

Course Listings (and Abbreviations)

Courses are listed alpha-numerically, by subject area code and course number. Courses numbered XXX-099 generally are designed to provide students with basic skills necessary for freshman studies. Courses numbered XXX-100 through XXX-199 normally represent freshman level courses. Courses numbered XXX-200 through XXX-299 are usually sophomore-level courses. Prerequisites, if any, are listed at the end of each course description. Students are advised to consult with their counselors regarding transfer of courses and credits to other institutions.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

ACCT Accounting
 ANTH Anthropology
 ARCH Architectural and Construction Engineering
 Technology
 ART Art
 ASL American Sign Language
 AUTO Automotive Technology
 AVIA Aviation Technology

B

BADM Business Administration
 BIO Biology

C

CART Commercial Art
 C&CR Court and Conference Reporting
 CHEM Chemistry
 CHIN Chinese
 CMHT Community Mental Health Technology
 CS Computer Studies
 CVT Cardiovascular Technology

D

DANC Dance
 DAST Dental Assisting
 DENT Dental Hygiene
 DIET Dietetic Technology
 DLAB Dental Laboratory Technology

E

ECED Early Childhood Education
 ECON Economics
 EDUC Education
 ELEC Electrical/Electronic Engineering Technology
 EMT Emergency Medical Technology
 ENG English
 ENGR Engineering
 ESCI Earth Science

F

FIN Financial Management
 FIRE Fire Technology
 FREN French

G

GCMT Graphic Communications Management and
 Technology
 GEN General Studies
 GEOG Geography
 GER German

H

HEBR Hebrew
 HIM Health Information Management
 HIST History
 HLTH Health
 HOSP Hospitality Management
 HTEC Health Technologies
 HUM Humanities

I

INDT Manufacturing/Industrial Technology
 INTD Interior Design Technology
 ITAL Italian

J

JAPN Japanese
 JOUR Journalism

L

LAT Latin
 LAWE Law Enforcement

M

MA Medical Assisting
 MARK Marketing
 MATH Mathematics
 Manufacturing/Industrial Technology
 INDT
 MECH Mechanical Engineering Technology
 MLT Medical Laboratory Technology
 MUS Music

N

NURS Nursing

O

OADM Office Administration
 OPT Optical Technology
 OTAT Occupational Therapy Assistant

Course Listings (and Abbreviations)

P

PA Physician Assistant
PE Physical Education
PHIL Philosophy
PHM Pharmacy Technology
PHYS Physics
PL Paralegal Studies
POL Political Science
PNUR Practical Nursing
POS Plant Operation Services
PSA Surgeon's Assistant
PSCI Physical Science
PST Plant Science Technology
PSY Psychology
PTAT Physical Therapist Assisting Technology

R

RADT Radiography
REAL Real Estate
REL Religious Studies
RESP Respiratory Care
RUSS Russian

S

SOC Sociology
SPAN Spanish
SPCH Speech Communication
SSCI Social Science
Surgeon's Assistant PSA

T

THEA Theatre Arts

U

UST Urban Studies

V

VT Veterinary Technology

ACCOUNTING - ACCT

ACCT-115 Accounting/Business Applications with Electronic Calculations **4 Credits**

Development of the touch system on the 10-key calculator. Application of simple mathematical procedures to typical accounting, financial, marketing, economic, and other business problems. Instruction and practice in the operation of calculators as used in solving these problems.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for MATH-097.

ACCT-125 Survey of Financial Accounting **4 Credits**

Introductory course in fundamentals of accounting concepts, techniques and practices for students enrolled in two-year career track accounting program and non-accounting business career programs. Emphasis on development of financial statements and utilization of accounting information, concepts and financial statements for management decision making.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-115.

ACCT-126 Survey of Managerial Accounting **4 Credits**

Introductory course in the analysis of financial accounting statements and internal accounting reports for managerial decision making. Emphasis on cost accounting, budgeting, cost-volume-profit analysis, standard costs, incremental decision making and capital budgeting techniques.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-125.

ACCT-128 Applied Accounting **4 Credits**

Introductory course in the fundamentals of accounting procedures as used in a double-entry system. Emphasis on application of procedures and use of tools needed to record financial information in an accounting system.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

ACCT-136 Accounting with Computer Applications **3 Credits**

Application of basic accounting concepts and procedures to microcomputers using software packages, templates and student developed projects. In-depth study of the use of microcomputers as tools in accounting and management. Emphasis will be on computer-generated written assignments and oral presentations supporting financial reports developed during the course. Open computer labs are available to students without access to a microcomputer.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-125 or ACCT-128 or ACCT-145, or departmental approval: equivalent courses and/or experience.

ACCT-145 Financial Accounting **5 Credits**

Introduction to the methodology and logic of the accounting procedures, principles, and standards followed in the development of the information presented in the financial statements of business entities. Emphasizes measuring, describing, interpreting, and analyzing a business' economic activities. For transfer/transient business/accounting students and two-year theory track accounting majors.

Lecture 5 hours. Laboratory 0 Hours.

Prerequisite(s): None.

ACCT-146 Managerial Accounting **5 Credits**

Introduces how accounting information is generated and utilized by managers of business entities in order to plan operations, control activities and make sound decisions. Emphasizes cost accounting systems, responsibility accounting, identifying financial information relevant to management, and analyzing cost behaviors. For transfer/transient business/accounting students and two-year theory track accounting majors.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-145 or departmental approval.

ACCT-150 Governmental/Not-for-Profit Accounting **5 Credits**

Accounting principles, standards, and procedures applicable to enterprises operated not-for-profit: covers governmental units, institutions such as universities, hospitals, charitable organizations, fraternal organizations, religious groups, clubs, etc. Emphasis on the use of funds, budgets, appropriations, third-party reimbursements, and encumbrances as a means of control.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-125 and ACCT-128, or ACCT-145.

ACCT-155 Practical Taxation **5 Credits**

Study of federal, state and local individual income tax law and procedures. Topics include gross income, inclusions and exclusions, exemptions, itemized deductions, tax credits and tax computations. Emphasis on procedures and preparation of returns and schedules.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-091 or equivalent.

ACCT-201 Management Finance and Accounting **4 Credits**

Development of managerial skills in using financial and accounting information in small ventures.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-125 or ACCT-145.

ACCT-202 Management Finance and Accounting **4 Credits**

Continued development of managerial skills in using financial and accounting information in small ventures.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-201.

ACCT-210 Principles of Financial Management 4 Credits

Analytical study of the basic principles of financial management, financial analysis and planning, working-capital management, capital budgeting, capital structure, dividend policies, long-term financing and markets.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-126 or ACCT-146; and MATH-124 or MATH-141.

ACCT-211 Intermediate Accounting 4 Credits

In-depth discussion of the traditional (intermediate) financial accounting topics, as well as recent developments in accounting valuation and reporting practices. Functions and theory will be examined as they relate to financial statements such as income statements, retained earnings statements, balance sheets, and statements of changes in financial position. Present value concepts and current assets such as cash, receivables, and inventories will also be discussed.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-146.

ACCT-212 Intermediate Accounting 4 Credits

Accounting for current liabilities, plant assets and long-term liabilities, as well as equities and investments. Included are topics such as acquisition and disposition of properties, depreciation and depletion, intangibles and amortization.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-211.

ACCT-213 Intermediate Accounting 4 Credits

Discussion of special topics and issues related to income determination such as revenue recognition, accounting for income taxes, accounting for pension costs, accounting for leases, and accounting changes and errors. Preparation and analysis of financial statements will be examined along with financial reporting and changing prices, as well as full disclosure in financial reporting.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-212.

ACCT-236 Accounting with Advanced Computer Applications 3 Credits

Application of in-depth accounting concepts and procedures to microcomputers using commercial software packages and/or student developed spreadsheet templates. Emphasis on integrated accounting systems. Student will complete a project requiring application of accounting theory using the microcomputer as a tool. Final reporting using a word processing package will be required, critically examining software's strengths and weaknesses from a business/accounting perspective. Open labs are scheduled for students to complete their assignments.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-136 and ACCT-211, or departmental approval.

ACCT-250 Cost Accounting 5 Credits

Theory and practice of cost accounting as it applies to management of manufacturing businesses. Accounting for materials, labor, and overhead under process cost and job order cost systems. Study of the budgeting process and standard cost procedures. Also accounting for by-products and joint products. Use of gross profit analysis, contribution margin, break-even point, differential cost analysis, and other analytical tools by management in decision-making activities.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-126 or ACCT-146.

ACCT-251 Internal Controls 5 Credits

Survey course intended to provide understanding and appreciation of philosophy, concepts, and techniques pertaining to audit process, whether internal or external, or for public, private, or governmental organizations. Topics include study of evidence gathering, internal controls to prevent fraud or misappropriation, EDP auditing, professional ethics, legal relationships, audit tools, audit programs, and preparation of working papers and reports. Outside project will be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-126 and ACCT-128, or ACCT-146.

ACCT-255 Theory of Taxation 5 Credits

Introduction to the study of Federal Taxation, including the evolution and application of current tax law, and the importance of tax planning procedures. Consideration of the impact of tax factors on individual, family, and business decision-making, and an insight into tax research procedures.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-146 or departmental approval; equivalent course and/or experience.

ACCT-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

ACCT-272 Accounting: Special Topics

3 Credits

Course provides an in-depth intellectual accounting-related endeavor. Precise nature will be detailed in contract between student and instructor developed during first week of class. May include, but is not limited to, research, group study, case study or practical experience under faculty guidance. Written and oral presentation required at end of course. Students must attend certain seminars which may be held during the day, on weekends or evenings during quarter. Topics may include business ethics, proper business attire, business protocol, human relations and other topics necessary to succeed in the accounting profession.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: enrollment limited to accounting students graduating within two quarters.

ACCT-272A Accounting: Special Topics

1-4 Credits

In-depth study of special topics in accounting. Topics offered will vary in response to the demands of industry and business and in response to students' needs.

(Repeatable. No more than 3 credits of special topics courses may be applied toward the accounting program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-125 and ACCT-128, or departmental approval: equivalent courses and/or experience.

ANTHROPOLOGY - ANTH

ANTH-101 Cultural Anthropology

4 Credits

Cultural patterns and dynamics. History, distribution and growth of cultural patterns. Includes social organization and material culture.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

ANTH-102 Physical Anthropology

4 Credits

Study of man as a physical being. Origin and antiquity of man, the relationship of man to animals, paleontological discoveries and racial phenomena.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

ANTH-103 Prehistoric Archaeology

4 Credits

Discovery of man's prehistoric past by the methods of modern archaeology. Presentation of archaeological findings and interpretation in selected parts of the world.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

ANTH-201 Peoples and Cultures of the World

4 Credits

Survey of primitive cultures, non-Western civilizations and peasant societies. Theories of cultural anthropology will be utilized in an attempt to understand the reasons for differences among humans.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

ANTH-203 Archaeological Field Methods

2-6 Credits

Training and experience in surveying, mapping, excavation and artifact processing at archaeological sites. Course requires 40 hours a week of participation in summer session.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

ANTH-270 Special Topics in Anthropology

1-4 Credits

Study of selected topics, themes, or trends in anthropology (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): ANTH-101 or departmental approval.

ANTH-281 Independent Research in Anthropology

1 Credit

Must be taken concurrently with any 200-level course in anthropology. Specific content is to be arranged through a contract between the instructor and each student. May be repeated for an accrued maximum of three credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Instructor approval: must be taken concurrently with a 200-level course in anthropology.

ARCHITECTURAL AND CONSTRUCTION ENGINEERING TECHNOLOGY - ARCH

ARCH-141 Architectural Drawing I

3 Credits

Design and working drawing techniques of domestic structures will be presented. Scale, detailing, space requirements, framing systems, dimensioning, architectural lettering and modular systems will be discussed. Contemporary building materials and methods are surveyed.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

ARCH-142 Architectural Drawing II

3 Credits

Architectural drawing projects, including studies of public restrooms, measured drawing, structural systems, building equipment and relative codes.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): ARCH-141.

ARCH-143 Architectural Drawing III

3 Credits

Architectural drawing project includes the development of a curtain walled multi-storied, steel frame, office building and parking garage. Construction methods, building systems and code research are emphasized.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): ARCH-142.

ARCH-221 Building Equipment (Mechanical Systems)

3 Credits

Introduction to mechanical systems as applicable to building construction. Water supply, sanitation and acoustical systems. Environmental factors affecting systems design.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ARCH-142.

ARCH-222 Building Equipment (Heating/Air Conditioning Systems)

3 Credits

Fundamentals of heating, ventilating and air conditioning. Equipment and systems will be investigated.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ARCH-142.

ARCH-223 Building Equipment (Electrical Systems)

3 Credits

Electrical theory and electrical systems as applicable to building. Fundamentals of commercial and industrial lighting. Systems of power distribution.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ARCH-142.

ARCH-251 Construction Procedures

3 Credits

Various construction methods and procedures. Includes an orientation to contemporary construction equipment and its application to the job schedule. Site preparation, scheduling of equipment, men and materials.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ARCH-143 or departmental approval: ability to interpret construction drawings and specifications.

ARCH-260 Cooperative Field Experience

1-3 Credits.

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program

Course Descriptions

Fall 1996-Summer 1998 Catalog

ART - ART

ART-101 Art Appreciation

4 Credits

Development of an understanding and interest in creative forms in the visual arts. Introduction to painting, sculpture and architecture. Simple experimental studies in basic design through texts and visual materials.

Reading required.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

ART-102 Art History

3 Credits

Survey of the chronological and stylistic development of Western art. Includes Egyptian, Mesopotamian, Greek, Roman, Early Christian, Byzantine and Gothic schools.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ART-103 Art History

3 Credits

Survey of the chronological and stylistic development of Western art. Includes Renaissance, Baroque and Rococo schools.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ART-104 Art History

3 Credits

Survey of the chronological and stylistic development of Western art. Includes the 19th century schools and some study of the 20th century.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ART-105 Drawing I

3 Credits

Introductory course in drawing to develop a student's ability to describe through observation. Location of forms in space, proportion, shape and light.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): None.

ART-106 Drawing II

3 Credits

Exploration of different media and approaches. Building of solid forms in clearly and totally defined space, using textures and surfaces, linear and tonal qualities.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-105 or departmental approval.

ART-107 Drawing III

3 Credits

Development of skills in drawing based upon knowledge acquired in Drawing I and II. Exploration of a wide variety of media and techniques. Attention to perspective and composition in drawing.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-106 or departmental approval.

ART-108 Fundamentals of Design I

3 Credits

Study of such elements of design as line, mass, space, light, shade, texture and color. Organization to achieve rhythm, balance, movement and unity.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): None.

ART-109 Fundamentals of Design II

3 Credits

Continuation of Fundamentals of Design I course.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-108 or departmental approval.

ART-110 Fundamentals of Design III

3 Credits

Continuation of Fundamentals of Design II course.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-109 or departmental approval.

ART-111 Sculpture

3 Credits

Introduction to sculpture, through the medium of clay, with stress on the procedures of sculpture and modeling.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): None.

ART-112 Sculpture

3 Credits

Introduction to plaster casting, wood and light metals plus advance techniques in clay.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-111 or departmental approval.

ART-113 Sculpture

3 Credits

Complex problems in clay and glaze mixing plus advanced problems in wood and metal. Introduction to stone sculpture and plastics.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-112.

ART-120 Survey of Non-Western Art

3 Credits

Art of Africa, Persia and the Orient and its relation to contemporary art.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ART-121 Calligraphy

3 Credits

Study and execution of letter forms and their history as elements of design in such applications as layout and illustration.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): None.

Course Descriptions

Fall 1996-Summer 1998 Catalog

ART-131 Commercial/Advertising Art 3 Credits

Knowledge of basic equipment and techniques used in the advertising, display and manufacturing fields.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-105 or ART-121, and departmental approval.

ART-132 Commercial/Advertising Art 3 Credits

Personal application of techniques in advertising design with emphasis on the layout and lettering methods. Knowledge of production.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-131.

ART-133 Commercial/Advertising Art 3 Credits

Advanced methods of advertising/commercial display and their demands in the current market.

Lecture 2 hours. Laboratory 4 hours

Prerequisite(s): ART-132.

ART-140 Film Appreciation 3 Credits

Introduction to the aspects of the film including script, directing and the elements of cinematography. Includes a survey of film history and criticism. Students see film masterpieces from a number of countries.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ART-151 Art for Elementary Education 3 Credits

Basic art education theory and practice in the visual arts for elementary education majors. Emphasis on the integration of the visual arts disciplines with other subjects in the elementary curriculum.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Eligibility for ENG-101.

ART-169 Ceramics I 3 Credits

Basic clay-working techniques including handbuilding.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): None.

ART-170 Ceramics II 3 Credits

Handbuilding and throwing. Introduction to clay and glaze science.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-169.

ART-171 Ceramics III 3 Credits

Throwing skills for functional and production pottery.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-170.

ART-181 Appreciation of Interior Design and Decoration 3 Credits

Basic knowledge of the aesthetic beauty shown in architecture, interior design, decoration and furniture.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ART-101 recommended.

ART-182 Appreciation of Interior Design and Decoration 3 Credits

Knowledge of the principles of contemporary exterior and interior architectural designs.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ART-101 recommended.

ART-183 Appreciation of Interior Design and Decoration 3 Credits

Study of the elements of pure design, expression of structure, suitability of material to its use, contrast and variety, avoidance of monotony, pleasure of surprise, establishment of unity and evidence of taste as the foundation stones of good design regardless of style or period.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ART-101 recommended.

ART-190 Introduction to Computer Graphics 3 Credits

Introduction to the computer and its uses as a creative and technical medium in the visual arts. Provides hands-on experience in generating visual images, then exploring creative options using paint programs to change colors, add and delete elements, create variations on a theme. Develops understanding of hardware/software relationships, input/output devices and peripherals, terms, procedures and processes of micro-based graphic computer systems.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): ART-108 or departmental approval.

ART-191 Computer Graphics Applications I 3 Credits

Emphasis on operating computer systems and paint programs to produce more selective and amplified applications. Student will achieve greater speed, consistency and competence in computer graphics applications. Introduces new software, encourages more creative problem-solving, explores sequential thinking, and focuses on applying the computer to concepts of motion, time and space.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): ART-190 or departmental approval.

ART-207 Water Color 3 Credits

Fundamentals of water color techniques and qualities.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-105.

ART-208 Portrait Drawing and Painting

3 Credits

Basic exploration and preparation of grounds, panels and canvases for traditional drawing and painting of the human head. Anatomy and construction and in totality the composition of the picture format is emphasized.

May be taken three times for a total of nine credits.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-105 or departmental approval: portfolio.

ART-221 Printmaking I

3 Credits

General introduction to various aspects of printmaking and graphic composition. Special emphasis on the woodcut. Some multi-color work.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-105 or departmental approval.

ART-222 Printmaking II

3 Credits

Emphasis on further developing the techniques of etching, engraving, drypoint and wood cut. Some multi-color work.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): None.

ART-270 Special Topics in Art

1-4 Credits

Study of selected topics in the traditional arts and in emerging computer art technologies (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: concurrent enrollment in ART-272 may be required.

ART-272 Special Topics in Art Laboratory Experience

1-4 Cr

Specialized lab focuses on problem solving within a selected topic. Emphasis will be on application and production. (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 2-12 hours.

Prerequisite(s): Departmental approval: concurrent enrollment in ART-270 may be required.

AUTOMOTIVE TECHNOLOGY - AUTO

AUTO-100 Automotive Maintenance

2 credits

Designed to teach automotive maintenance and introduce vehicle systems and components to the automobile owner. Topics include orientation to safe and proper hand tool usage, safe work habits, proper applications for fluids and lubricants, maintenance schedules and the selection of a repair facility. Includes an introduction to brake, electrical, suspension, fuel, and cooling systems and their terminology. Minimal hands-on application.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

AUTO-110 Introduction to Automotive Service

2 credits

Designed to provide mastery of several basic service procedures required of a person beginning work in an automobile service center. Provides opportunity to perform tasks using prescribed laboratory sheets after introduction to shop safety and safe operation of automobile equipment and hand tools. Oil change, tire service, coolant service, transmission service, and service manual usage are some of the tasks to be mastered.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

AUTO-119 Basic Automotive Electrical Systems

4 credits

Essentials of electricity for the automotive technician. Topics include electrical theory, Ohm's Law, basic, series, parallel and series-parallel circuits. Introduction to reading and using wiring schematics, along with extensive use of the Digital Volt Ohm Meter, are included.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

AUTO-120 Fundamentals of Internal Combustion Engines

4 credits

Operation of the internal combustion engine including engine fundamentals, cooling system operations, disassembly, measurement and assembly. Emphasis on diagnosis and troubleshooting.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None

AUTO-122 Automotive Braking Systems

4 Credits

Designed to provide student with a foundation in the theory and operation of automotive braking systems. Includes hydraulic brake principles, service operations, troubleshooting and repair of disc, drum and anti-lock braking systems including machining operations.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None.

AUTO-125 Automotive Heating and Air Conditioning 4 credits

Theory, diagnosis and servicing procedures of automotive air conditioning systems are covered as well as heating systems, electric and vacuum components and electronic climate control systems. Includes service procedures for R-12 and R-134A refrigerants.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): AUTO-119.

AUTO-128 Intermediate Automotive Electrical Systems 4 Credits

Essentials of theory of operation, diagnosis and testing of the following automotive systems: batteries, A.C. charging systems and alternators; starting systems; and basic ignition systems.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): AUTO-119 or departmental approval: industry related experience.

AUTO-129 Engine Tune-up and Emissions 5 credits

Theory and operation of modern automobile ignition systems and emission control devices. Methods of analyzing and locating malfunctions, using deductive methodology and diagnostic equipment, will be used to diagnose and repair ignition and emission related problems.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): AUTO-119 or departmental approval: industry related experience.

AUTO-131 Automotive Technical Experience 1 credit

Provides technical field experience needed to develop automotive service repair skills through work experience in the automotive service field. Students spend at least 12 clock hours per week per credit hour registered for gaining practical experience. May be repeated up to eight credit hours; no more than four credits may be applied toward the automotive technology program degree requirements.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 12 hours per week per credit hour.

Prerequisite(s): Departmental approval: job site approval required.

AUTO-220 Engine Performance and Driveability 5 credits

Theory, operation and advanced diagnostic of modern automobile ignition, fuel, and computer controlled emission control devices. Methods of analyzing and locating malfunctions, using deductive methodology and diagnostic equipment, will be used to diagnose and repair computer controlled driveability and emission system related problems.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): AUTO-128.

AUTO-221 Advanced Automotive Electrical and Electronic Systems 4 Credits

Theory of operation, diagnosis and testing of automotive electrical and electronic systems. Study of automotive systems including lighting, instrumentation, body and chassis electrical and electronic controls.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): AUTO-128.

