Ambulance Field Experience.

**EMT 2040 Paramedic III Ambulance Field Experience**
2 Credits
Practical ambulance field experience in the treatment techniques learned in Paramedic I and Paramedic II continues. Prerequisite: EMT 2020 Paramedic II. Co-requisite: EMT 2030 Paramedic III Clinical Experience.
PT 1114 Introduction to Electronic Technology
This course introduces the student to the electrical/electronic engineering technology fields. Emphasis is on electronic terminology, measurements, safety, and test equipment usage. Electronic unit analysis, conversion, and functions using the calculator are discussed along with use of the volt-ohm-milliammeter and oscilloscope. Electrical safety with basic house wiring practices and procedures is covered. This course covers career opportunities, industrial safety, review of technical math, problem solving, and is suitable for the fundamental applications of electricity and electronics in all disciplines. Corequisite: DM 0084/MATH 0800 or equivalent.

PT 1124 Engineering Technology Techniques
This course introduces the student to engineering technology. Included in this course are the following topics: career orientation, the fields of engineering technology, unit systems, conversion of units, the hand-held calculator, technical math, industrial safety, instruments, metrology, technical sketching, library usage, problem solving, laboratory practices, technical reports, and the use of tools. Corequisite: DM 0084/MATH 0800 or equivalent.

PT 1134 Electronic Workbench Applications
This course introduces the student to electronic circuit simulation on a computer. The student designs, tests and modifies analog and digital electronic circuits using Electronic Workbench, a circuit simulation software package. Electronic test equipment such as digital multimeters, oscilloscopes, signal generators, bode plotters, and logic analyzers are used on screen to test and measure the performance of electronic circuits. The student reinforces previously learned material from earlier courses in basic electronics. Prerequisite: Second year electrical/electronic student or permission from advisor.

English

ENGL 1010/EN 1005 English Composition I
Through writing compositions and reading essays critically, students are taught to organize and develop ideas, using various rhetorical modes and editing techniques. The course focuses chiefly on improving the clarity and effectiveness of writing and includes instruction and practice in the research process. Prerequisite: ENGL 0800/DE 0885 and READ 0800/DR 0084 or satisfactory performance on the COMPASS or ACT test.

ENGL 1020/EN 1045 English Composition II
This course emphasizes synthesis and analysis, taught with a focus either on an introduction to literature or on contemporary issues. The course includes instruction in research and documentation skills. Prerequisite: ENGL 1010/EN 1005.

ENGL 2650/EN 2035 African American Literature
Students study African American literature. Dramatic, lyrical, and narrative works are examined for their enlightenment of African American life and thought and for their historical significance. Prerequisite: ENGL 1020.

PT 1114 Electronic Workbench Applications
This course introduces the student to electronic circuit simulation on a computer. The student designs, tests and modifies analog and digital electronic circuits using Electronic Workbench, a circuit simulation software package. Electronic test equipment such as digital multimeters, oscilloscopes, signal generators, bode plotters, and logic analyzers are used on screen to test and measure the performance of electronic circuits. The student reinforces previously learned material from earlier courses in basic electronics. Prerequisite: Second year electrical/electronic student or permission from advisor.
ENGL 2110 American Literature I 3 credits, 3 Class Hours
This course is an interpretative study of major American authors and literary achievements from the colonial period through the mid-nineteenth century. Prerequisite: ENGL 1020 English II.

ENGL 2120 American Literature II 3 credits, 3 Class Hours
This course is an interpretative study of major American authors and literary achievements from the mid-nineteenth century through World War II. Prerequisite: ENGL 1020 English II.

ENGL 2210 British Literature I 3 credits, 3 Class Hours
This course surveys major British authors and their works from medieval beginnings to the time of Samuel Johnson. It examines the development of English verse and prose fiction as art forms. Prerequisite: ENGL 1020 English II.

ENGL 2220 British Literature II 3 credits, 3 Class Hours
This course surveys English authors and literature from Romanticism to the present day. It examines nineteenth century British poetic movements, Victorian Literary refinements, and modern variations. Prerequisite: ENGL 1020 English II.

ENGL 2420 American Fiction 3 credits, 3 Class Hours
A critical examination of selected American fictional works to develop an appreciation of novels and short stories. Explores the role and function of fiction in relationship with major authors. Prerequisite: ENGL 1020 English II.

ENGL 2760 Cultural Confrontations 3 credits, 3 Class Hours
This course is an interdisciplinary examination of the causes and effects of conflicts between and within cultures. The course questions the notion of cultural unity, raises issues of cultural identity, and defines categories used to construct cultural positions. Prerequisites: ENGL 1020

Environmental Sciences

NSCI 1000 Natural Sciences 3 Credits, 3 Class Hours
This course is designed to meet core requirements for career programs and includes an application of natural and physical science concepts. Includes an appreciation of man’s relationship with his living and nonliving environments. (Degree students must take MSCI 1001 prior to graduation.)

NSCI 1001 Natural Sciences Laboratory 1 Credit, 3 Class Hours
This course is designed to meet core requirements for career programs. Application of natural and physical science concepts. Includes an appreciation of man’s relationship with his living and nonliving environments. Prerequisite or Co-requisite: NSCI 1000.

Ethics

ETHC 2040 Ethics 3 Credits, 3 Class Hours
This course examines opinions about right and wrong conduct in relation to self, other people, animals, and the environment. Reflections on human values and the basic ethical positions which guide or inform peoples’ lives are emphasized. Selected readings from contemporary sources and great moral philosophers are studies. Prerequisite: DE 0083, DR 0084

Fire Science

FS 1100 Fire Fighting Strategy and Tactics I 3 Credits, 3 Class Hours
This course covers development and implementation of strategic factors in emergency management; development of tactical objectives and an incident action plan; and implementation and use of the Incident Command System as an emergency management tool.

FS 1101 Fire Service Instructional Methodology 3 Credits, 3 Class Hours
This course provides an understanding of the training course development process, including development of objectives, instructional activities, instructor guide design, instructional techniques, and evaluation of instruction. This course requires individual participation in lesson plan presentation.

FS 1200 Fire Officer I 3 Credits, 3 Class Hours
This course offers an introduction to the principles of organization, communication, group dynamics, leadership, motivation, problem solving, preincident surveys, emergency management, the State of Tennessee requirements for “NFPA 1041 Fire Officer I,” and other topics necessary for an effective fire officer.

FS 1201 Fire Officer Leadership 3 Credits, 3 Class Hours
This course focuses on the leadership role of the company officer in the fire service. The course will enable mid-range managers, especially company officers, to be more effective in their roles as leaders.

FS 2300 Hazardous Materials Team Operations I 3 Credits, 3 Class Hours
This course is designed to prepare hazardous material team members to function safely and as a unit in dealing with incidents. Personal protection and safety, basic physical and chemical properties, container characteristics and basic tactics will be discussed. Emphasis is placed on team operations and use of emergency episode equipment.

FS 2301 Fire Inspector I 3 Credits, 3 Class Hours
This course will provide the basic understanding of Fire Inspection principles and Code requirements. Students will meet the requirements as
specifies National Fire Protection Association Standard 1031 (Professional Requirements for Fire Inspector I). This course will also provide detailed work to prepare students to take the written Southern Building Code Congress International (SBCCI) Fire Inspector Level I Examination. This course will be accepted to satisfy the state continuing education requirement for state certification inspectors.

**FS 2302 Developing Fire and Life Safety Strategies**  
3 Credits, 3 Class Hours  
This course presents the foundation of public safety education within the fire organization and the structure of effective safety programs. The course examines structure and presentation techniques that will establish effective public education programs. This course will fulfill the state experience requirement for state certification for Public Life Safety Officer I.

**FS 2400 Hazardous Materials Team Operations II**  
3 Credits, 3 Class Hours  
Training for Hazardous Materials Team Members was developed in response to growing concern over the increased risk of occupational exposure to toxic substances. The risk has escalated in recent years because of the proliferation of chemical, biological, and other types of hazards. Strategies for effective responses to the countless numbers of hazards posed by new products and combinations of products are presented. Completion of this course and FS 2300 fulfills the City of Memphis certification of Hazmat Technician.

**FS 2401 Fire Service Budgeting and Financial Management**  
3 Credits, 3 Class Hours  
This course provides fire officers with an applied understanding of the economic environment of the fire service. Students will examine funding and revenue sources; evaluate the different approaches to municipal budgeting; determine the political processes associated with funding; and study the accounting procedures used to administer a final budget. Computer applications will be reviewed and opportunities provided to students in the use of computers within the budgetary process. Through group discussion and case-study approaches, the student will demonstrate a working knowledge of modern fire service financial philosophy.

**FS 2500 Fire Fighting Strategy and Tactics II**  
3 Credits, 3 Class Hours  
This course will provide fire officers with an awareness of the strategic and tactical factors associated with large-scale emergencies. Recent and significant case studies will provide the basis for a “lessons-learned” experience. Role-playing through simulation will provide an opportunity to experience the demands of emergency management and application of command skills in the Incident Command System.

**FS 2501 Fire Protection Systems**  
3 Credits, 3 Class Hours  
This course addresses code applications during construction, liabilities of code enforcement, interpersonal communications, fire protection system components, acceptance testing and maintenance of fire protection systems, residential sprinkler systems, and fire safety education planning. This course stresses conceptual learning dealing with problem solving, mechanical competence, and behavioral approaches. This course can be used to fulfill the state continuing education unit (C.E.U.) requirement for Tennessee State Certified Fire Inspector.

**FS 2502 Mid-Level Management for Fire Officers**  
3 Credits, 3 Class Hours  
This course is designed for individuals who currently serve or plan to serve in supervisory positions. The course will examine political, social, legal, and economic issues that challenge supervisors today and in the near future. Special focus is placed on group problem-solving and creative discovery of solutions to meet modern organizational problems.

### Geographic Information Systems (GIS)

**GS 1001 Principles of Geographic Information Systems**  
3 Credits, 3 Class Hours  
Principles of Geographic Information Systems (GIS) provides an introduction to the concepts needed to think like a GIS practitioner. Comprehensive without being overloaded with excessive detail, it offers the students insights into the idea of geographic inquiry and spatial discovery and grounding in a thorough familiarity with the wide variety of topics relevant to GIS. Topics include geographic data, maps, projection systems, automation, data structures, and applications, as well as lab assignments which correspond to the coursework being taught.

**GS 1015 Intro to ArcView GIS**  
3 Credits, 3 Class Hours  
Introduction to ArcView GIS is a thorough overview of the concepts, functions, applications, technologies, and trends associated with Geographic Information Systems and computer based mapping. Topics include spatial data and database management, hardware and software considerations, GIS applications, project planning, education and training, and implementation.

**GS 1020 Advanced ArcView GIS**  
4 Credits, 4 Class Hours  
This course is a follow-up to Intro to ArcView GIS. The course will expand the student’s knowledge of and expertise in Geographic Information Systems, through classroom lecture and “hands-on” experience with PC-based Geographic Information Systems software. The course utilizes ESRI’s ArcView GIS software and the Spatial Analyst and Network Analyst Extensions. Providing the student with advanced software, this course will expand the participant’s knowledge and usability of GIS tools, and will give the student more “hands-on” experience in solving real-world problems. Prerequisite: GS 1015

**GS 2010 Intro to Arc/ INFO NT**  
4 Credits, 4 Class Hours  
This course introduces the student to the fundamentals and concepts of ARC/INFO NT software, the industry standard in Geographic Information Systems. The class will take the student through the basics of spatial analysis, data design and development, and problem solving through “hands-on” instruction on state-of-the-art Windows NT workstations. The student will, upon completion of this course and the advanced course to follow, be able to compete for technical-level jobs in this rapidly growing industry. Prerequisite: GS 1015

**GS 2020 Advanced ARC/ INFO NT**  
3 Credits, 4 Class Hours  
Advanced ARC/INFO NT is a continuation of the concepts presented in GS 2010, Introduction to ARC/INFO NT. The class will expand the student’s knowledge of GIS theory and ARC/INFO concepts and functionality in the context of “real world” problem solving. Student projects will involve combining several layers of data to find the relationships between layers, solving for a solution and producing sophisticated printed maps. Prerequisite: GS 2010

**GS 2030 Applications in Business**  
3 Credits, 3 Class Hours  
Applications in Business introduces the use of GIS as an analysis and marketing tool in the business world. Students will utilize skills developed in
introductory classes for solving problems in such applications as site selection, marketing and demographics, as well as explore the availability of pertinent data. Prerequisites: GS 1015, GS 2010

**GS 2035 Applications in Engineering**  
Applications in Engineering introduces the use of GIS as an analysis and design tool in engineering applications. Students will utilize skills developed in introductory classes for solving problems in such applications as site development, municipal engineering, municipal planning, transportation planning and design, and environmental analysis. Prerequisite: GS 1015 and GS 2010

**GS 2040 Introduction to Avenue Programming**  
Introduction to Avenue Programming provides an introduction to the ArcView GIS object oriented programming interface used to customize ArcView GIS applications. The student will be introduced to programming techniques used for application development. An emphasis will be placed on how to manipulate, modify, and customize the default ArcView GIS environment to meet specific requirements. Prerequisite: GS 1015 and IT 1002

**GS 2050 GIS Capstone Project**  
Students will define a GIS project topic and develop it from inception to completion utilizing the skills acquired in previous classes. The class will include instruction on project timeline development and presentation skills. Projects will be presented at the end of the semester in both oral and written form before a panel of instructors. Prerequisite: GS 2020 and IT 2010

**Geography**

**GEOG 1010 Physical Geography I**  
This course is the first of a two-semester laboratory science course for non-science majors. It introduces basic concepts of earth-sun relationships, atmospheric and oceanic movements and the fundamental principles of weather and climate.

**GEOG 1020 Physical Geography II**  
This course is a continuation of Physical Geography I. The course explores basic concepts of the earth’s physical structure, tectonic activity, local physical geography, and map interpretation.

**SC 1301 World Geographic Regions**  
World regional geography surveys the interrelationships of spatial location and the major cultures of both developing and industrialized nations of the world. The course examines the geographical characteristics, economics, religions, and philosophies of diverse populations unique to the major geographic regions of the world. This course may be used as a Humanities or general elective. Prerequisites: DR 0084, DE 0083 or equivalent

**Graphic Arts Technology**

**GA 1005 Creativity and Idea Development**  
This course introduces students to methods of idea generation and problem solving for graphic artists. Students will learn to develop and present creative solutions to design, product development, and communications problems using brainstorming techniques, research, and critical analysis. They will express those ideas using thumbnails, storyboards, graphics and typography to develop communications that are appropriate for targeted audiences based on demographic information and cultural relevance.

**GA 1012 Introduction to the Macintosh Computer**  
This class will focus on basic navigation in the Macintosh—the desktop, mouse, keyboard, windows, menus, and dialog boxes—with a detailed examination of memory, storage, disk organization, aliases and file operations. The Macintosh OS (operating system), fonts and font management, networking, and an overview of graphic file formats will also be covered, as will techniques for solving common software and hardware problems. One Macintosh computer per student is assigned for the course. Prerequisites: All required developmental courses

**GA 1015 Upgrading and Diagnostics for the Macintosh**  
This class is a continuation of material covered in GA 1012. It will cover diagnostics and maintenance of the system software and functional hardware of Macintosh systems. Topics covered will include troubleshooting methods and diagnostic software, system and hardware upgrades, hardware and software specifications, and basic network fundamentals essential to digital prepress production professionals, particularly those working in a service bureau or heavy production environment. Prerequisites: GA 1012

**GA 1020 Type & Layout**  
This class will focus on the fundamentals of visual design, layout and mechanical reproduction of printed communications. Topics will include a historical overview of typography and printing, basic principles of composition, a study of type and its architecture, non-digital mechanical preparation, mounting and presentation techniques, and graphic arts terminology, as well as a brief introduction to electronic prepress production using QuarkXpress. Emphasis will be placed on using graphics and typography to effectively communicate a clear message through class projects, discussion and critique. Prerequisites: All required developmental courses Corequisites: GA 1012

**GA 1030 Basic Computer Illustration**  
An introduction to computer illustration using Adobe Illustrator. Emphasis will be placed on the creation of object-oriented graphics, line art and technical illustration by mastering the pen tool, using tracing templates, creating and editing display type and type outlines, working with 4-color process and custom spot color, and working with layers and masks. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1012

**GA 1040 Scanning and Photo Images**  
Introduction to photographic image editing and manipulation using Adobe Photoshop. Emphasis is placed on desktop scanning basics, color correction and electronic photo retouching, image manipulation, painting images and special effects. Topics include scanning and output resolution,
working with clipping paths and using channels and layers. Ethics and copyright laws are also covered in relationship to the use of photographic and scanned imagery. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1012

**GA 1050 Electronic Publishing I**
4 Credits, 4 Class Hours
Electronic prepress production of page layouts and documents using QuarkXpress are covered in this course. Emphasis is placed on mastering the basics of QuarkXpress—including setting up master pages, importing and formatting text, using tabs and paragraph formats, and working with imported photos and art—while learning to create forms, tables and multi-column, multi-page documents. Professional typography and typesetting techniques, file management and publishing excellence will be stressed. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1012

**GA 1060 Prepress Production I**
3 Credits, 3 Class Hours
The printing process—traditional and electronic—will be covered in this class. Students will be exposed to various types of printing and printing prepress production techniques including trapping, stripping, halftones and 4-color process, line screens and resolution.

**GA 1070 Graphic Photography**
3 Credits, 3 Class Hours
Photography for graphic artists and others who wish to produce photographs suitable for publishing or photo-illustration work are covered. This course will instruct students in the use of basic photographic equipment including the 35mm camera, lenses, light meter, flash, and filters. Emphasis will be placed on choosing a subject, composition, using available light, and choosing film. There will also be instruction on art directing a photo shoot and evaluating and preparing prints and transparencies for use in printed publications. Students must provide their own 35mm camera.

**GA 1914 Special Problems I**
3 Credits, 3 Class Hours
This course allows coverage of material not included in other courses, either on an independent study basis or in the classroom. (This course is generally used for the Graphic Arts Department Internship which requires 80 contact hours for the semester.) Prerequisite: Division chair approval

**GA 2000 Professional Practices in the Graphic Arts**
2 Credits, 2 Class Hours
This class will focus on issues relevant to the graphic arts industry, including copyright law and other legal issues, ethics, pricing and marketing artwork, trade customs and professional business practices. Prerequisite: GA 1012

**GA 2011 Advanced Computer Illustration**
3 Credits, 3 Class Hours
Advanced computer illustration techniques using skills acquired in GA 1030 and GA 1040 are utilized in this course. Students will learn advanced features of Adobe Illustrator and will also learn to create illustrations using a variety of programs in combination. One Macintosh computer per student is assigned for the course. Prerequisite: GA 1030, GA 1040 (GA 1001 or other drawing class recommended)

**GA 2020 Color & Electronic Imaging**
4 Credits, 4 Class Hours
This course is an introduction to color theory and perception and the use of color in producing electronic images. Students compose original images as they learn advanced features of Adobe Photoshop. Emphasis is placed on using Photoshop filters, creating special effects and mastering color control. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1040

**GA 2040 Electronic Publishing II**
4 Credits, 4 Class Hours
Advanced methods in electronic prepress production of page layouts and documents using QuarkXpress are covered in this course. This is a project-based course which utilizes skills acquired in GA 1050 to create complex multi-page documents. Students will work with style sheets and master pages, learn to monitor font and picture usage, work with custom color specifications and prepare documents for output to film. Emphasis will be placed on proofing, file troubleshooting, file management and production quality. One Macintosh computer per student is assigned for the course. Prerequisite: GA 1050

**GA 2051 Presentation Graphics**
3 Credits, 3 Class Hours
Methods of conceptualizing and producing informational graphics will be explored using various presentation software, including Microsoft PowerPoint. Students will learn to evaluate information and determine the most effective methods and media for delivering that information to an audience. Designing effective charts and graphs will be covered and students will produce slides, overheads, on-screen presentations and simple interactive presentations. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1030, GA 1040

**GA 2060 Prepress Production II**
4 Credits, 4 Class Hours
This course will cover file output to film for prepress production. Topics will include trapping, calibration, quality control, troubleshooting complex files and checking a customer’s file. Linking to other high-end systems and their uses will be covered as well as how an imagesetter works. Students will prepare files to go to film and color separations. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1060, GA 1030, GA 1050

**GA 2071 Portfolio Practicum**
3 Credits, 3 Class Hours
Students will develop, create and produce extended, comprehensive projects which will apply skills acquired in previous classes. The course will include instruction on portfolio development and presentation, visual problem solving and concept development. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1030, GA 1060, GA 2020, GA 2040

**GA 2511 Introduction to Interactive Multimedia**
3 Credits, 3 Class Hours
This course is an introduction to interactive multimedia, theory and practice. Emphasis will be placed on conceptualizing and planning interactive multimedia projects, navigation, storyboard preparation and user interface design. Students will learn to produce and prepare graphics and animation, edit sound and script in an interactive program using Macromedia Director in combination with other programs. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1030, GA 1040

**GA 2512 Publishing on the Internet**
4 Credits, 4 Class Hours
This class will cover production and placement of graphic images into electronic documents for display over the Internet. Students will be introduced to the World Wide Web (WWW) and basics of human interface design including creation and placement of icons, preparation of graphic files for use on the WWW including GIF, animated GIF and JPEG formats, Hypertext Markup Language (HTML) tags for establishing links, and creating client-side image maps, tables and frames. Students will create and load a personal web site for display over the Internet. One Macintosh computer per student is assigned for the course. Prerequisites: GA 1030, GA 1040
GA 2516 Motion Graphics I  
This course provides an introduction to desktop video post production for small and full-screen viewing. Topics will include storyboarding, preparation of video and graphic images for use in video, video editing and creating video editing decision lists, audio editing, transitions and special effects, animation and moving typography. Students will use video and still images to create QuickTime movies using Adobe Premiere. Prerequisites: GA 1030, GA 1040

GA 2518 3D Modeling & Animation for Multimedia  
This course provides an introduction to 3 dimensional imaging using the Macintosh for digital production purposes. Students will be trained using an industry standard 3D modeling software platform. Through the use of this software students will create new images, modify existing 3D images and create environments for objects produced. Other topics to be covered will include image sequencing, velocity, placement, and transition. Students will use photographic, vector oriented images to create animated GIFs, or QuickTime movies. Prerequisites: GA 1030, GA 2020

GA 2522 Applied Problems in Interactive Multimedia  
Students will develop and produce interactive multimedia projects using skills acquired in previous classes. Emphasis will be placed on scripting in Macromedia Director for efficient navigation, precise movement and timing. Topics covered will include advanced animation techniques and 3-dimensional graphics and project management for multimedia. It is recommended that this course be taken in the student's final semester. One Macintosh computer per student is assigned for the course. Prerequisites: GA 2511

GA 2526 Motion Graphics II  
Advanced techniques are used in desktop video post production to expand upon material covered in GA 2516. This includes creation of video edit decision lists, advanced video editing in Adobe Premiere, and special effects, animation and moving typography using Adobe After Effects. Students will use video and still images to create QuickTime movies suitable for use in interactive multimedia production. One Macintosh computer per student is assigned for the course. Prerequisite: GA 2516

GA 2530 Graphic Arts Internship  
This course is designed to give the student supervised work experience in a graphic arts production environment. There will be no less than 80 contact hours for the semester. Prerequisites: GA 1030, GA 1040, GA 1050 and Division Chair Approval

GA 9013 Cooperative Education Work Experience I  
In this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society. Prerequisite: Co-op advisor's approval

GA 9014 Cooperative Education Work Experience I-A  
In this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society. Prerequisite: Co-op advisor's approval

GA 9023 Cooperative Education Work Experience II  
The student spends one semester in employment in the industry. Work duties are in the area of graphic arts technology using electronic prepress methods and concepts. The student receives first-hand experience using skills developed in the first-year technical courses. Prerequisite: GA 9013

GA 9024 Cooperative Education Work Experience II-A  
The student spends one semester in employment in the industry. Work duties are in the area of graphic arts technology using electronic prepress methods and concepts. The student receives first-hand experience using skills developed in the first-year technical courses. Prerequisite: GA 9014

GA 9033 Cooperative Education Work Experience III  
The student spends one semester in employment in the industry. Work duties are in the area of advanced graphic arts technology using advanced electronic prepress methods and concepts. The student receives first-hand experience in the job market working with actual projects under his/her supervisor's supervision. Credit earned will be additive; substitute credit will not be awarded. Prerequisite: GA 9023

GA 9034 Cooperative Education Work Experience III-A  
The student spends one semester in employment in the industry. Work duties are in the area of advanced graphic arts technology using advanced electronic prepress methods and concepts. The student receives first-hand experience in the job market working with actual projects under his/her supervisor's supervision. Credit earned will be additive; substitute credit will not be awarded. Prerequisite: GA 9024

Health

HLTH 1050 Personal Health  
This course is a study of personal health including mental health, hygiene, communicable disease, degenerative disease, nutrition, drug use/abuse, and other health related problems. It explores the principles and habits of wholesome living.