AUTO-222 Automatic Transmission/Transaxles 4 credits

Theory of operation and diagnosis, maintenance and overhaul procedures of the automatic transmission and transaxle with a major emphasis on hydraulic fundamentals, controls and planetary gear train theory.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): AUTO-119 or departmental approval: industry related experience.

AUTO-223 Automotive Alignment Steering and Suspension 4 credits

Theory, principles of operation, and terminology of automotive steering and suspension designs. Emphasis on system inspection and accurate malfunction diagnosis, parts replacement procedures, location and interpretation of specifications, measurement and adjustment of alignment angles, wheel balancing and correct use of special tools and equipment.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): AUTO-119 or departmental approval: industry related experience.

AUTO-224 Manual Transmissions/Transaxles and Drive Train 4 Credits

Theory and operation of manual transmissions, transaxles, clutches, drive shafts, universal joint, rear axles, limited slip differentials and axle shafts. Emphasis on diagnosis, troubleshooting and repair.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): AUTO-119 or departmental approval: industry related experience.

AUTO-225 Automotive Service Operations 3 Credits

Principles of operation for today's automotive repair center to include staffing, customer relations, personnel management, scheduling of work and workers, parts inventory control procedures, job costs, supervisor's role in cost control, manufacturer's warranties, marketing and advertising.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): AUTO-119 or departmental approval: industry related experience.

AUTO-270 Current Topics in Automotive Technology 1-4 Credits

Specialized course focuses on changes, trends and emerging technology in the automotive service industry including state-of-the-art changes in vehicle operation, fuel management systems, components and systems and service operations. (Repeatable. No more than 4 credits of special topics courses may be applied toward the automotive technology program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): None.

AUTO-272 Current Topics in Automotive Technology Laboratory Experience 1-3 Credits

Focuses on the practical application of emerging technology in the Automotive Service Industry including state-of-the-art changes in vehicle operation, fuel management systems, components, systems and service operations. (Repeatable. No more than 4 credits of special topics courses may be applied toward the automotive technology program degree requirements.)

Lecture 0 hours. Laboratory 2-6 hours.

Prerequisite(s): Concurrent with AUTO-270.

AVIATION TECHNOLOGY - AVIA

AVIA-101 Private Pilot Theory 3 Credits

Overview of the aviation industry, the industry's importance in our economy, career opportunities in aviation, familiarization with aviation terminology, introduction to training for pilots, and preliminary study for the private pilot written examination required by the Federal Aviation Administration.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

AVIA-105 Aviation Communications 3 Credits

Radio usage, knowledge of low and medium frequencies, proper phraseologies, A.T.C. procedures and convenience of radio aids in navigation. Emergency procedures, radar vectors, FCC assigned frequencies, high density traffic communication, approach and departure control and en route procedures.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

AVIA-121 Commercial Pilot Theory 3 Credits

Elementary aerodynamics, weight and balance in aircraft, instruments and instrument systems, basic meteorology, F.A.A. regulations, radio communications and procedures, pre-flight inspection, safety procedures, navigation and principles leading to the written examination for commercial pilots administered by the Federal Aviation Administration.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

AVIA-141 Aviation Meteorology 3 Credits

Basic concepts of meteorological phenomena, formation of air masses, fronts, thunderstorms, icing, fog and clouds, and the analysis and use of weather data for safe flight.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

AVIA-151 Primary Flight 3 Credits

Actual flight experience in approved aircraft. Designed to train students in aircraft pilot fundamentals which lead to private pilot licensure by the Federal Aviation Administration. Flight experience: 38 hours.*

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): None.

AVIA-171 Commercial Pilot

3 Credits

Advanced maneuvers including chandelles, lazy eights and eights-on-pylons and 720-degree power turns; gliding spirals; 180-degree side approaches and 360-degree overhead approaches; accuracy landings. Advanced cross-country flying. Flight experience: 38 hours.*

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): AVIA-151 or departmental approval: private pilot certificate.

AVIA-172 Commercial Pilot

3 Credits

Extensive navigation training including radio navigation utilizing VHF and LF radio navigation aids; air surveillance; radar approaches; night operations including night navigation; extensive basic instrument training including radar approach procedures. Flight experience: 38 hours.*

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): AVIA-171.

AVIA-201 Intermediate Flight

3 Credits

Review of all precision maneuvers and multi-engine aircraft systems, loading and performances; pre-flight, takeoffs and landings, basic maneuvers; single engine operation; emergency procedures, flight and fuel consumption, planning VMC V1 and V2 speeds, theories of multi-engine flight. Flight experience: 38 hours.*

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): AVIA-172.

AVIA-202 Intermediate Flight

3 Credits

Instrument flight planning; filing flight plan; aircraft performance range and fuel requirements; required instrumentation and equipment and their proper use; emergency procedures; IFR navigation including VOR, ILS, DME and ADF and radar approach procedures; holding procedures; missed approach procedures; compliance with A.T.C. procedures. Flight experience: 40 hours.*

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): AVIA-201.

AVIA-221 Instrument Pilot Theory

3 Credits

Advanced course leading to the F.A.A. examination for instrument pilot rating. Covers instruments, charts, advanced meteorology, approach and landing aids, radio navigation, radar, automatic flight, etc.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): AVIA-101 or AVIA-121 or departmental approval.

AVIA-271 Flight Instructor

3 Credits

Advanced course leading to F.A.A. written examination for instructor rating. Covers fundamentals of flight instruction, effective flight instruction methods, instructor responsibilities, medical requirements of flying, F.A.A. regulations and safety.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): AVIA-221 or concurrent enrollment, or F.A.A. Instrument Pilot License.

AVIA-281 Ground Instructor

3 Credits

Comprehensive study of the fundamentals of teaching and learning as they apply to flight introduction, effective teaching methods; instructional management; instructor responsibilities; aeromedical information for instructors; aerodynamics; airplane performance; flight training syllabus; federal regulations for instructors.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): AVIA-221 or concurrent enrollment.

AVIA-285 Advanced Ground Instructor/Dispatcher

3 Credits

Advanced course leading to the F.A.A. written examination for the advanced ground instructor as well as the flight dispatcher. Covers advanced operating and flight rules, flight operations including weather services, AIM, IAP, Mach speeds, flight logs, weight and balance, and aircraft performance analysis.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): AVIA-221, AVIA-271, and AVIA-281; or departmental approval.

BUSINESS ADMINISTRATION - BADM

BADM-102 Introduction to Business

4 Credits

Comprehensive survey of the American business system with emphasis on basic business vocabulary.

Examination of principles and careers related to economics, management, marketing, accounting, finance and general business.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-110 Business Decision Making

2 Credits

Analysis and application of systematic reasoning towards business problems. Examination of current business problems utilizing both measurable and qualitative tools of decision making. Case analysis will provide methodology for framing decisions.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): BADM-102.

BADM-112 Principles of Management

4 Credits

Introduction to management principles, concepts and skills utilized in operating a business organization. Detailed analysis of management function with emphasis on planning, organizing, decision-making, delineating of authority, leading and controlling.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): BADM-102 or departmental approval.

BADM-120 Transportation Principles

3 Credits

Survey of the American domestic freight transportation systems, including areas of history, applicable regulations and industrial traffic management. Emphasis on modes of transportation and their interrelationships including but not limited to motor, rail, water and air.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-121 Labor-Management Relations

3 Credits

Historical, legal and structural environments which influence labor relations, and an examination of the negotiation and administration of labor contracts.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-130 Small Business Management I

3 Credits

Development of entrepreneurial skills needed by those who may want to start their own venture or by those who already run their own venture.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-102 or departmental approval.

BADM-131 Small Business Management II

3 Credits

Development of managerial skills needed by those who may want to start their own venture or by those who already run their own venture.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-130.

BADM-211 Production/Operations Management

3 Credits

Principles and techniques of coordinating the routing, scheduling and control of industrial production including planning, charting, critical path analysis and quality control.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-213 Business Law

4 Credits

Study of the legal process as it relates to society, government, business and the individual; the laws governing commercial transactions such as contracts, personal property, bailments and sales.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-214 Business Law

4 Credits

Study of the legal process as it relates to society, government, business and the individual; study of laws governing commercial transactions, such as commercial paper, real property, secured transactions, agency, employment, partnerships and corporations.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): BADM-213.

BADM-216 Introduction to Purchasing

3 Credits

Analysis of purchasing organization structure and procedures. Description of quality, specifications and standardization, supplier selection, price theory, contract negotiation and legal aspects of purchasing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-102 or departmental approval.

BADM-217 Intermediate Purchasing

3 Credits

Application of principles relating to price policies, speculation, equipment procurement, salvage operations, legal matters, records and budget analysis.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-216.

BADM-218 Purchasing Management

3 Credits

Procedures and policies relative to contract negotiations. Vendor-buyer relationships, make or buy decisions, inventory control, buyer training, materials handling, records and budgets. Analysis of specific case studies.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-217.

BADM-220 Human Relations in Business

3 Credits

Basic motives of people in job situations. Company relationships with workers, suppliers and customers. Leadership development, communication and group processes.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-222 Organizational Behavior

3 Credits

Study of the principles and practices of organizational dynamics. The interrelationships of formal, informal and individual subsystems are emphasized. Lecture, discussion, case studies and projects are used or designed to enhance the learning experience.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-220.

BADM-223 Value Analysis

3 Credits

Focuses on a system which reduces the cost of materials and services. Included are the techniques, formal and informal programs, major areas to analyze, start-up, training, use of suppliers and keeping the program going.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-217 or departmental approval.

BADM-224 Negotiations

3 Credits

Principles, techniques and skills needed in interpersonal, buyer-seller, transportation and labor management negotiations.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BADM-216 or departmental approval.

BADM-230 Industrial Traffic Management

3 Credits

Traffic manager's responsibility operating within an industrial/commercial company. Includes freight loss and damage claims, handling of hazardous materials regulations, import/export and just-in-time concepts. Relationship of industrial traffic management function to operating units of the company including inventory control, purchasing, warehousing and information management.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

BADM-233 Personnel Management

3 Credits

Problems, practices and policies in the management of people. Leadership, motivation and direction of employees toward management-employee-oriented goals. Employment practices. Administration of management-union relationship, benefit programs and employee compensation.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

BADM-241 Office Management

4 Credits

Basic principles of office organization and management. Emphasizes the interrelationship between physical, personal and procedural factors affecting the efficient layout of an office.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

BADM-245 New-Business Seminar

4 Credits

On-the-job analysis of an existing small business creation of a simulated business.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): BADM-131 or departmental approval.

BADM-246 New-Business Seminar

4 Credits

Continued on-the-job analysis of an existing small business creation of a simulated business.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): BADM-245.

BADM-250 Business Operations

3 Credits

Capstone course which focuses on the application of entrepreneurship, management, finance, accounting and marketing skills. Emphasis is on the interrelationship of specific business disciplines. Perspective of the manager or owner is experienced via case analysis, computer simulations, or actual operational exposure.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ACCT-126 or ACCT-145; and BADM-110, BADM-112, BADM-130, MARK-201, and OADM-130.

BIOLOGY - BIO

BIO-104 Introduction to Biology-Cellular Controls/Genetics/Ecology **4 Credits**

Designed primarily for non-science majors to fulfill lab science requirement. Fundamental concepts of cellular biology, genetic inheritance, developmental biology, natural selection, communities and ecosystems, with special emphasis on the applications of these concepts to the individual living in today's world.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

BIO-105 Introductory Biology - Human Body in Health and Disease

4 Credits

Designed primarily for non-science majors to fulfill lab science requirement. Fundamental concepts of homeostasis of the human body. Emphasis on the anatomy and physiology of the nervous-hormone, skeletal-muscular, circulatory and respiratory and urogenital systems with special emphasis on the significance of these concepts to the individual living in today's world.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Eligibility for ENG-101.

BIO-107 Oral Structure and Development

4 Credits

Introduction to dental terminology, form and function of teeth and related structures. Development, histology, morphology, and pathology of the permanent and deciduous dentitions and soft tissue structures. Helps students identify the normal structures and common abnormalities within the oral cavity, and to communicate effectively with other members of the dental team.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the Dental Assisting program.

BIO-108 General and Oral Tissues

3 Credits

Study of general principles of histology and pathology related to the oral cavity. Emphasis will be on development and types of basic tissues, formation of facial structures, and pathological process of systemic and oral diseases.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to the Dental Hygiene program.

BIO-110 Anatomy and Physiology for Radiographers **5 Credits**

Basic understanding of body systems, structures and organs in regard to their functions and relationship to diagnostic radiographic examinations. Includes topographic anatomy and different radiographic appearance of body structures.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to the Radiography program.

BIO-111 General Biology I

4 credits

General introduction to basic biological principles structured around a detailed study of cell morphology and physiology with emphasis on the metabolic processes of photosynthesis, respiration, cell division, and embryological development. Biochemical principles are stressed.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Eligibility for ENG-101.

BIO-112 General Biology II

4 credits

Multicellular organisms are examined in regards to structure, function, and regulation. Utilizing comparative anatomy and physiology, emphasis is on the increasing complexity found within these organisms. Extensive coverage is given to the tissues, organs, and systems level of complexity as they have evolved in the various major groups of multicellular plants and animals. In animals, this includes a detailed study of the circulatory, digestive, respiratory, musculo-skeletal, excretory, endocrine, and nervous systems. In plants nutrient procurement, transport, and hormones are examined. Role of all of the above in maintaining homeostasis within the multicellular organism is stressed.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): BIO-111 or departmental approval: equivalent knowledge.

BIO-113 General Biology III

4 credits

Continuity of life, evolution, diversity of life, and ecology. Continuity of life includes reproduction and genetics. Evolution delves into the origins of evolutionary theory and modern concepts of evolution. Diversity of life includes an examination of various taxonomic schemes and a survey of the five kingdoms. Ecology explores the various levels of ecological organization and interrelationships among organisms and their environment.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): BIO-111 or departmental approval: equivalent knowledge.

BIO-121 Principles of Medical Science

4 Credits

Basic principles of inorganic chemistry, organic chemistry and biochemistry necessary for the study of human physiology. Emphasizes physiological applications of the chemical processes of cellular transport, communication and metabolism. Designed to prepare students for anatomy and physiology. The laboratory includes use of the metric system, basic chemistry techniques and physiological applications.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Successful completion of MATH-093 or MATH-094, or eligibility for MATH-100N.

BIO-131 Anatomy and Physiology of the Eye

3 Credits

Study of the composition of the eye and its associated structure such as orbit, eyelids, and muscles.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the Optical Technology program.

BIO-135 Dental Anatomy and Terminology

4 Credits

Introduction to physiological and anatomical characteristics of the oral environment with specific reference to terms used in the dental profession.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the Dental Laboratory Technology program.

BIO-136 Bio-Mechanics of Dentistry

4 Credits

Basic metric system, inorganic chemistry, organic chemistry and physics course, with emphasis on inorganic chemistry and principles of physics. Designed principally for the Dental Laboratory Technology program to provide students with the general chemical and physics knowledge required to improve the comprehension of dental laboratory materials, procedures and life in general. Laboratory experiences include chemistry and physics.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to the Dental Laboratory Technology program

BIO-141 Anatomy and Physiology of Domestic Animals I

5 Credits

Explores the comparative anatomy and physiology of the canine, feline, equine, bovine, ovine, and porcine species. Focuses on cellular biology, the digestive, circulatory, respiratory, urinary, and musculo-skeletal systems with emphasis on species variations. Laboratory includes preserved specimens, models, microscopic observations, and audio/visual aids when available.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): BIO-121 or concurrent enrollment.

BIO-142 Anatomy and Physiology of Domestic Animals II

5 Credits

Explores the comparative anatomy and physiology of the canine, feline, equine, bovine, ovine, and porcine species. Focuses on embryology, early development and genetics; includes the nervous, endocrine, and reproductive systems. Laboratory includes preserved specimens, models, microscopic observations, and audio/visual aids when available.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): BIO-141.

BIO-143 Anatomy and Physiology I

4 Credits

Study of the structure and function of the human body. Focus on fundamental concepts of cellular structure and physiology. Structure, function, and terminology of the skeletal, muscular, circulatory, lymphatic, and digestive system are considered. Laboratory experiences include demonstrations, microscopic observations, videos and films related to lecture topics.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): BIO-121; or CHEM-102 or concurrent enrollment; or departmental approval.

BIO-144 Anatomy and Physiology II

4 Credits

Study of the structure and function of the human body. Focus on structure and functions of the respiratory, urinary and nervous systems. Hematology, acid-base balance, and fluid and electrolyte balance are also considered. Special emphasis on these topics in normal and diseased states is discussed. Laboratory experiences include demonstrations, microscopic observations, videos, and films related to lecture topics.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): BIO-143 or departmental approval.

BIO-145 Anatomy and Physiology III

4 Credits

Study of the structure and function of the human body. Focus on the structure and functions of the endocrine, reproductive systems, immunology, cellular division, human sexuality, birth control, fertilization, embryological and fetal development, gestation, parturition, classical and theoretical genetics, recombinant DNA, teratogens, and common congenital abnormalities. Specific emphasis placed upon the mechanisms and controls of these topics in normal, dysfunctional and diseased states. Laboratory includes experiments, demonstrations, microscopic observations, video-tapes and films related to lecture topics.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): BIO-144 or departmental approval.

BIO-150 Field Botany

4 Credits

Study of the plant kingdom, local vegetation and plant communities. Emphasis is placed on understanding the natural heritage of northeastern Ohio.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

BIO-151 Environment: Issues and Choices for Society

3 Credits

Ecological/environmental study designed to have students recognize the interdependence of the environment and humanity and their responsibilities for preservation of the environment. Will not fulfill a lab science requirement.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

BIO-205 Field Zoology

4 credits

Study of the animal kingdom with emphasis on animal identification found in local habitats and ecosystems.

Field trips are included for direct observations, measurements and collecting of specimens.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Completion of any 100-level or higher science course.

BIO-206 Principles of Genetics

3 credits

Study of the principles of genetics as they relate to inheritance in organisms, particularly humans. Study will deal with classical Mendelian genetics, biological basis of inheritance, facts of modern genetics, developments in the molecular nature of hereditary determinants, and the role of environmental factors. Emphasis is given to current research and future implications.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BIO-104, or BIO-105, or BIO-111, or BIO-143.

BIO-207 Techniques in Molecular Genetics

3 Credits

Advanced study of structure and function of DNA with emphasis on laboratory techniques used in molecular biology. Laboratory practices and applications of sterile techniques, gel electrophoresis, DNA isolation, RFLP analysis, plasmids, and recombinant DNA will be included.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): BIO-104 or BIO-111 or BIO-145.

BIO-210 Biology of Aging

5 Credits

Study of the biological theories of aging, the fundamental concepts of cell biology and physiology and the preventive techniques to enhance well-being.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): BIO-104 and BIO-105, or departmental approval.

BIO-220 Radiobiology

2 Credits

Theories and practical application of the biological effects of ionizing radiation, enhancement factors, quantities and units of measurement, proper protective measures for both patient and personnel, maximum permissible doses, radiation absorption processes and shielding, and exposure monitoring devices.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the Radiography program.

BIO-221 Microbiology

4 Credits

Survey of representative types of microorganisms in terms of their structure, function, cultivation, identification and methods employed for their control. Emphasis is placed on those causing human disease and the role of the immune system.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Allied Health Majors: CHEM-101, or BIO-121 or equivalent; and BIO-142 or BIO-144, or departmental approval: equivalent knowledge. Biology Majors: BIO-112.

BIO-222 Pathophysiology

3 credits

Descriptions of abnormal physiology with the processes that bring about these disruptions, and with the various ways in which these diseases manifest themselves as symptoms, signs, physical factors, and laboratory findings leading to diagnosis, treatment and prognosis. An examination of basic pathophysiological processes is followed by a survey of diseases of the various body systems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BIO-145.

BIO-270 Special Topics in Biology

1-4 Credits

Study of selected topics or current issues in the field of biology. Provides student an opportunity to explore various biological phenomenon in greater detail. Topics offered will vary (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements).

Lecture 01-04 hours. Laboratory 0 hours.

Prerequisite(s): Dependent on special topic, biology counterparts will determine appropriate prerequisite when approving topical outline.

BIO-272 Special Laboratory Topics in Biology

1-3 Credits

Laboratory study of selected topics or current issues in the field of biology. An opportunity to gain laboratory experience and investigative skills to further one's understanding of biology. Topics offered will vary (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 2-9 hours.

Prerequisite(s): Dependent on special topic, biology counterparts will determine appropriate prerequisite when approving topical outline.

BIO-281 Independent Research in Biology

1-3 Credits

May be taken by students who wish to select and design an independent research project in biology, or by students concurrently enrolled in a 200-level biology course who wish to obtain honors credit for the 200-level biology course.

Lecture 0-3 hours. Laboratory 0-9 hours.

Prerequisite(s): Departmental approval: completion of any 100-level biology course and instructor approval of proposed research project.

COMMERCIAL ART - CART

CART-105 Commercial Art Orientation

2 Credits

Overview of the commercial art industry including history, employment trends, professional materials and processes. Typical commercial artists' assignments will be discussed.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): None.

CART-111 Typography and Layout

2 Credits

Advertising layout, design and lettering to prepare the commercial art student/freshman for the more specialized second year of the program. Emphasis on basic layout design plus type recognition, roughing in of headline lettering, copy designating, total design approach and terminology understanding.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): None.

CART-112 Typography and Layout

2 Credits

Continuation in preparing the student for hand lettering. Speed ball pen, ruling pen, crowquill pen and brush will be utilized. Roman, Gothic and Block-letter styles will be studied as well as formal and informal scripts, poster and outline lettering.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): CART-111.

CART-113 Typography and Layout

2 Credits

Study of the use and application of pressure sensitive type sheets available today. Use of type or hand lettering in the design of monograms, trademarks and logotypes and the situations where hand lettering is a must.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): CART-112.

CART-140 Page Layout on Computer

3 Credits

Introductory course in electronic page layout using a graphic computer system and vector software. Emphasized is hands-on experience, application and production in hardcopy of typography and layout choices. Designing and redesigning through selection, size, placement, proportion and manipulation of type and scanned images to visually clarify and unify the page. Output to a postscript laser printer to proof and finalize page designs. May be repeated for up to nine credits, three of which are applicable to a commercial art degree.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): CART-111 and ART-108, or departmental approval.

CART-201 Graphic Drawing

2 Credits

Designed to help students transfer basic skills to areas of practical usage through assignments in graphic production and illustration similar to those encountered in the field of commercial art. Projects will include drawing the clothed human figure and the parts of the figure most frequently used commercially, and constructing drawings of manufacturer's products.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): ART-107, ART-109 and ART-202.

CART-202 Graphic Drawing

2 Credits

Concentration on drawing product packages and containers, fashions and animals.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): CART-201.

CART-211 Illustration

3 Credits

Introducing basic professional rendering technique in black and white and color generally used in simple illustrations for advertising design and newspaper advertising. Primary emphasis, however, on black and white renderings.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ART-107, ART-109, and ART-202.

CART-212 Illustration

3 Credits

Emphasizing the airbrush and its role in advertising art. Maintenance, care and use of the airbrush, friskets and acetate masks. Various textures, obtainable with the airbrush, will be pursued. Complete airbrush renderings will be emphasized.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): CART-211.

CART-221 Graphic Production

2 Credits

Comprehensive course in preparation of art for reproduction (camera-ready art). Editorial preparation and layout of copy for publication. Includes a study of style; the point system; type faces; work and character count; texture substances and uses; paper; printing process; photo engraving; platemaking; and offset lithography to acquaint the student with the practical and economical advantages of different media used in the production of publications. Study of professional standards and cost of production in the publishing industry.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): ART-107 and ART-109.

CART-222 Graphic Production

2 Credits

Continuation of graphic production in the preparation of artwork for reproduction, including the use of crop marks, register marks, bleed, cropping, sizing of artwork and photographs. Also a complete understanding of keyline procedure and paste-up necessary for getting artwork ready for the camera.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): CART-221.

CART-240 Designing with Type on Computer

3 Credits

Intermediate course in electronic page layout introducing the student to vector oriented drawing software in conjunction with type. Emphasis will be in the manipulation of type in conjunction with simple graphic images. Obtaining type, manipulating type with several different software packages, and type application will be covered. Projects will be output to a postscript laser printer. Working with service bureaus and other output options will be discussed. May be repeated for up to nine credits, three of which are applicable to a commercial art degree.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): CART-140 or departmental approval.

CART-241 Integrating Art with Type on Computer

3 Credits

Advanced course in desktop publishing. Provides hands-on experience in creating various graphic elements typically found in full-page design, then assembling them into an integrated two-page spread. Emphasis on interrelationships of line illustration, halftone photo images, display type, text, logos, boxes and rules as components of a unified two-page layout. May be repeated for up to nine credits, three of which are applicable to a commercial art degree.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): CART-240 or departmental approval.

CART-262 Commercial Art Practicum

2 Credits

Designed to help the commercial art student, who is in the final quarter, prepare a portfolio of professional quality. Portfolio will be critiqued on a professional basis. A work experience, arranged by the College in a professional setting off-campus, requires 14 hours of student participation each week.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): Final quarter standing in the Commercial Art program.

CART-270 Special Topics in Commercial Art

1-4 Credits

Changes, trends and emerging technology in the field of commercial art; computer graphics, air brush techniques, design for video, illustration techniques and package design; applied projects providing hands-on experience. (Repeatable. No more than 4 credits of special topics courses may be applied toward the commercial art program degree requirements.)

Lecture 1-4 hours. Laboratory 0-3 hours.

Prerequisite(s): Departmental approval.

COURT & CONFERENCE REPORTING - C&CR

C&CR-100 Introduction to Court Reporting

1 Credit

Comprehensive survey of the field of court reporting. Examination of the history of reporting, importance of recognizing diversity for the working reporter, equipment needs and technological trends, and the role of a working reporter within the legal system.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): None.

C&CR-103 Legal Terminology & Communications I

3 Credits

Basic terminology utilized by the legal profession. Emphasis on spelling, definition, pronunciation and usage of legal terms. Instruction in professional etiquette and demeanor.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

C&CR-104 Legal Terminology & Communications II

3 Credits

Advanced terminology utilized by the legal profession. Emphasis on spelling, definition, pronunciation and usage of legal terms. Introduction to the roles and responsibilities of those working in the legal field and telephone techniques.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): C&CR-103.

C&CR-105 Basic Theory I

3 Credits

Introduction to principles of stenotype machine with emphasis on reading, theory rule application for conflict-free writing, and the system of phonetic writing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-101 or concurrent enrollment, or written departmental approval.

C&CR-106 Basic Theory II

3 Credits

Introduction to substitute letters and principles presentation of theory with emphasis on reading, writing, and reporter English skills in preparation for speedbuilding and transcription.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): C&CR-105 or concurrent enrollment, or written departmental approval: beginning knowledge of stenotype machine theory.

C&CR-109 Introduction to CAT

2 Credits

Hands-on introduction to computer aided (CAT) real-time translations systems. Overview of the many softwares available to the stenotype writer as well as basic terms, system supports, preliminary preparations, and transcript production. To write accurate, conflict-free notes which equates to producing a near-final product instantly, theory and style techniques that are easily adapted to increase a student's computer competency are presented.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): ENG-101 or concurrent enrollment, and written departmental approval: minimum steno speed of 60 wpm.

C&CR-110 Steno Editing

3 Credits

Stenotype students will become familiar with a variety of skills necessary in the transcription and production of transcripts/ documents needed in their careers as a verbatim reporter, educational reporter, transcriptionist, captionist, or rapid entry writer. Rules of punctuation and grammar will be modified to accommodate ambiguous, clumsy, incongruous, and incorrect English. Proofreading, spelling, and vocabulary development will also be emphasized.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): OADM-108 or concurrent enrollment.

C&CR-120 Skills Analysis

1 Credit

Specialized lab devoted to machine handling and problem solving. Provides support for individualized writing progress utilizing the computer (computer tutor programs), audio tapes and other pertinent resources (as available). Credit for this lab is granted as one credit for each three hours in lab. May be repeated as often as needed but a maximum of three credits will apply toward graduation requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval.

C&CR-122A Speedbuilding and Transcription I

3 Credits

Speedbuilding at the 80-100 wpm level of the Court and Conference Reporting Program. Utilization and expansion of machine-writing theory. Practical procedures on the stenotype machine to develop beginning skill levels. Minimum exit speed is 100 wpm.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

C&CR-122B Speedbuilding and Transcription II **3 Credits**

Speedbuilding at the 120-140 wpm level of the Court and Conference Reporting program. Utilization and expansion of machine-writing theory. Practical procedures on the stenotype machine to develop skill levels on question and answer testimony, jury charge and literary materials.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

C&CR-123 Steno Processing I **3 Credits**

Introduction to the software program RapidText Entry. Text entry uses a steno machine for word processing functions to input text.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): C&CR-106 and/or written departmental approval: equivalent knowledge of theory and minimum writing speed of 60 wpm.

C&CR-124 Steno Processing II **3 Credits**

Introduction to writing techniques using the steno machine and real-time application to build text entry skills utilizing advanced word processing functions for document preparation.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): C&CR-123 and C&CR-122A.

C&CR-202 Medical Reporting **3 Credits**

Medical testimony is an integral part of many court cases. Emphasis on writing consistency of medical terms. Word relationships, spelling techniques/rules cited. Materials selected include names not in the basic CAT dictionary so that students learn the techniques of developing a "job" dictionary.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): C&CR-122B, C&CR-109, and MA-103.

C&CR-203 Court Reporting I **3 Credits**

Presentation of subject matter that court reporters encounter. Introduction to wide variety of speaking styles with material duplicated from real-life situations. Continued emphasis on vocabulary development as well as grammar rules relative to punctuating the "spoken" word correctly.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): C&CR-122A and C&CR-109.

C&CR-204 Court Reporting II **2 Credits**

Emphasis on multi-voice, literary, and jury charge materials. Transcription skills reinforcement includes a review of English, vocabulary expansion, and proofing skills in producing the transcript.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): C&CR-122B and C&CR-109.

C&CR-207 Reporter Technology I **3 Credits**

Designed to introduce the many technological tools available to the court reporter. Use of videotaping, CAT transcription and litigation support are among the many technological areas covered.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): C&CR-122B and C&CR-109, or written departmental approval: minimum steno speed of 140 wpm.

C&CR-208 Reporter Technology II **3 Credits**

Continues to build on Reporter Technology I. Student will prepare transcripts while writing in the "realtime" mode. Realtime reporting in the deposition, in the classroom environment, in the broadcast environment, and for seminars/conferences/conventions will be discussed.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): C&CR-207.

C&CR-211 Courtroom Procedures **3 Credits**

Emphasizes the role of the reporter in trials, depositions, and administrative hearings. Preparation of deposition/court transcripts, marking and handling of exhibits, indexing and storing of notes, reporting techniques and ethics will be stressed.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): C&CR-109.

C&CR-221 Internship **1 Credit**

Provides the student with 55 verified hours of actual writing time during on-the-job training using machine shorthand technology.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 5 hours per week.

Prerequisite(s): C&CR-122B or concurrent enrollment, and departmental approval: C&CR-223 or concurrent enrollment or 200 wpm speed certificate.

C&CR-222A Speedbuilding and Transcription III **3 Credits**

Speedbuilding at the 160-180 wpm level of the Court and Conference Reporting program. Utilization of and expansion of machine-writing theory. Practical procedures on the stenotype machine to develop skill levels on Literary, Jury Charge and Q&A materials.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

C&CR-222B Speedbuilding and Transcription IV **3 Credits**

Speedbuilding at the 200-225 wpm level of the Court and Conference Reporting program. Utilization of and expansion of machine-writing theory. Practical procedures on the stenotype machine to develop skill levels on Literary, Jury Charge and Q&A materials.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

C&CR-223 Steno Application**3 Credits**

Using the machine shorthand keyboard, real-time theory and skill, students will hone writing skills using RapidText or realtime software. Continued perfection of production skills and building a comprehensive steno to English dictionary.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): C&CR-122B or concurrent enrollment; and C&CR-109; and C&CR-123 or C&CR-203 or C&CR-204.

CHEMISTRY - CHEM**CHEM-101 Introduction to Inorganic Chemistry****5 Credits**

Introductory course with atomic structure and bonding as a basis for understanding valence, formulas, compounds and chemical reactions. Measurement, stoichiometry, states of matter, solutions, ionization and their applications in daily life are discussed.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): One year of high school algebra or equivalent.

CHEM-102 Introduction to Organic Chemistry and Biochemistry**5 Credits**

Chemistry of carbon compounds. Structure, physical and chemical properties and metabolism of biomedical compounds important to physiology and nutrition.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): CHEM-101 or equivalent.

CHEM-109 Introduction to Biochemistry**5 Credits**

Chemical bonding, the chemistry of carbohydrates, fats, proteins, enzymes and the metabolic process. Emphasis will be placed on the practical application of the relationship of nutrition. (Not designed for pre-medical students.)

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): None.

CHEM-130 General Chemistry I**4 Credits**

Study of the fundamental principles of chemistry with emphasis on atomic structure, chemical bonding, and stoichiometry.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for MATH-120; CHEM-101, and concurrent with CHEM-135, or departmental approval.

CHEM-131 General Chemistry II**4 Credits**

Emphasis on states of matter, solutions, electrochemistry, chemical kinetics and chemical equilibrium.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CHEM-130, CHEM-135, and concurrent with CHEM-136, or departmental approval.

CHEM-132 General Chemistry III**3 Credits**

Emphasis on ionic equilibrium, acid-base theory, thermodynamics, complex compounds, nuclear chemistry, descriptive inorganic chemistry, and a brief introduction to organic chemistry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): CHEM-131, CHEM-136, and concurrent with CHEM-137, or departmental approval.

CHEM-135 General Chemistry Laboratory I**1 Credit**

Basic laboratory experiments which correlate with the chemical concepts, principles and processes of "General Chemistry I". Emphasis on technique and procedures.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): CHEM-130 or concurrent enrollment, or departmental approval.

CHEM-136 General Chemistry Laboratory II**1 Credit**

Basic laboratory experiments which correlate with the chemical concepts, principles and processes of "General Chemistry II".

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): CHEM-135, and concurrent with CHEM-131, or departmental approval.

CHEM-137 General Chemistry Laboratory III**2 Credits**

Basic laboratory experiments which correlate with the chemical concepts, principles and processes of "General Chemistry III".

Lecture 0 hours. Laboratory 6 hours.

Prerequisite(s): CHEM-136, and CHEM-132 or concurrent enrollment.

CHEM-211 Organic Chemistry I**5 Credits**

Chemistry of carbon compounds including nomenclature, properties, preparation, and reactions of aliphatic and aromatic groups. Theoretical concepts and reaction mechanisms are introduced.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): CHEM-132 and CHEM-137.

CHEM-212 Organic Chemistry II**5 Credits**

Chemistry of carbon compounds emphasizing reaction mechanisms, synthetic uses and spectroscopy of hydrocarbons and their derivatives.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): CHEM-211.

CHEM-213 Organic Chemistry III**5 Credits**

Advanced topics of carbon chemistry including complex synthesis, molecular rearrangements, molecular orbital theory, heterocyclics, polymers and biochemistry.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): CHEM-212.

Course Descriptions

Fall 1996-Summer 1998 Catalog

CHEM-220 Quantitative Analysis **6 Credits**

Study of chemical stoichiometry, homogeneous and heterogeneous equilibria and the theory and techniques of gravimetric and volumetric methods of quantitative analytical chemistry. Focuses on instrumental analysis. *Lecture 4 hours. Laboratory 6 hours.*
Prerequisite(s): CHEM-132 and CHEM-137.

CHIN - CHINESE

CHIN-111 Beginning Chinese I **5 Credits**

Introduction to standard spoken Chinese (Mandarin) and a small part of related Chinese characters through listening, speaking and reading. *Lecture 5 hours. Laboratory 0 hours.*
Prerequisite: None.

CHIN-112 Beginning Chinese II **5 Credits**

Study of the Chinese language with emphasis on speaking. Expansion of vocabulary. Continued practice in speaking, listening and reading. *Lecture 5 hours. Laboratory 0 hours.*
Prerequisite: CHIN-111 or departmental approval.

CHIN-113 Beginning Chinese III **5 Credits**

Continued study of the Chinese language. Practice in conversation on given subjects. Transition from speaking to reading. *Lecture 5 hours. Laboratory 0 hours.*
Prerequisite: CHIN-112 or departmental approval.

COMMUNITY MENTAL HEALTH TECHNOLOGY - CMHT

CMHT-104 Group Work in the Human Services **4 credits**

Introduction to group work. Investigation of group work theories, different types of groups, family dynamics, stages of the group process, group facilitation, participant role/influences, and group counseling techniques. Cooperative learning and role playing are incorporated into the learning experience. *Lecture 4 hours. Laboratory 0 hours.*
Prerequisite(s): Concurrent enrollment in CMHT-126M, or departmental approval: assessment by program coordinator.

CMHT-110 Introduction to Residential Services **4 Credits**

Introduction to mental retardation and other developmental disabilities. Emphasis on the residential services currently available to persons with mental retardation and developmental disabilities. Understanding persons with mental retardation and developmental disabilities in a residential setting. *Lecture 4 hours. Laboratory 0 hours.*
Prerequisite(s): None.

CMHT-120 Recording, Analyzing, and Using Data **4 Credits**

Practice in using behavioral observation to record, analyze and use data. Knowledge of factors that affect behavior. Emphasis on the use of the scientific method of inquiry during field placement. *Lecture 2 hours. Laboratory 0 hours.*
Other Required Hours: Directed practice: 15 hours per week.
Prerequisite(s): CMHT-110.

CMHT-121 Introduction to Community Mental Health **4 Credits**

Survey of the history of human services with emphasis on the mental health movement. Introduction to contemporary service delivery systems and the use of empirical data in the development of service interventions. Explanation of humanism as a philosophical basis in contemporary service delivery. *Lecture 4 hours. Laboratory 0 hours.*
Prerequisite(s): Eligibility for ENG-101 or departmental approval.

CMHT-121M Introduction to Human Services **4 credits**

Survey of the history of the Human Services. Philosophy of the Human Services. Introduction to contemporary Human Service delivery systems. Development of client-centered Human Service interventions. Emphasis on understanding Human Services in the context of a culturally/ ethnically/ racially diverse urban environment. *Lecture 4 hours. Laboratory 0 hours.*
Prerequisite(s): ENG-099, or eligibility for ENG-101.

CMHT-125 Roles and Responsibilities of a Habilitation Technician

4 Credits

Survey of the roles and responsibilities of a community-based habilitation technician. Development of assertive behavior. Emphasis on working as a team player for the benefit of the client.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-110.

CMHT-126 Inquiry, Observation and Assessment

4 Credits

Practice in the use of behavioral observation and descriptive terms. Direct field experience of ten hours per week, data gathering, hypothesis formation and decision making with reference to individuals, groups and social systems. Emphasis on the use of the scientific method of inquiry in a field setting.

Lecture 3 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 10 hours per week.

Prerequisite(s): CMHT-121.

CMHT-127M Human Services Principles and Practices I

4 credits

Continuation of practicum experience. Development of assessment skills. Completion of log writing requirements. Emphasis on managed care essentials and implementation of therapy principles. Assertiveness skills. Class discussion of practicum experience. Practicum site visits.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): CMHT-126M; or concurrent enrollment in CMHT-128M; or departmental approval: equivalent courses and/or experience.

CMHT-128M Human Service Systems

3 credits

Development of a systems approach to human service delivery, with the emphasis on macro and micro systems. Exploration of formal and informal systems. Development of skills to evaluate existing human services in the community. Exploration of the use of networking as a method of client advocacy. Student will develop assessment skills and intervention strategies for individuals and families through the use of genogram and ecological mapping tools.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Concurrent enrollment in CMHT-127M Human Services Principles and Practices I.

CMHT-129 Principles and Practice in Behavior Management of Persons with Developmental Disabilities

4 Credits

Individual/group behavioral management of persons with mental retardation and developmental disabilities in a variety of settings. Application of management strategies during off-campus field experience.

Exploration of the habilitation technician's responsibilities in behavior management.

Lecture 2 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 15 hours per week.

Prerequisite(s): CMHT-120.

CMHT-130 Primary Service Delivery for Persons with Developmental Disabilities

4 Credits

Introduction to primary service delivery for persons with mental retardation and developmental disabilities.

Knowledge of first aid and other emergency procedures.

The habilitation technician's involvement in the daily care of persons with mental retardation and developmental disabilities.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-120.

CMHT-132 Crisis Prevention and Safety Practices in the Residential Setting

4 Credits

Knowledge of crisis situations in a residential setting.

Introduction to various ways to react to a crisis.

Emphasis on the importance of preventing a crisis.

Knowledge of safety practices in a residential setting.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-120.

CMHT-200 Service Strategies in Community Mental Health Technology

4 Credits

Practice in the development of the skills of assessment, planning, coordination, intervention, maintenance and referral as an integral part of case management.

Emphasis on oral and written communication as they pertain to case management.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-202 or concurrent enrollment, or CMHT-210 or concurrent enrollment.

CMHT-202 Community Mental Health Technology Principles and Practices I

4 Credits

Introduction to the basic principles of time management.

Application of time management techniques to individual's schedule. Investigation into the therapeutic theories of laughter and playfulness.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 15 hours per week.

Seminar: 2 hours per week on campus.

Prerequisite(s): CMHT-127 and CMHT-128.

CMHT-203 Community Mental Health Technology Principles and Practices II

4 Credits

Research and practice in the development of preventive measures in the human service field. Information exchange between field site representatives and students.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 15 hours per week.

Seminar: 2 hours per week on campus.

Prerequisite(s): CMHT-202.

CMHT-204 Community Mental Health Technology Principles and Practices III

4 Credits

Fundamentals of proposal writing and program development. Continuation of field experience with focus on the client within the context of the existing service delivery system.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 15 hours per week.

Seminar: 2 hours per week on campus.

Prerequisite(s): CMHT-203.

CMHT-210 Individual Habilitation Planning

4 Credits

Knowledge of individual habilitation plan. Emphasis on the purpose, development and implementation of the individual habilitation plan. The habilitation technician's responsibilities in the implementation of the individual habilitation plan.

Lecture 2 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 15 hours per week.

Prerequisite(s): CMHT-129.

CMHT-215 Development of Functional Living Skills

4 Credits

Habilitation technician's contribution to the enhancement of a disabled person's living skills. Development of everyday living skills. Exploration of community resources available to assist persons with mental retardation and developmental disabilities in daily life.

Lecture 2 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 15 hours per week.

Prerequisite(s): CMHT-210.

CMHT-224 Roles in Community Mental Health

3 Credits

Familiarization of students with their own behavior and the behavior of others in terms of assertiveness. Survey of community mental health generalist roles as identified by the National Institute of Mental Health. Development of general and specific methods to use to advocate successfully in a variety of situations.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101 or departmental approval.

CMHT-225 Legal Issues in Mental Health

3 Credits

Basic knowledge of the legal issues in the mental health field, including current Ohio Revised Code Statutes such as commitment, retention, release, due process, patients' rights and confidentiality. Discussion of recent court decisions pertaining to mental health legal issues.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101 or departmental approval.

CMHT-226 Alternatives to Institutional Care

3 credits

Historical overview of the care of the handicapped. Study of the effects of institutionalization on various handicapped populations. Current trends toward use of "least restrictive setting." Overview of the development of community-based services. The "balanced service system" concept as a philosophy of help. Skills in effective community living for service consumers.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101, or departmental approval: work experience.

CMHT-227 Prevention of Psychopathology

3 Credits

Study of the process by which communities develop and organize themselves to prevent/solve common problems which effect community mental health. Knowledge of the role of the Community Mental Health Generalist and the skills necessary to organize a group of people to effectively define, mobilize and manage their community/groups for the prevention of mental health problems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101 or departmental approval.

CMHT-229 Community Mental Health Issues in Chemical Dependency I

3 Credits

Introduction to the current concepts, theoretical models and research used by practitioners to understand the total ecology of the chemically dependent individual. Examinations and explorations of the psychological, social and cultural/lifestyle aspects of chemical dependency as it applies to special populations and subcultures.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-127 or concurrent enrollment, or departmental approval.

CMHT-230 Community Mental Health Issues in Chemical Dependency II

3 Credits

Examination of the levels of prevention, the legal aspects, methods, strategies and community resources that are used to prevent chemical dependency and relapse.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-202 or concurrent enrollment, or departmental approval.

CMHT-231 Community Mental Health Issues in Chemical Dependency III 3 Credits

Review of the physical, cultural, social and psychological aspects of chemical dependency. Examination of the various methods of intervention, assessment, case management, referrals and community resources which will assist the chemically dependent person to maintain sobriety.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-203 or concurrent enrollment, or departmental approval.

CMHT-232 Community Mental Health Issues in Chemical Dependency IV 3 Credits

Examination of the roles, skills, knowledge and ethics necessary for a career in the field of chemical dependency. A personal inventory of one's skills and knowledge. Special emphasis placed on assertiveness, advocacy, stress management and ethical standards as each pertains to the field.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): CMHT-204 or concurrent enrollment, or departmental approval.