HLTH 1100 Children's Health  
This course is a study of children's health as it relates to optimum growth and development individually and in group settings. Emphasis is on safe environments in the home, family, day care centers, and schools. It includes survey of prevention and control of childhood diseases, nutrition, parent and community education, state health regulations, and available health social services.

HLTH 2210 Health First Aid and Safety  
This course explores basic first aid and safety principles and focuses on providing emergency care and accident prevention training in personal, school, home, and family environments. CPR included.
History

HIST 1110/ SC 1200 Survey of World Civilizations I  
3 Credits, 3 Class Hours
The course traces forms of civilizations from beginnings to 1500. Prerequisites: DE0083/ENGL0800, DR0084/READ0800 or equivalent

HIST 1120/ SC 1201 Survey of World Civilization II  
3 Credits, 3 Class Hours
The course traces forms of civilizations from 1500 to the present. Prerequisites: DE0083/ENGL0800, DR0084/READ0800 or equivalent

HIST 1510/ SC 1215 Survey of the United States I  
3 Credits, 3 Class Hours
Students study the history of the United States from discovery to the end of political reconstruction. Prerequisites: DE0083/ENGL0800, DR0084/READ0800 or equivalent

HIST 1520/ SC 1216 Survey of the United States II  
3 Credits, 3 Class Hours
Students study the history of the United States from 1877 to the present. Prerequisites: DE0083/ENGL0800, DR0084/READ0800 or equivalent

HIST 1710/ SC 1220 African-American History  
3 Credits, 3 Class Hours
The course surveys the African-American experience from the African background to the present. Prerequisites: DE0083/ENGL0800, DR0084/READ0800 or equivalent

HIST 1810 Women in American History  
3 Credits, 3 Class Hours
A survey of women's role in American History from colonial times through the 1970s. The accomplishments of those notable women who have made the pages of history texts will be examined but the primary emphasis will be on the lives and activities of the mainstream of American women from slaves and homemakers to wage earners and professionals. Prerequisites: DE0083/ENGL0800, DR0084/READ0800 or equivalent

Honors

HONR 1110 Inquirerre I  
3 Credits, 3 Class Hours
This is a seminar course for honors and specially admitted students and uses modes of inquiry from the various disciplines, students will explore with a professor, the community, and visiting guest lecturers, a selected theme. The process of reflecting, researching, analyzing, evaluating, and presenting is as important as the content. Each student will complete a thematic inquiry project and publicly present it to the college community during honors week. Hospitality Management

Hospitality Management

HM 1010 Introduction to Hospitality I  
3 Credits, 3 Class Hours
This course provides an orientation to the hospitality industry. The content includes an introduction to the structure of lodging, food service, and tourism organizations, the role of lodging departments, the future of the industry and career opportunities. Course structure includes lecture, projects, discussion, and guest speakers to learn about opportunities, trends and organizations in the hospitality field. The course has a writing emphasis and will require numerous small written assignments and a minimum of a one project or term paper for understanding and further study of the industry. Lab time is utilized to orient students to a wide variety of career opportunities through field trips.

HM 1100/ HPER 1530 Health Promotion, Wellness & Fitness  
2 Credits. 2 Class Hours
An overview of concepts important to the promotion of good health is given in this course. Emphasis is placed on individual responsibility for achieving optimal well-being and developing healthy lifestyles that reduce risk factors and provide a positive role model for others.

HM 1120/ DIET 1310 Nutrition  
3 Credits. 3 Class Hours
This course familiarizes the student with fundamental nutritional principles, nutritional requirements for normal and special diets, and nutritional care to maintain health and prevent illness. The basic nutrients include carbohydrates, lipids, proteins, minerals, and vitamins are discussed. Consideration is also given to food and health problems in the socioeconomic and cultural environment and through the life cycle.

HM 1131/ DIET 1810 Food Service Sanitation/ Safety (HACCP) system, this course provides the student with instructions on the origins and consequences of food-borne illnesses and the measures used to prevent them. The student studies good sanitation practices, safe preparation and handling of food and foodservice equipment, communicable diseases, pest control and liability of the establishment. The student will have the opportunity to receive the SERV/SAFE certification through the National Restaurant Association.

HM 2190/ DIET 2710 Catering and Buffet  
4 Credits, 2 Class Hours, 4 Laboratory Hours
This course emphasizes the preparation of cold and hot entrees, sales, garnishments and ice carvings for catering events with the substantial attention to the practical techniques for the preparation of show pieces. The buffet segment enables the student to plan, organize, and set up a complete buffet. It also concentrates on the practical techniques and preparation of show pieces. Prerequisite: HM 2225

HM 1140 Professional Housekeeping  
3 Credits, 3 Class Hours
The student receives instruction in both the housekeeping and managerial functions of the professional housekeeper in this course. Additionally, duties and responsibilities, methodology, selection of supplies, care and treatment of the various parts of the facility, equipment care, safety, fire prevention, and health of the housekeeping department are addressed.
HM 1150 Travel Agency Operations 4 Credits, 2 Class Hours, 4 Laboratory Hours
This course is part of the Travel and Tourism concentration. Students study basic organization and management principles including staffing, legal aspects, building new sales accounts, and the effects of deregulation of the travel industry. Four contact laboratory hours are included which involve students in the hands-on use of computer terminals and software used in travel agency operations for making reservations, airline ticketing, and retrieval of travel data. Prerequisite: IT 1001 or basic computer and typing skills with approval from program coordinator

HM 1160 Travel Destinations 3 Credits, 3 Class Hours
This course is part of the Travel and Tourism concentration. Emphasis is placed on the study of worldwide nationalities in terms of recreational geography, economic descriptions and environmental conditions. Attention is given to the major attractions of various countries at specific times, including cultural, industrial, historical and artistic displays and to seasonal events such as festivals, camping, and sports activities.

HM 1170 Hospitality Sales and Marketing 3 Credits, 3 Class Hours
Part of the Travel and Tourism concentration, this course is an introduction to the broad scope of hospitality marketing with emphasis on the analysis, structure, and strategy of the travel industry. Budgeting, allocation of resources, market research, media selection and effectiveness of marketing plans are also stressed. Prerequisite: BN 1100

HM 1180 Lodging Management 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is part of the Travel and Tourism concentration. Emphasis is placed on the study of worldwide nationalities in terms of recreational geography, economic descriptions and environmental conditions. Attention is given to the major attractions of various countries at specific times, including cultural, industrial, historical and artistic displays and to seasonal events such as festivals, camping, and sports activities.

HM 1190 Food and Beverage Cost Control 3 Credits, 3 Class Hours
Students utilize math applications as they develop a thorough background for the hospitality industry’s cost control system. The emphasis is on problem-solving as students study the mechanics of determining food costs, sales percentages, mark-ups, cost of goods sold, etc. Emphasis is placed upon the short- and long-term effectiveness of diverse cost control systems as they impinge on the human, material and mechanical structure of an enterprise. Prerequisite: MA 1011

HM 2120 Beverage Management 3 Credits, 3 Class Hours
The history, identity, and service of wines, beers, and spirits are covered extensively. Basic mixology as well as bar layout, purchasing and specifications, legal restrictions, glassware and supplies, service and control systems unique to beverage operations are studied. The course includes emphasis on the problems of alcohol abuse and the effect of alcoholic consumption on highway safety. A minimum of three written reports is required.

HM 2221 Layout, Operations and Maintenance of Hotels and Restaurants 3 Credits, 3 Class Hours
Problems and considerations of facilities management are introduced to the student in this course. Factors governing the selection, placement, and maintenance of equipment for effective and efficient use in food-service and lodging operations are discussed. Students prepare a project of the appropriate equipment, layout, and design of a hospitality facility.

HM 2225 Food and Beverage Preparation 4 Credits, 2 Class Hours, 4 Laboratory Hours
Students experience a wide range of food service function types with vegetable, bakery, meat, poultry, fish and shellfish preparation being studied in both lecture and laboratory situations in this course. Each student plans and executes a function serving the public, with responsibility for all phases of the operation, including preparation, safety, sanitation, recipe determination, staffing, service, cost control, and dining room decor and atmosphere. Each student prepares a comprehensive report of the function. Prerequisite: HM 1131

HM 2230 Legal Aspects of Hospitality Administration 3 Credits, 3 Class Hours
Students are introduced to the American legal system and basic business law concepts as well as laws unique to the hospitality industry. Selected topics in contracts, torts, and hospitality law are discussed with emphasis on lodging and beverage laws. The case study approach is utilized to afford the student an appreciation of the legal duties of innkeepers, restaurateurs, and tavernkeepers in order to avoid or minimize legal liabilities and entanglements.

HM 2240 Managerial Accounting for the Hospitality Industry 4 Credits, 4 Class Hours
Elements of cost and financial statement analysis are studied in this problem-solving-oriented course. Students are acquainted with financial and operating ratios, budgeting, pricing, cost-volume-profit relationship, cost analysis and potentials, cash management, and investment considerations. Prerequisite: AT 1005

HM 2261 Advanced Food Preparation 4 Credits, 2 Class Hours, 4 Laboratory Hours
Students study and prepare regional, national, or specialty foods to enhance their food preparation skills and knowledge. Particular attention is given to current food trends. Students will plan, cost and design menus. Prerequisite: HM 2225

HM 2280 Convention and Meeting Planning 3 Credits, 3 Class Hours
Part of the Travel and Tourism concentration, this course instructs students in the skills necessary to plan for a one-hour to a one-week or more deluxe conference and/or convention. Course content includes resources, marketing techniques, sales leads, logistics, and follow-up.

HM 2290 International Travel and Planning 3 Credits, 3 Class Hours
This course is part of the Travel and Tourism concentration. The students study the application of research skills in researching unfamiliar destinations, both national and international. Topics include research methods and the history, culture and nature of world regions and areas. Prerequisite: HM 1160

HM 2330 Sales and Marketing Techniques 3 Credits, 3 Class Hours
Prerequisites: AT 1005, HM 1010 or approval of program coordinator

HM 2420 Human Resource Management 3 Credits, 3 Class Hours
This course is part of the Travel and Tourism concentration. Emphasis is placed on the study of worldwide nationalities in terms of recreational geography, economic descriptions and environmental conditions. Attention is given to the major attractions of various countries at specific times, including cultural, industrial, historical and artistic displays and to seasonal events such as festivals, camping, and sports activities.

HM 2510 Business Law 3 Credits, 3 Class Hours
Students are introduced to the American legal system and basic business law concepts as well as laws unique to the hospitality industry. Selected topics in contracts, torts, and hospitality law are discussed with emphasis on lodging and beverage laws. The case study approach is utilized to afford the student an appreciation of the legal duties of innkeepers, restaurateurs, and tavernkeepers in order to avoid or minimize legal liabilities and entanglements.

HM 2520 Legal Aspects of Hospitality Administration 3 Credits, 3 Class Hours
Students are introduced to the American legal system and basic business law concepts as well as laws unique to the hospitality industry. Selected topics in contracts, torts, and hospitality law are discussed with emphasis on lodging and beverage laws. The case study approach is utilized to afford the student an appreciation of the legal duties of innkeepers, restaurateurs, and tavernkeepers in order to avoid or minimize legal liabilities and entanglements.

HM 2530 Sales and Marketing Techniques 3 Credits, 3 Class Hours
Prerequisites: AT 1005, HM 1010 or approval of program coordinator

HM 2540 Human Resource Management 3 Credits, 3 Class Hours
This course is part of the Travel and Tourism concentration. Emphasis is placed on the study of worldwide nationalities in terms of recreational geography, economic descriptions and environmental conditions. Attention is given to the major attractions of various countries at specific times, including cultural, industrial, historical and artistic displays and to seasonal events such as festivals, camping, and sports activities.

HM 2550 Legal Aspects of Hospitality Administration 3 Credits, 3 Class Hours
Students are introduced to the American legal system and basic business law concepts as well as laws unique to the hospitality industry. Selected topics in contracts, torts, and hospitality law are discussed with emphasis on lodging and beverage laws. The case study approach is utilized to afford the student an appreciation of the legal duties of innkeepers, restaurateurs, and tavernkeepers in order to avoid or minimize legal liabilities and entanglements.

HM 2560 Sales and Marketing Techniques 3 Credits, 3 Class Hours
Prerequisites: AT 1005, HM 1010 or approval of program coordinator

HM 2570 Human Resource Management 3 Credits, 3 Class Hours
This course is part of the Travel and Tourism concentration. Emphasis is placed on the study of worldwide nationalities in terms of recreational geography, economic descriptions and environmental conditions. Attention is given to the major attractions of various countries at specific times, including cultural, industrial, historical and artistic displays and to seasonal events such as festivals, camping, and sports activities.
Human Services

HM 9013 Cooperative Education Work Experience I
3 Credits, 225 Laboratory Hours
In this course students receive supervised part-time employment in lodging, travel planning, and/or food service while enrolled at the college. Placement is made by the office of Cooperative Education after all requirements for employment are met. Students are required to perform skills needed in the industry and to keep records of their experiences. Prerequisite: Twelve (12) semester credit hours with a GPA of 2.5 or higher.

HM 9023 Cooperative Education Work Experience II
3 Credits, 225 Laboratory Hours
Students receive supervised part-time employment in lodging, travel planning and/or food service. Placement and grading are the same as for HM 9013. Prerequisite: HM 9013.

HM 9033 Cooperative Education Work Experience III
3 Credits, 225 Laboratory Hours
Students receive supervised part-time employment in lodging, travel planning and/or food service. Placement and grading are the same as for HM 9013. Prerequisite: HM 9023.

HM 9043 Cooperative Education Work Experience IV
3 Credits, 225 Laboratory Hours
Students receive supervised part-time employment in lodging, travel planning and/or food service. Placement and grading are the same as for HM 9013. Prerequisite: HM 9033.

Human Services

HSER 1300 Life-style Management
1-3 Credits, 1-3 Lecture Hours
This course is a study of factors affecting individual life-styles. Students will examine proven management techniques designed to help them improve their life-styles.

HSER 1450 Orientation to Functions of Substance Abuse Counselor
3 Credits, 3 Lecture Hours
This course is an introduction to the two core competencies required for effective practice as a substance abuse counselor. Opportunities for practical skill development in each primary function will be emphasized.

HSER 1500 Counseling Theories
3 Credits, 3 Lecture Hours
This course presents a comparative approach to counseling and psychotherapy practice orientations. Exposure to the most commonly utilized theoretical orientations will include psycho-dynamic, behavioral, cognitive behavioral, social learning, client centered, gestalt, transactional analysis and systems theories.

HSER 1510 Principles of Substance Abuse Education
3 Credits, 3 Lecture Hours
Addresses the social, political, physiological, and behavioral aspects of alcohol and drug abuse. Explores the nature of psychoactive substances and the various theories explaining abuse by different populations. Theories and methods of prevention techniques for substance abuse will be presented.

HSER 1520 Methods of Substance Abuse Treatment
3 Credits, 3 Lecture Hours
Emphasis on real-world applications of approaches to therapy described in the counseling theories course. The routine activities which take place in typical substance treatment settings are presented. Primary settings covered are impatient, outpatient, and the modality of day treatment. Family dynamics modes, including co-dependency and adult children of alcoholics will be covered. Prerequisites: HSER 1500 Counseling Theories.

HSER 1600 Special Problems in Human Services
1-3 Credits, 1-3 Lecture Hours
The in-dept study of a particular area of interest in human services.

HSER 1700 Adult Development
3 Credits, 3 Lecture Hours
A study of the biological, cognitive, emotional, social, and personality development in adult life (late teens to death). Major theorists such as Erickson, Neugarten, Gould, Levinson, and Lowenthal will be examined. Opportunities to apply these theories to personal life structure.

HSER 1810 Orientation to Human Services
3 Credits, 3 Lecture Hours
Introduction to human services in our society with emphasis on current needs, practices, and projected changes. Focus on the development of a personalized professional portfolio.

HSER 1820 The Skilled Helper: Techniques and Strategies
3 Credits, 3 Lecture Hours
An introduction to the various therapeutic intervention technique principles and procedures. Practical skill development in selected counseling and interviewing techniques.

HSER 1850 Group Facilitation Skills
3 Credits, 3 Lecture Hours
Introduction to interpersonal concepts and communication problems. Explores attitudes, feelings and past experience as related to student's interactions in group work. Analysis of group types and development of specific group process competencies. Prerequisite: HSER 1820.

HSER 2930 Human Services Field Experience I
4 Credits, 1.5 Class Hours, 160 Lab Hours
This course is 160 hours supervised experience in human services agencies which served clients directly. Students will choose an agency from diverse target areas such as geriatrics, substance abuse counseling, mental health, mental retardation and your prevention services. In-class activities on campus include 1.5 hrs in a weekly seminar.

HSER 2940 Human Services Field Experience II
4 credits, 1 Class Hour, 3 Lab Hours
This course is a continuation of Human Services Field Experience I. Prerequisite: HSER 2930 Human Services Field Experience I.

HSER 2950 Human Services Field Experience III
4 credits
This course continues an intensive supervised field experience at a human services agency including 15 hours on-campus classroom activities. Prerequisite: HSER 2940 Human Services Field Experiences II.
Industrial Engineering Technology

IE 1004 Technical Computer Applications 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is a practical experience in using IBM-compatible personal computers for special business and industrial applications. An integrated software system (Microsoft Office) applying a word processor, a spreadsheet, and a database used separately and integrated is used. BASIC programming and Windows are also covered. Prerequisite: DM 0085 or approval of program coordinator

IE 1204 Measuring Techniques I 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course explores basic methods of measurement and data collection for industry. The hands-on use of traditional equipment such as micrometers, calipers, scales, sine bars, protractors, gage blocks, and surface plates as well as the calibration and maintenance of measuring equipment will be emphasized. Units, conversions, and basic shop mathematics are an important part of the course. Prerequisite: DM 0085 or approval of program coordinator

IE 1214 Measuring Techniques II 4 Credits, 3 Class Hours, 2 Laboratory Hours
As a continuation of IE 1204, this course explores more advanced methods of measurement and data collection for industry. Inspection techniques covered will include computer-based laser, optical, digital and automated. Equipment covered will include Coordinated Measurement Machines (CMM), Configurable Vision Inspection Modules (CVIM), optical comparators, robots and sensors. The hands-on use of high-tech equipment and Geometric Dimensioning and Tolerancing (GDT) will be emphasized as will the statistical use of data. The student will also be introduced to quality assurance and inspection documentation. Prerequisites: IE 1204, MA 1131 or approval of program coordinator

IE 2003 Production and Operations Management 3 Credits, 2 Class Hours, 3 Laboratory Hours
This course covers the following areas: forecasting, production planning, financial analysis, inventory control, resource management, CPM and PERT scheduling, materials resource planning (MRP), and Just-In-Time (JIT) manufacturing. Computer programs are demonstrated. Prerequisite: MA 1131 or approval of program coordinator

IE 2014 CNC and Robotics 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course addresses the requirement that the mechanical and industrial engineering technology technicians be skilled in the principles of computer-integrated manufacturing. Emphasis is placed on computer numerical control machines, industrial robots, and computer-controlled systems. Prerequisites: IE 1004, ME 1144, or approval of program coordinator

IE 2023 Motion and Time Analysis 3 Credits, 2 Class Hours, 3 Laboratory Hours
This course presents the principles and techniques used in work measurement and operation analysis. Topics involved are operator and machine process charts, product flow charts, operation routing charts, motion economy laws, standard time study methods, and synthetic time study methods. Video tape analysis and applicable computer programs are demonstrated. Technical report writing is emphasized and the student is required to write formal reports on laboratory projects. Prerequisites: EN 1005, IE 1004, IE 2003 or approval of program coordinator

IE 2034 Plant Layout and Materials Handling 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is a practical study of facilities planning with emphasis on the most efficient arrangement of work areas to achieve the lowest production costs. Topics covered are equipment location, material handling, automatic storage and retrieval, bar-coding, capital requirements, personnel organization, and safety. Computer-aided design (CAD) problems are performed. Prerequisite: ME 1294, IE 1004 or approval of program coordinator

IE 2043 Statistical Quality Control 3 Credits, 2 Class Hours, 3 Laboratory Hours
This course covers the statistical concepts of frequency distributions, Xbar-R charts, attribute charts, lot-by-lot acceptance sampling plans, and the normal curve. Other topics include product reliability, process capability, preventive maintenance, and quality assurance. Computer applications are demonstrated. Prerequisites: IE 1004 or approval of program coordinator

IE 2054 Computer-Integrated Manufacturing 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is designed to provide an overview of automation and computer-integrated manufacturing methods in modern production plants. Emphasis is placed on economics as well as technical issues related to automation. The course topics include flow-line production, numerical control, industrial robots, computer-integrated manufacturing, process monitoring and control, and group technology. Prerequisites: IE 1004 or approval of program coordinator

IE 9013 Cooperative Education Work Experience I 3 Credits, 225 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today’s society.

IE 9014 Cooperative Education Work Experience I-A 4 Credits, 300 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today’s society.

IE 9023 Cooperative Education Work Experience II 3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of industrial engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: IE 9013 or IE 9014

IE 9024 Cooperative Education Work Experience II-A 4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of industrial engineering technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: IE 9013 or IE 9014

IE 9033 Cooperative Education Work Experience III 3 Credits, 225 Laboratory Hours
The student acquires work experience in the industrial engineering technology field under the supervision of an engineer or senior technician. The
Industrial Maintenance Technology

IM 1104 Basic Machine Tool Operations
This course covers the terminology, measuring principles and basic machine shop techniques utilized in maintenance departments, production and job shops. Subjects covered are hand tools, benching, taps and dies, semi-precision, precision measurement, and layout practices. Machine tool operations covered include drills and drilling, turning machines, horizontal milling machines, shapers grinding and abrasive machining process. Safety is stressed during the course and industrial terminology is used.
Prerequisite: IM 1104

IM 1114 Blueprint Reading and Drafting
This course covers terminology and the basic techniques and fundamentals of drafting to prepare the student to read blueprints and for more advanced classes in engineering drawing. Lettering techniques, use of drawing instruments and scales, applied geometric construction, orthographic projection, isometric drawing, and drawing layout procedures are covered. Also included is an introduction to computer-aided drafting.

IM 1124 Welding Processes
This course is designed to enhance one’s interest and knowledge in the art and science of welding. Emphasis is placed on shielded metallic arc welding (S.M.A.W.), oxygen-acetylene welding (O.A.W.), plasma arc cutting, gas tungsten arc welding (G.T.A.W.), gas metal arc welding (G.M.A.W.), and other industrially important welding processes. The topics of destructive testing, nondestructive testing, properties, identification, and heat treatment of metals are presented.

IM 1204 Advanced Machine Tool Operations
This course is a continuation of Basic Machine Tool Operations and provides additional hands-on experience to promote safe and proper operation of machine tools. The machine shop techniques learned in the basic course are utilized to produce an assigned project. Additional machine tool operations, combined with related information, are included to build on the knowledge and experience already gained. Standard/special cutting tools, metallurgy, precision measurement and special machine processes are covered. Safe working practices are continually stressed.
Prerequisite: IM 1104

IM 1214 Pipelining and Plumbing Practices
This course covers the various plumbing and pipelining connections and types of pipe normally used in industry. The practical applications of materials, tools, and calculations necessary for the layout of plumbing, pipelining, and gas systems are emphasized. Laboratory work includes layout, cutting, bending, fabrication, installation, and maintenance of a typical process, utility and waste piping system. Labs also include the valves and fittings peculiar to each system. Safety instructions are stressed continually throughout the course.

IM 2104 Electrical Circuit Fundamentals
This course is designed to acquaint the student with the fundamental concepts of DC and AC electrical circuits. The theory of electron flow, magnetism, production of electricity, series circuits, circuits containing resistance, inductive reactance, and capacitive reactance are discussed. The proper use of measuring equipment and personal safety is stressed throughout the course. Prerequisite: MA 1131 or approval of program coordinator

IM 2114 Fluid Power I
This course presents the basic principles of hydraulics and pneumatics and its practical applications. Emphasis is placed on a fundamental understanding of the physical principles of fluid power and the principles of applications of different types of pumps and compressors and the role each plays in a total fluid power system. The design, application, and maintenance of system components are reinforced in the laboratory where work is accomplished on actual equipment and systems. Prerequisite: MA 1131 or approval of program coordinator

IM 2124 Air Conditioning Principles
This course covers the basic principles of air conditioning and refrigeration, including, but not limited to, theory, refrigerants, systems evacuation, system charging, controls, metering devices, evaporators, condensers, compressors, heat pumps, and troubleshooting. The proper use of tools and equipment as well as personal safety is stressed throughout. This course requires the preparation of formal reports.