CMHT-251 Community Mental Health Seminar 3 Credits

Assessment of one's knowledge, experiences, and skills as a community mental health generalist. Instruction of the preparation and presentation of one's qualifications through the written resume and portfolio. Guidelines and preparation for the employment interview.

Investigation into service areas of special interest.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 3 hours per week.

Prerequisite(s): CMHT-203 or CMHT-215.

CMHT-270 Special Topics in the Human Services 1-4 credits

Study of selected topics or current issues in the field of Human Services. Topics will vary as new topics of interest arise in the human services. (Repeatable. No more than 8 credits of special topics courses [CMHT-270 and CMHT 272] may be applied toward fulfilling Community Mental Health Technologies elective graduation requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

CMHT-272 Special Topics in the Human Services - Practicum 1 credit

Study of selected topics or current issues in the field of Human Services. Topics will vary as new topics of interest arise in the human services. (Repeatable. No more than 8 credits of special topics courses [CMHT-270 and CMHT 272] may be applied toward fulfilling Community Mental Health elective graduation requirements.)

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Prerequisite(s): Concurrent enrollment in CMHT-270.

COMPUTER STUDIES - CS

CS-102 Introduction to Computer Use 4 Credits

Study of the role of computers in the evolution of information-based society. Information processing, its historical development, need, components and processing cycle are examined. Computers, systems and program development are included. Hands-on introduction to word processing, spreadsheets and file management is provided. Required of all computer studies majors, and also satisfies the basic computer literacy of other academic disciplines and career programs. Open lab time is available for students who are unable to complete assignments during regularly scheduled class sessions.

Lecture 4 hours. Laboratory 1 hour.

Prerequisite(s): None.

CS-114 Internal Computer Functions 4 Credits

Examines data structures and hierarchy, hardware configuration and architecture, and both systems and applications software. Introduces concepts of problem solving.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CS-102.

CS-120 Microcomputer Applications I 4 Credits

Introduction to the software tools and techniques used in the entry, storage, protection, retrieval and reporting of transaction support data. Development, use, maintenance and disposal of transaction files and data bases are included.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): CS-114.

CS-124 Techniques and Logic of Program Design 4 Credits

Language-independent course introducing computer program design and development. Identification and solution of business problems are emphasized. Structured flow charts, hierarchy charts and pseudo code will be used in program description and design.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CS-102.

CS-125 Applications Program Development I: COBOL I 4 Credits

Introduction to structured programming in a mainframe environment; learning to code from stated problems and given specifications to produce accurate, reliable and maintainable programs. Topics include record descriptions, elementary verbs, table handling and control break logic. Manipulation of data from existing files to provide desired reports.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): CS-124.

CS-230 Microcomputer Applications II **4 Credits**

Intermediate applications that includes study in spreadsheet techniques required for accurate and timely interpretation and presentation of data. Spreadsheet development, commands, capabilities and applications are discussed.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): None.

CS-234 Systems Analysis Methods **4 Credits**

Overview of the system development life cycle. Emphasis on current system documentation through the use of both classical and structured tools/techniques for describing process flows, data flows, data structures, file designs, input and output designs and program specifications. Discussion of the information gathering and reporting activities and of the transition from analysis to design.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CS-114.

CS-235 Applications Program Development II: COBOL II **4 Credits**

Coursework applies and builds upon concepts, knowledge, skills and competencies learned in the prerequisite course. Includes necessary syntax and techniques for creating and maintaining files organized under different modes.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): CS-125.

CS-240 Microcomputer Applications III **4 Credits**

Advanced applications course that includes methods used to access, transfer, and/or exchange data between applications and/or computer systems. Physical transfer conversions, shared environments, and local and remote networks are included.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): CS-120 or CS-230.

CS-245 Applications Program Development III: COBOL and CICS **4 Credits**

Intermediate applications course builds upon concepts, skills and competencies learned in the prerequisite course. Includes the use of operating system libraries, virtual storage file structures, interacting with indexed type files and on-line processing techniques.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): CS-235.

CS-250 Microcomputer Applications IV **5 Credits**

Advanced applications course that includes in-depth study of a popular microcomputer operating system and of popular microcomputer hardware. Includes a survey of operating environments and utility software.

Completion of a comprehensive term project using the microcomputer will be required.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): CS-120 or CS-230 or CS-240.

CS-255 Applications Program Development IV: CICS **5 Credits**

Advanced applications course builds upon concepts, knowledge, skills and competencies learned in the prerequisite course. Screen design and the on-line query and maintenance of existing data bases are included.

Lecture 3 hours. Laboratory 4 hours.

Prerequisite(s): CS-245.

CS-260 Cooperative Field Experience **1-3 Credits**

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. The requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

CS-270 Special and Current Topics in Computer Studies **1-4 Credits**

Specialized course focuses on changes, trends and emerging technology in the field of computer software; state-of-the-art information processing packages and currently used and recognized hardware. An overview of concepts, components, architecture and application of software systems packages. Examples include DOS, LOTUS, dBase III, Prolog and expert systems.

(Repeatable. No more than 5 credits of special topics courses may be applied toward the computer studies program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): None.

CS-272 Special and Current Topics in Computer Studies Laboratory Experience

1 Credit

Specialized lab focuses on applications portion of subject matter found in CS-270, Special and Current Topics in Computer Studies. Devoted to problem solving, system software experimentation and machine handling. Direct purpose of providing tools to physically build experimental and active models of productivity.

(Repeatable. No more than 5 credits of special topics courses may be applied toward the computer studies program degree requirements.)

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

CS-281 Assembly Language Programming

5 Credits

Computer programming in an assembly level language to demonstrate control of memory addressing, register usage, internal data representation, and manipulation and instruction formats.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): CS-124.

CS-282 Basic Programming

5 Credits

First course in the study of the programming language BASIC using modular programming techniques and logical control structures to solve general programming problems in a highly structured design. Emphasis on the design of business type programs and logic flow.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): CS-124.

CS-284 RPG Programming

5 Credits

Involves the coding and execution of Report Program Generator programs generating elementary level reports as used in the business environment. Functions include the editing of data, computations, comparing, control breaks and transaction processing which will use logical relationships among fields, records and files.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): CS-124.

CS-285 PASCAL Language

5 Credits

First course in the study of the programming language PASCAL using modular programming techniques and logical control structures to solve general programming problems in a highly structured (top-down) design. Emphasis on the design of the control structures and modularity to enhance readability, increase efficiency and minimize errors in program design.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): CS-124.

CS-286 Structured Systems Analysis and Design

4 Credits

Advanced study of structured systems development. Emphasis on strategies and techniques of structured analysis and structured design for producing logical methodologies which deal with complexity in the development of information systems.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): CS-234.

CS-287 C Programming

5 Credits

First course in the C programming language covering elementary programming logic, functions, structures, pointers, data types, and input/output devices, relating of C's inherent structured programming orientation to solve problems. Average of four to six hours of preparation is usually needed for the student to maintain effective use of the two hours per week in the computer lab.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): CS-124.

CARDIOVASCULAR TECHNOLOGY - CVT

CVT-101 Electrocardiography (Interpretation) **3 Credits**

Presents the fundamentals of electrocardiography (EKG), normal pacer activation sequences, electrical pathways, pattern assessment, measurement intervals and changes seen in pathological states. Full interpretations from 12 lead EKG tracings will be discussed.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

CVT-106 Introduction to the Health Care Setting **2 Credits**

Introduces the modern hospital/health care environment, professionalism, and basic patient care and safety techniques. Includes exposure to emergency cardiac procedures. (Note: Study of each cardiovascular testing modality will occur in subsequent program courses.)

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

CVT-108 EKG, Holter, Pacemaker Lab **2 Credits**

Theory and laboratory practice of entry level cardiovascular procedures including EKG, holters, and pacemakers. Emphasis is on technical accuracy in operational, problem solving and quality control skills.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): CVT-106 and concurrent with CVT-101.

CVT-109 Stress Testing Lab **2 Credits**

Theory and laboratory practice of exercise stress testing cardiovascular procedures. Emphasis is on technical accuracy in operational, problem solving and quality control skills.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): CVT-101 and CVT-108.

CVT-113 Introduction to Cardiovascular Assessment **3 Credits**

Introduces the theory and practice of those cardiovascular assessment tools used in patient preparation for cardiovascular procedures. Presents how this data base is used in determining procedural appropriateness and patient safety, skills to be taught, history taking, physical assessment (auscultation, palpation, percussion), analysis of appropriate lab data and clinical correlations.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to the program.

CVT-115 Cardiovascular Anatomy and Physiology **3 Credits**

Focuses on the study of normal cardiovascular anatomy and physiology from its embryologic development to adulthood. Normal age related changes will be presented and the various hemodynamic mechanisms that function at each age are analyzed and discussed. Various topographic planes used in ultrasound to assess the cardiac structures will be introduced with emphasis placed on accurate structure recognition.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BIO-143 or concurrent enrollment, and admission to the program.

CVT-120 Vascular Physical Principles and Instrumentation

4 credits

Basic physical principles of electronics, ultrasound, and hemodynamics as they relate to the diagnosing of vascular disease. Special focus on preparing student to take the Board examination in this specialty area of ultrasound testing.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PHYS-110 or departmental approval.

CVT-126 Principles and Practice of 2-D/M Mode Echocardiography **6 Credits**

Theory and laboratory practice of cardiac ultrasound procedures including echocardiography (M-Mode and 2-Dimensional), phonocardiography, and pulse wave forms. Emphasis is on technical accuracy in operational, problem solving and quality control skills. Also presented is an overview of acquired and congenital cardiac pathology involving heart valves, heart muscle, and related structures. Each pathological entity will be examined not only echocardiographically, but also through the use of the following cardiac assessment tools: ECG data, history/physical exam findings, and catheterization data. Changes from normal noted by each modality will serve to typify each pathologic condition, providing a classic data base.

Lecture 5 hours. Laboratory 3 hours.

Prerequisite(s): CVT-108, CVT-113 and CVT-115.

CVT-127 Principles and Practice of Cardiac Doppler 6 Credits

Theory and laboratory practice of cardiac Doppler procedures including pulsed-wave, continuous-wave and color flow mapping modalities. Fundamentals include the physics of Doppler and wave form analysis. In lab, emphasis is placed on technical accuracy, awareness of operator dependent quality, recognition of acceptable data, and problem solving. The role of Doppler in the entire cardiac exam is highlighted. In examining the clinical applications of Doppler, an overview of acquired and congenital cardiac pathology involving the heart valves, heart muscle and related structures is presented. Other assessment tools used to evaluate each pathological entity and complement the Doppler findings include echocardiographic imaging data, ECG data, history/physical exam findings, and catheterization data.

Lecture 5 hours. Laboratory 3 hours.

Prerequisite(s): PHYS-110 and CVT-126.

CVT-130 Vascular Technology 6 credits

Focus on mastery of the battery of tests necessary to diagnose cerebrovascular and peripheral vascular disease, non-invasively.

Lecture 5 hours. Laboratory 3 hours.

Prerequisite(s): CVT-126 and CVT-120.

CVT-211 Clinical Rotation, Applications and Interpretations I 4 Credits

Directed practice at a clinical site utilizing cardiovascular testing equipment. This first rotation in a sequence involves the supervised performance of diagnostic procedures in the area of electrocardiography. Experiences leading to technical accuracy in the performance of EKG's, holters, pacemaker assessment and exercise stress testing will be provided. Beyond the development of technical competency, this clinical rotation will also guide the student toward the professional realm. Upon gathering a complete cardiac data base in the electrocardiographic domain, the student will be able to analyze the information and formulate interpretive statements which are incorporated into preliminary reports. Emphasis is placed on the ability to accurately gather data, note variations, and arrive at logical interpretive conclusions.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): CVT-101, CVT-108, and/or concurrent with CVT-109.

CVT-212 Clinical Rotation, Applications and Interpretations II 4 Credits

Directed practice at a clinical site utilizing cardiac ultrasound equipment in the supervised performance of diagnostic procedures. Emphasis will be placed on developing technical accuracy in the areas of echocardiography (M-Mode and 2-D), phonocardiography and pulse wave recordings. Beyond the development of technical competency, this clinical rotation will also guide the student toward the professional realm. Upon gathering a complete cardiac data base in the echocardiographic domain, the student will be able to analyze the information and formulate interpretive statements which are incorporated into preliminary reports. Emphasis is placed on the ability to accurately gather data, note variations, and arrive at logical interpretive conclusions.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): CVT-211, CVT-126, CVT-113, and CVT-115.

CVT-213 Clinical Rotation, Applications and Interpretations III 4 Credits

Directed practice in a clinical setting utilizing cardiac ultrasound equipment in the supervised performance of diagnostic procedures. Emphasis will be placed on developing technical accuracy in all the areas of Doppler echocardiography and incorporating this additional data into the total cardiac exam. Students will have exposure to advanced cardiac ultrasound procedures. This clinical rotation segment also continues to develop assessment and interpretive skills by incorporating findings from Doppler examinations into the total cardiac data base. Interpretive statements will be formulated from the data base and included in a preliminary report. Students will be required to participate in directed practice in all phases of non-invasive cardiac testing (including both electro- and echocardiographic exams) with a greater degree of independence at a clinical site for 20 clock hours per week. (At least 4 clinical hours per week should be devoted to reiterating technical competency objectives in electrocardiographic testing modalities, so as to continue to gain proficiency in these tests.)

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): CVT-212 and CVT-127.

CVT-214 Clinical Rotation, Applications and Interpretations IV

4 Credits

Last segment of the clinical course sequence challenges the student to independently function within the supervised laboratory setting at a clinical site, guiding and tailoring each examination according to the requirements of each patient situation. Students will be exposed to more complex cardiac pathology through experience in portable ultrasound assessments in critical care areas. Students will be required to participate in directed practice in all non-invasive cardiac testing modalities.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): CVT-213.

CVT-220 Trends in Cardiovascular Technology

2 Credits

Formal sessions covering professional issues and strategies in cardiovascular studies. Includes guest lecturers, literature review/critiques, panel discussions of current topics, new diagnostic techniques and technology, case presentations, future directions of the profession, and the research process.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Concurrent with CVT-213.

CVT-226 Advanced Clinical Correlations

2 Credits

Review of cardiac ultrasound physics and echocardiography examination questions, intended to assist student in preparation for national registries. Recommend this course be taken in last quarter of the cardiovascular technology degree program.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): CVT-126, CVT-127, and PHYS-110.

DANCE - DANC

DANC-110 Survey and Appreciation of Dance as an Art Form

4 Credits

Introduction to the elements and styles of the art of dance to increase the student's ability to identify and understand stage, movie, and video dance styles through visual and movement concepts. Various performing artists and choreography will be studied in their cultural and historical context. Lectures supplemented with textbook and video assignments. Additional reading from course bibliography and attendance at live performances required.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

DANC-122 Stage Movement I

2 Credits

Teaches effective communication through the organization and control of movement. Individual analysis of posture, use of space, energy and pedestrian movement will be applied to group experiences. Includes expressive non-verbal and verbal activities as well as stage fights and falls.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

DANC-123 Stage Movement II

2 Credits

Create a character through control of weight, energy, posture and gesturing. Identify and recreate body language to reflect mood, attitude and emotion. Includes basic movement required for musical theatre performing.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): DANC-122 or departmental approval.

DANC-150 Dance I, Fundamentals of Dance

3 Credits

For the new dancer. Theoretical approach to the fundamentals of dance with an emphasis on the classic vocabulary of modern dance and ballet, leg, arm and body positions. Stressing the importance of proper alignment and muscular awareness, the student will perform basic dance combinations.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): None.

DANC-151 Dance II, Modern Dance

3 Credits

Theoretical and practical approach to secondary techniques of modern dance. Stresses dance as an expressive art form. Student will perform secondary dance combinations.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): DANC-150.

DANC-152 Dance III, Modern Dance 3 Credits

For the experienced student dancer. Further study of the theory and skills of modern dance with emphasis on understanding of underlying theory and increasing physical competence. Stresses dance as an artistic form of self expression. Students will perform intermediate dance combinations.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): DANC-151.

DANC-160 Dance Production 2 Credits

Elements of choreographing, lighting, costuming and advertising the dance performance are studied. Informal and formal dance performances are prepared in class.

Lecture 0 hours. Laboratory 6 hours.

Prerequisite(s): DANC-151 or concurrent enrollment, or departmental approval: dance skills equal to those learned in DANC-151.

DANC-230 Dance Technique IV 2 Credits

For the experienced student dancer. Studio work will apply and expand upon the skills of dance techniques. Emphasizes movement memory, rhythmic accuracy and spatial orientation.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): DANC-152.

DANC-231 Dance Technique V 2 Credits

Further application of dance techniques, concepts and theories. Studio work will emphasize movement memory, flexibility, and musicality.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): DANC-230.

DANC-232 Dance Technique VI 2 Credits

Advanced dance techniques. Studio work will emphasize dynamic variety and challenge the student's physical limitations and interpretive abilities.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): DANC-231.

DANC-270 Special Topics in Dance 1-4 Credits

Study of selected specific forms of dance (see class schedule for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Course prerequisite will be determined by the topic.

DANC-272 Special Topics in Dance Studio Experience 1-3 Credits

Study of selected specific forms of dance (see class schedule for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 2-6 hours.

Prerequisite(s): Course prerequisite will be determined by the topic.

DENTAL ASSISTING - DAST

DAST-121 Dental Assisting Methods I **7 Credits**

Integrated study of dental equipment, instruments, materials, assistant and operator roles, and clinical procedures associated with the delivery of basic dental treatment. Physical and biological properties of restorative materials, bases, gypsum products, and impression materials are discussed as a foundation for application of these materials during the examination, diagnostic, amalgam, and composite procedures. Skills are developed in the preparation and manipulation of the materials and instruments, in the principles and practice of four-handed dentistry, and in anticipating the needs of the operator. Introduction to the principles of microbial activity and the application of current practices of infection control in the dental office. Outside assignment: observation in a general practice setting.
Lecture 4 hours. Laboratory 9 hours.
Prerequisite(s): BIO-107 or concurrent enrollment.

DAST-122 Dental Assisting Methods II **5 Credits**

Integrated study of dental equipment, instruments, materials, assistant and operator roles, and clinical procedures associated with the delivery of specialty dental treatment. Physical and biological properties of these materials are discussed as a foundation for application of these materials during endodontic, removable and fixed prosthodontic, orthodontic, surgical, and periodontic clinical procedures. Skills are developed in the preparation and manipulation of the materials, instruments and equipment, in the principles and practice of four-handed dentistry, in anticipating the needs of the operator and in monitoring patient reaction. Outside assignment: observation in a specialty practice.
Lecture 2 hours. Laboratory 9 hours.
Prerequisite(s): DAST-121.

DAST-131 Dental Assisting Radiography I **4 Credits**

Study of physical properties of x-radiation, generation of x-rays for dental applications, uses of x-rays in dentistry, and understanding of and adherence to strict safe operating procedures and infection control practices. Theory and practice in the fundamentals of oral radiographic technique as delegable to the dental assistant. Emphasis on mastery of bisect-the-angle exposure technique in producing diagnostically acceptable full mouth and bite-wing radiographs on the adult patient. After successful skill development utilizing mannequins, a supervised experience on a patient will be scheduled. Skills in processing, mounting and evaluation of film, including recognition of errors and methods for their correction, and recognition of normal anatomic landmarks are developed.
Lecture 3 hours. Laboratory 3 hours.
Prerequisite(s): BIO-107 or concurrent enrollment.

DAST-132 Dental Assisting Radiography II **2 Credits**

Theory and practice in the fundamentals of oral radiographic technique for special applications including occlusal, panoramic, edentulous and pediatric radiographs. Emphasis on mastery of the paralleling exposure technique, using the extension cone paralleling device, in producing diagnostically acceptable full mouth and bite-wing radiographs on the adult patient. Patients will be regularly appointed to the dental assisting radiography course clinic where students will develop clinical competence under instructor supervision. Skills in maintenance of processing equipment, duplication of radiographs, monitoring quality assurance of the equipment, charting existing restoration from radiographs, and recognition of pathologic condition commonly seen on radiographs are developed.
Lecture 1 hour. Laboratory 3 hours
Prerequisite(s): DAST-131.

DAST-150 Dental Office Management **5 Credits**

Development of sound dental office business procedures and identification of role of the dental auxiliary in the management of the dental practice. Emphasis on appointment scheduling guidelines, bookkeeping, telephone etiquette, collections, banking and insurance procedures. Review of basic math, grammar and spelling. Typing and computer keyboard skills are introduced and/or reinforced.
Lecture 4 hours. Laboratory 3 hours.
Prerequisite(s): Departmental approval: admission to the Dental Assisting Program.

DAST-191 Dental Assisting Practicum I **2 Credits**

Practical application of dental assisting principles and skills via a field experience consisting of seven hours per week in a dental practice setting under the supervision of a program recognized practitioner or supervisor. Course orientation and related dental seminars will be offered on the average of one hour per week.
Lecture 0 hour. Laboratory 0 hours. Other Required Hours: Practicum: 7 hours per week. Seminar: 1 hour per week.
Prerequisite(s): Departmental approval: admission to the program.

DAST-193 Dental Assisting Practicum II **6 Credits**

Practical application of dental assisting skills and principles via a field experience in a dental practice setting under the supervision of a program recognized practitioner or supervisor. Students rotate through various dental facilities. Emphasis is placed on techniques, efficiency, patient contact and personal and professional growth. Participation in a campus-based weekly seminar allows students to share learning experiences. Guest speakers are invited to address relevant topics. *Lecture 0 hours. Laboratory 0 hours. Other Required Hours: Practicum: 28 hours per week. Seminar: 2 hours per week. Prerequisite(s): DAST-191.*

DENTAL HYGIENE - DENT

DENT-101 Preventive Oral Health Service I **5 Credits**

Principles of social science related to dental hygiene practice and the professionalization of dental hygiene. Knowledge and understanding of an oral inspection and history prior to initiation of treatment. Philosophy of preventive oral health and its relevance to dental hygiene. Etiology, pathogenesis, treatment and prevention of all oral accretions. Principles of technique for the oral prophylaxis. Students practice on mannequins and then apply instruments to the mouth. Observation time in Sophomore Clinic. View clinical procedures as an entity, especially in relation to those preventive oral health service topics discussed.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): Departmental approval: admission to the Dental Hygiene program.

DENT-102 Tooth Morphology **3 Credits**

Study of nomenclature, development, calcification and eruption of permanent and deciduous teeth. Lectures on physiology of the dentition, physiologic tooth form, the periodontium, arrangement of teeth and occlusion.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

DENT-112 Applied Oral Anatomy **3 Credits**

Study of the function of the masticatory apparatus as a unit. Lectures on dentosseous structures and the temporo-mandibular joint, muscles of the tongue, innervation and vascular supply to the head, and viscera of the head.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): DENT-102.

DENT-113 Preventive Oral Health Service II **5 Credits**

Methods and materials utilized to implement preventive oral health. Study of diagnostic aids used by dentist in treatment planning. Identification of diagnostic criteria for caries susceptibility used in oral diagnosis. Apply knowledge of plaque control in patient oral physiotherapy instruction. Apply topical anticariogenic agents and understand mode of action. Study of clinical manual to apply knowledge to all facets of treatment of patients in the dental hygiene clinic.

Lecture 3 hours. Laboratory 6 hours.

Prerequisite(s): DENT-101.

DENT-126 Radiology **4 Credits**

History and development of the x-ray, its nature and properties. Safety precautions and uses of the x-ray in dentistry. Theory and practice in the fundamentals of oral radiographic technique. Film placement, tube angulation, processing and mounting of films. Consists of twenty modules of instruction, lecture modules correlated with ten laboratory modules.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): DENT-102.

DENT-128 Oral Histo-Pathology **2 Credits**

Introduction to the clinical manifestations of histology and pathology for diseases affecting the teeth and supporting structures. Visual differentiation between normal and abnormal conditions.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): BIO-108.

DENT-131 Preventive Oral Health Service III **3 Credits**

Students perform oral prophylaxis, expose radiographs, apply topical fluoride to the teeth and provide preventive oral health services to adult and child patients in the clinic. Learn the special needs of geriatric and handicapped patients.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): DENT-113.

DENT-136 Current Concepts in Dental Materials **4 Credits**

Physical properties of dental materials and basic principles of their preparation. Application of the principles of dental materials by manipulating cements, bases, liners, amalgam, impression materials, composites, bonding and sealant materials tooth bleaching agents in the laboratory setting.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): DENT-113.

DENT-138 Peridontics I **1 Credit**

Histological study of changes to tissues of oral cavity due to periodontal disease.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): DENT-113.

DENT-200 Preventive Oral Health Services IV 3 Credits

Concentrated clinical experience performing oral prophylaxis, exposing radiographs, applying topical fluoride, polishing restorations, and providing patient education to adult and child patients in the clinic. Introduction to principles of treatment planning to include assessment, implementation and evaluation of patient needs. Development of office management skills, to include patient continuous care regime, appointment planning and interpersonal communication techniques. Ten hours of case presentation required to discuss clinical patient care.

Lecture 0 hours. Laboratory 9 hours.

Prerequisite(s): DENT-131.

DENT-206 Community Oral Health I 2 Credits

Dental hygiene profession and its potential for impact upon community health practices is examined. Study of research design as it relates to the interpretation of scientific journal articles, and the planning and implementation of a dental public health research project. Selection, survey, development and validation of a dental health education program will be completed for a specific population.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): DENT-212.

DENT-208 Periodontics II 2 Credits

Study of periodontal diseases and their etiology. Discussion includes hygienist's responsibility to periodontal patient's condition, treatment and education.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): DENT-138.

DENT-209 Pharmacology and Therapeutics 3 Credits

Drugs and anesthetics, with emphasis on those used in the dental office. Discussion of the origin of drugs and anesthetics, physical and chemical properties, preparation, mode of administration and effects on body systems. Preoperative and postoperative patient care.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): DENT-136.

DENT-212 Preventive Oral Health Service V 4 Credits

Study and clinical application of the principles of performing the oral prophylaxis, exposing radiographs, applying topical fluorides and treatment planning on adult and child patients. Ten hours of case presentations required to discuss clinical patient care. *Lecture 0 hours.*

Laboratory 12 hours.

Prerequisite(s): DENT-200.

DENT-221 Preventive Oral Health Service VI 4 Credits

Clinical assignments focus on the needs of the special patient and treatment planning procedures within the scope of dental hygiene. Review of preventive oral health service methodologies. Ten hours of case presentations required to discuss clinical patient care.

Lecture 0 hours. Laboratory 12 hours.

Prerequisite(s): DENT-212.

DENT-222 Community Oral Health II 3 Credits

Study of the principles of public health dentistry, concepts of epidemiology, fundamentals of dental needs assessment, resources and objectives, fundamentals of planning, organizing, delivery and evaluating public health dental care. Review of special needs programs and public health approach to preventive dentistry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): DENT-206.

DENT-228 Dental Specialties 2 Credits

Study of general dentistry and specialty practices. Role of dental auxiliaries in various settings through assignments to specialty practices. Twelve hours of observation required in specialty practices.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): DENT-212.

DENT-236 Dental Practice Management 2 Credits

Future of dentistry and role of the dental hygienist as related to the profession and association. Principles of ethics and laws relating to dental practice. Introduction to administration and management of a dental health team.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): DENT-228.

DENT-241 Preventive Oral Health Service VII 4 Credits

Continuation of clinical experience integrating social and basic sciences with the clinical practice of dental hygiene. Application of the principles of performing the oral prophylaxis, exposing radiographs, utilizing topical fluorides and supplemental preventive treatment procedures. Ten hours of case presentations required to discuss clinical patient care.

Lecture 0 hours. Laboratory 12 hours.

Prerequisite(s): DENT-221.

DIETETIC TECHNOLOGY - DIET

DIET-102 Dietetic Orientation and Nutrition Management Techniques **4 Credits**

Introduction to philosophy, principles and concepts of dietetics as a science, including knowledge and application of standards of practice, and requirements of entry into the dietetics profession. Study the organizational structures involving nutrition delivery systems, dietetics' professionals roles, responsibilities, and ethical consideration. Employment opportunities and job market trends examined. Students will participate in activities related to professional motivation and goal setting, communication, and nutrition multicultural/ethnic awareness.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

DIET-106 Nutrition Care I **4 Credits**

Study of energy yielding nutrients, their food sources, digestion, absorption, and utilization in humans. Nutritional implications of socioeconomic, cultural, and psychological factors affecting food selection patterns upon normal health status throughout the life cycle will be explored. Nutritional recommendations and dietary guidelines for individuals and groups will be discussed.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

DIET-107 Nutrition Care II **4 Credits**

In-depth study of vitamins, minerals and water, their food sources, health benefits and risks. Their importance to human nutrition throughout the life cycle is applied. Sources of reliable scientific information are explored.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): DIET-106 and BIO-121.

DIET-110 Nutrition for Consumers **3 Credits**

Study of physical, psychological and social importance of food to the body during life cycle as affected by environmental factors. Consumer skills concerned with labeling, shopping, menu planning and food preparation are stressed. Nutrition concerns are assessed for changing behavior and developing future goals.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-099.

DIET-111 Normal Nutrition **3 Credits**

Designed for nursing students and other majors to help develop awareness and knowledge of nutrition principles related to personal and patient care. Nutrient and energy requirements, weight control and stages of the life cycle will be discussed. Dietary recommendations and food patterns applied to culture, diets and prevention of nutrition related disease.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-099.

DIET-115 Nutrition for Children and Families **3 Credits**

Designed for persons interested in the education of small children and the relationship of nutrition to the total development and health of children. Nutritional requirements and methods of encouraging the development of good eating habits will be included.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-101.

DIET-129 Fundamentals of Food Production and Management **4 Credits**

Study of basic foods. Application of scientific principles of food preparation, safe food handling techniques, recipe conversion and dietary modifications.

Introduction to human resources management.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): MATH-100D, DIET-102, and eligibility for ENG-101.

DIET-130 Food Production Principles **1 Credit**

Principles involved with food production for normal and therapeutic meals. Principles of selection of tools and equipment for different uses. Principles of food production that are consistent with quality assurance standards. Introduction to ethical technical decisions involved in food production.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): DIET-129, DIET-106, ENG-101, and concurrent with DIET-133.

DIET-133 Techniques of Dietetic Food Production and Management **3 Credits**

Application of scientific principles, techniques and methods of food production and management for normal and therapeutic meals. Use of tools and equipment appropriate for different food service systems.

Evaluation of food products consistent with quality assurance standards and nutritional criteria appropriate for all ages and diverse ethnic groups.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): Concurrent with DIET-130.

DIET-159 Dietetic Quantity Food Procedures **3 Credits**

Lecture, demonstration, and application of dietetic quantity purchasing skills required in the supervision of institutional nutritional care delivery systems. Food specifications, legal and ethical issues, budget management, information systems methods and records management. Students will participate in simulated food purchasing activities and decision making processes.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Concurrent with DIET-133.

DIET-170 Dietetic Technology Practicum

5 Credits

First experience in Nutrition Services in a health care facility under the direction of a registered dietitian. Includes application of techniques in food production, equipment use and care, employee management, information flow, documentation, sanitation regulations, food service personnel recruitment, training and retention, and quality assurance. Students will have opportunity to demonstrate the application of knowledge acquired in previous and concurrent didactic courses. Students will spend 210 hours in an off-campus practicum experience in addition to an on-campus weekly seminar.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 21 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): DIET-159 and DIET-107.

DIET-180 Sports Nutrition

3 Credits

Focus on nutritional implications for human physical and athletic performance including energy and specific nutrients. Emphasis on food selection to enhance performance and nutrient recommendations with regard to varying athletic activities. Includes sports nutrition for adolescent, aging, and female athletes as well as full-time and weekend-competitive athletes. Designed for coaches, athletes, and persons interested in enhancing physical performance through nutritional means.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-099.

DIET-210 Nutrition Care Practicum

4 Credits

Application of Dietetic Technician skills required in the nutritional care of patients, clients, or residents in acute or extended care facilities under the supervision of a registered dietitian. Application, documentation of care plans and patient education will be discussed. Seminar will provide forum for discussion of the practicum experience.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): DIET-170, and concurrent with DIET-219 and SPCH-101.

DIET-216 Diet Therapy I

4 Credits

Food therapy for prevention and treatment of disease. Writing menu extensions, calculation and use of meal patterns for diets modified in consistency, calories and carbohydrate. Review and application of current research and treatment as applied in patient care and education.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): DIET-107.

DIET-219 Diet Therapy II

3 Credits

Therapeutic menu planning procedures for diets modified in protein, fat, vitamins and minerals. Nutrition care planning and delivery for treatment of disease and health promotion. Alternative nutrition support systems for rehabilitation and critical care management. Role of the health care team in implementing the nutrition care plan.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): DIET-216.

DIET-222 Geriatric Nutrition

4 Credits

Study of concepts, scientific principles, techniques and application of nutrition care management processes that focus on older persons. Discussion of aging theories, legislative issues and service delivery systems that impact upon older persons. Includes physical, social, psychological and economical factors that influence the nutritional status, health and well being of diverse cultural population groups in both institutional and community-based settings.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): DIET-219 and concurrent with DIET-225.

DIET-225 Geriatric Nutrition Practicum

4 Credits

Supervised practicum experience in a nutrition services department of long term care facilities, health clinics, or community based organizations that provide services to older persons.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours:

Practicum: 14 hours per week. Seminar: 2 hours per week.

Prerequisite(s): Concurrent with DIET-222.

DIET-253 Community Nutrition and Public Health

3 Credits

Introduction to public health nutrition. Review and study of nutritional status of diverse population groups and types of community agencies and services provided. Trends, concepts and principles of public health delivery systems examined. Community resources, government programs, agencies, legislative and regulatory agencies described. Study of health assessment, health promotion strategies, nutrition education and evaluation of community health delivery systems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): DIET-222, DIET-236, and concurrent with DIET-260.

DIET-260 Community Nutrition Practicum

3 Credits

Practicum experience under the supervision of a registered dietitian. Skills in delivery of nutrition services in community-based agencies, out-patient health care settings, or social service agencies. Includes nutrition intervention, wellness promotion, and community-based treatment techniques.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours:

Practicum: 7 hours per week. Seminar: 2 hours per week.

Prerequisite(s): Concurrent with DIET-253.

DENTAL LABORATORY TECHNOLOGY - DLAB

DLAB-112 Complete Dentures I

4 Credits

Study of the fabrication of removable dentures in the clinical and laboratory setting. Laboratory manipulations will include boxing and pouring preliminary and master models; construction of various custom trays; construction of various baseplates and occlusal rims; and the mounting of master casts on non-adjustable and semi-adjustable articulators.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): Department approval: admission to the Dental Laboratory program.

DLAB-113 Complete Dentures II

4 Credits

Study of prosthodontic techniques involved in the construction of removable complete dentures utilizing various tooth forms, materials, instruments and equipment. Laboratory manipulations include the tooth selection and arrangement of various edentulous arches. Student will also wax, contour and polish maxillary and mandibular complete dentures for try-in.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): DLAB-112.

DLAB-132 Fixed Restorations I

4 Credits

Study of the fabrication of crown and bridge techniques with emphasis placed on the principles of occlusion as they relate to fixed dental restorations. Laboratory manipulations include waxing, spruing, investing, casting, finishing and polishing inlay, onlay and single crown restorations utilizing stone dies and opposing models that are articulated on half- and full-arch casts. Anatomical waxing exercises on semi-adjustable articulators will also be utilized to emphasize the occlusal morphology and cusp relations used in fixed restorative dentistry.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): BIO-135.

DLAB-133 Fixed Restorations II

4 Credits

In-depth study of the fabrication of crown and bridge techniques with emphasis on the principles of occlusion as they relate to fixed dental restorations. Laboratory manipulations include waxing, spruing, investing, casting, finishing and polishing veneer crowns, a cantilever bridge and a multiple unit bridge utilizing stone dies and opposing models that are articulated on various non- and semi-adjustable articulators.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): DLAB-132.

DLAB-152 Principles of Dental Materials

4 Credits

Introduction to the science of dental materials where the physical and mechanical properties of crystalline and non-crystalline structures are emphasized. Includes the nature of matter and energy; reversible and irreversible reactions; units of measurement; exothermic and endothermic heat; heat transfer; the nature of light, color and optics; and stress and hardness factors. Provides the dental laboratory technology student with information about the dental materials that will be encountered on a daily basis.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): BIO-136 or departmental approval.

DLAB-153 Practices in Orthodontics

4 Credits

In-depth study of the concepts and applications involved in pedodontic and orthodontic appliances. Laboratory manipulations will include the fabrication, finishing, polishing and repair of pedodontic and preventive orthodontic wrought wire and autopolymerizing resin appliances. Such appliances as retainers, habit appliances and various types of space maintaining and positioning appliances will be fabricated. Other laboratory manipulations will include fabrication of orthognathic study casts; fabrication of bruxism splints; and fabrication of a provisional wrought wire denture.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): BIO-135.

DLAB-161 Dental Morphology

3 Credits

In-depth study of the form and structure of deciduous and permanent natural teeth in the oral cavity. Anatomical and cusp relationship factors will also apply. Laboratory manipulations will include the preparation of diagnostic casts, drawing and sculpturing tooth shapes to specified measurements. Tooth identification, classification and numbering systems will also be applied. Introduction of dental instruments and equipment used in a dental laboratory environment.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): Departmental approval: admission to the program.

DLAB-162 Infection Control for the Dental Laboratory

2 Credits

Introduction to the necessity and enforcement of infection control measures in the dental laboratory, based on knowledge of specific infections and diseases and their various modes of transmissions.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): BIO-135.

DLAB-210 Complete Dentures III

4 Credits

Advanced study of complete denture techniques, relines and repairs. Laboratory manipulations include the finishing and polishing of maxillary and mandibular denture bases; repair and maintenance of complete denture prostheses; and complete fabrication of immediate dentures and surgical trays.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): DLAB-113.

DLAB-217 Dental Laboratory Practicum--Removable **3 Credits**

Field experience in the specialty areas of complete and partial dentures and orthodontics. Student will work 14 hours per week in a commercial dental laboratory under the supervision of an experienced program-recognized, owner/supervisor. The student will also attend course orientation and related dental laboratory technology seminars one hour per week.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours:

Practicum: 14 hours per week. Seminar: 1 hour per week.

Prerequisite(s): Departmental approval.

DLAB-224 Partial Denture Designs

4 Credits

Study of basic techniques used in the fabrication of cast removable partial dentures. Laboratory exercises will include survey, design, blockout, relief, master duplication, waxing, investing and casting, finishing and polishing of maxillary and mandibular chrome partial frameworks.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): BIO-135.

DLAB-225 Removable Partial Dentures

3 Credits

Advanced study of partial denture techniques, major connector and minor connector repairs. Laboratory manipulations include the design and fabrication of maxillary and mandibular partial denture frameworks, articulation and arrangement of artificial teeth, acrylic processing, acrylic finishing and polishing. Major connector and minor connector repairs will also be performed.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): DLAB-224.

DLAB-226 Precision Attachments

4 Credits

Advanced study and fabrication of removable partial dentures utilizing intracoronal and extracoronal semi-precision attachments. Laboratory manipulations include the design and fabrication of a maxillary semi-precision attachment framework, articulation and arrangement of artificial teeth, acrylic processing, finishing and polishing. Attachment soldering techniques will be applied. Concepts and applications of overdentures and precision attachment coordinating factors will be explored.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): DLAB-225.

DLAB-230 Fixed Partial Dentures I

4 Credits

In-depth study of the fabrication of crown and bridge techniques with emphasis on the principles of occlusion as they relate to fixed dental restorations. Laboratory manipulations include waxing, spruing, investing, casting, finishing and polishing a Maryland bridge and a multiple unit bridge utilizing stone dies and opposing models that are articulated on various non- and semi-adjustable articulators. Other laboratory manipulations include design and construction of a pontic; soldering and repairing techniques used in cast restorations; and construction of a transitional bridge. Adaptation of light-cured and resin build-up techniques will be explored.

Lecture 1 hour. Laboratory 9 hours.

Prerequisite(s): DLAB-133.

DLAB-234 Fixed Partial Dentures II

4 Credits

Advanced study of the fabrication of crown and bridge techniques with emphasis placed on the principles of occlusion as they relate to fixed dental restorations. Laboratory manipulations include the fabrication of cosmetic facings and a full crown composite restoration. Composite light-cured materials will be explored utilizing stone dies and opposing models. In-depth study of semi-precision attachments will be included. Other laboratory manipulations include waxing, spruing, investing, casting, finishing and polishing semi-precision substructures. Soldering techniques for adapting semi-precision attachments will be studied.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): DLAB-230.

DLAB-237 Dental Laboratory Practicum--Fixed

3 Credits

Field experience in the specialty areas of crown and bridge, and dental ceramics. Student will work 14 hours per week in a commercial dental laboratory under the supervision of an experienced program-recognized, owner/supervisor. Student will also attend course orientation and related dental laboratory technology seminars one hour per week.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours:

Practicum: 14 hours per week. Seminar: 1 hour per week.

Prerequisite(s): Departmental approval.

DLAB-245 Dental Ceramics I

4 Credits

Physical study and manipulation of porcelain which includes the designing of a metal substructure and personalized building and staining of a single unit ceramic crown. Laboratory manipulations include waxing, spruing, casting, finishing and polishing a metal substructure utilizing stone dies and opposing models. Opaque firing; porcelain adaptation; contouring and firing of porcelain; shading and staining of porcelain; finishing, polishing and glazing of porcelain will also be applied. Other laboratory manipulations include platinum matrix adaptation used in porcelain jacket crown construction and porcelain adaptation to semi-precision attachment substructures.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): BIO-135.

DLAB-246 Dental Ceramics II

3 Credits

Physical study and manipulation of porcelain. Advanced study of various techniques used in the designing of metal substructures and personalized building and staining of a multiple unit ceramic bridge. Laboratory manipulations include waxing, spruing, casting, finishing and polishing multiple unit substructures utilizing stone dies and opposing models. Opaque firing; porcelain adaptation; contouring and firing of porcelain; shading and staining of porcelain; finishing and glazing of porcelain; and pre- and post-soldering techniques will be applied. In-depth study of castable ceramic restorations will be utilized in the fabrication of a single unit Dicor crown, a Dicor inlay, and Dicor anterior facings.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): DLAB-245.

DLAB-266 Professional Concerns in Dentistry

2 Credits

Study of the dental laboratory technician's role in the dental health team concept. Recognition of the laws that regulate the dental laboratory profession will be examined. Emphasis will be placed on the certified dental technician's role in the dental laboratory profession. Concentration will be focused on the Recognized Graduate Examination offered by the National Board for Certification.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

EARLY CHILDHOOD EDUCATION - ECED

ECED-101 Introduction to Early Childhood Education 4 Credits

Introduction to history and philosophy of Early Childhood Education. Emphasis on developmental characteristics of young children from birth through age eight. Overview of developmentally appropriate practices with young children inclusive of the child with special needs. Ways of distinguishing a developmentally appropriate early childhood learning environment. Two-hour observation in Early Childhood Education setting required.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-102 Early Childhood Education 4 Credits

Study of various types of preschool centers. Emphasis on curriculum and program development, administration and the role of the preschool teacher.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ECED-101.

ECED-120 Early Language Development 3 Credits

Overview of spoken and written language development of young children. Theories and research related to language and literacy development and the role of the teacher in facilitating this development. Preparation and use of developmentally appropriate materials and experiences for language discovery and learning. Extensive practice in learning how to listen and talk with young children.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-101.

ECED-121 Literature for Early Childhood Education 3 Credits

History of children's literature; authors and illustrators of outstanding books for early childhood. Evaluating and selecting books to serve needs of individual children and/or groups. Practice in reading picture books and in telling stories. Other experiences include poetry, finger plays, film strips and creative dramatics. In addition to scheduled classroom activities on campus, students will participate in several off-campus visitations to early childhood learning centers to learn more about interacting with young children.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-101 or departmental approval: equivalent experience.

ECED-122 Art for Early Childhood Education 3 credits

Students in a lecture/workshop setting experience extensive variety of art media suitable for young children. Teacher's role in curriculum planning and guidance is emphasized. Outside assignment: planned activities at early childhood sites is required.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ECED-101 or departmental approval: understanding of developmental characteristics of young children and appropriate teaching practices and experiences.

ECED-123 Science for Early Childhood Education 3 credits

Students in a classroom setting are acquainted with an extensive variety of curriculum experiences in science, math and the social sciences for preschool children. Role of the teacher in facilitating science/social science experiences and a scientific attitude is explored. In addition to approved scheduled classroom activities on campus, students will participate in several off-campus visitations to early childhood learning centers to learn more about interacting with young children.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ECED-102 or departmental approval: understanding of developmental characteristics of young children and appropriate teaching practices and experiences.

ECED-124 Music for Early Childhood 3 Credits

Designed to acquaint and train students to understand and develop the instinctive creativity of young children. Basic music vocabulary and concepts will be stressed. Experiences with sound, rhythms, musical games, instruments and records will be explored.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ECED-101.

ECED-125 Music for Early Childhood Education 3 credits

Methods and materials in music appropriate for preschool children. Includes the planning of music sessions which will incorporate creative self-expression using sound and movement, songs, musical instruments and/or records and tapes. Expanded experiences in adult use of instruments and in developing adult musical skills.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ECED-101.