IM 2133 Motion and Power
This course examines the use of basic machines in industrial settings. Power transmission methods are stressed. Laboratory exercises cover the mechanical drive devices, gears, pulleys and belts, roller chain assemblies, timing belts, clutches, conveyor belts and shaft connections and alignment. Safety practices are emphasized along with the industrial applications. Prerequisite: MA 1131 or approval of program coordinator

IM 2204 Motors and Controls
This course covers the physical and electrical characteristics of alternators, generating sets, squirrel cage motors, wound-rotor motors, synchronous motors, AC series motors, control devices and applications, including the expanding use of solid-state control devices and applications. At the same time, this course covers the basic concepts of motor controls to enable the student to build technical competence upon a firm understanding of principles. It is assumed that the student has a basic understanding of electrical theory. The proper use of tools and equipment as well as personal safety is stressed throughout. Prerequisite: IM 2104

IM 2213 Occupational Safety
In this course, the students receive instruction in environmental and industrial safety practices. Also covered are the essential procedures used to assure an effective safety program in the workplace. Particular emphasis is placed on fire prevention and protection, material data sheets, governmental and safety standards, and accident prevention.

Prerequisite: IM 2104
IM 2214 Fluid Power II
This course is a continuation of Fluid Power I and covers design of basic hydraulic and pneumatic circuits and safety circuits. Emphasis is placed on operation, application and installation of pressure intensifiers, torque devices, pumps, motors, fundamentals of reservoirs and plumbing, as well as accumulators, packings, and seals. Proper maintenance and troubleshooting are stressed in this course. Prerequisite: IM 2114

IM 2224 Boiler and Heating Operations
This is an introductory course covering the principles of operation, maintenance, construction, and regulation of steam boilers and gas heating systems. The basic principles of metallurgy, materials selection and utilization combined with the operational concepts of fire tube, water tube, and hot water heating boilers are discussed. Emphasis is placed on details of construction, a knowledge of fuels, AGA specifications, firing controls and programmers, operational problems, and repair and maintenance of steam boilers and heating systems. Safety is an integral part of the course.

IM 2244 Basic Manufacturing Processes
This is a study of the conversion of raw materials into finished products by manufacturing processes. The nature of materials and the different processes involved in manufacturing and assembly are presented. The nature of metals and alloying agents are presented. Quality control techniques and inspection procedures are integral parts of the course.

IM 2254 Advanced CNC and Robotics
This course is designed to be a continuation of IE 2014, CNC and Robotics. Primary emphasis is placed on the logical analysis and problem-solving techniques associated with the operation and maintenance of CNC machining centers and industrial robots. Advanced programming features such as mirror imaging, polar rotation, datum shifts, turning, and threading are presented. Off-line computers used in CAD/CAM/CIM systems are covered along with robotic applications. Hands-on labs are featured. Prerequisite: IE 2014

IM 2264 Automated Industrial Systems
This course is designed as a hands-on approach to the automated industrial systems in a modern manufacturing or service organization. CNC machining centers, robotics, automated conveyors, automatic storage and retrieval systems, vision inspection and identification systems are examined. A systematic approach to troubleshooting coupled with logical preventive maintenance program is an integral part of the course. Prerequisite: IE 2014

IM 8304 Jig Fixture and Die Design Fundamentals
In this course the student is introduced to the fundamentals of tool design. The course covers design techniques used to produce efficient jigs, fixtures, pressworking tools, gages, assembly tools, cutting tools, and other metalworking tools. Additional training covering tool materials workholding principles is presented. Bending, forming and drawing dies together with index and positioning devices and methods of converting rotary to linear motion are presented.

IM 8404 Die Assembly
The many aspects of assembly and tryout covering bending, forming, embossing, heading and curling, coined, swaging, drawing, blanking, transfer, extrusion and molding are studied. The significance of finish allowances, parting lines, draft, stock positioning, metal flow, tolerances, scrap disposition, and development of blanks is covered. Layout experience with selected products establishing selection of materials, type of press, use of die sets, and standard component availability is covered. Materials selection includes specification for heat treatment.

IM 8414 Basics of Quality Control and Dimensional Metrology
Gaging methods, standards, units of measurement and conversion charts are reviewed in this course. Also covered are tolerance allocation, related and unrelated systems, gage types and applications, gage materials, geometric dimensioning, and tolerancing. Quality control principles are discussed. Product reliability, process capability and quality assurance are discussed. Statistical quality control problems and quality control concepts are presented. A technical review of a manufacturing problem is completed by each student.

IM 9013 Cooperative Education Work Experience I
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

IM 9014 Cooperative Education Work Experience I-A
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

IM 9023 Cooperative Education Work Experience II
In this course the student receives supervised work experience in any of the many facets of industrial maintenance technology. The student performs technician-level work applying knowledge gained in the he first-year technical courses to meet actual world-of-work requirements. Prerequisite: IM 9013 or IM 9014

IM 9024 Cooperative Education Work Experience II-A
In this course the student receives supervised work experience in any of the many facets of industrial maintenance technology. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements. Prerequisite: IM 9013 or IM 9014

IM 9033 Cooperative Education Work Experience III
The student acquires work experience in the industrial maintenance technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all Industrial Maintenance Technology courses to accomplish tasks as assigned by the engineer. Prerequisite: IM 9023 or IM 9024

IM 9034 Cooperative Education Work Experience III-A
The student acquires work experience in the industrial maintenance technology field under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all Industrial Maintenance Technology courses to accomplish tasks as assigned by the engineer. Prerequisite: IM 9023 or IM 9024
Information Technology

IT 1001 Introduction to Microcomputers  4 Credits, 4 Class Hours
This course is designed to provide entering students with a background in computer terminology and concepts. Topics include operating systems and basic use of the Internet. Hands-on instruction utilizes popular microcomputer software packages, including a word processor, an electronic spreadsheet, and a database. One computer per student is assigned for the course. Prerequisite: Keyboarding skills

IT 1002 Logic and Problem Solving for Programmers  4 Credits, 4 Class Hours
This course covers computer concepts and problem-solving techniques as they are applied to programming. Topics include structured programming techniques, design of printer spacing charts, and programming subject matter such as control and iteration. Students write and run programs in order to apply these concepts. One computer per student is assigned for the course. Prerequisite: DM 0085 or equivalent

IT 1004 Microcomputer Operating Systems  4 Credits, 4 Class Hours
The student receives a thorough introduction to the microcomputer operating system and how it provides an environment for information decision making. General concepts, commands, terminologies, and techniques of the microcomputer operating system are also introduced to the student. Skills are developed by using a microcomputer operating system. One computer per student is assigned for the course. Prerequisite: Keyboarding skills

IT 1006 Utilities/ Hard Disk Management  4 Credits, 4 Class Hours
This course includes utility programs that aid in the operation of microcomputer software and hardware. Advanced operating systems procedures and techniques are covered. Procedures and techniques for using a hard disk are presented. Writing across the curricula is stressed in this course, with technical writing skills and documentation techniques emphasized. One computer per student is assigned for the course. Prerequisites: IT 1004, EA 2814

IT 1101 C Programming Language  4 Credits, 4 Class Hours
This course introduces the student to the C programming language. Students write programs which emphasize the concepts of structured programming, top-down design, and user interaction utilizing C. Topics include functions, control statements, formatted input/output, character input/output, pointers, arrays, and strings. One computer per student is assigned for the course. Prerequisite: IT 1002

IT 1131 COBOL Programming  4 Credits, 4 Class Hours
COBOL permits a programmer to instruct computers in an English-type language. The programmer writes in English-like statements and paragraphs, following the conventions of a standard reference format, to describe the data to be processed and to specify the required procedures. The rules and language are taught using the structured approach, and various business problems are solved on the computer during laboratory hours. One computer per student is assigned for the course. Prerequisite: IT 1002

IT 1151 RPG/400 Programming  4 Credits, 4 Class Hours
RPG (Report Program Generator) is a high level, problem solving language. It is used almost exclusively on the IBM AS/400. This course is designed to give the student a sound understanding of how to write and run programs that range from simple to complex in nature. It prepares the student to enter the information systems field with a good basic knowledge of how to use RPG. One workstation per student is assigned for the course. Prerequisite: IT 1002

IT 1301 Concepts of Communications/ Networking  4 Credits, 4 Class Hours
This course includes basic communications concepts, terminology, techniques, and applications for data communications and networking of microcomputers. Writing across the curricula is stressed in this course with technical writing skills and documentation techniques emphasized. One computer per student is assigned for the course. Prerequisites: IT 1002 or both IT 1004 and EA 2814

IT 1411 Windows Visual Basic I  4 Credits, 4 Class Hours
In this introduction to Windows programming, emphasis is placed on Windows programming conventions and user interface objects using Microsoft's Visual BASIC. Topics include linking and module definition files, Windows procedures, an introduction to the graphics device interface (GDI), user interface standards, the Windows creation process, and operating systems consideration. One computer per student is assigned for the course. Prerequisites: IT 1001 and IT 1002

IT 2010 Introduction to Web Page Development  4 Credits, 4 Class Hours
The focus of this introductory course is on designing and creating a Web site with Web pages written in Hypertext Markup Language (HTML) using a text-only editor. Topics include basic HTML tags, tables, frames, forms, counters, and image mapping. The student will publish and maintain a web site including posting to Web server, both locally and remotely, and registration with a search engine. One computer per student is assigned for the course. Prerequisites: IT 1301 and IT 2401

IT 2101 Advanced C Programming Language  4 Credits, 4 Class Hours
This course continues the study of the C programming language. Topics introduced in C programming such as pointers, arrays and strings are studied in greater detail. Topics such as structures, disk file input/output, libraries, windows, graphics, debugging, and programming techniques are included. One computer per student is assigned for the course. Prerequisite: IT 1101

IT 2102 C++ Programming Language  4 Credits, 4 Class Hours
This course covers the syntax and features of the C++ programming language which is an extension to the C language. Emphasis is placed on proper design and techniques using the basic computer concepts of object-oriented programming. Topics include structures, classes, overloading, encapsulation, polymorphism, inheritance and input/output. One computer per student is assigned for the course. Prerequisite: IT 1101

IT 2111 Advanced C++  4 Credits, 4 Class Hours
This class is a continuation of the study of object-oriented programming using C++. This includes using object oriented analysis and design to develop Windows applications using Microsoft's Visual C++. Students will further explore complex OOP topics such as inheritance, composition, and exception handling. One computer per student is assigned for the course. Prerequisites: IT 2102
IT 2131 COBOL Advanced 4 Credits, 4 Class Hours
Advanced COBOL programming techniques are taught using VSAM disk files and integrated programs. File access and organization are covered for sequential, indexed sequential and relative files. The student is introduced to advanced debugging techniques. One computer per student is assigned for the course. Prerequisite: IT 1131

IT 2132 CICS 4 Credits, 4 Class Hours
This course encompasses fundamental concepts of data communication and programming using command level CICS. It includes basic mapping support, CICS tables, and coding in COBOL to handle on-line processing. One workstation per student is assigned for the course. Prerequisite: IT 2131

IT 2133 System Design 4 Credits, 4 Class Hours
The fundamentals of business system analysis and design are introduced through lectures as well as involvement in a systems project using a CASE tool. The project provides for group as well as individual efforts in design and documentation of batch and on-line systems. A minimum of three written reports is required for this course as per the writing across the curricula program requirement. Prerequisite: IT 2131

IT 2134 Application Case Study - COBOL 4 Credits, 4 Class Hours
In this course the student designs and programs an application that uses the concepts covered in the other courses in this track. One computer per student is assigned for the course. Prerequisites: IT 2131 and IT 2132

IT 2150 Database Concepts and Programming 4 Credits, 4 Class Hours
This course is an introduction to database design and processing. Emphasis is on relational databases with laboratory problems using SQL. One workstation per student is assigned for the course. Prerequisite: IT 1001 and either IT 1101, IT 1131, IT51, or IT 1411

IT 2151 RPG Interactive Programming and Advanced Concepts 4 Credits, 4 Class Hours
This course is a continuation of IT 1151, RPG/400 Programming, and teaches complex file handling techniques. Interactive programming is introduced using both DDS and SDA methods for creating simple displays. The use of Data Structures is also taught. One workstation per student is assigned for the course. Prerequisite: IT 1151

IT 2152 Subfiles, Menus, Advanced RPG Concepts 4 Credits, 4 Class Hours
This course is a continuation of IT 2151, and teaches more complex displays, menus and Online Help screens. Subfile concepts are covered, and subfile programming is done. One workstation per student is assigned for the course. Prerequisite: IT 2151

IT 2153 Operating System for AS/400 4 Credits, 4 Class Hours
A general overview of the components of the IBM AS/400 midrange computer is followed by emphasis on selected topics including menu system, object management, task management utilities, security, AS/400 control language, and CL programming. One workstation per student is assigned for the course. Prerequisite: IT 1151

IT 2154 AS/400 Distributed Programming Techniques 4 Credits, 4 Class Hours
This course introduces the student to data communications concepts and terminology, concentrating heavily on the AS/400 and its interrelationship with various types of networks. Some programming background is required. One workstation per student is assigned for the course. Prerequisites: IT 1001 and either IT 1101, IT 1131, IT 1151 or IT 1411

IT 2155 Application Case Study-RPG 4 Credits, 4 Class Hours
In this course the student designs and programs an application that uses the concepts covered in the other courses in this track. One workstation per student is assigned for the course. Prerequisites IT 2151 and IT 2153

IT 2156 Client Access/400 and Visual RPG 4 Credits, 4 Class Hours
This course introduces the student to AS/400 Client/Server technology and development using AS/400 Client/Server tools, such as Client/Access 400. Features of Visual RPG are also covered. One workstation per student is assigned for the course. Prerequisites: IT 2151 and IT 2153

IT 2201 UNIX Operating System 4 Credits, 4 Class Hours
A thorough overview of multiuser operating system utilizes the UNIX operating system. Emphasis is placed on the user interface, terminology and command structure within the multithread/multiuser environment. Electronic mail and communications standards are covered along with standard UNIX utilities needed to support the automated office. One workstation per student is assigned for the course. Prerequisite: IT 1002 or both IT 1004 and EA 2814 Corequisite: IT 1301

IT 2501 Database Management 4 Credits, 4 Class Hours
This course introduces the student to basic database systems and their design in an office environment. Emphasis is placed on the definition of the data requirements, data dictionaries usage and work flow analysis. The course utilizes the leading relational database software management system to create, manipulate, and extract reports for a database. An introduction to the industry’s leading database software is also covered. One computer per student is assigned for the course. Prerequisites: IT 1001 and IT 1004

IT 2601 Desktop Publishing 4 Credits, 4 Class Hours
A thorough overview of the state-of-the-art usage of computers in the graphic publishing environment is included in this course. An integrated approach covers topics including publishing, graphic painting, and basic publishing design software. The student combines text from word processors with graphics for an integrated publication. One computer per student is assigned for the course. Prerequisite: IT 2401

IT 2602 Advanced Desktop Publishing 4 Credits, 4 Class Hours
This is an advanced course in Desktop Publishing designed to enhance the DTP skills acquired in IT 2601, Desktop Publishing, fundamentals course. This course covers the concepts and practices applicable to the publishing and computer graphics marketplace. The student receives hands-on experience with Aldus Pagemaker, Corel Draw, a slide presentation program, and graphics scanners. Topics include color separation, typography techniques, and the principles of document design. One computer per student is assigned for the course. Prerequisites: IT 2601 and OS 1041
IT 2202 UNIX Software Tools 4 Credits, 4 Class Hours
This course provides an in-depth study of UNIX software tools. Topics include regular expressions, examining text files, formatting and working with fields and changing characters and strings in files, and file archives and compression. The awk language and the Korn shell programming environment are covered along with selected software development tools downloaded from the Internet. One workstation per student is assigned for the course. Prerequisite: IT 2201

IT 2205 UNIX System Administration 4 Credits, 4 Class Hours
This course explores the tasks and issues that everyone responsible for a UNIX system routinely faces. Topics include adding and removing users, managing UNIX processes, planning file systems, performing backups, setting up a printer and spooling system, overseeing a TCP/IP network (including NFS), adding new hardware devices, managing system security and fine tuning system resources. One workstation per student is assigned for the course. Prerequisite: IT 2201

IT 2210 Advanced C with UNIX 4 Credits, 4 Class Hours
This course provides an advanced understanding of C concepts on different UNIX platforms. Topics include compiling, debugging, creating and maintaining libraries, preprocessor, source code control, advanced pointer constructs, UNIX data structures, UNIX utilities, and dynamic memory allocation. This class prepares the student for UNIX systems programming in C. One workstation per student is assigned for the course. Prerequisites: IT 1101 and IT 2201

IT 2215 UNIX System Programming in C 4 Credits, 4 Class Hours
This course provides a thorough overview of the ANSI C programming language as implemented in the UNIX environment. Topics include data structures, arrays, pointers, system calls and standard library functions. Emphasis is placed on UNIX system I/O facilities, program maintenance, UNIX process control, and kernel intrinsics. One workstation per student is assigned for the course. Prerequisite: IT 1301

IT 2301 Local Area Networking—Administration 4 Credits, 4 Class Hours
In this advanced course, students receive a thorough overview of the installation, management, maintenance and utilities of local area networks (LAN). The primary topics cover Novell's NetWare LAN hardware and software selection, implementation and administration. Additional topics include Inter- and Intra-LAN communications and the technical issues of NetWare implementations. One microcomputer per student is assigned for the course. Prerequisites: IT 1301

IT 2303 Internetworking 4 Credits, 4 Class Hours
This course is a continuation of IT 2301, Local Area Networking Administration. The students explore the tasks and issues that everyone responsible for Local Area Network administration routinely faces. Topics include configuration management, tools and techniques in monitoring LAN performance, troubleshooting methods and tools as well as theory and troubleshooting concepts Configuration, maintenance and problem resolution of multiple protocol LANS are covered including TCP/IP, IPX, AFP, X.25 and other services. These topics are detailed in both stand-alone and simultaneous access implementations of hardware devices, management of system security, and overall tuning of systems communications. One computer per student is assigned for this course. Prerequisite: IT 2301

IT 2310 Local Area Networking—Engineering 4 Credits, 4 Class Hours
This course presents a thorough overview from client basics to advanced troubleshooting and optimization strategies of LAN engineering. Specific topics include design, installation, management and troubleshooting of LANs and WANS. Emphasis will be placed on real-world configurations. Students will develop and implement a multi-protocol, multi-operating system LAN environment using industry standard hardware and software. One computer per student is assigned for the course. Prerequisite: IT 2301

IT 2351 Windows NT-Workstation 4 Credits, 4 Class Hours
This course will introduce the student to the Windows NT Workstation operating system and how to network computers with NT workstation installed. In addition, the student will use hands-on projects and project cases for reinforcement. Topics to be covered in detail; installation of the operating system; user management, print services, file system management, user permissions. Troubleshooting and network support will also be covered. This course will help prepare the student to sit for the MCSE test for Windows NT Workstation operating system. One computer per student is assigned for the course. Prerequisite: IT 1301; IT 2401

IT 2401 Windows Operating System 4 Credits, 4 Class Hours
This course provides a thorough overview of the Windows operating system environment. Emphasis is placed on the graphical user interface and the terminology within the Windows multi-tasking environment. Topics include usage of the Desktop, file management, settings, printing and managing hardware. The course also includes the use of DOS through the Windows environment, memory management, Network Neighborhood, troubleshooting and other tools to customize Windows. One computer per student is assigned for the course. Prerequisites: Basic Keyboarding Skills and IT 1001

IT 2404 Windows Database Application-Access 4 Credits, 4 Class Hours
This course explores how the key concepts, features and commands of the leading Windows-based relational database program Access, are utilized to solve almost any business problem. The goal is to become familiar with database design and implementation in a windows environment with emphasis on data maintenance, queries, form design, reporting and macro writing. The goal is accomplished by using practical examples that are typical of those that everyday users of Access will encounter. One computer per student is assigned for the course. Prerequisite: IT 2401

IT 2411 Windows Visual Basic II 4 Credits, 4 Class Hours
This course is intended for students with a basic working knowledge of the Microsoft Visual Basic Programming system and experience developing windows-based applications. In this course students learn the concepts needed to write sophisticated event-driven applications with full error trapping and context-sensitive help for Microsoft Windows. One computer per student is assigned for the course. Prerequisite: IT 1411

IT 2412 Windows Visual Basic III 4 Credits, 4 Class Hours
This course presents an overview of designing Visual Basic database applications for both server-based and single user databases using Visual Basic, the Professional Edition. Topics included are client/server elements, data formats (ODBC, MBD and ISAM), access objects, and various local and remote access APIs. This course is intended for students with a good foundation in Visual Basic programming and experience in developing Windows applications. One computer per student is assigned for the course. Prerequisite: IT 2411
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Hours</th>
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<tr>
<td>IT 2605</td>
<td>Windows Applications</td>
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<tr>
<td>IT 2610</td>
<td>Help Desk Concepts</td>
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<tr>
<td>IT 2701</td>
<td>JAVA Application Programming</td>
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<td>IT 2711</td>
<td>Delphi-Rapid Application Development</td>
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<td>IT 2801</td>
<td>Special Problems I</td>
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<td>IT 2802</td>
<td>Special Problems II</td>
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<td>Special Problems IV</td>
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<td>IT 2805</td>
<td>Information Center Management</td>
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<td>IT 2806</td>
<td>Advanced Database Techniques</td>
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<td>IT 2905</td>
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<td>IT 2907</td>
<td>Windows Multimedia-- Toolbook</td>
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<td>Introduction to Powerbuilder</td>
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<tr>
<td>IT 9013</td>
<td>Cooperative Education Work Experience I</td>
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In this introduction to Windows applications, emphasis is placed on the various applications available within the Windows environment. Topics include the use of a word processing package, a spreadsheet package, a communications package, and an object-oriented package which gives direct access to the Graphics Device Interface. With the use of the object-oriented package, emphasis is placed on the features of multimedia applications. One computer per student is assigned for the course. **Prerequisites: IT 1001 and IT 2401**

This course provides a survey for computer programmers and systems analysts using rapid application development. Event-driven, visual, and structured programming concepts will be presented. Course emphasis will be on the total visual development process through problem analysis, design, coding, testing, debugging and maintenance. Programming projects will involve common business problems that require data entry, display of calculated results, reports, query, conditional testing, arithmetic operations, control breaks, array management, data masking, lookup processing, data organizations, file I/O and Web development. Programs will be implemented using Borland’s Delphi for Windows and the underlying Pascal language. One computer per student is assigned for the course. **Prerequisites: IT 1101 or IT 1131 or IT 1411**

This comprehensive course explores the elements of sound and visual images that comprise multimedia productions within the Windows environment. Emphasis is placed on multimedia programming techniques using objects, the OpenScript programming language and MCI command strings. Prominent authoring systems within the Windows environment are utilized. One computer per student is assigned for the course. **Prerequisites: IT 1004 and IT 2501**

This course explores how the fourth-generation language FOCUS is used to implement and manage a large variety of programming applications. The goal is to clarify for the novice FOCUS user the basic techniques which are available in FOCUS for report writing, file maintenance, and developing entire database applications. The approach is from the point of view of both the programmer and the end user. One computer per student is assigned for the course. **Prerequisites: IT 1004 and IT 2501**

This comprehensive course explores the elements of sound and visual images that comprise multimedia productions within the Windows environment. Emphasis is placed on multimedia programming techniques using objects, the OpenScript programming language and MCI command strings. Prominent authoring systems within the Windows environment are utilized. One computer per student is assigned for the course. **Prerequisites: IT 1004 and IT 2501**

This course allows coverage of material not contained in other courses, either on an independent study basis or in a classroom situation. **Prerequisite: Division chairperson approval**
## Landscape and Turfgrass Management

### HL 1100 Horticulture Plant Science
3 Credits, 3 Class Hours  
This course provides the basic plant information needed for those persons working in the landscape industry. Topics covered are elementary plant physiology, plant soils and nutrition, and propagation techniques.

### HL 1110 Soil and Water
3 Credits, 2 Class Hours; 2 Laboratory Hours  
This course covers the physical and chemical properties of soils, including soil texture, structure, density, soil water and drainage, cation exchange capacity, pH and soil surveys.

### HL 1120 Landscape Maintenance
3 Credits, 3 Class Hours  
This course includes landscape maintenance techniques such as seasonal scheduling, materials, equipment and labor estimation and budgeting. The course will review some basic plant nutrition and soil science (i.e., pH, soil types, water, soil tests). Students will learn how to calculate landscape square footages, and hard-good coverage requirements such as mulch, lime, weeding, mowing, edging, pruning, line trim, leaf removal, spade edging, seasonal color change, chemical applications, fertilization, irrigation, aeration, ice and snow removal, interiors, and scheduling and estimating these services. The course will also cover small engine and equipment maintenance and proper equipment selection.

### HL 1123 Landscape Techniques I
3 Credits, 2 Class Hours, 2 Laboratory Hours  
This course offers the student hands-on experience and lecture on the proper landscaping techniques for the Mid-South. Topics covered in this course will be: bed preparation, planting, pruning, mowing, edging, leaf removal, mulching, hand watering, fertilizing and composting.

### HL 1125 Irrigation Techniques I
3 Credits, 3 Class Hours  
This course introduces the basic elements, principles, and techniques currently used in landscape irrigation installation and service. Students study basic hydraulics and its practical application to all types of underground sprinklers, pipes, and valves. Automatic controls, backflow protection, and system troubleshooting are also covered during lectures and field trips. The material covered in this class addresses broad technical aspects of automatic irrigation and its use in commercial and residential landscapes.

### HL 1126 Irrigation Techniques II
3 Credits, 3 Class Hours  
This course is designed for students who have experience in irrigation and want to further their knowledge of the industry. Students will learn to design, build, install, maintain, trouble-shoot, and correct problems in existing irrigation systems. In addition, students will expand their knowledge of irrigation principals, design, and hydraulics of irrigation systems. **Prerequisite:** HL 1125

### HL 1128 Small Engines
3 Credits, 2 Class Hours; 2 Laboratory Hours  
This course is designed to familiarize the student with the internal combustion engine and the proper operation and maintenance as it relates to landscaping equipment. Student will purchase their own tools.

### HL 1130 Turfgrass Management I
3 Credits, 3 Class Hours  
This course covers turfgrass selection, identification, and establishment procedures for persons working in the golf course or lawn care industry as well as the do-it-yourself homeowner. Cultural practices to be discussed include basic fertilization programs, irrigation practices, mowing, thatch control, identification and control of pests (weeds, insects, and diseases), and the calibration of equipment used for seeding, fertilization and weed control.

### HL 1131 Turfgrass Management II
3 Credits, 2 Class Hours, 2 Laboratory Hours  
This course is designed for the person interested in specialized turfgrass management in the south. Detailed information on physiology, growth and development and different species and varieties of turfgrass will be presented. Students will develop complete programs for fertilization, weed and disease control, cultural practices, and establishment and renovation of all types of turfgrass areas including golf courses, athletic fields, lawns, and other recreational turfgrass areas. **Prerequisite:** HL 1130 or advisor approval
HL 1135 Horticultural Pest Management
3 Credits, 3 Class Hours
Through physical example and lecture, the student is familiarized with the most common insects, diseases, and weeds of this region. An overview of their management by the use of application and integrated biological techniques is presented. The student becomes familiar with laws, calibration, application equipment, soil science, pH, and fertilization. In addition, this course helps prepare the student for the EPA Core Examination under the categories of Ornamentals and Turf, Aquatics, Right of Way and Interiors. It is also good preparation for state licensing. Prerequisite: HL 1100 or advisor approval

HL 1137 Chemical Applications
3 Credits, 2 Class Hours, 2 Laboratory Hours
This course is designed to prepare the student for selecting the proper pesticide and using it correctly in turf and various horticultural settings. Proper calibration and operation of equipment and safety procedures for handling, storing, using, and disposing of hazardous chemicals will be covered. Prerequisite: HL 1135

HL 1145 Herbaceous Plants
3 Credits, 3 Class Hours
This course is a continuation of Plant Identification II and covers the identification, botanical names, cultural requirements and landscape/garden site uses of approximately 120 herbaceous plants. Plants are taught from slides, textbook, line drawings and fresh cut specimens when available. Some local field trips may be required. Prerequisite: HL 1152 or advisor approval

HL 1151 Plant Identification I
3 Credits, 2 Class Hours, 2 Laboratory Hours
This course covers the identification, botanical names, cultural requirements and landscape/garden site uses of approximately 80 woody ornamental plants. It also covers basic plant morphology as it relates to woody ornamentals. Plant identification is taught from slides, textbook, line drawings, and fresh cut specimens when available. Some local field trips may be required.

HL 1152 Plant Identification II
3 Credits, 2 Class Hours, 2 Laboratory Hours
This course covers the identification, botanical names, cultural requirements and landscape/garden site uses of approximately 80 herbaceous ornamental plants. The course also covers basic plant morphology as it relates to herbaceous plants. Plants are taught from slides, textbook, line drawings, and fresh cut specimens when available. Some local field trips may be required.

HL 1155 Woody Ornamentals
3 Credits, 3 Class Hours
This course is a continuation of Plant Identification I and covers the identification, botanical names, cultural requirements and landscape/garden site uses of approximately 120 woody ornamentals. Plant identification is taught from slides, textbook, line drawings, and fresh cut specimens when available. Some local field trips may be required. Prerequisite: HL 1151 or advisor approval

HL 1157 Arboriculture
3 Credits, 3 Class Hours
This course is for students who wish to enhance their knowledge of tree identification, function, evaluation and maintenance. The course also provides preparatory information and/or review for students interested in gaining the Certified Arborist designation through the International Society of Arboriculture’s certification program. Some topics to be covered are tree biology, soil properties, water management, nutrition and fertilization, tree selection, pruning, disease and problem diagnosis.

HL 1160 Landscape Design I
3 Credits, 3 Class Hours
This course covers landscape design principles, steps involved in the landscape design process, the use of drafting and drawing tools to design a landscape design and a brief historical review of landscape design from different geographic regions and periods. Students will need to purchase their own portable drawing boards, drawing supplies, and any required textbook.

HL 1165 Landscape Design II
3 Credits, 3 Class Hours
This course is a continuation of Landscape Design I. Emphasis is placed on the design process and multiple design problems. An introduction to grading/drainage and further work on the more technical aspects of site scale design and drawing production are included. In addition to the supplies used in Landscape Design I, students will need to purchase a few additional supplies. Prerequisite: HL 1160 or advisor approval

HL 1170 Landscape Business Management
3 Credits, 3 Class Hours
This course deals with the specific management concerns for the landscape business including accounting, records management, budgeting, estimating, job tracking, marketing, employment practices, business practices and applicable regulations.

HL 1175 Golf Course Operation and Maintenance
3 Credits, 2 Class Hours, 2 Laboratory Hours
This course is designed to present the management of golf and sports turf maintenance operations as it relates to the superintendent’s duties. Students will learn to groom turf, schedule work, manage equipment, keep records and budgets, manage irrigation systems, and practice proper cultural practices. Prerequisite: HL 1130

HL 1180 Landscape Construction and Building Design
3 Credits
This course will cover landscape construction and installation, grading, bed preparation, tie walls and planting around decks, fences and stone work for residential and commercial projects. In addition, site problems caused by construction debris will be addressed.

HL 9011 Cooperative Education Work Experience
1 Credit, 1 Laboratory Hour or 75 work hours
This course is designed to prepare the student to work in the green industry by gaining experience in a supervised environment. Students will be evaluated on pre-selected criteria during consultation with advisor. Prerequisite: Completion of 75% of the courses in the program.

HL 9021 Cooperative Education Work Experience
1 Credit, 1 Laboratory Hour or 75 work hours
This course is designed to prepare the student to work in the green industry by gaining experience in a supervised environment. Students will be evaluated on pre-selected criteria during consultation with advisor. Prerequisite: Completion of 75% of the courses in the program.

Languages
FREN 1010/FR 1001 Elementary French I
3 Credits, 3 Class Hours
Elementary French I introduce students to the basic elements of the French language, including practice in speaking, listening, reading, and
writing. Students learn to carry on simple conversations in the present, past, and simple future tenses.

**FREN 1020/FR 1002 Elementary French II** 3 Credits, 3 Class Hours
This course continues the basic study of French, include practice in speaking, listening, reading, and writing. Students read and write basic everyday French and carry on conversations on everyday subjects.

**FREN 2010 Intermediate French I** 3 Credits, 3 Class Hours
This intermediate-level language course includes practicing oral skills, building vocabulary, and reading French literature with relative ease. **Prerequisite:** FREN 1020 Beginning French II.

**FREN 2020 Intermediate French II** 3 Credits, 3 Class Hours
This course is a continuation of Intermediate French I. It focuses is with a focus on developing more in-depth language use. **Prerequisite:** FREN 2010 Intermediate French I.

**SPAN 1010/SP 1010 Elementary Spanish I** 3 Credits, 3 Class Hours
This course introduces the student to basic Spanish-language skills in reading, writing, listening, and speaking. Parts of speech and conjugation of present and past tenses are included. Students also study the culture of both Spain and Hispanic American countries. **Prerequisite:** DE 0084 and DR 0084/READ0800 or equivalent

**SPAN 1020/SP 1020 Elementary Spanish II** 3 Credits, 3 Class Hours
Reading, writing, listening, and speaking skills in Spanish are further developed in this course. The cultures of Spain and Hispanic American countries are strongly stressed. **Prerequisite:** SPAN 1010/SP 1010 or equivalent

**SPAN 2010/SP 2010 Intermediate Spanish I** 3 Credits, 3 Class Hours
This course continues to develop Spanish-language competency levels in reading, writing, listening, and speaking. Through reading and lectures students develop a greater knowledge of the history and cultures of Spain and Hispanic American countries. **Prerequisites:** SPAN 1010/SP 1020 or equivalent

**SPAN 2020/SP 2020 Intermediate Spanish II** 3 Credits, 3 Class Hours
This course continues to develop Spanish-language competency. It engages students in using languages as a whole, regardless of the particular skill involved, so that students read, write, speak, and hear Spanish more often than they work on specific vocabulary or grammatical items. Emphasis is also given to cultural studies of Spain and Hispanic American countries. **Prerequisite:** SPAN 2010/SP 2010 or equivalent

**SP 1014 Spanish for Special Purposes** 3 Credits, 3 Class Hours
This course is an elementary conversational Spanish course designed for people who need to communicate with Spanish speakers. Each individual section of the course is customized to meet the needs of a particular audience (health-care workers, law enforcement personnel, landscapers, bankers). This course does not transfer.

**SP 1090 Review of Spanish Grammar** 1 Credit, 1 Class Hour
This review of the basic elements of Spanish grammar is designed for students who have not had recent Spanish-language studies. The uses of nouns, adjectives, and articles are included as are the present, imperfect, preterite, conditional, and future verb tenses in the indicative. Formation and uses of the present subjunctive are the final component. **Prerequisite:** two semesters of college Spanish or Two years of high school Spanish

**SP 2030 Business Writing in Spanish** 3 Credit, 3 Class Hours
This intermediate-level course is designed to introduce students to the vocabulary, document format, and cultural elements relating to business correspondence and communication. Though writing skills are emphasized, reading and speaking are also crucial components. This course may be used as a general elective. **Prerequisite:** EN 1005 or equivalent; SP 2030 or equivalent

**SP 2050 Introduction to Hispanic American Literature** 1 Credit, 1 Class Hours
Conducted in English, this course gives students an opportunity to read, discuss, and write about literature, both fiction and non-fiction, produced by Hispanic writers in the U.S. from the 16th century to the present. **Prerequisite:** EN 1005 or instructor's permission

**SP 2051 Introduction to Hispanic American Literature II** 1 Credit, 1 Class Hours
Conducted in English, this course gives students an opportunity to read, discuss, and write about literature, both fiction and non-fiction, produced by Hispanic writers in the U.S. in the twentieth century. **Prerequisite:** EN 1005 or instructor's permission

**Library Use/ Information**

**LIBR 1010 Library Research Skills** 1 Credits
This course is a study of the library's arrangement, services, catalogs, periodical indexes, reference books, and the general print and audiovisuals collection.

**Mathematics**

**MATH 1420/MA 1012 College Algebra** 3 Credits, 3 Class Hours
This course explores the real number system, relations and functions, graphing techniques, linear and quadratic systems of equations and inequalities, matrices and determinants, conic sections, polynomial functions and theory of equations, exponential and logarithmic functions. **Prerequisite:** MATH 0810 or DM 0085 (Intermediate Algebra) or demonstrated proficiency on the placement examination OR the mathematics component of the ACT.
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<tr>
<th>Course Code</th>
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<th>Credits</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>MATH 1610/MA 1001 Concepts of Numbers</td>
<td>3 Credits, 3 Class Hours</td>
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</tbody>
</table>
| This course is an introduction to set theory, logic, numeration systems, algorithms, and the real number system. 
Prerequisite: MATH 0810 or DM 0085 (Intermediate Algebra) OR demonstrated proficiency on the placement examination OR the mathematics component of the ACT. |
| MATH 1620/MA 1002 Concepts of Algebra | 3 Credits, 3 Class Hours |  |
| This course is a study of equations, relations and functions, matrices, coordinate geometry, probability, and statistics. 
Prerequisite: MATH 1610 or MA 1001 |
| MATH 1720/MA 2112 Elementary Calculus | 4 Credits, 4 Class Hours |  |
| This course is an introduction to concepts and methods of elementary calculus of one real variable as related to rational, exponential and logarithmic functions; nature of derivatives; differentiation; applications of derivatives, nature of integration; definite integral; applications of the definite integral. 
Prerequisite: MATH 1420 or MA 1012 OR permission of the department chair. Elementary Calculus OR Calculus and Analytic Geometry I may be used to satisfy degree requirements. |
| MATH 2010 Analytic Geometry and Calculus I | 4 Credits, 4 Class Hours |  |
| This course is a study of tangents, limits and continuity, differentiation and its applications, anti differentiation, and the definite integral. 
Prerequisite: Two years of high school algebra, geometry and trigonometry, plus satisfactory placement test scores, or Math 1420 and 1460. 
(Satisfactory placement scores would include 25 on the Math portion of the ACT.) |
| MATH 2020 Analytic Geometry and Calculus II | 4 Credits, 4 Class Hours |  |
| This course is a study of the definite integral and its applications, exponential and logarithmic functions, transcendental functions, techniques of integration, infinite series. 
Prerequisite: Math 2010. |
| MATH 2030 Analytic Geometry and Calculus III | 4 Credits, 4 Class Hours |  |
| This course is a study of Taylor and Maclaurin series, conic sections, vectors in two and three dimensions, partial differentiation, multiple integration, and selected topics in vector calculus. 
Prerequisite: Math 2020. |
| MATH 2210 Statistics | 3 Credits, 3 Class Hours |  |
| This course is a study of basic statistical concepts including data organization and analysis, probability theory ND distributions, sampling, estimation, and hypothesis testing. 
Prerequisite: MATH 0810/DM0085 Intermediate Algebra or demonstrated proficiency on the placement examination or on the mathematics component of the ACT. |
| MATH 2620 Differential Equations | 3 Credits, 3 Class Hours |  |
| This course studies ordinary differential equations, including first order equations, second-order linear equations, higher order linear equations, models and applications, series solutions, la place transforms. 
Prerequisite: MATH 2020. |
| MA 1131 Algebra and Trigonometry I | 3 Credits, 3 Class Hours |  |
| A thorough study of algebra is made in this course. The course encompasses quadratic equations, linear equations, functions, graphs of functions, trigonometry of the right triangle, radian measure, trigonometric functions of any angle, vectors, trigonometry of oblique triangles, the Law of Sines, the Law of Cosines, graphs of trigonometric functions, systems of equations. 
Prerequisites: Three years of high school mathematics (algebra or above) and appropriate score on ACT or COMPASS test; or completion of DM 0085/MATH0810 |
| MA 1141 Algebra and Trigonometry II | 3 Credits, 3 Class Hours |  |
| A continuation of Algebra and Trigonometry I, this course encompasses the trigonometric form of complex numbers, powers and roots of complex numbers exponential and logarithmic functions, inequalities, variation, sequences and series, trigonometric identities, trigonometric equations, inverse trigonometric functions, conic sections, and polar coordinates. 
Prerequisite: MA 1131 |
| MA 2012 Statistics | 3 Credits, 3 Class Hours |  |
| The student is acquainted with the theory of statistics. Topics covered include frequency distributions, measures of central tendency and dispersion, sampling methods, probability distributions, hypothesis testing, estimation, regression and correlation analysis. 
Prerequisite: MA 1012 or MA 1002 or MA 1131 |
| MA 2113 Calculus | 4 Credits, 4 Class Hours |  |
| This course encompasses limits, the derivative, methods to differentiate polynomials, products, quotients, and powers of functions, implicit differentiation and applications of differentiation. Elementary integration is introduced. Differentiation and integration of the trigonometric functions are covered. 
Prerequisite: MA 1141 |
| MA 2114 Integral Calculus | 4 Credits, 4 Class Hours |  |
| A continuation of MA 2113, Calculus, this course includes applications of the definite integral, differentiation and integration of transcendental functions, techniques of integration, and polar coordinates. 
Prerequisite: MA 2113 or equivalent |

**Mechanical Engineering Technology**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ME 1134 Engineering Materials</td>
<td>4 Credits, 3 Class Hours, 2 Laboratory Hours</td>
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</tbody>
</table>
| This course includes the study of the characteristics of ferrous and nonferrous engineering materials, plastics, wood, and concrete along with their production, fabrication, and heat treating processes. 
Prerequisite: DM 0085 |
ME 1144 Machines Technology
In this course, the student is introduced to engineering technology and the study of modern production methods and practices. The introduction phase emphasizes the field of engineering technology, unit systems, conversions, the hand-held calculator, technical mathematics, safety, measuring instruments, library usage, problem solving, and laboratory exercises/reports. The machines phase emphasizes the use of production tools, machines, and equipment. Prerequisite: DM 0085

ME 1154 Statics and Dynamics
This course covers the two areas of engineering mechanics - statics and dynamics. The statics section covers resultantants, free-bodies, trusses, center of gravity, equilibrium, moment of inertia, and friction. The dynamics section covers dynamic force systems, kinematics, kinetics, work and energy, impulse, momentum, power, and friction. Prerequisites: MA 1131, PH 1119

ME 1184 Design Principles
This course is designed as a first course in engineering drafting and design. The course includes a series of educational experiences relating to the field of engineering design beginning with lines and lettering and building to the final graphical communication sent to the production line. These educational experiences include instruments and drafting techniques, lettering, geometric constructions, sketching, multiview projection, axonometric projection, oblique projection, auxiliary and normal views, section, threads and fasteners, geometric dimensioning and tolerancing (GDT), and welding symbology. Prerequisite: DM 0085

ME 1194 CAD Design I
This course is the first mechanical engineering course in computer-aided design (CAD). It consists of a series of educational experiences relating to the field of engineering graphics which include fundamental drafting principles, geometric constructions, orthographic projection, isometric projection, sectional views, and dimensioning techniques. The course presents logical and well-tested, step-by-step instruction about the AutoCAD commands, mode setting, drawing aids, shortcuts, and other valuable characteristics of AutoCAD. Prerequisite: DM 0085

ME 1294 CAD Design II
CAD Design II is a continuation of ME 1194. Its drafting topics consist of tolerancing, GDT, threads and fasteners, welding notation, assembly drawings, working drawings, auxiliary views, piping schematics, and electrical schematics. CAD topics covered include effective use of layers, colors, and linetypes as well as symbol libraries, blocks, and system variables. Lecture and laboratory go hand-in-hand as the student develops intricate technical drawings. Prerequisite: ME 1194 or approval of program coordinator

ME 1303 Technical Presentations
This course will utilize design and presentation software to create multimedia presentations for use by engineering and technical staff in industry. Software will include: 1) MS Office including Power Point, 2) Virtual Reality (VRML) converters, 3) Raster paint programs, 4) MS Front Page, 5) Digital video photography with editing software, 6) Internet video conferencing software, and 7) 2D and 3D rendered AutoCAD and Microstation vector graphics. The course will cover presentations in Power Point and on the Internet. Additional topics will cover video capture techniques and editing techniques as well as basic technical writing and graphic design. *Note: Proficiency with MS Word, MS Works, or Word Perfect is recommended as is familiarity with MS Windows. Prerequisite: IE 1004, or approval of Program Coordinator

ME 1314 Non-destructive Testing
This course examines the industry standard methods used to test material without causing damage. The student will study non-destructive testing (NDT) methods including ultrasonic, magnetic particle, radiographic, eddy current, and liquid penetrant. Additionally, the student will have extensive hands-on practice with ultrasonic, liquid penetrant, and magnetic particle equipment. Prerequisite: ME 1134, IE 1004 or Program Coordinator approval

ME 1324 Destructive Testing
This course studies the major methods employed by industry to test materials for specified properties. The student will gain hands-on experience with tensile testing, hardness testing, impact testing, chemical analysis, test standards, specimen preparation, metallography and weld testing. Prerequisite: ME 1134, IE 1004 or Program Coordinator approval

ME 2144 Machine Design and Special Problems
Machine Design and Special Problems is a course in which the principles of engineering technology are applied to the design of machines and mechanical systems. Calculations determining the size and shape of machine elements and the selection of materials are emphasized. In the laboratory portion of this course, the student utilizes the knowledge gained in this and previous courses to design, fabricate, analyze and report formally on a project selected by the student and approved by the instructor. Prerequisite: CI 2204, ME 1294, IE 1004 or approval of program coordinator

ME 2154 Fluid Systems
The major divisions of this course include characteristics of noncompressible fluids; pressure, head, and force; buoyancy and displacement; flow rate, velocity, and power; Bernoulli’s equation and energy relationships; orifices, nozzles, and other flow devices; series and parallel pipe systems; flow in non-circular cross sections; open channel flow; flow measurement; pump selection; and forces due to fluid in motion. Prerequisites: MA 1141, PH 1119 or approval of program coordinator

ME 2163 Electro-Mechanical Devices
This course includes electrical and electronic nomenclature and symbols; the use of the VOM, VTVM, and oscilloscope; direct and alternating current; transformers and regulators; motors and generators; electrical circuits; and techniques of electrical component selection. Prerequisites: MA 1141, PH 1129 or approval of program coordinator

ME 2173 Air Conditioning
This is a course wherein air conditioning is used to introduce the student to the principles of thermodynamics and heat transfer. Topics covered include basic thermodynamic principles, heat and the change of state, heat transfer, psychometry, human comfort factors, load and load calculations, equipment selection, mechanical refrigeration, heat pumps, fluid flow, evaporative systems, air distribution, and control systems. Prerequisites: MA 1141, PH 1119 or approval of program coordinator

ME 2184 3D Model I
The purpose of this course is to provide students with an understanding of the features, limitations, and considerations associated with the operation of a computer-aided design/drafting (CAD) 3D system. Emphasis is placed on the operation of the CAD, 3D software, since this is
Interpersonal skills for phlebotomists are discussed, including basic concepts of communication, stress management, professional behavior, legal anatomy and physiology.

This course is a study of clinical hematology with emphasis on the complete blood count and peripheral blood differential and the basic anatomy and physiology relative to hematopoiesis and cellular metabolism, and a study of the physiochemical and chemical properties of urine and the microscopic examination of urinary sediment. 

Prerequisite: Admission to MLT or permission of instructor.
MLT 2320 Medical Microbiology
7 Credits, 7.5 Lecture Hours, 10 Lab Hours
The student studies microorganisms of medical importance to man and the body's immunological response to infectious agents, including
anatomy and physiology relative to cellular and humoral immunity, principles of the immune response, structure and function of antigens and
antibodies, antigen/antibody reactions, serological methods, proper collection, handling and examination of specimens, culture techniques,
identification methods, drug sensitivity testing, and quality control procedures.
Prerequisite: BIOL 2410, MLT 1110, and admission to MLT program or permission of instructor.

MLT 2510 Immunohematology
3 Credits, 6 Lecture Hours, 10 Lab Hours
The student studies blood banking with emphasis on human blood group antigens and antibodies, including principles of donor requirements and
phlebotomy, blood component preparation and use, blood storage, blood compatibility, genetics, problem solving techniques, quality control, and
anatomy and physiology relative to transfusion therapy.
Prerequisite admission to MLT program or permission of instructor.

MLT 2710 Clinical Seminar
2 Credits, 2 Lecture Hours
This course is an analysis of organizational management, structure and current issues in the clinical laboratory, a review of medical laboratory
principles and procedures and a comprehensive examination and presentation of topics by students and healthcare practitioners.
Prerequisites: MLT 1110, MLT 1500, MLT 2100, MLT 2120, MLT 2320, MLT 2510, or permission of the instructor.