ECED-130 Administration, Budgeting, Policy and Procedures for Child Care Centers 3 credits

Overview of major administrative principles, types of child care centers, legislative constraints, center policies and procedures, insurance ramifications, design of physical facilities, purchasing, budgeting, record keeping and professional public relationships.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-131 Quality Programming and Staff Relationships 3 credits

Survey of a wide variety of programmatic formats as related to philosophical assumptions, educational theories and environmental design with respect to infant, toddler, preschool and after-school child care settings. Modes of staff support and management including problem solving and conflict resolution.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-132 Communication in Sensitive Situations 3 credits

Impact of major stress situations on the lives of young children including abuse and neglect, death, divorce, separation, attachment, autonomy, developmental, emotional strains, communication with the support of families experiencing stress will be discussed. Assessment and referral services will be considered.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-140 Community Resources for the Special Needs Child 3 credits

Expands the student's knowledge of community agencies and/or related services regarding the special needs child, his or her family and associated professionals.

Community agencies and their services will be explored through site visits, community speakers and media.

Federal government legislation will serve as the foundation for all studies, especially as it focuses on the special needs child from birth through 21 years of age.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-141 Role of the Special Needs Assistant 3 credits

Develops knowledge and understanding of the role of the special needs assistant in child care settings serving special needs children from infancy through primary grade levels. Focuses on major skills which include observation and collection of data on individual needs of children. Current job descriptions from school districts, day care centers, non-profit agencies and residential settings will be analyzed. Course conducted in coordination with students' weekly internships in community settings.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-142 Personal/Professional Skill Assessment for the Special Needs Assistant

3 credits

Provides specific career assessment and preparations for persons who will work in child care settings serving special needs children. Focuses on developing and organizing skills which will assist the student in attaining a successful job match. These career entry skills will include resume development, interviewing, job search and networking, understanding professional application forms and development of a personnel file.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECED-150 Curriculum, Materials and Equipment for the Special Needs Child

3 Credits

Knowledge of effecting curriculum, materials, and equipment appropriate for the special needs child. Positive educational environments. Practice presenting activities and making materials that address abilities of special needs children. Devices and equipment utilization applicable to special needs.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ECED-101.

ECED-151 Behavior Observation, Individualized Planning and Group Management

3 Credits

Observation and involvement with children handicapping conditions. Off-campus settings will provide opportunities to implement individualized developmental plans and develop group management skills.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ECED-101.

ECED-160 Experience in ECED Learning Center

2 Credits

Practice within the College-based Early Childhood Education Learning Center. Introduction to developmentally appropriate care and education of young children within an assigned setting. Preparation, organization and maintenance of an educational environment, communication strategies, planning and presentation of experiences/activities for young children will be emphasized. Experience will be provided in relating to the wide array of individuality among children. Cultural and familial expectation, adjustment of children to a group setting and development of positive work relationships will be emphasized. One three-hour block of time will be spent with the assigned age group and one hour in a follow-up seminar per week.

Lecture 0 hours. Laboratory 3 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): ECED-102, ECED-120, and departmental approval.

ECED-170 Role of the Special Child

3 credits

Survey course in identification, assessment and mainstreaming of the child with special needs in a normal preschool classroom. Techniques for working with professionals from other disciplines and with parents of handicapped children. In addition to the scheduled classroom activities on campus, students will participate in several observations of special needs children in a variety of child care settings. Primarily designed for early childhood education majors.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-101.

ECED-220 Child Behavior and Guidance

3 Credits

Guidance of preschool children within an educational program based on interpretation of child growth principles in practice. To help students understand themselves in their roles as teachers of young children.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

ECED-222 Center-Family Relationships: Child Health Concerns

3 credits

Develop skills to effectively work with parents in fostering the total developmental growth of their children. Emphasis on interpersonal techniques that will promote positive relationships with family, child care center and community. Training in child abuse and neglect, first aid, and communicable diseases.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-102 or ECED-150 or ECED-253, or concurrent enrollment in ECED-234.

ECED-232 Early Childhood Education Student Teaching

3 Credits

Discussion and analysis of components of teaching environments. Covers aspects of equipment, materials, routines, purchasing, and qualities of a setting that enhance developmentally appropriate practice. Analysis of teaching skills, attitudes and values necessary for assuming responsibilities leading to the teacher position in a pre-kindergarten setting will also be addressed.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval and concurrent with ECED-233.

ECED-233 Early Childhood Student Teaching Practicum

2 Credits

Participation in an assigned pre-kindergarten teaching site under College supervision to develop practical skills in teaching young children. Each student will spend approximately 140 hours in a field experience.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): Departmental approval and concurrent with ECED-232.

ECED-234 Early Childhood Education Student Teaching **3 Credits**

Information relative to the knowledge, skills, attitudes, and values associated with becoming an efficient, effective lead/group teacher of young children. Covers aspects of budgeting for a child care center, legal responsibilities of the center and the teacher, professional conduct, and ethical issues. Resume writing, interviewing techniques, preparation of materials to support a wide variety of thinking processes, and readiness for kindergarten will be reviewed. Possible indicators of learning difficulties and planning and guidance techniques, appropriate for managing groups of children in a day-long environment, will also be included.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-232, ECED-233, and concurrent with ECED-235.

ECED-235 Early Childhood Student Teaching Practicum **2 Credits**

Actual participation in an assigned pre-kindergarten teaching site under College supervision to develop and refine practical application of skills necessary for becoming a lead/group teacher of young children. Each student will spend 140 hours in a field experience.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): ECED-232, ECED-233, and concurrent with ECED-234.

ECED-240 Infant and Toddler Care **3 credits**

In-depth learning experience relating to child growth and development from birth to age three; studying methods of providing healthful and safe environments for infants/toddlers in a variety of child care settings; licensing recommendations; parent involvement. In addition to scheduled classroom activities on campus, students will participate in several observations of children under three years old in a variety of child care settings.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ECED-101.

ECED-252 Independent Living Skills for the Special Needs Child **4 Credits**

Role of the educational assistant in assisting children with special needs to develop self-help skills. Appropriate physical care of children will be introduced and practiced. Code of ethics explored.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ECED-150.

ECED-253 Field Experience with the Special Needs Child **3 Credits**

Seven hours per week in a field placement site to provide practical experience for the educational assistant in a setting serving the developmentally disabled child. Preparation and presentation of instructional plans. Portfolio writing preparation. Strengthening of staff communications. Job preparation. On-site observation and evaluation.

Lecture 2 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Prerequisite(s): ECED-150.

ECED-270 Special Topics in Early Childhood Education **1-4 Credits**

Study of selected topics or current issues to explore various emerging theories, research and applications impacting early childhood classrooms. Topics will vary as new issues emerge in the early childhood field (see class schedule for current offerings). (Repeatable. No more than three credits of special topics courses may be applied toward the Early Childhood Education degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

Course Descriptions

Fall 1996-Summer 1998 Catalog

ECON - ECONOMICS

ECON-100 Basic Economics

3 Credits

Principles of economics designed to provide an understanding of the structure, organization and operation of our economy; relationship of our economy to our social and political welfare and to our standard of living.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECON-151 Development of the American Economy

4 Credits

Evolutionary development of our economic system from medieval times to present. Designed for better understanding of the economic life.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECON-161 Principles of Economics I

4 Credits

Introduction to the scope and method of economics, scarcity and resource allocation, basic demand-supply analysis, the mixed economy and its basic components, national income analysis and modern employment theory, money and banking and economic growth.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

ECON-162 Principles of Economics II

4 Credits

Refinements in demand-supply theory, supply and the costs of production, price and output determination by market structure; resource pricing, general equilibrium analysis, economics of poverty and inequality, international trade theory, comparative economic systems and current economic problems.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ECON-161.

ECON-270 Special Topics in Economics

1-4 credits

Study of selected topics and events in the area of economics (see schedule booklet for current offerings). (Repeatable. No more than eight credits of special topics courses may be applied toward fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Faculty counterparts determine the appropriate prerequisite/corequisite for each topic.

EDUCATION - EDUC

EDUC-101 Introduction to Education

3 Credits

Introduction to the broad and complex field of public education. Emphasis on personal and professional characteristics required for successful teaching.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

EDUC-200 Approaches To Teaching

4 Credits

General strategies and skills of instruction with emphasis on curriculum design, instructional planning, learner diversity, decision making, interpersonal communication, questioning and classroom management.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): EDUC-101.

EDUC-205 Human Diversity in Education

3 Credits

Socio-cultural patterns related to race, gender, culture, class, health and differential ability, with instructional implications for sensitivity to culturally-based and community differences.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): EDUC-101, and concurrent with EDUC-240 and PSY-203.

EDUC-240 Sophomore Practicum

2 Credits

Participation of students at assigned sites in an applied extended field experience under college supervision to fashion, develop and evaluate practical skills in teaching.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7-1/2 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): Concurrent with EDUC-205 and PSY-203.

ELECTRICAL/ELECTRONIC ENGINEERING TECHNOLOGY - ELEC

ELEC-120 Introduction to Electric and Electronic Circuits 3 Credits

Introduction to electric-electronic terms, prefixes, components, symbols, circuits, and schematic diagrams. Use of Ohm's Law, Kirchoff's voltage and current Laws to solve simple two-resistor series and parallel circuits. Practical laboratory experience with electronic voltmeter, DC ammeters, batteries, electronic power supplies and the construction of working circuits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: MATH 091 or equivalent.

ELEC-122 Principles of DC/AC Circuits 3 Credits

Direct-current and alternating-current circuit fundamentals. Electrical quantities and units of measurements. Series and parallel circuits. OHM's Law, Kirchoff's voltage and current waves. Phasors and J-Operators. Impedance, admittance and power triangles. Power factor and power factor correction.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MATH-126 or concurrent enrollment.

ELEC-125 DC Electric Circuits 3 Credits

Direct-current (DC) circuit fundamentals, emphasis on conventional current flow, electrical quantities and units of measurement, sources of EMF, Ohm's Law, electrical energy and power relations, series, parallel and series-parallel circuits, and voltage dividers. Kirchoff's Laws, Thevenin's and Norton's theorems. Laboratory experience in construction of working circuits and evaluation of their performance.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Eligibility for MATH-116 or departmental approval.

ELEC-126 AC Electric Circuits I 3 Credits

Fundamentals of alternating current (AC) circuits with emphasis upon capacitance, inductance, time constants, sinusoidal voltage and current, reactance, vectors and phasors, impedance, and RC, RL and RLC series and parallel circuits. Practical laboratory experience with AC instruments including oscilloscopes, capacitance testing and the evaluation of reactive circuits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-125; and MATH-126 or concurrent enrollment.

ELEC-127 AC Electric Circuits II 3 Credits

Emphasis on power, resonance, coupled circuits, transformer action and harmonics. Practical laboratory experience with various combinations of series and parallel reactive circuits and resonant circuits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-126.

ELEC-140 Direct Current Machines 3 Credits

Direct current generator-motor principles and construction. Principles covered include magnetic fields and excitation, voltage generation, current, armature reaction, power losses, torque, speed and speed regulation, efficiency, machine ratings and application. Practical laboratory experiences with DC machinery.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-125 or departmental approval: high school algebra.

ELEC-145 Power Transformers and AC and DC Electrical Machinery 3 Credits

Principles of electro magnetism. Principles of design, construction, application and operation of power transformers, and DC and AC single-phase and polyphase rotating machinery.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MATH-126; and ELEC-127 or concurrent enrollment.

ELEC-150 Alternating Current Machines 3 Credits

Theory of alternating current machinery. Construction, characteristics, and operation of transformers, induction and synchronous motors, synchronous generators and converters, both single and polyphase. Practical laboratory experience with machinery.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-140; and ELEC-127 or concurrent enrollment.

ELEC-160 Semiconductor and Electronic Circuits I 3 Credits

Fundamentals of vacuum tubes and semiconductors. Circuit applications including waveshaping circuits, rectifier and power supply circuits and filter networks. Vacuum triode and semiconductor diode characteristics. Practical laboratory experience with circuits involving semiconductors, diodes, zeners and vacuum triodes. Includes the design of amplifiers and design and troubleshooting of power supply circuits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-127 or concurrent enrollment, or departmental approval.

ELEC-170 Electrical/Electronic Design and Drafting 3 Credits

Principles and practice of electrical/electronic drafting techniques. Specific applications as related to motor control diagrams (ladder), electrical/electronic circuits, layout of circuit components for chassis and printed circuit applications. Graphic symbols and conventions.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): ELEC-160 and ENGR-121, or departmental approval.

ELEC-211 Electrical Construction and Application 2 Credits

Wiring systems for light, heat and power. Transmission and distribution systems; switches, contactors, relays and circuit breakers. Wire, cable and conduit applications. Feeder and branch circuit protection. Safety and grounding practices. Lighting systems and design. Electric heating design. Demonstrations will be used to familiarize students with equipment.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): ELEC-127 and ELEC-140.

ELEC-231 Electrical CAD I 4 Credits

Advanced course in computer-aided drafting for application of CAD as used in electrical and electronic applications. Specific areas of interest are: chassis layout, development of a parts list format, development of a symbol library, drawing of schematic diagrams and industrial control circuits. Application of the attribute commands as part of the report generation process.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ENGR-130A; and ELEC-170 or concurrent enrollment.

ELEC-237 Telecommunications I 3 Credits

Fundamentals of basic analog communication systems at the circuit and subsystem level. Topics include modulation, demodulation, transmitters, receivers and a complete analog communication system. Emphasis is placed on circuits and systems using I.C. technology.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-260 or concurrent enrollment.

ELEC-238 Telecommunications II 3 Credits

Comprehensive introduction to contemporary digital data communications theory, hardware and systems applications. Topics include digital modulation methods, multiplexing methods, bandwidth considerations, baud rates noise considerations, demodulation methods, half duplex, full duplex, synchronous and asynchronous systems, and interfacing techniques.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-237.

ELEC-239 Telecommunications III 3 Credits

Introduces the fundamentals and applications of transmission lines, waveguides, antennas and radiowave, and microwave propagation. Focuses on theory and application of microwave, fiber optic, cellular, and broadband based communication systems.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-238.

ELEC-240 Bio-Medical Terminology and Technology 4 Credits

Introduction to the bio-medical program and to the organization of the hospital or health facility. Study of anatomy and physiology as pertaining to the servicing and maintaining bio-medical electronic equipment (such as ECG, EMG, EEG, defibrillators, heat monitors and other monitoring equipment and diagnostic equipment) is included. Hospital electrical safety and interaction with nursing and physicians are also discussed.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ELEC-125.

ELEC-243 Bio-Medical Equipment I 4 Credits

Hospital intensive care equipment such as electrocardiograms, patient monitors and defibrillator units will be studied. Basic electronic equipment principles will be studied and reinforced in the laboratory. Various measurements, calibration and preventive maintenance techniques will be performed in the laboratory.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-240 and ELEC-260.

ELEC-245 Bio-Medical Equipment II 3 Credits

Study of general bio-medical equipment using technical service manuals. Safety checks will be performed in the laboratory on all equipment.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-243 and ELEC-252.

ELEC-247 Clinical Internship 6 Credits

The bio-medical engineering student internship program will provide the student with on-the-job experience in the bio-medical equipment field. During the eight-week period, the student will be rotated 40 hours a week at a local health facility, equipment manufacturer or medical field service organization.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 40 hours per week.

Prerequisite(s): ELEC-245.

ELEC-250 Industrial Electronics I 3 Credits

Operating principles of universally oriented electronic equipment. Industrial application of semiconductors and tube operated circuits. Rectifiers, thyristors, thyatron and associated equipment. Includes sensing of time, voltage and light.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-160 or concurrent enrollment.

ELEC-251 Industrial Electronics II

3 Credits

Zener diode and transistor voltage regulators, saturable reactor power control, motor counter EMF, three-phase rectification, thyristers and firing controls, automatic motor control, introduction to feedback control systems and robotics.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-250 and ELEC-260.

ELEC-252 Logic, Pulse and Switching Circuitry

3 Credits

Elements of logic, pulse and switching circuitry. Emphasis on number systems and Boolean algebra; clipping and clamp circuits; the transistor as a switch; bistable, monostable and astable multivibrators; pulse amplifiers; and blocking oscillators.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-260.

ELEC-253 Computer Circuitry

3 Credits

Application of logic, pulse and switching circuits to computers. Codes and introduction to machine language. Emphasis on counters and shift registers, timing and control, computer arithmetic operations and memory systems, input-output equipment, digital-to-analog (D/A) and analog-to-digital (A/D) conversion.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-252.

ELEC-254 Digital Systems I

3 Credits

Introduction to digital electronics, digital arithmetic and logic operations, basic gate theory, techniques for analysis of gate systems combinational logic theory, use of SSI and MSI components in digital systems.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-260 or concurrent enrollment.

ELEC-255 Digital Systems II

3 Credits

Introduction to the theory and operation of sequential digital circuits. Topics include design and analysis of SSI and MSI asynchronous and synchronous counters, MSI memory IC's and systems, shift registers, arithmetic/logic units and interface circuits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-254.

ELEC-256 Microprocessor Devices I

3 Credits

Topics include an introduction to microprocessor theory and function, microprocessor architecture and operation, single board systems, memories, microprocessor programming, and program design and testing.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-255.

ELEC-257 Microprocessor Devices II

3 Credits

Introduction to the basic theory of software implemented counters and time delays, software interrupts, microprocessor stack and subroutines, code conversion, BCD arithmetic, I/O ports and direct memory access, software development systems and assemblers, parallel input/output and basic interfacing techniques.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-256.

ELEC-260 Semiconductor and Electronic Circuits II

3 Credits

Transistor characteristics and theory of operation. Transistor biasing and thermal stabilization. Small signal and low frequency amplifier circuits. Field effect transistor. Practical laboratory experience with transistor small and large signal amplifier circuits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-160.

ELEC-261 Semiconductor and Electronic Circuits III

3 Credits

Study of semiconductor and electronic circuits with emphasis on amplifiers, feedback amplifiers, differential amplifiers, oscillator circuits and operational amplifier circuits. Laboratory experience with cascaded, cascoded amplifiers, power supplies, differential amplifiers, operational amplifiers and other integrated circuits will be included.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-260.

ELEC-262 Electronic Measurement

3 Credits

Principles of electronic measuring and test instruments. Basic meters in DC and AC measurements. Comparison and bridge type measurements will be performed. Electronic meters and oscilloscopes application. Practical laboratory experience with instrument circuits, operation, calibration and measurement.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-260.

ELEC-263 Electronic Instrumentation

3 Credits

Circuitry, operation and calibration of sophisticated electronic instruments such as impedance bridges, signal generators, frequency measuring devices, temperature sensors and transducers, and recorders.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-252 and ELEC-262.

ELEC-270 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

ELEC-272 Integrated Circuit Analysis

3 Credits

Introduction to linear integrated circuit components used in industry today. Topics include operational amplifiers, voltage comparators, digital-to-analog (D/A) and analog-to-digital (A/D) converters, active filter circuits, sample and hold circuits, and phase-locked loops.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ELEC-261.

EMERGENCY MEDICAL TECHNOLOGY - EMT

EMT-124 EMT-Basic

7 Credits

Comprehensive study of basic life support skills of Emergency Medical Technician-Basic including recognition of nature and seriousness of patient's condition or extent of injuries, assessing the requirements of emergency care, lifting, moving, handling and transporting patients as part of the prehospital emergency care system. Development of proficiency in endotracheal intubation and automated defibrillation skills under the direction of on-line medical control.

Lecture 5 hours. Laboratory 6 hours.

Prerequisite(s): Departmental approval: students must receive formal acceptance to the program.

EMT-131 Cardiopulmonary Resuscitation

1 Credit

Introduction to respiratory and circulatory emergencies in adults and children. Instruction and treatment methods to meet American Red Cross and/or the American Heart Association certification for Cardiopulmonary Resuscitation module (CPR).

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): None.

EMT-134 Emergency Medical Technician - Ambulance

1 Credit

A 33-hour clinical laboratory experience based in hospitals under college supervision. Student will rotate through selected hospital and squad units with a focus on patient assessment, interaction with patients and staff, and basic emergency skills. Successful completion of an in-hospital rotation is required as a portion of the EMT-A certification process.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): EMT-124 and departmental approval.

EMT-136 Heavy Rescue

3 Credits

Techniques of heavy rescue, and the equipment management necessary to release an entrapped victim.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Certified EMT-A and department approval.

EMT-137 Defensive Driving

1 Credit

Principles and practices of defensive driving related to emergency rescue vehicles including laws, conditions of accidents, and methods of avoiding accidents.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: certified EMT-A, EMT-P, current EMT student, or working with safety forces driving. Must have a valid Ohio driver's license.

EMT-138 Emergency Medical Services Communications

2 Credits

Provides theoretical and technical knowledge required to operationally perform the functions of an emergency medical communicator. General topics include telemetry, telephone techniques, dispatching, triage procedures, equipment, and FCC regulations governing use of VHF, UHF, FM and AM frequencies.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval.

EMT-211 Advanced Techniques of Assessment and Triage

2 Credits

Advanced techniques and theory pertaining to physical assessment. Consideration is given to the diagnosis, treatment and triage of emergency conditions.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): Departmental approval and certified EMT-A or EMT-P.

EMT-212 EMT-Intermediate

6 Credits

Principles and practices of emergency medical technicians at the intermediate level, including roles and responsibilities, EMS systems, medical/legal considerations, EMS communications, shock, trauma, anatomy and physiology.

Lecture 3 hours. Laboratory 6 hours.

Other Required Hours: Clinical/field experience: 3 hours per week. Prerequisite(s): Current State or National Registry EMT-Basic certification, and departmental approval.

EMT-221 Emergency Medical Technology Paramedic Theory IV

3 Credits

Covers the cognitive and practical aspects of Advanced Cardiac Life Support (ACLS). Student must complete course with the minimal certification of advanced cardiac life support. To obtain certification at this level, student must meet the standards of the American Heart Association (AHA). Course will be taught by an ACLS certified instructor with the sanction of the AHA, Northeast Ohio Affiliate and be sponsored by a physician who is certified as an advanced cardiologist.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Student must be an Ohio Board of Regents certified Paramedic, an R.N. who is involved in providing or teaching advanced life support, or an M.D. All must be certified AHA, CPR instructors and must have approval for admission from an AHA certified instructor. All applicants must be screened by the American Heart Association Northeast Ohio Affiliate and they must present required credentials including a near-perfect CPR strip. Registration must be six weeks in advance of taking the course.

EMT-222 Paramedic Theory I/EMT-Intermediate

10 Credits

Principles and practices of emergency medical technicians at the intermediate and paramedic level including roles and responsibilities, EMS systems, medical/legal considerations, EMS communications, rescue, major incidents responses, stress management, shock, pharmacology, trauma, burns, environmental injuries and defibrillation.