MLT 2810 Clinical Assignment I
4 Credits, 4 Lab Hours
Selected clinical experiences at the extended medical campuses which provide students with an opportunity to develop competencies in hematol-
y, immunology, microbiology, immunohematology, urinalysis, and medical biochemistry under the supervision of medical technologists.
Prerequisites: MLT 1110, MLT 1500, MLT 2100, MLT 2120, MLT 2320, MLT 2510, or permission of the instructor.

MLT 2820 Clinical Assignments II
10 Credits, 10 Lab Hours
Continuation of Clinical Assignment I. Prerequisite: MLT 2810 or permission of instructor.

Medical Terminology

AHS 1020/CR 1003 Medical Terminology
3 Credits, 3 Class Hours
Medical terminology is the study of words that relate to body systems, anatomical structures, medical processes and procedures, drugs and a
variety of diseases that afflict humans. Prefixes, suffixes, abbreviations, plural endings, word roots, and combined forms are covered. Terms are
presented that relate to all areas of medical science, hospital service and paramedical facilities.

Merchandising

MRCH 1470 Visual Merchandising and Store Promotion
3 Credits, 3 Lecture Hours, 3 Lab Hours
This course surveys store promotions including visual, advertising, publicity, and special events with application through simulation activities.

MRCH 1700 Retail Merchandising
3 Credits, 3 Lecture Hours
This course introduces enterprises, activities, operations and practices in the fashion industry with emphasis on merchandising terminology and
techniques.

MRCH 2700 Merchandise Planning and Control
3 Credit, 3 Lecture Hours
This is an investigation of retail store organization with emphasis on the merchandising division. Topics include dollar merchandise planning,
assortment planning unit control, inventory control, and merchandise selection.

MRCH 2720 Applied Merchandising Techniques
3 Credits, 3 Lecture Hours
This course applies merchandising practices, procedures, techniques, and activities. Emphasis is on skills development and simulated experiences.

Military Science (Army ROTC)

MS 1100 Leadership Laboratory (Fall)
1 Credit
Two laboratory hours per week.

MS 1101 Introduction to Military Science (Fall)
1 Credit
Introduction to Army ROTC with hands-on approach through several basic military skills. Lectures and practical exercises in military rapelling and
mountaineering, fundamentals in weapons training and an overview of the role of the United States Army. There is no military obligation.
Corequisite: MS 1100

MS 1111 Principles of Leadership and Confidence Building (Spring)
2 Credits
This course begins the leader development process by providing the skills, knowledge and attitudes necessary for the student to exhibit the leadership
characteristics and traits. Students study orienteering and the fundamentals of survival training. There is no military obligation. Corequisite: MS
1115

MS 1115 Leadership Laboratory (Spring)
1 Credit
Two laboratory hours per week.

MS 2200 Leadership Laboratory (Fall)
1 Credit
Two laboratory hours per week.
<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>MS 2201</td>
<td>American Military History (Fall)</td>
<td>3</td>
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<tr>
<td>MS 2211</td>
<td>Fundamental Survival Skills (Spring)</td>
<td>1</td>
<td></td>
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<tr>
<td>MS 2215</td>
<td>Leadership Laboratory (Spring)</td>
<td>1</td>
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<tr>
<td>MS 2221</td>
<td>Small Unit Tactics I (Fall)</td>
<td>2</td>
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<tr>
<td>MS 2231</td>
<td>Small Unit Tactics II (Spring)</td>
<td>2</td>
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<tr>
<td>MS 2250</td>
<td>Basic Camp Practicum (Summer)</td>
<td>1-6</td>
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<tr>
<td>MUSC 1070</td>
<td>Music Appreciation</td>
<td>3</td>
<td>3 Class Hours</td>
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<tr>
<td>MUSC 1050</td>
<td>Fundamentals of Music</td>
<td>3</td>
<td>3 Class Hours</td>
</tr>
<tr>
<td>MUSC 1080</td>
<td>Introduction to Music History</td>
<td>3</td>
<td>3 Class Hours</td>
</tr>
<tr>
<td>MUSC 1150</td>
<td>Basic Music Theory I</td>
<td>4</td>
<td>3 Class Hours, 2 Lab Hours</td>
</tr>
<tr>
<td>MUSC 1160</td>
<td>Basic Music Theory II</td>
<td>4</td>
<td>3 Class Hours, 2 Lab Hours</td>
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<tr>
<td>MUSC 1200</td>
<td>Music and Worship</td>
<td>2</td>
<td>2 Class Hours</td>
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<tr>
<td>MUSC 1220</td>
<td>Basic Choral Conducting</td>
<td>2</td>
<td>2 Class Hours</td>
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<tr>
<td>MUSC 1230</td>
<td>Hymnology</td>
<td>2</td>
<td>2 Class Hours</td>
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<tr>
<td>MUSC 1250</td>
<td>Concert Choir</td>
<td>2</td>
<td>2 Studio Hours</td>
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<tr>
<td>MUSC 1350</td>
<td>Jazz Ensemble</td>
<td>2</td>
<td>3 Studio Hours</td>
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<tr>
<td>MUSC 1380</td>
<td>Class Percussion</td>
<td>2</td>
<td>2 Lab Hours</td>
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<tr>
<td>MUSC 1450</td>
<td>STCC Singers</td>
<td>2</td>
<td>3 Studio Hours</td>
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Developments since colonial period; emphasis on background and growth of national military and naval establishments, military and naval thought, difficulties accompanying modernization and assumption of global responsibilities and problem of relationship between civilian and military-naval sectors in democracy. There is no military obligation. Corequisite: MS 2200

A continuation of the leader development process with an emphasis on military first aid and survival planning. There is no military obligation.

Corequisite: MS 2215

Two laboratory hours per week.

This course emphasizes preparation of the individual for combat. It includes preparation of potential leaders in combat through study of the knowledge and skills needed by an individual soldier. Skills are developed in planning and organizing by combat patrols. The course includes a series of field practicums. There is no military obligation.

Advanced concepts in reconnaissance, raid and ambush patrolling techniques, extended patrolling operations and application techniques for specialized equipment. Leadership skills through student-led patrols. Includes series of field practicums. Expands material taught in MS 2221 but may be taken independently of 2221. There is no military obligation.

Six weeks training normally taken during the summer between the second and third years by those students who have not taken previous ROTC training, or who have not completed the required basic military science courses for advanced course enrollment. Training is conducted at a designated U.S. Army installation and includes practical experience in leadership, small unit tactics, weapons drill and communications under field conditions. Student must register for this course following successful camp completion to receive academic credit. Students receive approximately $670 pay, room and board and travel expenses. There is no military obligation. Prerequisite: Permission of the Professor of Military Science

Music Appreciation is designed to increase the student’s enjoyment and understanding of music. This course assists the student in listening to, recognizing and synthesizing elements that can apply to any musical work. The student discovers contemporary music of America as well as music of other periods and cultures. This course fulfills the Fine Arts/Humanities requirement for the General Education core.

This course is an introduction to basic music structural elements including notation, rhythm, scales intervals, triads, and acoustics, writing, sight-singing, ear-training, and keyboarding skills are developed.

This course presents a broad base survey of music history. Studies include a review of fundamentals and a study of European and American music history.

This course is a continuation of written and aural skills acquired in Fundamentals of Music. Emphasis is on utilizing these skills in writing music with a focus on developing working knowledge of musical notation, grammar, and vocabulary.

This course is a continuation of Basic Music Theory I. with an emphasis on the harmonic aspects of music. An introduction to harmonic and analysis and part writing along with continued work on more complex aspects of melody and rhythm is included. Prerequisite: MUSC 1150 Basic Music Theory I.

This course provides an understanding of the use of music in all phases of church life.

This course is an introduction to choral techniques including basic musicianship, reading a score, gesture, voice training, and style.

This course is a study of the origin, development, and perpetuation of hymns and tunes.

This course contains instruction in singing difficult music from all musical periods and styles. Audition required. Required course for all vocal music majors.

This course involves the performance of jazz, rock, and contemporary idioms. Enrollment by audition.

This course involves instruction and daily practice the percussion fundamentals. This class is open to all students.

This course requires performance of gospel, spirituals and pop-jazz vocal music by a select choral ensemble of 15-25 singers. The group performs with rhythm section from the jazz ensemble.
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<tr>
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<th>Course Name</th>
<th>Credits, Hours</th>
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<tbody>
<tr>
<td>MUSC 1600</td>
<td>Class Piano</td>
<td>2 Credits, 2 Studio Hours</td>
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<tr>
<td>MUSC 1700</td>
<td>Class Voice</td>
<td>2 Credits, 2 Class Hours</td>
</tr>
<tr>
<td>MUSC 1800</td>
<td>Class Guitar</td>
<td>2 Credits, 2 Class Hours</td>
</tr>
<tr>
<td>MUSC 2110</td>
<td>Arranging and Writing Music</td>
<td>2 Credits, 2 Class Hours</td>
</tr>
<tr>
<td>MUSC 2120</td>
<td>Intermediate Music Theory I</td>
<td>4 Credits, 3 Class Hours, 2 Lab Hours</td>
</tr>
<tr>
<td>MUSC 2130</td>
<td>Intermediate Music Theory II</td>
<td>4 Credits, 1.3 Class Hours, 2 Lab Hours</td>
</tr>
<tr>
<td>MUSC 2990</td>
<td>Music Seminar</td>
<td>1-3 Credits, 1-3 Class Hours</td>
</tr>
<tr>
<td>NURS 1110</td>
<td>Adult Health Nursing I</td>
<td>7 Credits, 4 Lecture, 9 Clinical Hours</td>
</tr>
<tr>
<td>NURS 1000</td>
<td>Introduction to Nursing</td>
<td>3 Credits, 3 Lecture Hours</td>
</tr>
<tr>
<td>NURS 1910</td>
<td>Professional Nursing Transition</td>
<td>3 Credits, 3 Lecture Hours</td>
</tr>
</tbody>
</table>

### Nursing

The courses listed below may be taken only by students enrolled in the 1999-2000 nursing program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>NURS 1110</td>
<td>Adult Health Nursing I</td>
</tr>
<tr>
<td>NURS 1000</td>
<td>Introduction to Nursing</td>
</tr>
<tr>
<td>NURS 1910</td>
<td>Professional Nursing Transition</td>
</tr>
</tbody>
</table>
NURS 2010 Nursing of Children 5 Credits, 3 Lecture Hours, 12 Clinical Hours
Focus is on the adaptation of the child through developmental changes from infancy to adolescence with emphasis on using the nursing process in caring for the sick child and the family including a comparative study of the healthy child through theoretical concepts and observational experiences in a community agency setting. Prerequisites: (1) NURS 1110 Adult Health Nursing I, (2) A&P I & II, (3) College level mathematics. (This is a half-semester course.)

NURS 2130 Adult Health Nursing II 5 Credits, 3 Lecture Hours, 12 Clinical Hours
This course is a continuation of developing knowledge of health, adaptation, and the nursing process and includes incorporating physiological and psychosocial data in delivering individualized nursing care to clients, developing skills in utilizing principles of therapeutic communication and teaching learning for client’s specific development stage. Prerequisites: (1) NURS 1110 Adult Health Nursing I, (2) A&P I & II, (3) College level mathematics. (This is a half-semester course.)

NURS 2240 Nursing of the Childbearing Family 5 Credits, 3 Lecture Hours, 12 Clinical Hours for 1/2 semester
This course includes a study of the pregnant client and her family throughout the pregnancy. Theoretical and clinical experiences are designed to focus on the stages of developmental growth and the adaptive processes utilized to strive for a healthy equilibrium. A major focus will be on the introduction to normal maternal and neonatal health concepts and their deviations. Prerequisites: (1) NURS 1110 Adult Health Nursing I, (2) A&P I & II, (3) College level mathematics. (This is a half-semester course.)

NURS 2350 Mental Health Nursing 5 Credits, 3 Lecture Hours 12 Clinical Hours for 1/2 semester
The course focuses on aspects of the individual’s adaptive response to the external and internal environment along the mental health continuum. The concepts of holistic man, therapeutic use of self, self-awareness, culture and the nursing process are emphasized. Theories of personality development are presented as well as concepts of psychobiology and stress. Theoretical and clinical experiences focus on therapeutic approaches to psychiatric care and their application in the clinical and community setting with clients experiencing alterations in psychosocial adaptation. Prerequisites: A&P I & II, Adult Health Nursing I, college level mathematics. (This is a half-semester course.)

The following courses comprise the nursing curriculum.

NURS 1113 Professional Nursing Transition 3 Credits, 3 Lecture Hours
This course builds on a student's knowledge of the nursing process, health-illness continuum and man’s responses to internal/external stressors. Focus is on concepts of nursing diagnosis formulation, teaching-learning process, pharmacotherapeutics, fluid, electrolyte and acid-base balance, and the inflammatory process. Prerequisites: LPN licensure, Anatomy and Physiology I and II, and college-level mathematics.

NURS 1114 Foundations of Nursing 4 Credits, 3 Lecture Hours
This course introduces the concepts of health, the nursing process, and man’s adaptive responses. Emphasis is placed on utilizing the nursing process and Maslow’s Hierarchy of Needs to assist clients in adapting to problems interfering with homeostasis. Prerequisites: Eligible to enroll in college-level courses. Co-requisites: Anatomy and Physiology I, College Math, NURS 1126, NURS 1136, NURS 1141.

NURS 1126 Foundations of Nursing Clinical 2 Credits
Clinical laboratory experiences are planned to correlate with classroom theory and provide learning opportunities which increase competence in the components identified as an essential framework for the Associate Degree Nursing education. These core components are (1) Professional behaviors, (2) Communication, (3) Assessment, (4) Clinical decision-making, (5) Caring interventions, (6) Teaching and learning, (7) Collaboration, and (8) Managing Care. Prerequisites: Eligible to enroll in college-level courses. Co-requisites: Anatomy and Physiology I, College Mathematics, NURS 1114, NURS 1136, and NURS 1141.

NURS 1136 Nursing Skills Laboratory 1 Credit
The clinical skills laboratory course presents nursing procedures in the nursing process format. Skills competency is a major component with 100% competency expectation in the laboratory before transferring skills to the patient population. Critical thinking skills are incorporated in various ways throughout the course to assist students in applying critical thinking to clinical situations. Co-requisites: NURS 1114, NURS 1126, NURS 1141, Anatomy and Physiology I, college mathematics.

NURS 1141 Dosages and Solutions 1 Credit
The course involves a study of the theoretical principles of drug administration and practice in the methods of drug dosage calculations. Mastery of Intravenous administration and flow rate calculations is included before encountering the skills in the clinical area. Co-requisites: NURS 1114, NURS 1126, NURS 1136, Anatomy and Physiology I, college mathematics.

NURS 1213 Adult Health Nursing I 3 Credits
Development of knowledge articulates with the concepts and clinical skills, adaptation and the nursing process including physiological, psychosocial, pathophysiological, and health teaching aspects of client care in diverse health care settings. Emphasis is placed on problem-solving and critical thinking skills in determining client’s adaptive responses to interruption of his/her health status. This is a half semester course. Prerequisites: NURS 1114, NURS 1126, NURS 1136, NURS 1141, Anatomy and Physiology I, college mathematics. Co-requisites: NURS 1226, NURS 1242, NURS 1613, NURS 1626, Anatomy and Physiology II.

NURS 1226 Adult Health Nursing I Clinical
Clinical experiences include planning and providing clinical caring interventions in client care in diverse health care settings. Emphasis is placed on developing competencies in clinical decision making, communication, assessment, teaching and learning. This is a half semester course. Prerequisites: NURS 1114, NURS 1126, NURS 1136, NURS 1141, Anatomy and Physiology I, college mathematics. Co-requisites: NURS 1213, NURS 1242, NURS 1613, NURS 1626, Anatomy and Physiology II.

NURS 1242 Pharmacology 2 Credits
This course acquaints the student with drug classifications used in treating common conditions. Content will focus on actions, uses, side effects, and nursing implications for commonly used drugs. Prerequisites: NURS 1114, NURS 1126, NURS 1136, NURS 1141, Anatomy and Physiology I, college mathematics. Co-requisites: NURS 1213, NURS 1226, NURS 1613, NURS 1626, Anatomy and Physiology II.
NURS 1613 Nursing of the Childbearing Family  
This course focuses on the study of the pregnant client and her family throughout the pregnancy. Theoretical and clinical experiences are designed to focus on the stages of developmental growth and the adaptive processes utilized to strive for a healthy equilibrium. A major focus will be on the introduction of normal maternal and neonatal health concepts and their deviations. This is a half-semester course.  
Prerequisites: NURS 1114, NURS 1126, NURS 1136, NURS 1141, Anatomy and Physiology I, college mathematics.  
Co-requisites: NURS 1213, NURS 1226, NURS 1242, NURS 1626, Anatomy and Physiology II.

NURS 1626 Nursing of the Childbearing Family Clinical  
This course involves the implementation of care for the expectant family during the antepartum, intrapartum, postpartum and newborn period. The nursing process which involves critical thinking will be utilized to give total and individualized client care. This is a half-semester course.  
Prerequisites: NURS 1114, NURS 1126, NURS 1136, NURS 1141, Anatomy and Physiology I, college mathematics.  
Co-requisites: NURS 1213, NURS 1216, NURS 1226, NURS 1613, Anatomy and Physiology II.

NURS 2313 Mental Health Nursing  
The course focuses on aspects of the individual's adaptive response to the external and internal environment along the mental health continuum. The concepts of holistic man, therapeutic use of self, self-awareness, culture and the nursing process are emphasized. Theories of personality development are presented as well as concepts of psychobiology and stress. Theoretical and clinical experiences focus on therapeutic approaches to psychiatric care and their application in the clinical and community setting with clients experiencing alterations in psychosocial adaptation. This is a half-semester course.  
Prerequisites: (1) Anatomy and Physiology I and II, (2) college-level mathematics, (3) NURS 1213, (4) NURS 1226, (5) NURS 1242, (6) NURS 1613, (7) NURS 1626/Co-requisites: (1) NURS 2326, (2) NURS 2513, (3) NURS 2526.

NURS 2326 Mental Health Nursing Clinical  
Clinical experiences focus on therapeutic caring intervention approaches to psychiatric care, and their application in clinical and community settings with clients experiencing alterations in psychosocial adaptation. This is a half-semester course.  
Prerequisites: (1) Anatomy and Physiology I and II, college math, NURS 1213, NURS 1226, NURS 1242, NURS 1613, NURS 1626.  
Co-requisites: NURS 2313, NURS 2513, NURS 2526.

NURS 2412 Nursing Management  
Discussion of problems, issues, and stressors is inherent in adaptation from student to practitioner. This course reviews management principles and explores expanded role of the nurse, including educational preparation differences of the RNs. Risk Management, ethical/political principles, and job readiness skills. This course provides the opportunity to discuss problems and stressors of changing one's role form student to practicing nurse. The concept of practicing nurse is developed by exploring the changes in educational preparation and the expanding role of the nurse in relation to trends in health care delivery. There is discussion of the health care system as it exists in today's society and the inherent stressors of this system. The use of the nursing process and communication skills in the role of a team leader are stressed. Emphasis is placed on the rights, responsibilities, legal implications, delegation and nursing management.  
Prerequisites: (1) Anatomy and Physiology I and II, (2) college math, (3) NURS 2313, (4) NURS 2313 ???, (5) NURS 2326, (6) NURS 2513, (7) NURS 2526.  
Co-requisites: (1) NURS 2414, (2) NURS 2426, (3) NURS 2436.

NURS 2414 Adult Health Nursing II  
This course is a continuation of developing knowledge of health, adaptation, and the nursing process and includes incorporating physiological and psychosocial data in delivering individualized nursing care to clients, developing skills in utilizing principles of therapeutic communication and teaching learning for client's specific development stage. This is a half-semester course.  
Prerequisites: (1) NURS 1110 Adult Health Nursing I, (2) Anatomy and Physiology I and II, (3) college level mathematics.

NURS 2426 Adult Health Nursing II Clinical  
Adult Health Nursing II clinical is designed to develop the competencies of critical thinking, collaboration, accountability and lifelong learning activities upon the entry into practice.  
Prerequisites: Anatomy and Physiology I and II, college math, NURS 2313, NURS 2326, NURS 2513, NURS 2526.  
Co-requisites: NURS 2414, NURS 2412, NURS 2436.

NURS 2436 Nursing Management Clinical  
This course complements the management theory course. The student is given the opportunity to apply principles of management in the clinical setting.  
Prerequisites: Adult Health I 1213, Nursing of Children 2513, Nursing of the Childbearing Family 1613, Mental Health Nursing 2313, Anatomy and Physiology I and II, college-level math, Nursing Courses 1100-1141.

NURS 2460 Professional Nursing Issues  
This course is a discussion of problems, issues and stressors inherent in adaptation from student to practitioner, reviews management principles and explores expanded role of the nurse, including educational preparation differences of RNs, risk management, ethical/political principles and job readiness skills. This course provides the opportunity to discuss problems and stressors of changing one's role from student to practicing nurse. The concept of practicing nurse is developed by exploring the changes in educational preparation and the expanding role of the nurse in relation to trends in health care delivery. There is discussion of the health care system as it exists in today's society and the inherent stressors of this system. The use of the nursing process and communication skills in the role of a team leader are stressed. Emphasis is placed on the rights, responsibilities and legal implications for the practice of nursing.  
Prerequisite: NURS 110 Adult Nursing I.

NURS 2513 Nursing of Children  
Focus is on the adaptation of the child through developmental changes from infancy to adolescence. Emphasis is on using the nursing process in caring for the sick child and the family including a comparative study of the healthy child through theoretical concepts and observational experiences in a community agency setting. This is a half-semester course.  
Prerequisites: (1) Anatomy and Physiology I and II, (2) college level mathematics, (3) NURS 1213, (4) NURS 1226, (5) NURS 1242, (6) NURS 1613, (7) NURS 1626.  
Co-requisites: (1) NURS 2313, (2) NURS 2326, (3) NURS 2526.

NURS 2526 Nursing of Children Clinical  
This course places emphasis on the use of the nursing process for the care of the child in the sick role and adaptive behaviors used by the family and the child in the sick role. A comparative study of the healthy child is provided through observational experiences in community agencies. Hospital clinical experiences provide the student with opportunities to apply principles of pediatric nursing.  
Prerequisites: (1) Anatomy and Physiology I and II, (2) NURS 1213 Adult Health Nursing I, (3) NURS 1226 Clinical, (4) NURS 1242 Pharma-
**Occupational Safety and Environmental Health Technology**

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<tr>
<th>Course Code</th>
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<th>Credits, Hours</th>
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<tbody>
<tr>
<td>EP 1023</td>
<td>Hazard Communication and Multimedia Reporting</td>
<td>3 Credits, 3 Class Hours</td>
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<tr>
<td>EP 2003</td>
<td>OSHA Hazardous Waste Operations</td>
<td>3 Credits, 2 Class Hours, 2 Laboratory Hours</td>
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<tr>
<td>EP 2013</td>
<td>Solid and Hazardous Waste Management</td>
<td>3 Credits, 3 Class Hours</td>
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<tr>
<td>EP 2023</td>
<td>Ergonomics</td>
<td>3 Credits, 3 Class Hours</td>
</tr>
<tr>
<td>EP 2033</td>
<td>Fire Protection and Accident Prevention</td>
<td>3 Credits, 3 Class Hours</td>
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<tr>
<td>EP 2044</td>
<td>Industrial Hygiene</td>
<td>4 Credits, 4 Class Hours</td>
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<tr>
<td>EP 2045</td>
<td>Fire Protection and Accident Prevention</td>
<td>3 Credits, 3 Class Hours</td>
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**Office Administration**

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<tbody>
<tr>
<td>OFAD 1010</td>
<td>Keyboarding I</td>
<td>3 Credits</td>
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<tr>
<td>OFAD 1020</td>
<td>Keyboarding II</td>
<td>3 Credits</td>
</tr>
<tr>
<td>OFAD 1040</td>
<td>Transcription</td>
<td>4 Credits, 4 Lecture Hours</td>
</tr>
<tr>
<td>OFAD 2000</td>
<td>Microsoft Word</td>
<td>4 Credits, 4 Class Hours</td>
</tr>
<tr>
<td>OFAD 2040</td>
<td>Word Processing Concepts and Applications II</td>
<td>4 Credits, 4 Class Hours</td>
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</tbody>
</table>
Word with other programs and the World Wide Web will also be taught. This course meets MOUS certification requirements.