Lecture 6 hours. Laboratory 6 hours.

Other Required Hours: Practicum: 10 hours per week.

Prerequisite(s): Certified EMT-A or departmental approval: admission to the program including pre-test, credentials and health forms.

EMT-223 Paramedic Theory II

10 Credits

Principles and practices of the study of anatomy and physiology of normal respiratory function and mechanism of respiration. Assessment of respiratory system, management respiratory disorders due to medical or trauma related emergencies. Anatomy and physiology of cardiovascular system, assessment of cardiac patient, EKG interpretation of normal rhythms and dysrhythmias. Treatment modalities, pharmacologic intervention, defibrillation, fluid and shock therapy. Management of other vascular medical and trauma emergencies. Completion of Advanced Cardiac Life Support curriculum of American Heart Association.

Lecture 6 hours. Laboratory 6 hours.

Other Required Hours: Practicum: 10 hours per week.

Prerequisite(s): EMT-222 and departmental approval.

EMT-224 Paramedic Theory III

10 Credits

Principles and practices of emergency medical technicians at the paramedic level in the management of medical, central nervous system, geriatric, environmental, pediatric obstetrical, gynecological, neonatal and behavioral emergencies. Includes anatomy, physiology, assessment and field treatment.

Lecture 6 hours. Laboratory 6 hours.

Other Required Hours: Practicum: 10 hours per week.

Prerequisite(s): EMT-222, EMT-223, and departmental approval.

EMT-229 Instructional Techniques

3 Credits

Focuses on the instructional training methods necessary to impart clinical competencies to students. Develops skills in instructional design, delivery and evaluation.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: current enrollment in the Emergency Medical Technician associate degree program, or currently certified Emergency Medical Technician-Ambulance with a minimum of 5 years experience.

EMT-230 Emergency Medical Technology Technical Management

3 Credits

Study of diagnostic categories of emergencies, emergency service categorization, hospital care capabilities, patient transport protocol and transfer agreements. Discussion of area-wide planning in preparation for disaster as well as procedures for establishing a training system for emergency medical personnel. In addition to on-campus educational activity, exploration of emergency medical service planning and operations in a practical working environment will be included.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval, and Certified EMT-A or EMT-P. People in administrative levels of emergency services will be considered

ENGLISH - ENG

ENG-097 Language Fundamentals I

6 Credits

Designed for those students who need to develop vocabulary strategies, reading comprehension and basic writing skills.

Lecture 6 hours. Laboratory 0 hours.

Prerequisite(s): Placement by department: appropriate placement test score.

ENG-098 Language Fundamentals II

6 Credits

Designed for those students who need additional course work in reading comprehension, vocabulary development and basic writing skills.

Lecture 6 hours. Laboratory 0 hours.

Prerequisite(s): ENG-097 or placement by department.

ENG-099 Language Fundamentals III

6 Credits

Mastery of language fundamentals: reading comprehension; basic essay writing skills; and basic study and test-taking skills.

Lecture 6 hours. Laboratory 0 hours.

Prerequisite(s): ENG-098 or placement by department.

ENG-101 College Composition

3 Credits

Study and practice in the principles of good writing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Placement by department: appropriate placement test score; or ENG-099; or ENG-138 (with instructor recommendation); or instructor recommendation from a prior English course.

ENG-102 College Composition

3 Credits

Study and practice in the principles of good writing, with emphasis on interpretive papers and research papers.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-101.

ENG-103 College Composition

3 Credits

Study and practice in the principles of good writing, with emphasis on critical papers about literature.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-107 Advanced Reading Improvement

3 Credits

Emphasis on reading comprehension and critical interpretation of college-level material. Some applications to professional and business-level reading when adaptable. Some effective speed-reading techniques. Group instruction and individualized attention in the art and skills of efficient reading.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for 100-level English courses, or placement by department.

ENG-131 English as a Second Language: Grammar for Communication I

6 Credits

English for non-native speakers. An intensive approach combines oral practice, written exercises, language laboratory work, and videotaped lessons. Students are prepared to communicate in real-life situations and also to continue in more advanced classes of English as a Second Language.

Lecture 4 hours. Laboratory 4 hours.

Prerequisite(s): Placement by ESL assessment exam or instructor, and concurrent with ENG-132 or departmental approval.

ENG-132 English as a Second Language: Reading and Writing I

6 Credits

English for non-native speakers. An intensive approach to reading provides practice in reading texts, essays, and short stories, understanding lectures, and building vocabulary. Intensive writing practice consists of writing sentences and paragraphs using basic sentence patterns and correct spelling and punctuation. Both guided composition and free expression are included. Students are prepared for everyday reading and writing tasks as well as for more advanced classes of English as a Second Language.

Lecture 4 hours. Laboratory 4 hours.

Prerequisite(s): Placement by ESL assessment exam or instructor, and concurrent with ENG-131 or departmental approval.

ENG-133 English as a Second Language: Grammar for Communication II

3 Credits

English for non-native speakers. Practice in listening to and speaking basic English sentence patterns. Focus on form, meaning, and use.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENG-131 or placement by instructor: ESL assessment exam; and concurrent with ENG-134 or departmental approval.

ENG-134 English as a Second Language: Reading and Writing II

5 Credits

English for non-native speakers. Practice in high beginning readings and simplified literary material. Practice in writing paragraphs.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ENG-132 or placement by instructor: ESL assessment exam; and concurrent with ENG-133 or departmental approval.

ENG-135 English as a Second Language: Grammar for Communication III

3 Credits

English for non-native speakers. Practice in listening to and speaking modified English sentence patterns. Focus on form, meaning, and use.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENG-133 or placement by instructor: ESL assessment exam; and concurrent with ENG-136 or departmental approval.

ENG-136 English as a Second Language: Reading and Writing III

5 Credits

English for non-native speakers. Practice in intermediate readings and literary materials. Practice in creating topic sentences and developed paragraphs.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ENG-134 or placement by instructor: ESL assessment exam; and concurrent with ENG-135 or departmental approval.

ENG-137 English as a Second Language: Grammar for Communication IV

3 Credits

English for non-native speakers. Practice in listening to and speaking complex English sentence patterns. Focus on form, meaning, and use.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENG-135 or placement by instructor: ESL assessment exam; and concurrent with ENG-138 or departmental approval.

ENG-138 English as a Second Language: Reading and Writing IV

5 Credits

English for non-native speakers. Practice in advanced intermediate readings and literary material. Practice in writing paragraphs and essays.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ENG-136 or placement by instructor: ESL assessment exam; and concurrent with ENG-137 or departmental approval.

ENG-201 Creative Writing

3 Credits

Practice in imaginative writing for students who wish to explore their creative potential.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102 or departmental approval.

ENG-215 Technical Writing I

4 Credits

Students learn about the technical communication process, about their roles in a complex organization and how those roles affect the communication of technical information. Emphasis on writing reports which effectively meet the needs of various readers within an organization.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102 or departmental approval.

ENG-216 Technical Writing II **4 Credits**

Develops the students' abilities to distinguish between data, conclusions drawn from data, and recommendations based on the conclusions. Includes principles for the design and use of effective visual aids in a technical report. Students learn when to use various report formats for effective communication.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ENG-215 or departmental approval.

ENG-221 British Literature: Early Period **3 Credits**

Study of major works of British literature from the early period to 1660.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-222 British Literature: Middle Period **3 Credits**

Study of major works of British literature from 1660 to 1832.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-223 British Literature: Modern Period **3 Credits**

Study of major works of British Literature from 1832 to the present.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-231 American Literature: Early Period **3 Credits**

Reading and analysis of notable American literary works from the early period to the Civil War.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-232 American Literature: Middle Period **3 Credits**

Reading and analysis of notable literary works from the Civil War to World War I.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-233 American Literature: Modern Period **3 Credits**

Reading and analysis of notable American literary works from World War I to the present.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-241 Introduction to Literature: Poetry **3 Credits**

Interpretive scrutiny of poetic form, including an examination of mechanical structure, an exploration of emotional thrust, and a search for both the actual and potential sense of the poem.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-242 Introduction to Literature: Fiction **3 Credits**

Critical analysis of selected works of fiction designed to develop appreciation and understanding of the short story and the novel as literary forms.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-243 Introduction to Literature: Drama **3 Credits**

Critical analysis of selected dramatic works designed to develop appreciation and understanding of the drama as a literary form.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-245 Special Studies in Literature **3 Credits**

Study of selected literary works which may include fiction, drama, poetry and/or exposition of a specified central theme. Study of the literary experience as it relates to specific themes and trends. (See schedule book for current offerings.) May be taken for an accrued maximum of nine credits.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102 or departmental approval.

ENG-251 African-American Literature I **3 Credits**

Study of major works of African-Americans from the Post-Reconstruction era through the Harlem Renaissance.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-252 African-American Literature II **3 Credits**

Study of major works of African-Americans from 1930 to 1960.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-253 African-American Literature III **3 Credits**

Study of major works of African-Americans from the sixties to the present.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-260 Survey of Juvenile Fiction **3 Credits**

Designed to cover the literature read by the school-age child through adolescence, a fiction study offering a unique mix, from folklore to the ultra-modern, from the traditional to the experimental, where the older learn from the younger.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102.

ENG-271 Shakespeare

4 Credits

Comprehensive reading course which includes a representative selection of Shakespeare's plays: comedies, tragedies and histories.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ENG-102

ENG-281 Independent Research in Literature

1 Credit

Must be taken concurrently with any 200-level English course. Specific content is to be arranged through a contract between the instructor and each student. May be repeated for an accrued maximum of nine credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): ENG-102 and instructor approval: must be taken concurrently with a 200-level course in English.

ENGINEERING - ENGR

ENGR-101 Metallurgy I

3 Credits

Physical and mechanical properties of pure metals and alloys. Metallic state, crystallization, annealing, equilibrium phase diagrams. Hardness tensile, impact testing and metallographic methods.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

ENGR-102 Metallurgy II

3 Credits

Heat treatment and phase changes of steels, alloy steels, tool steels and cast irons. Study of their microstructure and mechanical properties.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENGR-101.

ENGR-103 Metallurgy III

3 Credits

Study of nonferrous metals and alloys, effects of high and low temperature on metals, wear and corrosion. Extractive and powder metallurgy.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENGR-101.

ENGR-109 Engineering Technology Orientation

2 Credits

Orientation and introduction to modern technical education and technical careers. Acquaints students with technical fields and employment opportunities. Includes definitions, a self-assessment, and basic skills needed for success in technical programs.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for ENG-101.

ENGR-116 Engineering Report Construction

2 Credits

Oral, written and graphic methods of communication for the engineer and technician. Provides practice in preparation of technical reports.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Eligibility for ENG-101.

ENGR-121 Engineering Drawing I

3 Credits

Principles and practices in orthographic and pictorial drawing and sketching. Lettering, applied geometry and use of instruments. Sectional and auxiliary views. Dimensioning systems as applicable to production drawings graphic data representation.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

ENGR-122 Engineering Drawing II

3 Credits

Elements of machine drawing, electronic diagrams, piping and welding drawing, intersections and developments. Precision dimensioning as dictated by shop processes. Working drawings, methods of reproduction and control.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): ENGR-121.

ENGR-123 Engineering Drawing III

3 Credits

Drafting principles and applications pertinent to working drawings. Includes metric, dual and true position dimensioning; geometric tolerancing. Tool drawings, design drawing and technical illustration are introduced together with applications of special drafting aids and techniques. Graphical mathematics methods and media are included.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): ENGR-122.

ENGR-128 Calculating Methods

2 Credits

Scientific calculator and computer programming in the BASIC language applied to technical program solving.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MATH-116.

ENGR-130A Introduction to AUTOCAD

4 Credits

Introduction to computer assisted drafting (CAD) will use structured programming techniques to enable the student to operate a CAD system consisting of a CPU, associated peripherals and the AUTOCAD software. An interactive drafting capability will be developed by combining the existing manual drafting skills of the student and the versatility of the AUTOCAD software. Student, using the system, will draw the basic lines, arcs and circles, and expand this skill to the use of the BLOCK, ARRAY, TEXT, DIMENSIONING and other AUTOCAD commands. An overview of the necessary DOS commands required for the operation of the IBM or compatible computer will be provided. Student will become familiar with the special terms and definitions used in CAD and other related computer applications.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ENGR-121; or ARCH-141 or concurrent enrollment; or departmental approval: equivalent knowledge.

ENGR-130B Introduction to Intergraph CAD

4 Credits

Introduction to CAD using MicroStation software. Study on how to establish design files, how to enter commands and how to use the MicroStation system of units. Instruction in element placement, manipulation and modification. Grouping concepts will be studied, including the use of fences, graphic groups and working sets. Cell generation and placement will be explained. Study of view control, keypoint snap, patterning, dimensioning, text placement, use of enter data fields, and the significance and use of reference files. Instruction in the various commands and features of MicroStation will be reinforced by the preparation of several sample application drawings.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ENGR-121; or ARCH-141 or concurrent enrollment; or departmental approval: equivalent knowledge.

ENGR-151 Statics

3 Credits

Study of forces and the effect of forces on bodies at rest. Applications in vector analysis. Force analysis of simple structures and simple machines. Friction and its effect. Center of gravity, centroids and moments of inertia.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-126 or concurrent enrollment.

ENGR-215 Surveying

3 Credits

Applications and care of surveying instruments. Techniques and practice in taping. Use of transit and level in horizontal and vertical measurement, differential and profile. Emphasis on accurate recording of field data in note form, contours, drainage, grading, layout of vertical curves, topographic stadia and plane table work.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): MATH-126.

ENGR-252 Applied Dynamics

3 Credits

Basic study of engineering dynamics including plane motion, curvilinear motion, kinetics, work, energy, power and efficiency.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENGR-151.

ENGR-254 Strength of Materials

4 Credits

Study of stresses and deformation caused by externally applied forces. Includes the effect of forces applied to beams, torsional forces, combined forces, and forces applied to columns.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): ENGR-151.

ENGR-270 Special and Current Topics in Engineering

1-4 Credits

Specialized course focuses on changes, trends, and emerging technology in the field of engineering software, state-of-the-art information processing packages, and currently used and recognized hardware. Overview of concepts, components, architecture, and application of software systems packages. (Repeatable. No more than 4 credits of special topics courses may be applied toward the engineering technology program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: based on analysis of previous experience.

ENGR-272 Special and Current Topics in Engineering Laboratory Experience

1-4 Credits

Specialized lab focuses on problem solving, system software experimentation, and machine handling. Direct purpose of providing tools to physically build experimental and active models of productivity. (Repeatable. No more than 4 credits of special topics courses may be applied toward the engineering technology program degree requirements.)

Lecture 0 hours. Laboratory 2-8 hours.

Prerequisite(s): Departmental approval: based on analysis of previous experience.

EARTH SCIENCE - ESCI

ESCI-101 Physical Geography

4 Credits

Introductory study of geography's physical elements. Includes earth-sun relationships, maps, elements and controls of climate. Landforms and the agents, erosion and deposition, water resources, vegetation associations, and soil types. World distribution, causal relationships and significance to man are stressed.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

ESCI-102 Physical Geology

4 Credits

Materials and structures of the earth, processes, and agencies by which the earth's crust has been and is being changed. Rocks and their mineral composition. Work of rivers, winds, and glaciers as agents of erosion. Volcanoes and earthquakes as forces which change the surface of the earth. Regularly scheduled field trips are an integral part of this course.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

ESCI-103 Historical Geology

4 Credits

Geologic history of the earth and its inhabitants, with special emphasis on North America. Laboratory study deals with principal fossil life of the various geologic periods. Occasional field work is required.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

ESCI-120 Geology of the National Parks

4 Credits

Studies of each park will include the reasons why this area was set apart as a park, its geological history, its present lithology and topography, the geologic processes operating today, and the influence of lithology and topography on climatic and biotic factors (and vice versa). Ecological and geological problems that have arisen because of man's presence in the parks or in nearby areas will also be stressed. Laboratory exercises will include the study of rocks and fossils, interpretation of topographic and geologic maps, study of depositional and erosional patterns, analysis of climatic and biological data, and investigations into ecological problems.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): None.

ESCI-206 Introduction to the Science of Ecosystems

4 Credits

Studies of the lithosphere, atmosphere, hydrosphere, and biosphere are incorporated into a comprehensive study of ecosystems. Emphasis placed on the effects of humans on these ecosystems and how these altered ecosystems, in turn, affect humans. The effects of humans to be studied are primarily those that are inflicted on the ecosystems because of their numbers, their concentrations, their standards of living, and their everyday economic activities.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Sophomore status or departmental approval.

ESCI-270 Special Topics in Earth Science

1-4 Credits

Study of selected topics or current issues in the field of earth science. Opportunity to explore various geologic and geographic phenomenon in greater detail. Topics offered will vary as new topics of interest arise in the earth sciences (see class schedule for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Dependent on special topic, earth science counterparts will determine appropriate prerequisite when approving topical outline.

ESCI-272 Special Laboratory Topics in Earth Science

1-3 Credits

Study of selected topics or current issues in the field of earth science. Opportunity to gain laboratory experience and investigative skills to further one's understanding of earth science. Topics offered will vary as new topics of interest and techniques arise in the earth sciences (see class schedule for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 3-9 hours.

Prerequisite(s): Dependent on special topic, earth science counterparts will determine appropriate prerequisite when approving topical outline.

FINANCIAL MANAGEMENT - FIN

FIN-106 Consumer Finance

3 Credits

Management of personal finances and study of consumer protection; personal budgeting, buying on credit, planning an insurance program and medical care. Also covers investments, home ownership, retirement planning and income taxes.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

FIN-110 Principles of Finance

3 Credits

Introduction to the basic principles of finance, private and government financial institutions, financial instruments, money and credit systems, and current problems in consumer and business financing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ACCT-115 and BADM-102.

FIN-161 Retail Banking

3 Credits

Survey of the role of savings associations in the modern business world. Savings associations' historical development, present-day organization, competition, and future directions are presented.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

FIN-162 Savings Association Operations

3 Credits

Survey of major operational areas in savings associations including functions, work processes and interrelationships among operating areas.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIN-161 or departmental approval.

FIN-163 Deposit Accounts and Services

3 Credits

In-depth study of the general characteristics, ownership, and classification of savings accounts. Legal and contractual features of savings accounts will be analyzed. Additional topics include types of savings accounts, financial institutions offering savings accounts, forms of account ownership, account classification systems, determination of account earnings, taxation and reporting of earnings, and recent laws and regulations pertaining to savings accounts.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): FIN-161.

FIN-164 Deposit Account Operations

3 Credits

In-depth and technical treatment of the administration of savings accounts and the numerous laws and regulations governing savings associations. Topics include the Federal Savings and Loan Insurance Corporation, savings account loans, garnishment, dormant and decedent accounts, liquidity requirements, advertising regulations, and recent changes in regulations in insurance coverage, branch and family banking.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIN-163.

FIN-221 Residential Mortgage Lending

3 Credits

Principles essential in originating, processing and administering residential mortgage loans. Topics include different types of residential mortgage loans, property appraisal techniques, risk evaluation, legal requirements of loans and the secondary mortgage market.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIN-161.

FIN-222 Mortgage Loan Servicing

3 Credits

Servicing of mortgage loans from the close of the loan until the final payment. In-depth study of the actual procedures required in the daily operation of mortgage loan servicing.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): FIN-221.

FIN-223 Individual Retirement Accounts/Keogh Plans

3 Credits

Comprehensive study of the fundamental, legal, and regulatory factors pertinent to Individual Retirement Accounts, simplified Employee Pension Plans and Keogh Plans. Coverage will include administrative procedures required for the marketing and administration of plans.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

FIN-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Cooperative Education program.

FIN-270 Special Topics in Financial Institutions

3 Credits

Specially presented education experiences related to financial institutions. Emphasizes current changes in legislation, institutional practices, financial instruments or other technical areas pertinent to Savings and Loan Associations. (Repeatable. No more than 8 credits of special topics courses may be applied toward the financial management program degree requirements.)

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

FIRE TECHNOLOGY - FIRE

FIRE-100 Introduction to Fire Science **3 Credits**

Organization of fire service, structure and function of battalion and company. Personnel management, training, fire equipment and apparatus, communications, records and reports, insurance rating systems and fire service laws.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

FIRE-210 Fire Fighting Command **3 Credits**

Group operations and command strategy. Pre-planning of fire fighting operations, size up at the fire, employment of personnel and equipment.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-100.

FIRE-211 Fire Fighting Command and Administration **3 Credits**

Specific tactical problems from a command point of view, pre-planning of fire-fighting operations and the evaluation of these plans.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-100.

FIRE-220 Chemistry of Hazardous Materials **3 Credits**

Analysis of chemical reactions as the causative agent of fire. Includes redox reactions, reaction rates, toxic compounds, and hazardous combinations of chemicals.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-100.

FIRE-230 Building Construction for Fire Prevention **3 Credits**

Study of building construction and materials. Emphasis on fire prevention procedures and practices as related to building construction. Fire ratings of materials.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-100.

FIRE-232 Fire Prevention and Protection Systems **3 Credits**

Design and operation of fire protection systems, water distribution, detection, alarm and watchman services. Carbon dioxide, dry chemical, foam and water spray systems. Inspection practices and fire prevention. Fire codes and ordinances and examination of heating systems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-230.

FIRE-235 Fire Investigation Methods **3 Credits**

Principles of fire investigation, arson laws, interrogation of witness and application of photography. Preparation of reports and adjustments of losses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-100.

FIRE-236 Fire Investigation Methods **3 Credits**

Emphasis on preparation of reports and collection and presentation of arson evidence in court.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-235.

FIRE-240 Fire Hydraulics **3 Credits**

Hydraulic theory. Drafting of water, velocity and discharge, friction loss, engine and nozzle pressure, fire streams, pressure losses, flow and pump testing, and applications in fire service.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for MATH-120.

FIRE-260 Cooperative Field Experience **1-3 Credits**

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

FIRE-270 Fire Services Training and Public Relations **3 Credits**

Methods and techniques of instruction for fire personnel. Organization of training programs and preparation of related materials. Study of public relations as pertinent to municipal fire services including processes for building goodwill and publicity efforts.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-100.

FIRE-280 Managing Fire Services **3 Credits**

Total management of effective emergency fire and medical services on an immediate need basis. Budget, personnel, labor relations and measurement and evaluation of productivity, as well as training and education of fire service units.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): FIRE-211 or departmental approval.