**Prerequisite:** Word Processing I (OFAD 2400 or OS 2065).

**OFAD 2160/OS 2080 Office Administrative Management**
3 Credits, 3 Class Hours
This course is a study of practices and procedures of current office concepts including travel arrangements, itinerary planning, conference arrangements, etc. Also included are supervision of office personnel and labor-management relations. **Prerequisites:** Keyboarding II (OFAD 1020 or OS 1036), Word Processing I (OFAD 2400, OS 2065, or OS 1040), Principles of Accounting (ACCT 1210 or AT 1005), and Records Management (OFAD 1810, OS 2045) and Office Applications (OS 2086)

**OFAD 1030 Keyboarding III**
3 Credits, 3 Class Hours
This course is designed to further build speed and accuracy on the keyboard. Continuation of keyboarding including office correspondence and other documents. **Prerequisite:** OFAD 1020 or proven keyboarding speed of 40 wpm for 5 minutes with no more than one error per minute.

**OFAD 2450 Desktop Publishing**
3 credits, 3 Class Hours
This course is a study of publishing techniques used with microcomputers. Design techniques and desktop functions will be discussed and used. Types of desktop documents will be discussed and created. Prerequisite: OFAD 1020 Keyboarding II or minimum keyboarding speed of 40 words per minute and OFAD 2420/OS 207, Word Processing Concepts and Applications II

**OFAD 2990 Office Administration Practicum**
3 Credits, 1 Lecture Hour, 2 Lab Hours
A typical office environment will be utilized to provide students with on-the-job experience. **Prerequisites:** OFAD 2420/OS 2071 Word Processing II, OFAD 2040 or OS 2075 Transcription, MGMT 2050 Business Communication, OFAD 1810/OS 204 Records Management, OFAD 2160/OS 2080 Office Management.

**OFAD 2990 Special Topics in Office Technology**
1-3 Credits, 1-3 Class Hours
This course is an in-depth study of selected office technology topic(s) designed to reinforce basic knowledge and to further develop problem-solving skills. Departmental approval required.

**OS 1041 WordPerfect I**
3 Credits, 3 Class Hours
The application of word processing concepts and skills in entering, editing, formatting, and executing commands using the various features available in WordPerfect for Windows are emphasized in this course. The occupational production level of business letters, memorandums, reports, and tables are also emphasized. Line spacing, alignment, fonts, margins, indents, and tabs to documents to enhance their professional appearance are among the basic document formats discussed. **Prerequisite:** OS 1025 or OFAD 1010

**OS 2031 Spreadsheet I**
4 Credits, 4 Class Hours
This course is an instructor led, hands-on course in which the student uses an electronic spreadsheet to plan, create, manipulate, and print worksheets. The software used in this course is Microsoft EXCEL for Windows. Topics include EXCEL's functions, formulae, charts, data management, auditing features, and macros. Use of Goal Seek, Solver, and Scenario Manager to solve problems or to view “what-if” analyzes will also be covered. EXCEL will also be used to integrate, link, and embed into other Office Applications. This course meets MOUS certification requirements. **Prerequisites:** OS 2086, OS 1025 or OFAD 1010

**OS 2051 WordPerfect II**
3 Credits, 3 Class Hours
This course covers the advanced word processing applications including desktop publishing, macros, sorting, merging, etc., using WordPerfect for Windows. Special emphasis is placed on formatting documents for the business world. **Prerequisite:** OS 1041

**OS 2055 PowerPoint and Outlook**
3 Credits, 3 Class Hours
This course develops skills in using PowerPoint and Outlook needed for the expert user. In creating presentations using PowerPoint, students will learn to add visual elements, bring data in from other sources, modify and customize a presentation, and prepare presentations for distribution. Students will learn to use Outlook to organize their work and to communicate with others by using all the components of Outlook such as the journal, notes manager, mail client, contact and task managers, and calendar. Integrating PowerPoint and Outlook with other programs and the world wide web will also be taught. This course meets MOUS certification requirements. **Prerequisites:** OS 2086 or OFAD 1010

**OS 2061 Spreadsheet II**
4 Credits, 4 Class Hours
This course teaches the advanced Microsoft Excel features needed for the expert user. Students will create accounting/financial statements, data analysis, statistical tables, amortization schedules, forecasts, personnel records, and lists. Students will learn to audit a worksheet, use advanced functionality, use macros, and import and export data. Integrating excel with other programs and the world wide web will also be taught. This course meets MOUS certification requirements. **Prerequisite:** OS 2031

**OS 2076/MDT 2000 Medical Transcription I**
3 Credits, 3 Class Hours
This is a special course designed to develop skills in the use of the transcription machine and the transcription of medical office correspondence, history and physical reports, consultation reports, discharge summary reports, neuro-diagnostic reports, etc. Skill development in the following areas is stressed: format of medical documents, medical terminology (spelling/pronunciation), grammar skills, understanding lab reports and typewriting/keyboarding skills. **Prerequisites:** CR 1003, OS 1041 or OS 2065, AHS 1020

**OS 2077/MDT 2010 Medical Transcription II**
3 Credits, 3 Class Hours
This special course is a continuation of Medical Transcription I. Emphasis is placed on the development of medical transcription skills to the employable level. **Prerequisite:** OS 2076

**OS 2086 Office Applications**
4 Credits, 4 Class Hours
This course is designed to provide the student with computer skills in the Windows environment. Hands-on instruction covers windows, word processing, spreadsheets, database management, presentations, and desktop information management software. Instruction includes integration between applications and with the Internet. **Prerequisites:** OS 1025, OFAD 1010 or proven keyboarding speed of 30 wpm on a 3 minute timing with no more than one error per minute
OS 2095 Medical Office Practice 3 Credits, 3 Lecture Hours
Technical, practical information is presented through realistic medical office simulations in this course. Role playing situations, project assignments, and medical vocabulary review for the office assistant are included. Prerequisite: OS 2100, OS 2080

OS 2100 CPT Coding/ICD-9 3 Credits, 3 Lecture Hours
In this course the student explores the major changes that have been implemented in processing insurance and patient information in the medical office environment. CPT Coding and ICD-9 classification standards are emphasized using various systems for processing insurance claims and payment reimbursements. Prerequisite: CR 1003

OS 2200 Advanced CPT Coding/ICD-9 3 Credits, 3 Lecture Hours
This course focuses on the current advanced-level descriptive terms and five-digit identifying codes and modifiers for reporting medical services performed by physicians. CPT and ICD-9 descriptive terms, numeric identifying codes, and modifiers for reporting medical services and procedures recommended by the American Health Information Management Association are covered extensively. Prerequisite: OS 2100

OS 2501 Project Specialty I 1 Credit, 1 Class Hour
This course is open to Office Systems Technology majors only. Course content involves a study of topics relevant to the student's professional track option. Current technical expertise and computerized applications are emphasized in the design of a project, the content of which is based on a mutual agreement between the student and assigned faculty member.

OS 2502 Project Specialty II 2 Credits, 2 Class Hours
This course is open to Office Systems Technology majors only. Course content involves a study of topics relevant to the student's professional track option. Current technical expertise and computerized applications are emphasized in the design of a project, the content of which is based on a mutual agreement between the student and assigned faculty member.

OS 9013 Cooperative Education I 3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in the office of an established business. Placement is made by the Office of Cooperative Education upon completion of one semester of technical coursework or after all requirements for employment are met. The student utilizes knowledge gained in any or all the Office System courses to accomplish tasks as assigned within the modern office setting. Prerequisite or Corequisite: Financial Administrative Assistant Concentration: completion of one semester of technical coursework; General Administrative Assistant Concentration: OS 2051, OS 2080; Legal Assistant Concentration: OS 2051, LA 1080; Medical Administrative Assistant Concentration: OS 2051, OS 2095; Insurance Administrative Assistant Concentration: BN 1400, BN 1410

OS 9014 Cooperative Education Work Experience I-A 4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in the office of an established business. Placement is made by the Office of Cooperative Education after all requirements for employment are met. The student utilizes knowledge gained in any or all the required support courses to accomplish tasks as assigned within the professional track chosen. Prerequisite: OS 2051, OS 2080

OS 9023 Cooperative Education Work Experience II 3 Credits, 225 Laboratory Hours
This course consists of supervised employment in the student's chosen professional track. The cooperative education experience may substitute for a course in the student's major with the approval of the division chairperson. A significant amount of experience must relate to the course content for which the cooperative education is substituted. Prerequisite: OS 9013

OS 9024 Cooperative Education Work Experience II-A 4 Credits, 300 Laboratory Hours
This course consists of supervised employment in the student's chosen professional track. The cooperative education experience may substitute for a course in the student's major with the approval of the division chairperson. A significant amount of experience must relate to the course content for which the cooperative education is substituted. Prerequisite: OS 9014

OS 9033 Cooperative Education Work Experience III 3 Credits, 225 Laboratory Hours
This course consists of supervised employment in the student's chosen professional track. The cooperative education experience may substitute for a course in the student's major with the approval of the division chairperson. A significant amount of experience must relate to the course content for which the cooperative education is substituted. Prerequisite: OS 9023

OS 9034 Cooperative Education Work Experience III-A 4 Credits, 300 Laboratory Hours
This course consists of supervised employment in the student's chosen professional track. The cooperative education experience may substitute for a course in the student's major with the approval of the division chairperson. A significant amount of experience must relate to the course content for which the cooperative education is substituted. Prerequisite: OS 9024

Paralegal Studies

LA 1040 Introduction to Law 3 Credits, 3 Class Hours
This introductory course is required for all students in the Paralegal Studies program, and is designed to provide a general overview of the legal system and various substantive areas of the law, such as contracts, criminal law, torts, and real estate. Students are introduced to the structure and functions of the court systems, the steps in legal proceedings, the various kinds of law books and the law library, and the American system of law. Special attention is given to learning legal terminology. Prerequisites: DR 0084, DE 0083 or equivalent

LA 1045 Legal Research 3 Credits, 3 Class Hours
This course is required for all students in the Paralegal Studies program. Students learn to perform legal research using federal and state statutes, legal encyclopedias, treatises, form books, government publications, and state and national reporters. Students also learn the proper method of citation and how to brief and analyze court cases. Prerequisite: LA 1040 with a “C” or better

LA 1050 Family Law 3 Credits, 3 Class Hours
This course is required for all students in the Paralegal Studies program. Laws, procedures, and documents involved in marriage, annulment, divorce, adoption, and child custody/child support are included. Students learn how to interview clients with family law problems and to prepare family law documents. Prerequisite: LA 1040 with a “C” or better
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<th>Credits</th>
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<tbody>
<tr>
<td>LA 1040</td>
<td>Courts and Procedures I</td>
<td>3</td>
<td>Class</td>
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<tr>
<td>LA 1045</td>
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<td>Class</td>
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<tr>
<td>LA 1050</td>
<td>Real Estate Law</td>
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<tr>
<td>LA 1060</td>
<td>Torts</td>
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<tr>
<td>LA 1070</td>
<td>Law Office Management</td>
<td>3</td>
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<td>LA 1080</td>
<td>Employment Law</td>
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<td>LA 1090</td>
<td>Administrative Law</td>
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<td>Class</td>
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<td>LA 1100</td>
<td>Legislative Analysis and Drafting</td>
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<td>Class</td>
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<td>LA 1150</td>
<td>Constitutional Law</td>
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<tr>
<td>LA 1200</td>
<td>Jurisdiction and Structure of Government</td>
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<td>Substantive Area of Contract Law</td>
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<td>LA 1500</td>
<td>Litigation and Drafting of Legislation</td>
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<td>LA 1600</td>
<td>Admiralty and Maritime Law</td>
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<td>LA 1700</td>
<td>Insurance</td>
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<td>LA 1800</td>
<td>Bankruptcy</td>
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**Prerequisites:**

- LA 1040 and LA 1045 with a “C” or better
- LA 2030
- IT 1001

**Course Descriptions:**

- **LA 1040:** Courts and Procedures I
  - This course introduces the student to the theory and practice of administrative law through a study of the sources of administrative law, the study of administrative procedures, and the study of the relationship between judicial review and the administrative process. Course material includes study of the Social Security Administration, Immigration and Naturalization, and Tennessee Workers’ Compensation laws.
  - **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

- **LA 1050:** Legislative Analysis and Drafting
  - This course acquaints the student with legislative procedure as well as analysis and drafting of legislation. Students will review the role of the three branches of government in law making, the procedural and legal requirements for drafting legislation, the methods used for analysis and construction (interpretation) of legislation, and the constitutional implications to be considered in drafting legislation.
  - **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

- **LA 1060:** Real Estate Law
  - This course includes the study of zoning and easements, leases, and contracts and deeds. Special attention is given to the preparation of real estate contracts, closing statements, and other documents used in basic real estate transactions. Students also study title insurance and the various types of financing sources available in real estate transactions. This course is required for students in the real estate concentration.
  - **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

- **LA 1070:** Torts
  - This course involves the study of traditional tort law and covers private or civil wrongs or injuries. Areas of study include intentional torts, negligence, the appropriate standards of conduct, strict liability, and no-fault laws. Particular attention is given to the nature of personal injury litigation and its documentation and practices. This course is required for students in the litigation concentration.
  - **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

- **LA 1080:** Law Office Management
  - This course is required for all students in the Paralegal Studies program. It is designed to help the student develop skills for successful law office management. Course material includes human resource management, law office structure, basic financial management, and office communications.
  - **Prerequisites:** LA 1040 with a “C” or better

- **LA 1100:** Constitutional Law
  - This course covers the development of fundamental principles in constitutional law and integrates the study of United States Supreme Court decisions. Course material includes judicial review, federalism, the Bill of Rights, and the powers of the Supreme Court, Congress, and the President.
  - **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

- **LA 1150:** Legislative Analysis and Drafting
  - This course acquaints the student with legislative procedure as well as analysis and drafting of legislation. Students will review the role of the three branches of government in law making, the procedural and legal requirements for drafting legislation, the methods used for analysis and construction (interpretation) of legislation, and the constitutional implications to be considered in drafting legislation.
  - **Prerequisites:** LA 1040 and LA 1045 with a “C” or better
This course is designed to acquaint the student with various legal aspects of internet commerce, also called electronic commerce. Students will study databases as well as Lexis and Westlaw to obtain legal materials.

**LA 2040 Legal Writing**

This course is required for all students in the Paralegal Studies program. Emphasis on legal writing skills includes precision, clarity and accuracy, legal citation and proper format. Students draft a variety of documents including office and trial memoranda, letters, trial court briefs, contracts and operative documents. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better, IT 1001 and EN 1045

**LA 2045 Legal Internship**

This course is required for all students in the Paralegal Studies program and should be taken during the student’s last semester. The student works in a supervised legal environment in a law firm, agency or corporate legal department as a legal assistant intern for a total of 60 hours during the semester. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better, LA 1055, LA 2030 and LA 2040; an average of 3.0 or better in all LA designated courses.

**LA 2050 Probate Law**

This course covers the effect of various types of ownership upon passage of property at owner’s death, with or without a will; basic requirements for trusts and wills; administration of a decedent’s estate; and local Probate Court rules. Students prepare a variety of documents including a last will and testament, and petitions to open and close an estate. This course is an option for students in the real estate concentration. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2055 Health Care Law**

This course addresses the topic of health care law with an emphasis on the corporate, regulatory, and financial structure of health care delivery as well as the emerging law of bioethics and other legal aspects of the changing medical/technological field. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2060 Evidence**

This course provides an overview of the rules of evidence. Course material includes the general rules governing admissibility of evidence, the use of documentary and opinion evidence, evidential privileges, circumstantial evidence, confessions, admissions, witnesses, and the “hearsay rule” and its exceptions. This course is an option for students in the litigation concentration. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2065 Intellectual Property Law**

This course is designed to acquaint the student with various aspects of intellectual property law. Students will explore the various statutes and regulations related to traditional aspects of trademark, trade secrets, copyright, and patent law and will review various documents and forms commonly used in these areas. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2070 Bankruptcy and Creditor Rights**

This course covers the study of bankruptcy procedures and includes the initial filing, meetings of creditors, adversarial proceedings and final discharge hearings, automatic stay, adequate protection, and proceedings under Chapters 7, 11 and 13. Students also study the debtor’s obligations and rights, secured and unsecured creditors’ priorities, preferences and fraudulent transfers, and the bankruptcy court rules. Students identify assets and liabilities and prepare various bankruptcy forms. This course is an option for students in the corporate and banking concentration. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2075 Environmental Law**

This course addresses the topic of environmental law by focusing on an analysis of various environmental statutes as well as on the procedural issues common to the environmental field, including standing to sue and the standard of judicial review. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2080 Criminal Law and Procedure**

This course covers the substantive aspects of criminal law and includes the general principles of criminal liability, specific analysis of particular crimes, and the substantive defenses to crimes. Constitutional safeguards and procedures from arrest through trial, sentencing, punishments, and appeals are also studied. This course is an option for students in the litigation concentration. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2085 Immigration Law**

This course addresses the area of immigration law and procedure in the United States. Materials focus on statutory and regulatory aspects of the immigration process as well as assess the impact criminal statutes have on this process. In addition, students will examine court opinions applicable to immigration law. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better

**LA 2090 Interviewing and Investigation**

This course provides practical exposure to the skills needed to gather information through interviews with clients, witnesses, and other persons. Students study how to take statements, search records and documents, and preserve facts and evidence gathered for trial. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better, and LA 1055

**LA 2100 Computer Research and Legal Software**

This course is required for all students in the Paralegal Studies program. Students are exposed to computer assisted legal research and to various types of computer software commonly used in law offices through lecture, instructional software or hands-on exercises. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better, and IT 1001

**LA 2500 Advanced Computer Research**

This course expands on the concepts covered in LA 2100 and focuses on the utilization of database and spreadsheet software to perform tasks specific to the law office environment. Advanced instruction in computer-assisted legal research includes using the Internet and CD-ROM databases as well as Lexis and Westlaw to obtain legal materials. **Prerequisites:** LA 1040 and LA 1045 with a “C” or better, LA 2100 and IT 1001

**LA 2550 Internet Law**

This course is designed to acquaint the student with various legal aspects of internet commerce, also called electronic commerce. Students will explore the various statutes, regulations, constitutional and common law affecting internet commerce, with emphasis on contractual obligations, intellectual property, privacy, and liability. **Prerequisites:** DE 0083, DR 0084, LA 1040 or AT 1025
PHRM 1010 Introduction to Pharmacy Operations
This course includes a definition of the pharmacy technician role and responsibilities; opportunities available to graduates of the Pharmacy Technician Program; and a generalized overview of the practice of pharmacy. The student is oriented to the institutional setting, including equipment and laws pertaining to the practice of pharmacy. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1030 Measurement and Calculations
This course reviews basic math computation including Roman Numerals, addition, subtraction, multiplication, division of whole numbers and fractions. This course covers all health, measurements in the area of avoirdupois, apothecary, and metric systems as related to pharmaceutical calculations. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1040 Structure and Function of Body Systems
This course focuses on the structure and function of the nine body systems. Each system is discussed in detail with a focus on medications applicable to that system. Emphasis is placed throughout the course on presenting the human body as a living, functioning, hemostatic organism. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1050 Personal-Vocational Relationships
This course is a study of human relations, including oral and written communication. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1060 Sterile Products
This course introduces the operation of an intravenous admixture program. Specific study topics include medications and parenteral administration; facilities; equipment; supplies utilized in admixture preparation, techniques utilized in parenteral product compounding; terminology and calculations used in preparation of parenteral products; parenteral medication incompatibilities; and quality assurance in the preparation of parenteral products. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1070 Pharmacology
This course is a practical study of the various aspects of drug activity. Emphasis is placed on drug classification, dosages, routes of administration, generic and trade names of drugs, and appropriate use of references. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1080 Computer Sciences
This course is an introduction to fundamental computer operations, which includes general computer terminology and the alphabetic and numeric keyboard using the touch method of operation. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1090 Pharmacy Practice
This course acquaints the student with prescription and medication order policies and procedures in all pharmacy settings. Students interpret, label, compound and dispense prescriptions. Students will utilize profile systems and describe inventory control procedures. Students will utilize profile systems and describe inventory control procedures. Students will become familiar with unit dose drug distribution, floor stock distribution, narcotic control, and inventory control. Drug information references and compounding with an emphasis on the prescription balance and weight are also reviewed. Prerequisite: Admission to Pharmacy Technician Program or permission from instructor.

PHRM 1100 Clinical Pharmacy Experience I
This course is a clinical practicum in a hospital pharmacy setting.
Prerequisites: Completion of PHRM 1010, 1030, 1040, 1050, 1060, 1070, 1080, 1090, and 1110.

PHRM 1120 Clinical Pharmacy Experience II 3 Credits, 3 Class Hours
This course is a clinical practicum in retail pharmacy setting. Prerequisites: Completion of PHRM 1010 through 1100.

Philosophy

PHIL 2010 Introductory Philosophy 3 Credits, 3 Class Hours
This course is an introduction to basic philosophical problems in exploring the meaning of human life and reflecting our position in the world. Prerequisites: DE0083/ENGL0800 and DR0084/READ0800 or equivalent.

LOGC 2150 Introductory Logic 3 Credits, 3 Class Hours
This course is a study of deductive logical methods and their use in scientific inquiry, common-sense reasoning and formal systems. Topics include a study of informal fallacies and the logic and semantic tools required for analysis of fallacious arguments and misleading claims and a study of elementary symbolic logic.

SC 1401 Values in the Modern World 3 Credits, 3 Class Hours
This course is an introduction to philosophy, the course examines the different ways religion, political theory, science, and ethics define values and their relevance to responsible moral choices in today's society. This course may be used as a Humanities or general elective. Prerequisites: DR 0084/READ0800, DE 0083/ENGL0800 or equivalent.

Physical Education

HPER 1510 Introduction to Physical Education 3 Credits, 3 Class Hours
This course introduces the historical, instructional kinesiology, physiological, biomechanical, psychological, sociological, and philosophical aspects as well as professional careers of physical education.

HPER 1530 Concepts of Fitness and Wellness 2 Credits, 2 Class Hours
This course promotes individual responsibility for optimal well-being, encompassing local and national health concerns, personal health risk factors, life-style behaviors, and preventive health measures.

HPER 2450 Fundamentals and Techniques of Football 2 Credits, 2 Class Hours
This course introduces coaching principles and methods for football.

HPER 2460 Fundamentals and Techniques of Basketball 2 Credits, 2 Class Hours
This course explores the complexities of basketball. Emphasis is placed on discussions of fundamentals, teaching situations, history and styles of plays.

HPER 2470 Fundamentals and Techniques of Track and Field 2 Credits, 2 Class Hours
This course introduces the principles of teaching, coaching and performing in track and field.

HPER 2480 Fundamentals and Techniques of Baseball and Softball 2 Credits, 2 Class Hours
This course explores the complexities of baseball. Emphasis is on discussions of fundamentals, teaching situations, history, and styles of plays.

HPER 2850 Sports Officiating 3 Credits, 3 Class Hours
This course introduces the principles of officiating. Emphasis is placed on the guiding decision and judgment philosophies in various sports.

PHED 1100 Badminton 2 Credits, 1 Class Hour, 2 Lab Hours
Instruction in the skills, rules, and strategies of the game of badminton is presented.

PHED 1110 Basketball 2 Credits, 1 Class Hour, 2 Lab Hours
Instruction in basic basketball fundamentals is presented.

PHED 1130 Bowling 2 Credits, 1 Class Hour, 2 Lab Hours
This course provides instruction in the basics of bowling, including equipment rules, scoring, stance, delivery and release. 1 hr lecture, 2 hrs laboratory.

PHED 1300 Golf 2 Credits, 1 Class Hour, 2 Lab Hours
This course provides introduction to the game of golf, including the basics of the grip, stance, and swing, equipment, history, rules, etiquette, scoring, and playing on the course.

PHED 1380 Racquetball 2 Credits, 1 Class Hour, 2 Lab Hours
The fundamentals of racquetball, including equipment, skills, strategy, competition, and techniques are taught.

PHED 1510 Physical Conditioning 2 Credits, 1 Class Hour, 2 Lab Hours
This course is designed to improve individual's flexibility, strength, and cardiovascular endurance.

PHED 1550 Aerobics 2 Credits, 1 Class Hour, 2 Lab Hours
Instruction in figure, fitness, diet, and daily aerobic exercised is presented.
PHED 1560 Bench Step Aerobics  2 Credits, 1 Class Hour, 2 Lab Hours
This course is an instruction in bench step activity to enhance cardiovascular fitness and develop muscle strength, endurance, and flexibility. Other topics include fitness concepts, exercise facts, diet, weight control, and consumer educations.

PHED 1570 Body Sculpting: Shape, Tone and Tighten  2 Credits, 1 Class Hour, 2 Lab Hours
This course contains instruction in body sculpting through calisthenic exercises and includes health related fitness concepts, exercise principles, diet, nutrition, weight control contra-indicated exercises, and consumer education.

PHED 1680 Self-defense/ Karate  2 Credits, 1 Class Hour, 2 Lab Hours
The student develops skills through practice of the basic kicks, blocks, and punches in Karate. Various strategies for individual self-defense are introduced.

PHED 1690 Table Tennis  2 Credits, 1 Lecture Hour, 2 Lab Hours
This course offers instruction in the history, rules, strokes, and strategy of the game of table tennis.

PHED 1940 Volleyball  2 Credits, 1 Lecture Hour, 2 Lab Hours
Instruction in basic skills, history, rules, strategy and team play of volleyball are presented in this course.

PHED 1960 Weight Lifting  2 Credits, 1 Class Hour, 2 Lab Hours
The student receives introduction to the various lifting methods involved in the development of muscular tone and conditioning. In all lifting methods, safety is stressed.

PHED 1990 Special Topics in Health and Physical Education  1-3 Credits
This course is a study of special topics and development of specific skills as related to each topic.

PHED 2580 Recreational Leadership  3 Credits, 3 Class Hours
This course introduces recreational leadership theory and practice with applied principles of group behavior and dynamics along with study of developmental activities for various age groups and the effective use of time and talents.

PHED 1980 Exercise Machines: Weights and Aerobics  2 Credits, 1 Class Hour, 2 Lab Hours
This is an exercise class designed to enhance the health related aspects of fitness through the utilization of machine/free weight resistance equipment and cardiovascular endurance machines including a treadmill, stepper ND exercise bike.

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Physical Sciences

PSCI 1410 Physical Science I  4 Credits, 3 Class Hours, 3 Lab Hours
This course is the first of a two-semester lab course for non-science majors. Topics include measurement, motion, force, energy, heat, sound, optics, electric and magnesium, atomic physics and nuclear physics.

PSCI 1420 Physical Science II  4 Credits, 3 Class Hours, 3 Lab Hours
This course is a continuation of Physical Science I. Topics include chemical bonding, chemical reactions, astronomy, environmental science, geology and meteorology.

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Physical Therapy Assistant

PTA 2410 PTA Clinical Procedures I  3 Credits, 3 Class Hours, 3 Lab Hours
This course explores the basic theory and application of clinical procedures and physical agents used in the practice of physical therapy. Thermal agents are the primary topic, but the course also includes instruction in positioning and draping, massage, cold LASER, intermittent pneumatic compression, and elastic (ACE) wraps. Prerequisite: Acceptance into the PTA program.

PTA 2420 PTA Clinical Arts I  1 Credits, 3 Lab Hours
This course includes patient care skills fundamental to the practice of physical therapy including patient positioning and turning, transfer training, wheelchair management, gait training, aseptic techniques, assessment of vital signs, and introduction to special equipment. Prerequisite: Acceptance into the PTA program.

PTA 2430 PTA Seminar I  1 Credit, 1.5 Lecture Hours/ week for entire term, 4 Clinic Hours/ week last 4 weeks of term.
This course is an introduction to the profession of physical therapy and responsibilities of the physical therapist assistant and also includes study of the history of physical therapy and role of the physical therapist assistant in the health care system. Unit on medical terminology; practice in reviewing medical records, documentation and charting; sessions on improving interpersonal communication skills in clinical practice; and clinical experience consisting of one-half day per week for the final four weeks of the term are also included. Prerequisite: Acceptance into the PTA program.

PTA 2440 PTA Clinical Education I  1 Credit, 40 Clinic Hours/ week for two weeks at end of Summer Term
This course is a supervised clinical experience during which students practice skills and apply knowledge learned in classroom to patient care activities. Students affiliate for two weeks in area physical therapy clinics at end of Summer Term. Prerequisite: Admission to the PTA program and successful completion of all Summer Term courses preceding this course.

PTA 2450 Kinesiology for the PTA  3 Credits, 3 Class Hours, 3 Lab Hours
This course reviews kinematics, kinetics, muscle and nerve physiology, and surface anatomy. An emphasis is placed on actions, origins, insertions, and innervations of skeletal muscle. Prerequisite: Acceptance into the PTA program.
PTA 2510 PTA Clinical Procedures II
This course includes basic theory and application of clinical electrotherapy used in the practice of physical therapy.
Prerequisite: Successful completion of Summer Term PTA courses.

PTA 2520 PTA Clinical Arts II
This course presents an overview of basic orthopedic and medical conditions which may require therapeutic exercise.
Prerequisite: Successful completion of Summer Term PTA courses.

PTA 2530 PTA Seminar II
Basic teaching/learning principles are applied to patient education activities and includes discussion of student’s role in clinical education, e.g., assuming responsibility for learning, evaluating learning experiences, and appropriate clinical behavior.
Prerequisite: Successful completion of Summer Term PTA courses.

PTA 2540 PTA Clinical Education II
This course includes supervised clinical experiences during which students practice skills and apply knowledge learned in the classroom to patient care activities. Students are assigned to area physical therapy clinics for two weeks, full-time.
Prerequisite: Successful completion of all Fall semester courses preceding this course.

PTA 2550 Pathophysiology for the PTA
Diseases and disorders commonly encountered in patients referred to physical therapy are introduced. Etiology, signs and symptoms, general treatment considerations, and prognosis of each disease/disorder are discussed.
Prerequisite: Successful completion of Summer term courses.

PTA 2560 Assessment Techniques for the PTA
This course includes common assessment techniques used by the PTA in clinical practice and includes assessment of patient orientation, sensation, edema, joint motion (goniometry), muscle strength (manual muscle testing), posture and gait. Prerequisite: Successful completion of Summer term courses.

PTA 2610 PTA Clinical Procedures III
This course includes physical therapy management of patients will cardiac, pulmonary, vascular and lymphatic disorders and instruction in wound management, prosthetics and orthotics. Prerequisite: Successful completion of Fall Semester PTA courses.

PTA 2620 PTA Clinical Arts III
This course covers normal development from conception to birth, normal reflex development ND developmental milestones after birth. General concepts of aging included as basis for understanding problems encountered by patients with neuromotor and neuromuscular disorders. Physical therapy management of patients with cerebrovascular accidents, head trauma, cerebral palsy, and spinal cord injuries included. Primary neuro-physiological approaches (NDT, PNF, Brunntstrom, and Rood) are covered, as well as a variety of other treatment techniques ND therapeutic exercises. Prerequisite: Successful completion of Fall Semester PTA courses.

PTA 2630 PTA Seminar III
This course includes unit on medical ethics, introduction to clinical research in physical therapy, and sessions on physical therapy administration and management. Prerequisite: Successful complete of Fall Semester PTA classes.

PTA 2640 PTA Clinical Education III
This course includes supervised clinical experiences during which student practices skills and applies knowledge learned in the classroom to patient care activities. Students are assigned to area physical therapy clinics for two four-week, full-time affiliations.
Prerequisite: Successful completion of Spring semester PTA courses preceding this course.

Physics

PH 1001 Technical Physics
This course is designed for students of applied engineering programs such as Industrial Maintenance Technology, Automotive Service Technology, and Electronic Technology. The course includes a study of the physics of forces, energy and power, heat, gas laws and hydraulics, with lab experiments. Prerequisite: DM 0085/MATH0810 or equivalent

PH 1114 College Physics I
This course covers the Laws of Mechanics and Heat which is similar in content to the three-hour course. Laboratory experiments are included. Prerequisite: DM 0085 or equivalent Corequisite: MA 1012 or MA 1131 or equivalent

PH 1119 Applied Physics I
The first of a two-semester sequence for students in engineering technology programs, this course covers the laws of mechanics and heat, gas laws, and thermodynamics. This course uses algebra based math. Laboratory experiments are included. Corequisite: MA 1131

PH 1129 Applied Physics II
A continuation of Applied Physics I for students in engineering technology programs, this course covers DC & AC electricity, magnetism, sound, wave motion, optics elementary atomic and nuclear physics. Laboratory experiments are included. Prerequisite: PH 1119

SOUTHWEST TENNESSEE COMMUNITY COLLEGE
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Class Hours</th>
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<td>PH 2250</td>
<td>Atomic and Nuclear Physics</td>
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<td>PHYS 1210</td>
<td>Physics for the Health Sciences</td>
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<td>PHYS 2010</td>
<td>General Physics I</td>
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<td>PHYS 2210</td>
<td>Physics for Science and Engineering I</td>
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<td>POLS 1020/SC 1205</td>
<td>American National Government</td>
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<td>POLS 1040</td>
<td>Internship</td>
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<td>POLS 1070</td>
<td>American Government: The Institutional Process</td>
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<td>POLS 2040</td>
<td>The Diversity of Socio-Politics</td>
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<td>POLS 2050</td>
<td>Politics of Feminist Theory</td>
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<td>POLS 2120</td>
<td>Black Politics</td>
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<tr>
<td>SC 1206</td>
<td>International Relations</td>
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**Political Science**

- **POLS 1020/SC 1205 American National Government**: The course presents the development, structure and process of the American system of government. 
  **Prerequisites**: DE0083 and DR0084 or ENGL0800 and READ0800, or equivalent

- **POLS 1040 Internship**: This internship offers the opportunity to gain hands-on experience or to upgrade skills for students either aspiring to careers or seeking professional advancement in public administration, public affairs, law or other interdisciplinary fields. Approximately 45 work experience hours per semester equals 1 hour of credit. 
  **Prerequisites**: DE0083/ENGL0800, DR0084/READ0800, or equivalent

- **POLS 1070 American Government: The Institutional Process**: Politics and institutions will be compared to the Grand Political Game, Institutional Functionalism, and how power is distributed and authority is conferred by groups and the politically powerful entities. 
  **Prerequisites**: DE0083/ENGL0800, DR0084/READ0800, or equivalent

- **POLS 2040 The Diversity of Socio-Politics**: This course is designed to identify and investigate contemporary social, legal, economic and political elements which are relevant to quality of life and are considered to be educationally controversial in nature. This course will serve as an introduction and orientation to policy study, critical thinking and problem solving techniques for students. 
  **Prerequisites**: DE0083/ENGL0800, DR0084/READ0800, or equivalent

- **POLS 2050 Politics of Feminist Theory**: This course is an examination of contemporary feminist analyses of gender relations, how they are constituted and experienced and how social structures maintaining sexist hierarchies intersect with hierarchies of race, class and ethnicity. Connections between practice and theory will be investigated. 
  **Prerequisites**: DE0083/ENGL0800, DR0084/READ0800, or equivalent

- **POLS 2120 Black Politics**: The past, present and future roles of African Americans in the American political system will examined. The key focus will encompass the economic, social and political position of blacks as related to the larger population which includes the study of hyperpluralism. 
  **Prerequisites**: DE0083/ENGL0800, DR0084/READ0800, or equivalent

- **SC 1206 International Relations**: Students survey the concepts, processes, and relationships involved in the interactions of nations. 
  **Prerequisites**: DE 0083/ENGL0800, DR 0084/READ0800 or equivalent
Psychology

**PSYC 1210/SC 1507 General Psychology I**  
3 Credits, 3 Class Hours  
The course introduces students to social aspects of psychology as a behavioral science. Studies include personality, abnormal behavior, psychotherapy, intelligence, social and developmental psychology, and applied psychology.  
Prerequisites: DE 0083 and DR0084 or ENGL0800, READ0800 or equivalent

**PSYC 1220/SC 1508 General Psychology II**  
3 Credits, 3 Class Hours  
This course introduces students to the biological aspects of psychology as a behavioral science. Studies include learning sensations and perception, physiological and comparative psychology and psychopharmacology.  
Prerequisites: DE 0083 and DR0084 or ENGL0800, READ0800 or equivalent

**PSYC 2710/SC 1505 Human Relations at Work**  
3 Credits, 3 Class Hours  
Development of principles and techniques affecting human behavior and motives in situations where people work together is the primary focus in this course. Emphasis is placed on business, industrial, hospital and other institutional settings. The course includes leadership development, organizational hierarchy, communication, group processes, team spirit, and mutual helpfulness.  
Prerequisites: DE 0083 and DR0084 or ENGL0800, READ0800 or equivalent

**SC 1500 Child Development and Services**  
3 Credits, 3 Class Hours  
Students study the psychological and physiological growth and development of children beginning with conception and continuing to adolescence. Special attention is given to social and health services which enhance this developmental process.  
Prerequisites: DE 0083 and DR0084 or ENGL0800, READ0800 or equivalent

**SC 1506 Human Growth and Development**  
3 Credits, 3 Class Hours  
Principles and processes of human growth and development from conception to death are explored. Students examine physical, mental, and social development from a life-span perspective.  
Prerequisites: DE 0083 and DR0084 or ENGL0800, READ0800 or equivalent

**SC 1510 Abnormal Psychology**  
3 Credits, 3 Class Hours  
Basic concepts of psychopathology with emphasis on the development of behavior deviations, descriptions of various neurotic and psychotic reactions, and an introduction to methods of psychotherapy will be studied.  
Prerequisite: SC 1507, DE 0083 and DR0084 or ENGL0800, READ0800 or equivalent

Radiologic Technology

**RADT 1010 Introduction to Radiologic Technology**  
3 Credits, 3 Class Hours  
This course is an introduction to the basic aspects and principles of radiologic technology and the health care system including radiation protection, patient care and safety, agency structure and function, and radiology ethics. Open to all students.

**RADT 1020 Fundamentals of Radiologic Technology I**  
3 Credits, 3 Class Hours  
This course provides basic material necessary to an understanding of the necessity of radiation protection, of the basic photographic supplies, equipment and principles of radiographic production, of the prime factors used in radiographic production, and of the various types of equipment used in the field of radiography.  
Prerequisite: RADT 1010. Co-requisite: RADT 1710.

**RADT 1030 Fundamentals of Radiologic Technology II**  
3 Credits, 3 Class Hours  
This course provides instruction in accessory equipment used to obtain the optimum image. Emphasis is on practical aspects of equipment capabilities, film/screen combinations, grids, beam restricting devices and patient condition.  

**RADT 1210 Radiologic Physics I**  
3 Credits, 3 Class Hours  
This course presents a study of radiation physics and radioisotopes including the theoretical basis for understanding the nature, production and interaction of radiation with matter, atomic and electrical physics as it pertains to radiation production and control.  
Prerequisites: RADT 1020 and RADT 1710. Co-requisites: RADT 1510, RADT 1310, and RADT 1910.

**RADT 1220 Radiologic Physics II**  
3 Credits, 3 Class Hours  
This course presents a study of the physics of radiation production control and characteristics of basic imaging modalities including computer imaging and computer assisted image resolution and provides background for the understanding of radioactivity and its application in nuclear medicine and radiation therapy.  

**RADT 1230 Essentials of Radiobiology**  
2 Credits, 2 Class Hours  
This course is a survey of natural and artificial radiation sources and their effects on cell tissue and organisms including basic criteria and methods of survey, patient and occupational dose analysis and control effects on environmental quality. It covers familiarity with control agencies and appropriate regulations, legal aspects of control, accidents, and radiation incidents; facility/area design.

**RADT 1310 Radiographic Anatomy and Physiology I**  
2 Credits, 2 Class Hours  
This course presents a study of gross structure of the human body with radiographic anatomy including radiographs and demonstrations.  
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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits, Hours</th>
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<td>Radiographic Anatomy and Physiology II</td>
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<td>Radiographic Procedures I</td>
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<td>Radiographic Procedures III</td>
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<td>Fundamentals of Radiologic Technology V</td>
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<td>RADT 2110</td>
<td>Introduction to Pathology</td>
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<td>RADT 2910</td>
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<td>Radiologic Clinic V</td>
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<tr>
<td>RADT 2930</td>
<td>Radiologic Clinic VI</td>
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This course is a continuation of RADT 1310 covering the cardiovascular system, the gastrointestinal system, nervous system, and genitourinary system. Prerequisite: RADT 1310. Co-requisites: RADT 1520, RADT 1220, RADT 1920, and RADT 2010.

This course provides an investigation of the procedures used in patient positioning and radiation safety instruction for radiographic demonstration of anatomical parts of the chest, abdominal upper extremity, pelvic girdle, lower extremity, and shoulder girdle and includes topographical anatomy, patient and part positioning, equipment selection and use, and patient-film orientation of radiographic anatomy. Prerequisites: RADT 1710 and RADT 1020. Co-requisites: RADT 1310, RADT 1210, and RADT 1910.

This course presents an investigation of procedures used in patient positioning and radiation safety instruction for radiographic demonstration of anatomic parts of the axial skeleton, bony thorax, gastrointestinal system and urinary system. Prerequisites: RADT 1220, RADT 1920, and RADT 2010.

This course presents an investigation of procedures used in patient positioning and radiation safety for imaging procedures with special imaging equipment, C.T., MRI, mammography, extroradiography, including topographic anatomy, patient, and part positioning with related structure systems, equipment selection and usage. Prerequisite: RADT 1520. Co-requisite: RADT 1230, RADT 2020, and RADT 1920.

This course gives an overview of radiography and its role in health care delivery. Student responsibilities will be outlined as a part of orientation to the academic and clinical structure of the program. The student will also be introduced to ethics, legal responsibilities, and to the process of patient care. Prerequisite: RADT 1010. Co-requisite: RADT 1020.

This course is a practicum in routine diagnostic radiography in the art of radiographic positioning technique and development of professional responsibility and ethical practice and moral patient care. Prerequisites: RADT 1710 and RADT 1020. Co-requisites: RADT 1310, RADT 1510, and RADT 1210.

This course provides a continuation of practicum in routine diagnostic radiography. Prerequisite: RADT 1919. Co-requisites: RADT 1220, RADT 1320, and RADT 1520, and RADT 2010.

Concentrated clinical practice in routine diagnostic radiography involving 35 hrs of clinic work per week (Summer I session).

This course is a continuation of RADT 2010 with emphasis on radiographic image analysis including exposure factors, radiation dose, demonstrated anatomy and pathology, selection, and testing of film/screen combination with consideration for radiographic detail, contrast, density distortion. Prerequisite: RADT 2010. Co-requisites: RADT 1530, RADT 1230, and RADT 2920.

This course is a continuation of RADT 2020 with a study of patient care from the aspects of economics and quality. It also presents an introduction to quality assurance including personnel staffing, work flow studies, patient education, in-service education, continuing education, and facility and equipment usage and emphasizes learning as a continuous process with self examination and proficiency testing. Prerequisite: RADT 2020. Co-requisites: RADT 2110 and RADT 2930.

This course is a continuation of RADT 2030 with an emphasis on application of theory and practice correlation in patient care and imaging. Prerequisite: RADT 2030 Fundamentals of Radiologic Technology IV.

This course provides a study of inflammatory disorders, disorders of vascular origin, degenerative changes, and pathology of infectious diseases. Attention is given to organic systematic disease, pathologic anatomy, disturbed physiology, correlated with clinical signs and symptoms and radiographic exposure techniques in pathologic conditions. Emphasis on the principles of radiographic management for diagnosis with an introduction to the several systems. Prerequisite: RADT 1530. Co-requisites: RADT 2030, and RADT 2930.

This course is a continuation of RADT 1930. As the first course or the second year of study, the student assumes a more responsible role of the radiologic technologist. 35 hrs of clinic work per week (Summer II session).

This course is a continuation of RADT 2910, including increased proficiency in routine diagnostic radiologic procedures. New competencies required include the cranium, and new specialized diagnostic procedures. Additional work under indirect supervision in general radiography is required. Prerequisite: RADT 2910. Co-requisites: RADT 1530, RADT 1230, and RADT 2020.

This course requires an observation of and participation in all aspects of diagnostic radiology. Advanced imaging modalities of MRI, CT, sonography, radiation oncology, nuclear medicine, and angiography. Final competencies in general radiography are required. Prerequisites: RADT 2920. Co-requisites: RADT 2110 and RADT 2030.
Real Estate

FIR 1700 Principles of Insurance 3 Credits, 3 Class Hours
This course presents an economic, social and historical background of insurance. Includes insurance contracts; types, scope, organization and regulation of insurance companies; and basic forms of property, liability, and life insurance and annuities.

FIR 2100 Principles of Finance 3 Credits, 3 Class Hours
This course presents a study of the commercial banking system’s role in meeting short-and-long-term business demands for funds. Includes a practices and procedures investigation used by other financial institutions in providing credit.

FIR 2220 Personal Financial Management 3 Credits, 3 Class Hours
This course is an analysis of the economic problems which typically affect consumers. Emphasis on individual decision making processes in evaluating needs, wants, and resources and in utilizing resources including time, money, and energy.

FIR 2510 Principles of Business Law 3 Credits, 3 Class Hours
This course presents a study of business law in relationship to commercial transactions, contracts, agency and employer-employee relationships, negotiable instruments and legal procedures and includes breaches and remedies, product liability, real property, consumer/debtor protection, bankruptcy, personal property, and agency contracts/torts.

MG 1004 Principles of Real Estate 4 Credits, 4 Class Hours
This course provides a basic understanding of real estate and prepares students for the Tennessee Real Estate License Examination. Subject matter includes terminology, ethics, contract laws, mortgages, trust deeds, leases, financing, mathematics and closing statements. The course consists of 60 classroom hours and is required for pre-licensure of affiliate brokers.

MG 1023 Real Estate Salesmanship 2 Credits, 2 Class Hours
This course acquaints the student with basic sales techniques that are essential to the marketing of residential real estate. Attention is given to prospecting and qualifying buyers, preparing comparative market analyses, servicing listings, time management, negotiating and closing sales.

MG 1033 Real Estate Appraisal 2 Credits, 2 Class Hours
This course presents a broad view of the principles, procedures, and theories underlying all appraisals is presented in this course. All types of real property and leases are evaluated using the standard appraisal process with emphasis on residential, small commercial lands and farms. A complete market analysis of each type of property is taught. This course is also approved by the Tennessee Real Estate Appraisal Commission.

MG 1043 Real Estate Law 2 Credits, 2 Class Hours
This course is designed to acquaint the student with terminology, common law precedents and federal/state statutes relative to the law of real property. The legal basis and ramifications of real property contract instruments and ethical conduct as it relates to the business of real estate brokerage are discussed.

MG 1053 Real Estate Finance 2 Credits, 2 Class Hours
This course acquaints the student with real estate financing concepts, instruments and financial institutions that deal with estate capital transactions. Students are exposed to the financial aspects associated with individual and corporate ownership, partnerships, syndicates and trusts and the financing of various types of properties.

MG 1063 Real Estate Office Management 2 Credits, 2 Class Hours
This course is designed to cover the management functions critical in developing and operating a successful real estate brokerage firm. Methods and techniques for increasing productivity and efficiency are taught and Tennessee real estate law is emphasized.

MG 1073 Real Estate Course for New Affiliates 2 Credits, 2 Class Hours
This course is designed for affiliate brokers who receive their Tennessee real estate license after January 1, 1994. The course assists agents to qualify buyers and sellers, maintain a client record base, interact with other agents, be more proficient with contracts as well as other listing and selling documents.

MG 1279 Transfer Credit in Mid-Management Specialization Area (MG only) 0-6 Credits
This course number reflects credit awarded for CLEP examination, USAFI courses or tests, military service school, industrial training, cooperative education or college credit related to a Mid-Management technical specialty.

MG 1289 Mid-Management Specialty Work Experience (MG only) 0-16 Credits
This course number reflects credit awarded for documented work experience of a managerial or supervisory nature. A maximum of 16 hours (8 hours credit for each year in excess of a three-year apprenticeship) can be credited to this course number.

Sociology/ Social Work

SC 1015 Introduction to Social Services 3 Credits, 3 Class Hours
Introduction to Social Services is designed to provide students with professional entry-level knowledge, skills and a values framework for providing a wide range of social services that link people and agencies with resources, services and opportunities. Additionally, licensing requirements and regulations governing caregiver facilities and personnel are discussed. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SC 1023 Investment in Excellence 3 Credits, 3 Class Hours
This course includes survival techniques for success in a fast-moving world, based on the fundamental belief that personal change begins on the inside and works its way out. This course is designed to encourage self-responsibility by teaching behaviors and attitudes that lead to higher achievement and excellence. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent
SC 1025 Overview of Psychological/Sociological Conditions 3 Credits, 3 Class Hours
This course provides an overview of conditions which may confront persons who supervise services to individuals with special psychological and social needs. Various methods for providing services to the identified clientele are discussed. Emphasis will be placed on issues which impede optimal development during the lifespan. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SC 1050 Caregiver Administration Internship 3 Credits, 3 Class Hours
The Caregiver Administration internship allows the student to participate in the caregiver environment. The student is exposed to the daily responsibilities and experiences associated with caregiver administration, and is given the opportunity to apply educational training to actual work situations as they relate to clients. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent
Corequisite: AT 1003, permission of the instructor

SC 1515 Principles of Sociology 3 Credits, 3 Class Hours
This is a survey course designed to capture the interest of the student by demonstration of the process and challenge of scientific observation (based on facts and objectivity) and analysis of social behavior, causes, and effects. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SC 1520 Race and Ethnic Minorities 3 Credits, 3 Class Hours
This course provides a study of race and ethnic minorities in the United States from a socio-historical approach. The focus is on the social and political experiences of various immigrant groups in America and on the impact of more recent demographic changes in the ethnic and cultural characteristics of society and American institutions. Gender and class issues are also examined within this socio-historical approach. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SC 1530 The Family 3 Credits, 3 Class Hours
The study of the family as a social institution primarily emphasizes changes in family structure and function, courtship and marriage, and problems confronting contemporary family life. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent
Developmental prerequisites may be waived for special non-degree students.

SOCI 1010 Introductory Sociology 3 Credits, 3 Class Hours
This course introduces students to the field of sociology--its concepts, methods, theories and theorist. The sociological perspective is used in examining social interaction, social structures and social change. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SOCI 1030 Social Problems 3 Credits, 3 Class Hours
A critical reasoning approach is used in examining social problems and issues from the micro-social and global perspectives. Primary emphasis is placed on understanding the "social construction" of social problems--their magnitude, severity, causes, consequences and possible solutions. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SOCI 2110 Introduction to Social Welfare 3 Credits, 3 Class Hours
A survey of the social welfare system in America including a look at the social work profession is studied. Emphasis is on the critical historical and contemporary factors influencing the structure and process of our response to human needs including social policy, legislation, social services programs, and the process of change. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SOCI 2170 Race, Gender and Class Inequalities 3 Credits, 3 Class Hours
Using a socio-historical perspective and a critical reasoning approach, the consequences associated with race, class and gender inequalities in American social institutions are examined. Attention will be given to the impact of more recent demographic shifts in the cultural characteristics of society and to the global nature, of race, class and gender issues. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SOCI 2320 Marriage and Family Relationships 3 Credits, 3 Class Hours
The study of the family as a social institution primarily emphasizes relationships among the family, society and individual members, and cultural variations based on class differences, ethnicity, and religion. The course also explores the family’s adaptation to changing societal forces and problems confronting contemporary family life. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SOCI 2600 The Family in Global Perspective 3 Credits, 3 Class Hours
This course focuses on the family as a global social institution and its responses to modernization, industrialization, and urbanization. Perspectives are presented from a sociological, anthropological and ecological frame of reference. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

SOCI 2710 Sociology of the Black Family and Community 3 Credits, 3 Class Hours
This course is an analysis of the sociological complexities of education, religion, politics, law enforcement, housing, and industry in the black community. Prerequisites: DE 0083/ENGL0800, DR0084/READ0800 or equivalent

Speech

SPCH 1110/EN 1011 Public Speaking 3 Credits, 3 Class Hours
This course is the study of ethical and effective public speaking with practice on constructing and delivering various types of speeches. Major focus will be placed on informative and persuasive speaking. This course fulfills the oral communication requirements for the general Education Core.

SPCH 1310 Black Communication 3 Credits, 3 Class Hours
This course is a study of the speeches and rhetoric of the Black American. Emphasis on major black speakers in America.
encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student

ET 9013 Cooperative Education Work Experience I 3 Credits, 225 Laboratory Hours

in the electronic communication field.

This course permits coverage of material not contained in other courses. Primary emphasis is placed on the application of current devices and trends

ET 2444 Special Topics 4 Credits, 3 Class Hours, 2 Laboratory Hours

such as fiber optics, microwave communications, and receive/transmit techniques. A microwave dish is fabricated by the student in the laboratory. A fiber optics transmitter/receiver is constructed and tested by the student in the laboratory. Problems requiring a computer solution are assigned as part of laboratory projects. Prerequisite: ET 1124

ET 2144 Telecommunications and UHF 4 Credits, 3 Class Hours, 2 Laboratory Hours

This course covers communication systems using electromagnetic radiation in broadcast and point to point terminals. The ability of the system to transfer information from one point to another is studied in the presence of noise which adversely affects the transmission and reception of radio frequency signals. Amplitude modulation (AM), single sideband (SSB), and frequency modulation (FM) are studied and comparisons are made as to the advantages and disadvantages of each system. Computer programs are written by the student which relate to topics covered in both the classroom and in the laboratory. The student also constructs and tests a complete AM transmitter and receiver system using integrated circuits. Television systems are discussed and analyzed. Prerequisite: ET 2214

ET 2233 Electrical/ Electronic CAD Drawing 3 Credits, 2 Class Hours, 2 Laboratory Hours

This course introduces the student to the use of the computer for making electronic drawings. The primary goal of this course is to familiarize the student with the menus and commands of a computer-aided-drafting system. Skills will be developed to enable the student to manipulate lines, symbols, and text on the computer screen to produce an acceptable drawing before it is plotted. Block, logic, schematic, and printed circuit drawings will be covered in this course. Prerequisite: EE 1101 or PT 1114

ET 2244 Telecommunication Design 4 Credits, 3 Class Hours, 2 Laboratory Hours

This course provides for the application of theory covered in previous courses. The student is assigned projects having certain prescribed standards of operation. His or her responsibility is to use all knowledge gained to design, build, and test the circuitry to verify that it has met the prescribed standards. Topics typically covered in the course include active filters and frequency shaping networks, time domain multiplexing and frequency division multiplexing, D-A/A-D conversion, Norton amplifiers and transconductance amplifiers. This course also includes a minimum of three written reports with one formal engineering report. Prerequisite: CE 1124, ET 2134

ET 2344 Telecommunications for Technicians 4 Credits, 3 Class Hours, 2 Laboratory Hours

This course is an overview of the telecommunication area and emphasizes data communications, telephony, and microwave transmission. Current techniques used for high efficiency transmission of analog and transmission paths, radio link systems, earth station criteria, and facsimile communications facility are made. A fiber optics transmitter/receiver is constructed and tested by the student in the laboratory. Prerequisite: ET 1124

ET 2444 Special Topics 4 Credits, 3 Class Hours, 2 Laboratory Hours

This course permits coverage of material not contained in other courses. Primary emphasis is placed on the application of current devices and trends in the electronic communication field. Prerequisite: ET 1124

ET 9013 Cooperative Education Work Experience II 3 Credits, 225 Laboratory Hours

From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.
ET 9014 Cooperative Education Work Experience I-A  
4 Credits, 300 Laboratory Hours
From this experience the student participates in the employer/employee relationship. By being an integral part of the work atmosphere, the student encounters the true meaning of work, the physical and security needs it provides, plus the impact it has on today's society.

ET 9023 Cooperative Education Work Experience II  
3 Credits, 225 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the electronic industry. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements.  
Prerequisite: ET 9013 or ET 9014

ET 9024 Cooperative Education Work Experience II-A  
4 Credits, 300 Laboratory Hours
In this course the student receives supervised work experience in any of the many facets of the electronic industry. The student performs technician-level work applying knowledge gained in the first-year technical courses to meet actual world-of-work requirements.  
Prerequisite: ET 9013 or ET 9014

ET 9033 Cooperative Education Work Experience III  
3 Credits, 225 Laboratory Hours
The student acquires work experience in the electronic industry under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all electronic courses to accomplish tasks as assigned by the engineer.  
Prerequisite: ET 9023 or ET 9024

ET 9034 Cooperative Education Work Experience III-A  
4 Credits, 300 Laboratory Hours
The student acquires work experience in the electronic industry under the supervision of an engineer or senior technician. The student utilizes knowledge gained in any or all electronic courses to accomplish tasks as assigned by the engineer.  
Prerequisite: ET 9023 or ET 9024

### Television Production

TVPR 1710 TV Production I  
3 Credits, 3 Class Hours
This course provides hands-on instruction in basic television production. Exposure to color and black/white television production equipment with emphasis on production principles, terminology, and vocations are included.

TVPR 1720 TV Production II  
3 Credits, 3 Class Hours
This is a study of “on-the-air” production theory and practice with additional voice training and control. Emphasis is placed on production differences among mass media, film, and live theater.  
Prerequisite: TVPR 1710.

### Theater

THEA 1060/EN 1055 Theater Appreciation  
3 Credits, 3 Class Hours
This course is designed to develop an understanding and critical appreciation of live theater. Through reading and analyzing important plays, viewing filmed dramas, and attending and evaluating theatrical productions, students will be introduced to performance and technical components of theater and develop an understanding of theater’s designation as a “collaborative art.” This course fulfills the Fine Arts/Humanities requirement for the General Education core.

THEA 1310 Theatre Crafts I  
3 Credits, 1 Class Hours, 3 Shop Hours
This course covers theater and job hierarchies with emphasis on stage manager duties and includes hands-on approach to converting basic drawings to full realized scenery elements using tools and fasteners as well as painting techniques; reading light plots; and hanging, focusing, and getting instruments.

THEA 1320 Theatre Crafts II  
3 Credits, 1 Class Hours, 3 Shop Hours
This course covers problem-solving in applying design ideas to unusual spaces and implementing design ideas on restricted budgets, with emphasis on designing sets, lights, and costumes. It includes script analysis and development of stage terminology.  
Prerequisite: THEA 1310.

THEA 1510 Basic Acting  
3 Credits, 3 Class Hours
This course contains instruction in basic body and voice control techniques and exploration of actor’s resources and class exercises to develop relaxation, concentration, imagination, and improvisation skills.

THEA 1520 Intermediate Acting  
3 Credits, 3 Class Hours
This course is a continuation of basic body and voice control techniques with introduction to role analysis, characterization development and scene interpretation.  
Prerequisite: THEA 1510 or permission of instructor.

THEA 1910 Production Laboratory  
1 Credit
This course is an introduction to the technical demands of the theater through day-to-day operations. Student may select work hours to fit their schedule and may select an area of particular interest if possible.

### Corporate Center

These special Corporate Center courses should not be viewed as a substitute for related degree courses. Only the relevant Southwest Tennessee Community College academic division chair or program chair can determine what degree credit, if any, can be awarded.

BF A102 Basic Teller/ Cashier Training  
2 Credits
This course is designed to give students basic skills needed for entry-level positions as cashiers in banks, credit unions, savings and loan offices and major retail operations. Students count money, handle cash transactions and perform check-cashing operations. Loss prevention, selling techniques and customer service are also covered. Student guide is provided to participants.
BI 2113 Nutritional Physiology 3 Credits
This course covers the basic science of nutrition as it relates to the different stages of growth and development, diet modification in clinical situations and identifying the needs of individuals with varying lifestyles and cultures. Emphasis is placed on the relationship of nutrition and nursing in the total concept of health care.

EE 1060 Advanced Programmable Logic Controllers 4 Credits, 3 Class Hours, 2 Laboratory Hours
This course is a continuation of the basic Programmable Logic Controllers (PLC) course (EA 1050). This course covers PLC memory organization, data types, math and other advanced instructions, configuring analog I/O, analog I/O applications, sample data, open and closed loop control systems, PID instructions, industrial networks, MMI (man-machine interface), software, message instructions, and Windows based programming software. Prerequisite: EA 1050 or permission from advisor

ET 1001 Introduction to the World Wide Web/Internet 1 Credit
This course is designed to introduce the student to the exciting world of the Information Superhighway. We will explore the Internet, the World Wide Web, and also learn how to utilize E-mail. This course will include a half-hour lecture as well as an hour long lab.

IE A003 Statistical Process Control 3 Credits
This course is designed for managers and frontline supervisors, engineers and other technical personnel and covers the basics of a statistical quality control program. Class participants study how to initiate such a program in their organization as well as why and how statistical process control reduces defects. Emphasis is placed on team-building and other quality-assurance principles advocated by W. Edwards Deming.

IM 4004 Control Systems Technician Fundamentals 4 Credits
This course combines basic industrial instrumentation and controls theory with hands-on training in the laboratory. Course topics include level, pressure, temperature and flow measurement and basic control strategies. Laboratory exercises cover measurement exercises, instrument calibration, thermocouples, resistance thermo detectors (RTD's), wiring, tube bending, and troubleshooting. Safety is emphasized throughout the course. This course is designed to provide experienced electricians with a basic knowledge of industrial instrumentation and controls. A sound working knowledge of DC and AC electricity is needed to be successful in this course. Prerequisite: EA 1010 or equivalent experience

IM 4014 Control Systems Technician Certification Preparation 4 Credits
This course is primarily designed for systems/instrumentation electricians and others with industrial controls experience who want to prepare for the International Society of Measurement and Controls “Certified Control Systems Technician” Level I examination. The course covers control loop tuning, the calibration of “smart” instruments, the evaluation of process signals, and the integration of a process control system. Advanced level, pressure, temperature and flow measurement exercises are conducted using a live process trainer.

IM A044 Basic Industrial Electricity/Electronics 4 Credits
This course covers the fundamentals of electricity and electronics as they apply to industrial facility maintenance. The principles and applications of AC and DC electricity are taught. An introduction to rotating machinery, associated controls, solid state and integrated circuits and test instrumentation is presented. Basic math operations and electrical laws are taught to provide the student with the mental skills needed to understand how and why industrial electrical/electronic devices function. This hands-on course is taught in an electrical lab.

IM A183 HVAC Controls 3 Credits
The HVAC Controls course familiarizes students with the electrical, electronic, and pneumatic controls utilized in heating, cooling and ventilating systems. It covers the terminology, functions, applications and servicing of the various control systems. The course also prepares the students for more advanced training in the HVAC field.

IM A203 National Electric Code 3 Credits
This is a special course designed for electricians who are seeking to upgrade their working knowledge of the Memphis/Shelby County and National Electrical Codes. It is a practical course based on the current NEC and is primarily intended for the apprentice or journeymen level electricians.

IM A304 Standard Gas Code 4 Credits
This course provides a comprehensive examination of gas-fired equipment, including its design, application and performance standards. The course covers the installation, maintenance and repair of gas-fired boilers, furnaces, heat pumps, water heaters and other heat producing equipment. Pipefitting, electrical devices, safety controls and venting, as they apply to gas-fired installations, are studied. The course includes both classroom instruction and practical laboratory exercises and demonstrations. All of the local and national codes that regulate gas-fired equipment are reviewed in detail. This review is intended to prepare the course graduate for licensing examinations.

IT 0523 Advanced Access 2 Credits
This course introduces the student to advanced operations within the Access 97 environment. The class is designed to teach the student how to customize reports and integrate Access with other programs. Other topics include using query wizards, creating and running macros and writing Visual Basic Code. Prerequisite: Access Fundamentals (MC A222) or equivalent experience

IT 0720 Fundamentals of Internet and Web Page Design 2 Credits
This course introduces the student to fundamental operations within the Internet environment. The class is designed to develop effective procedures for navigating and exploring the Web. Also, this course introduces the students to creating a Web page using HTML. Prerequisite: Windows 95 Fundamentals (MC A742) or equivalent experience

IT A132 Office 97 Fundamentals 2 Credits
Students will learn the fundamentals of Word (word processing), Excel (spreadsheet), Access (database), PowerPoint (graphics presentations) and Outlook (organizer) for Microsoft Office 97 on the Windows 95 platform. (* Also applies to MS Office 95. *) Students get a brief idea of how the units interact and the new tools for the Internet that are a part of Office 97. Prerequisite: Windows 95 Fundamentals (MC A742) or equivalent experience

MC A012 Introduction to Microcomputers 2 Credits
Basics of the hardware and software utilized in microcomputer systems are taught. Hands-on experience includes introductory use of the leading spreadsheet and database programs and basic use of the MS/DOS operating systems.
MG 1001 USPAP (Uniform Standards of Professional Appraisal Practices) 1 Credit
In this course, students will learn about the Uniform Standards of Professional Appraisal Practices and what they mean. Topics include how and why the standards were written, how they became law under Title XI of the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) Prerequisite: none; knowledge of Principles of Real Estate recommended

MG 1004 Principles of Real Estate 4 Credits
This course provides a basic understanding of real estate and prepares students for the Tennessee Real Estate License Examination. Subject matter includes terminology, ethics, contract laws, mortgages, trust deeds, leases, financing, mathematics and closing statements. The course consists of 60 classroom hours and is required for pre-licensure of affiliate brokers. It is approved by the Tennessee Real Estate Commission for 60 Classroom hours in Category 1.

MG 1033 Real Estate Appraisal 2 Credits
A broad view of the principles, procedures and theories underlying all appraisals is presented in this course. All types of real property and leases are evaluated using the standard appraisal process with emphasis on residential, small commercial lands and farms. A complete market analysis of each type of property is taught. This course is approved by the Tennessee Real Estate Commission for 30 classroom hours in Categories 3, 5 and 6. This course is also approved by the Real Estate Appraiser Commission.

MG 1073 Real Estate Course for New Affiliates 2 Credits
This course is designed for affiliate brokers who received their Tennessee Real Estate License after January 1, 1994. The course will assist agents to qualify buyers and sellers, maintain a client record base, interact with other agents, be more proficient with contracts as well as other listing and selling documents. This course is approved by the Tennessee Real Estate Commission for 30 classroom hours in Category 7.
MG A001 Effective Customer Service Strategies 1 Credit
This course is designed to develop effective professional skills in customer service, telephone techniques and team building.

MG A353 Management Planning Tools for Total Quality 3 Credits
This course introduces the student to the seven quality management planning tools (e.g., Tree Diagram, Matrix Diagram, Activity Network Diagram). Theory and application of each tool is covered. In addition, the course assists the student in developing the necessary knowledge and skills to integrate the tools into a cycle of activities. This cycle turns the output of one tool into the input of another related tool. This course assists the student in becoming an effective planner within a total quality management environment.

MG A383 Problem Solving Using Charts and Graphs 3 Credits
Course participants study how to use basic graphs and control charts to analyze processes and identify problems. A thorough review of commonly used statistical methods and data collection techniques is covered. The participants are exposed to Taguchi methods, such as cause and effect diagrams, pareto analysis, histograms, and scatter diagrams. The participant should develop a basic understanding and use of the statistical process control charts for sampling inspection.

MG A602 Child Care As A Business 2 Credits
This special course outlines the requirements day care providers must meet to be licensed. The course focuses on the day-to-day operations of a child care center. Topics include budgeting, marketing, developing a business plan, hiring, training, and managing a quality staff.

OS A402 Basic Computer Keyboarding 2 Credits
No experience typing or using the computer keyboard? Learn basic keyboarding skills that are needed to input information accurately and quickly using a computer.

PT A002 Commercial Driver’s License Basics 2 Credits, 2 Class Hours
This course is designed to assist individuals in preparing for the Commercial Driver’s License (CDL) tests in areas of the General Knowledge Test, the Air Brakes Test, and the Combination Vehicles Test. Topics discussed include CDL laws, various tests, various qualifications, driving and cargo safety, vehicle inspection and operation, and air brake components and operation.

PT B432 Intermediate Excel 2 Credits
This course is a continuation course of Excel Fundamentals (MCA 432). Topics to be covered include styles, customization, linking, data transfers and other intermediate and advanced features and commands. Prerequisite: Excel Fundamentals (MCA 432)

PT C432 Advanced Excel for Windows 2 Credits
This course is for Excel users who are ready for Excels most advanced features. Topics will include: macros, advanced graphing, advanced database commands, backsolver, cross tab, customizing, toolbar, and other advanced features. Prerequisite: Excel Fundamentals (MCA 432)

SCA 022 National Counselor Certification Overview 2 Credits
This course is designed to prepare counselors for National Certification and state licensure. Study materials for the content area include theories of counseling, appraisals, human growth and development, research and career counseling.

HL 1128 Small Engines 3 Credits, 2 Class Hours, 2 Laboratory Hours
This course is designed to familiarize the student with the internal combustion engine and the proper operation and maintenance as it relates to landscaping equipment. Student will purchase their own tools.
The Honorable Don Sunquist
Chairman, Ex Officio, Governor of Tennessee

The Honorable Edgar R. “Buddy” Bowers
Harriman

The Honorable Demetra Godsey Boyd
Clarksville

The Honorable Noble Cody
Cookeville

The Honorable Robert Jack Fishman
Morristown

The Honorable Arles B. Greene
Goodlettsville

The Honorable Clifford “Bo” Henry
Maryville

The Honorable Bethel Arrita Summers
Faculty Member, Tennessee Technology Center at Dickson

The Honorable Jane G. Kisber
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The Honorable W. Keith McCord
Knoxville

The Honorable Leslie Pope
Johnson City

The Honorable J. Stanley Rogers
Manchester

The Honorable Maxine A. Smith, Ph.D.
Memphis

The Honorable William H. Watkins, Jr.
Vice Chairman, Memphis

The Honorable Cynthia Davis
Student, Ducktown

The Honorable Vernon Coffey
Commissioner of Education, ex officio

The Honorable Richard D. Rhoda, Ph.D.
Executive Director, Tennessee Higher Education Commission, ex officio

The Honorable Dan Wheeler
Commissioner of Agriculture, ex officio

The Honorable Charles Manning, Ph.D.
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Andrea Miller, Provost, Executive Vice President, Academic and Student Affairs

Karen Nippert, Vice President, Institutional Advancement

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Southwest Tennessee Community College
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Yvonne Jones, Associate Professor of English

Nicholas Joseph, Jr., Instructor, Radiologic Technology
B.S., Kennesaw College – 1988

Steven A. Katz, Professor, English/Music

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B.S., University of Memphis – 1971, M.S., University of Memphis – 1972

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B.S., Middle Tennessee State University – 1967, M.S., University of Memphis – 1979

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B.A., University of Memphis – 1979, M.A., University of Memphis – 1986  
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B.S.N., University of Virginia – 1969, M.S.N., Emory University – 1971  

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B.S.N., University of Tennessee-Nashville – 1979, M.S.N., University of Southern Mississippi – 1980  

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B.S.M.E., Georgia Institute of Technology – 1961, M.S.I.M., Georgia Institute of Technology – 1964, Ph.D., University of Mississippi – 1983, Registered Professional Engineer  

Penny S. Mays, Instructor, Radiological Technology  
Certificate, Advanced Roentgen Ray Technique, University of Tennessee, Memphis – 1961  

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B.S., University of Mississippi – 1984, M.S., University of Mississippi – 1989, Ph.D., University of Mississippi – 1992  

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B.A., Mississippi College – 1951, M.A., University of Alabama – 1952, B.D., Union Seminary (Virginia) – 1966  

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Isom Tibbs, Instructor, Developmental Studies, Mathematics  

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B.S., Miami University (Ohio) – 1982, M.S., Miami University (Ohio) – 1984

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Michael D. Wright, Associate Professor, Information Technology

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M.S., University of Memphis - 1970

J. Paul Dudenhefer, Professor Emeritus
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William T. Dugard, Professor Emeritus
M.S., University of Memphis - 1972

Charles O. Eddlemon, Professor Emeritus
M.S., University of Memphis - 1989

Virginia A. Eleazer, Professor Emerita
M.S., University of Tennessee - 1943

LaVerne T. Gurley, Professor Emerita
Ph.D., The Union for Experimenting Colleges and Universities – 1976

Marian E. Ham, Professor Emerita
D.A., University of Mississippi - 1977

Margie J. Hobbs, Professor Emerita
Ph.D., University of Mississippi – 1986

Walker Hurd, Professor Emerita
M.A., Memphis State University - 1969

James D. Gilbert, Professor Emeritus
Ed.D., University of Mississippi - 1966

Bette C. Latta, Professor Emerita
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George R. Mackie, Professor Emeritus
M.S., University of Memphis - 1974

Albert E. McBee, Professor Emeritus
A.E., State Technical Institute at Memphis – 1974

George L. Miller, Professor Emeritus
B.S.E.T., Memphis State University - 1987

Richard W. Phillips, Professor Emeritus
A.S., State Technical Institute at Memphis – 1976

Ruby Jean Powell, Professor Emerita
M.A., University of Tennessee – 1955

Clyde Orem, Professor Emeritus
M.B.A., University of Memphis – 1967

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B.S., University of Memphis – 1954
Patricia S. Peeples, Professor Emerita  
B.A., Texas Women’s University - 1950  

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A.S., State Technical Institute at Memphis – 1976  

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M.B.A., University of Memphis - 1970  
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Latonya Alexander, Computer Programmer Analyst, B.S., Austin Peay State University, 1977

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Sherry Arnold, Training Specialist M.S., University of Memphis, 1992

Jean G. Arkeison-Veron, Executive Director Institutional Development, M.S., University of Memphis, 1991

Robert Atkins, Director Workforce Development B.S., Xavier University, 1962

Stephen Beeko, Librarian Ed.D., Oklahoma State University, 1982

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Kimberly Hamilton, Program Coordinator B.A., University of Memphis, 1995

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John Harris, Director, Physical Plant

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Jane Sipes, Assistant Director Distance Learning M.S., University of Memphis, 1996

Yolanda Smith, Director, Payroll A.A.S., State Technical Institute at Memphis 1984

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