FRENCH - FREN

FREN-111 Beginning French I

5 Credits

Introduction to French through multiple approach with emphasis on speaking and understanding. Practice in conversational French and aural comprehension on topics of daily interest. Some practice in writing basic sentences and small simple paragraphs on relevant topics, and reading short paragraphs. Outside assignment: listening to cassettes in French may be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

FREN-112 Beginning French II

5 Credits

Study of the French language with emphasis on speaking. Continued practice in speaking, understanding, reading, and writing. Further development of conversational skills. Outside assignment: listening to cassettes in French may be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): FREN-111 or one year of high school French.

FREN-113 Beginning French III

5 Credits

Continued study of the French language. Development of proficiency in understanding, speaking, reading and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics and more conversational opportunities. Outside assignment: listening to cassettes in French may be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): FREN-112 or two years of high school French.

FREN-201 Intermediate French I

4 Credits

Intensive exercises in written and oral expression. Grammar review and vocabulary building. Study of French civilization. Introduction to literature.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): FREN-113 or three years of high school French.

FREN-202 Intermediate French II

4 Credits

Intensive exercises in written and oral expression. Continuation of grammar review and vocabulary building. Continuation of introduction to literature.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): FREN-201 or three years of high school French.

FREN-203 Intermediate French III

4 Credits

Intensive exercises in written and oral expression. Emphasis on advanced grammar review and vocabulary building. Continuation of the study of literature.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): FREN-202 or three years of high school French.

FREN-241 French Conversation and Composition

4 Credits

Discussion of topics of everyday life, colloquialisms, vocabulary augmentation, and improvement of speech patterns. Practice in writing compositions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): FREN-203 or concurrent enrollment, or departmental approval: three years of high school French.

FREN-242 French Civilization and Literature

4 Credits

Introduction to civilization and literature of France. Emphasis on interrelationship between history and geography of France and its culture.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): FREN-203 or concurrent enrollment, or departmental approval: three years of high school French.

FREN-243 Readings in French Literature

4 Credits

Introduction to French literature of the 19th and 20th centuries. Highlights of representative authors and their works. Emphasis on oral discussion.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): FREN-203 or concurrent enrollment, or departmental approval: three years of high school French.

GRAPHIC COMMUNICATIONS MANAGEMENT AND TECHNOLOGY - GCMT

GCMT-101 Graphic Arts Orientation 2 Credits

Overview of the graphic arts industry: career field, employment trends and typical future technical assignments.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): None.

GCMT-103 Introduction to Printing 1 Credit

Exploratory experiences in processes and procedures used to produce printed product. Includes laboratory and field experiences to augment and reinforce concepts.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): None.

GCMT-105 Science of Graphic Arts 4 Credits

Basic physics, chemistry and mathematics applied to the printing process including metrics, measuring systems, effects of different molecular states, molecular energy, magnetism, electricity, pressroom chemistry, lithographic plates, chemistry of inks and paper, physics of light, reflection, refraction, photographic lenses, photographic emulsions, sensitometry and densitometry, colour theory, colour separation principles, electronic prepress and electronic scanning.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GCMT-103 or departmental approval.

GCMT-110 Graphic Arts Materials 3 Credits

Study of printing papers, alternative substrates, plastics and metals, and printing inks for lithography, gravure, letterpress, flexography and screen process.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

GCMT-113 Beginning Photography 3 Credits

Fundamentals of black and white photography. Emphasis on basic skills necessary to understand and operate a camera, develop film, make photographic prints and develop an appreciation for the photographs of others. Student must provide own camera, film and printing paper.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

GCMT-114 Intermediate Black and White Photography 3 Credits

Black and white photographic principles and techniques, with an emphasis on methods of refinement of negative and print quality and an introduction to the aesthetics of contemporary photography.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-113 or departmental approval: submission of portfolio of prints.

GCMT-115 Advanced Black and White Photography 3 Credits

Advanced study in black and white photographic principles and techniques. Continued refinement of technical skills and development of the critical skills necessary for self-evaluation and appreciation of aesthetic issues in the medium.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-114 or departmental approval: submission of portfolio of prints.

GCMT-125 Computer Applications in Graphic Communications 4 Credits

Introduction to the computer and its applications in the graphic arts industry. Provides experiences with microcomputers, software, storage, input and output devices used within the printing, publishing and photographic industries. Concentrates on applications used to create and modify graphic images, page layouts, visual presentations, etc. Includes an introduction to computer operation, business applications and programming within the industry. Explores hardware and software selection, networking, telecommunications and program languages specific to the industry.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None.

GCMT-131 Copy Preparation 4 Credits

Designing, planning and preparing black and white and color copy for reproduction emphasizing both phototypesetting operations and mechanical art preparation. Includes principles of design and layout; type identification and specification; copy mark-up and proofreading; scaling copy, preparing paste-up and key-line art; and an introduction to generating typeset composition.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None.

GCMT-171 Reproduction Photography and Film Assembly 4 Credits

Introduction to fundamental concepts of lithographic darkroom and offset stripping procedures. Theory and practice with contacting, and process camera operations producing line, halftone and special effect images on a variety of light sensitive materials. Includes planning layouts and assembly of flats for single and multi-color printing with single and multi-page impositions, proofing, register systems, machine processing, densitometry and quality control.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None.

GCMT-201 Platemaking and Presswork

4 Credits

Fundamental lithographic platemaking and presswork operations. Includes additive and subtractive plate structure, platemaking procedures, and register control. Students will operate offset-lithographic duplicators and presses to gain understanding of both conventional and integrated dampening systems, make ready, press adjustments and print evaluation. Emphasis on separating environmental and quality control procedures.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None.

GCMT-203 Advanced Offset Press Techniques

3 Credits

Theory and laboratory practice relating to single and multi-color offset presses. Emphasis on state-of-the-art equipment and systems, press operating and adjustment procedures, identifying and correcting common press-related problems, and printing analysis and quality control procedures.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-201 or departmental approval: prior offset press operating experience.

GCMT-209 Finishing and Bindery

4 Credits

Designed for graphic arts students and others interested in paper finishing and binding methods. Desktop publishing students will learn how printed pages are laid out with correct gutters and trims. Students will plan job flow, select equipment and prepare impositions. Students will practice with paper folding, paper cutting, stitching, pamphlet binding, plastic binding, perfect binding, aqueous coatings, UV coatings, diecutting, paper embossing, hot foil stamping and other finishing and numbering processes.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): None.

GCMT-212 Artificial Lighting Technique

3 Credits

Theory and practice of artificial lighting technique in black and white and color photography. Commercial studio and location problems will be addressed in the areas of portrait, fashion, product advertising and editorial photography.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-114 or departmental approval: submission of portfolio.

GCMT-213 Color Transparencies

3 Credits

Introduction to color photography with emphasis on the color transparency. Film characteristics, lighting characteristics, processing, and the use of slides in audio-visual applications.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-113 or departmental approval: submission of portfolio of photographs.

GCMT-214 Color Printing I

3 Credits

Introduction to color printing theory and practice. Film processing and printing from color negatives. Emphasis on color theory, technical print quality and aesthetics of the color image.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-113 or departmental approval: submission of portfolio of prints.

GCMT-216 Individual Projects in Photography

3 Credits

Individual projects in black and white or color photography in areas of the student's choice. Progress and grading will be determined on an individual basis according to criteria mutually agreed upon between the student and the instructor. May be repeated up to nine credits.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: six quarter hours in photography, or submission of portfolio of photographs.

GCMT-217 Large Format Camera Technique

3 Credits

Theory and practice of large format camera technique. Application in commercial studio and location problems, including portraiture, fashion, advertising product, architectural and editorial photography.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-114.

GCMT-218 Multimedia Production

3 Credits

Introduction to methods used in the production of multimedia presentations incorporating photographic imagery, full motion video and computer graphics. Emphasis on use of computer in kinetic and sequential communications, and on aesthetic and technical considerations of these methods.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-255.

GCMT-219 Color Printing II

3 Credits

Advanced color printing techniques with an emphasis on refinement of technical controls and the aesthetics of the color print.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-214 or departmental approval: submission of portfolio of prints.

GCMT-222 Production and Operations Management

3 Credits

Procedures applied to managing various sizes of graphic arts facilities. Includes planning, scheduling, job tracking, inventory control, quality control, plant layout, and purchasing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): GCMT-125, GCMT-171, GCMT-201, and GCMT-209.

GCMT-223 Applied Graphic Arts Sales 3 Credits

Practical applications of customer sales and service techniques related to the production or supplying of printed products, printing services, supplies and equipment. Students will participate in a sales and/or customer service setting in industry seven hours per week.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): MARK-202, and GCMT-226 or concurrent enrollment, or departmental approval.

GCMT-226 Graphic Arts Estimating 4 Credits

Introduction to various cost estimating systems and procedures used in small and medium-sized printing facilities. Includes establishing cost centers, production standards and mark-ups, estimating time and materials needed for pre-press, press and binding operations.

Introduction to computer estimating.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Eleven hours GCMT class work, or departmental approval.

GCMT-235 Personal and Corporate Publishing I 3 Credits

Overview and applications of microcomputer-based electronic desktop publishing systems. Use of hardware and software for the design and production of printed documents for personal, office, business, advertising, scientific and technical communications. Basic principles of graphic design and electronic page layout.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-125 and GCMT-131, or departmental approval: page layout and computer experience.

GCMT-236 Personal and Corporate Publishing II 3 Credits

Production and preparation of documents for output to proofing and image setting devices. Study of popular page layout programs with an emphasis on using advanced typographic controls, preparation of documents for multicolor reproduction, integrating graphic images into documents and preparation of Postscript imagesetting files.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-235 or departmental approval.

GCMT-237 Imagesetting Systems 3 Credits

Study of hardware, software, and current practices incorporated in the publication of complex full color documents using modern imagesetting methods. Emphasis on the final assembly of text and graphics composition, organization and planning of complex documents, requirements for color reproduction, and system configurations for service bureau requirements. Includes creating, proofing and correcting final film output. Emphasis on industry trends and evolving technology and publishing practices. Students must have a good working knowledge of page layout and illustration software prior to taking this class.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-236 or departmental approval.

GCMT-250 Presentation Graphics 3 Credits

Presentation graphics for use in business, industry, education and publication. Principles of effective design and production of computer generated graphic images used to display data, develop organizational charts and graphs. Review and selection of hardware and software used for these applications.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-125 or departmental approval: prior computer experience.

GCMT-253 Electronic Drawing and Illustration 3 Credits

Creating and modifying Paint, Draw, and PostScript Illustration images using professional software designed for art production applications in the graphic arts industry. Includes comparison of software applications, image file structure, use of appropriate electronic imaging tools, creation and modification of color, and selection and use of input and output devices.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-125 or departmental approval.

GCMT-255 Electronic Still Photography I 3 Credits

Introduction to the techniques of electronic still photography with an emphasis on computer manipulation of the photographic image. Use and understanding of hardware and software systems for the input, modification and output of digital images.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): ART-108 or GCMT-113, and GCMT-125.

GCMT-256 Electronic Still Photography II 3 Credits

Visual problem solving in electronic still photography with an emphasis on color input, color manipulation of the photographic image and color output techniques. Use and understanding of hardware and software systems for the refined application of theory and technique in making digital color photographic images.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-255.

GCMT-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

GCMT-261 Internship

1-3 Credits

Limited to students in the Internship Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Internship: 12 hours per week.

Prerequisite(s): Formal acceptance into the Internship Program.

GCMT-270 Special Topics in Graphic Communications and Photography

1-4 Credits

In-depth study of special topics including photography, electronic imaging, printing, finishing and industry trends. Topics offered will vary in response to changing aesthetic and technological trends in the field.

(Repeatable. No more than 4 credits of special topics courses may be applied toward the graphic communications management and technology program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): None.

GCMT-272 Special Topics in Graphic Communications and Photography Laboratory Experience

1-2 Credits

In-depth applied study of special topics including photography, electronic imaging, printing, finishing and industry trends. Topics offered will vary in response to changing aesthetic and technological trends in the field.

(Repeatable. No more than 4 credits of special topics courses may be applied toward the graphic communications management and technology program degree requirements.)

Lecture 0 hours. Laboratory 3-6 hours.

Prerequisite(s): None.

GCMT-273 Color Reproduction

3 Credits

Introduction to the various methods used to reproduce color originals. Emphasis on color separation, color correction, color proofing and printing requirements.

Includes color theory, investigating of conventional and electronic color separation techniques, color correction, reproduction requirements, color proofing, color communications and evaluation of final print or proof.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-125 or departmental approval.

GCMT-275 Portfolio Preparation

3 Credits

Preparation by students of a professional portfolio of their work. Emphasis will be placed on developing the design of their portfolio to emphasize individual strengths or areas of specialization. Use of appropriate presentation materials, business forms and protocols to insure the proper handling of their portfolios will be discussed, as well as presentation techniques used in interviews.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: a sufficient quantity of successfully completed work for portfolio inclusion is required.

GCMT-276 Electronic Page Makeup

3 Credits

Applications of the computer in modifying and assembling images for reproduction. Includes study in electronic imposition, electronic page layout, and electronic image placement, modification, enhancement, and retouching. Lab experience on low and medium resolution systems and field observations of high resolution systems.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): GCMT-125 and GCMT-171, or departmental approval.

GCMT-277 Professional Photographic Practices

3 Credits

Introduction to business and marketing practices common in the commercial photography industry. Emphasis will be placed on developing professional objectives based upon careful consideration of the financial, legal, organizational, promotional, interpersonal, and ethical practices particular to the photographic industry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

GENERAL STUDIES - GEN

GEN-101 Personal Development

3 Credits

Experience-based approach designed to help students examine their individual resources, values, and goals as they relate to their personal development. Emphasis on experiences planned to assist in achieving the objectives of becoming more self-directing, self-motivating, self-confident, and empathetic towards others.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Students will spend 3 hours in a less formalized group session each week.

Prerequisite(s): None.

GEN-102 Career Exploration

3 Credits

Survey of career development theory. Emphasis on the nature and meaning of work, values, interests, functional skills, attitudes and needs as they relate to the career development process. Sources of occupational information are discussed. Series of self-assessment inventories are utilized.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

GEN-103 Organizing Your Employment Campaign

3 Credits

Designed for students who have made a mature career choice. Techniques for initiating an employment campaign which includes occupational information, identifying potential employers, labor market trends, interviewing techniques and resume preparation. Criteria for job satisfaction and job adjustment are analyzed.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

GEN-106 Introduction to College

1 Credit

Designed for students entering college for the first time. Course orients students to the College and its programs, services, and policies. Student resources, college and student expectations, academic support services, financial aid, degree programs, and student rights and responsibilities are some of the topics that are covered. Recommended for new students with 12 or less cumulative hours.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): None.

GEN-120 College Survival Strategies: Guidelines for Your Success

3 Credits

Presentation of information and methods helpful for student success in college such as planning, time management, communication skills, relationships, memory techniques and test-taking skills. Includes an emphasis on college resources and other topics important to college success.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-098 or departmental approval.

GEN-181 Independent Study

1 Credit

Designed for students entering college for the first time with course placement in Language Fundamentals I (English course). Must be taken concurrently with General Studies course, Introduction to College. Specific content to be arranged (through a contract) between instructor and student.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Concurrent enrollment in GEN-106 and placement in ENG-097.

GEN-270 Special Topics in General Studies

1-4 Credits

Specialized course focuses on selected topics in student development. (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling program requirements in the Associate of Arts and Associate of Science degrees.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): None.

GEOGRAPHY - GEOG

GEOG-102 World Regional Geography

4 Credits

Geographical study of selected world regions. Landforms, climate, peoples, problems of cultural and political differences.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

GEOG-103 World Resources

4 Credits

Study of area variation on the earth's surface in man's activities related to producing, exchanging and consuming wealth.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

GEOG-105 The African Diaspora

4 Credits

Study of the world regions touched by the African Diaspora, especially Africa, the Caribbean, Brazil and the United States. Focus on the characteristics of each region, demographic changes and variations that shaped the cultures during and after slavery until the present.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

GEOG-151 Geography of the United States and Canada

4 Credits

Regional survey of the United States and Canada noting significant characteristics of each region. Includes physical characteristics, resource potentials and important political, economic and social activities.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

GERMAN - GER

GER-111 Beginning German I **5 Credits**

Introduction to German through multiple approach with emphasis on speaking and understanding. Intensive practice in conversational German and aural comprehension in simple sentences on topics of daily interest. Some practice in writing and reading short paragraphs. Outside assignment: listening to cassette tapes based on textbook material.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

GER-112 Beginning German II **5 Credits**

Study of the German language with emphasis on speaking and understanding. Continued practice in speaking, understanding, reading and writing. Emphasis on strengthening conversational skills through discussion of selected readings and cultural topics.

Outside assignment: practice with audio cassette tapes based on textbook materials.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): GER-111 or one year of high school German.

GER-113 Beginning German III **5 Credits**

Study of the German language with emphasis on speaking and understanding. Practice and strengthening of conversational skills through use of basic dialogue. Selected readings and discussions on cultural topics.

Practice in writing short compositions on assigned topics. Outside assignment: practice with audio cassette tapes based on textbook materials.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): GER-112 or two years of high school German.

GER-115 Beginning Business German I **5 Credits**

Introduction to German business practices. Emphasis on business vocabulary and business terms through use of simple exercises. Conversational topics associated with daily business dealings. Awareness of cultural business differences. Outside assignment: listening to cassettes based on textbook materials is required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

GER-116 Beginning Business German II **5 Credits**

Study of German business dealings and continued practice in speaking, understanding, reading and writing. Emphasis on strengthening conversational business skills through discussions of selected business terms and settings. Study of management style, labor relations and import-export dealings. Emphasis on cultural differences. Outside assignment: practice with cassettes based on textbook materials is required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): GER-115 or instructor approval.

GER-201 Intermediate German **4 Credits**

Study of the major developments of German literature and culture. Selected grammar review. Emphasis on oral facility.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GER-113 or departmental approval: two years of high school German.

GER-202 Intermediate German **4 Credits**

Emphasis on oral and written expression. Building of more advanced vocabulary and sentence structure through more difficult prose.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GER-201 or departmental approval: two years of high school German.

GER-203 Intermediate German **4 Credits**

Continued study in literature and civilization. Increasing emphasis on conversation and free composition.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GER-202 or departmental approval: three years of high school German.

GER-241 German Conversation and Composition **4 Credits**

Discussion on topics of everyday life, colloquialisms, vocabulary augmentation and improvement of speech patterns. Practice in writing compositions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GER-203 or concurrent enrollment, or departmental approval: three years of high school German.

GER-242 German Civilization and Literature **4 Credits**

Introduction to German civilization and literature. Interrelationships among German history, geography, literature and culture.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GER-203 or concurrent enrollment, or departmental approval: three years of high school German.

GER-243 Readings in German Literature **4 Credits**

Introduction to German literature from the 18th century to the present. Highlights of representative authors and their works. Emphasis on oral discussions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GER-203 or concurrent enrollment, or departmental approval: three years of high school German.

Course Descriptions

Fall 1996-Summer 1998 Catalog

HEBREW - HEBR

HEBR-111 Beginning Hebrew I

5 Credits

Study of the Hebrew language with emphasis on understanding oral communication; reading and writing to produce simple sentences to convey needs, wishes or thoughts.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

HEBR-112 Beginning Hebrew II

5 Credits

Study of the Hebrew language with particular emphasis on production of oral and written communication. Study of written texts to develop reading skills for speed and comprehension.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): HEBR-111 or departmental approval: one year of high school Hebrew.

HEBR-113 Beginning Hebrew III

5 Credits

Study of the Hebrew language with emphasis on conversation, reading with comprehension, and on the language's interdependence with historical and contemporary culture.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): HEBR-112 or departmental approval: two years of high school Hebrew.

HEBR-201 Intermediate Hebrew

4 Credits

Introduction to more advanced vocabulary and speech patterns; acquainting the student with Hebrew literature, modern and medieval. Systematic review of grammar. Laboratory drill.

Lecture 3 hours. Laboratory 1 hour.

Prerequisite(s): HEBR-113 or departmental approval: two years of high school Hebrew.

HEBR-202 Intermediate Hebrew

4 Credits

Strengthening facility of oral and written expression in the language. Building of more advanced vocabulary and sentence structure by means of selections from Hebrew literature. Laboratory drill.

Lecture 3 hours. Laboratory 1 hour.

Prerequisite(s): HEBR-201 or departmental approval: two years of high school Hebrew.

HEBR-203 Intermediate Hebrew

4 Credits

Oral and written expression in the language are further developed. Literary selections are to be discussed to gain deeper understanding and appreciation of Hebrew thought and culture. Laboratory drill.

Lecture 3 hours. Laboratory 1 hour.

Prerequisite(s): HEBR-202 or departmental approval: three years of high school Hebrew.

HEALTH INFORMATION MANAGEMENT - HIM

HIM-110 Introduction to the Health Care Field

3 Credits

Overall view of the health care system. Topics stressed will include the organization of hospitals and medical staffs; professional organizations; licensing, certifying and accrediting agencies; federal health care programs; ethics; medical record profession; and health care delivery trends and issues.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the Health Information Management program.

HIM-112 Principles of Health Information

Management I

3 Credits

Introduction to the acquisition and maintenance of health care data including methods of numbering, filing, record storage, retrieval, retention, indices, registers, microfilming and aspects of computerization in the Medical Record Department.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to the program.

HIM-114 Principles of Health Information

Management II

3 Credits

Introduction to the health record in the acute care setting including its content, importance, uses and forms; documentation requirements for complete and accurate health records as required by external licensing, certifying and accrediting agencies; forms design; and the functions of assembly, analysis and abstracting.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): HIM-110, HIM-112, and MA-102, or departmental approval.

HIM-116 Health Records in Ancillary Care Facilities

3 Credits

Introduction to long term care facilities, ambulatory care facilities, home health care programs and hospice programs with emphasis on the goals; essential services provided; medical staff and personnel requirements; licensing, certifying and accrediting agencies controls; and health records practices.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): HIM-110 and HIM-112, or departmental approval.

HIM-118 Health Data Collection and Analysis

3 Credits

Collection, computation, presentation, and analysis of health and administrative statistics including simple retrieval through abstracting of information from the health record, generating manual and computerized reports, graphically presenting data, and securing and reporting vital statistics.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: math requirement for the AAS degree and HIM-114.

HIM-120 Computer Applications in Health Information Management

2 Credits

Overview of computer applications in health care facilities with emphasis on uses in the medical record department; basic information on computer systems, computer system configurations common to health care facilities, future trends and applications that will impact medical record departments; and hands-on experience in major software applications.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): Departmental approval: CS-102 and HIM-114; and HIM-116 or HIM-131 or HIM-133.

HIM-131 Introduction to Medical Transcription

2 Credits

Emphasis on transcription equipment, transcribing techniques, use of medical reference books, and practice in transcribing histories and physicals, operative reports and discharge summaries.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): MA-102 or departmental approval.

HIM-133 Medical Office Coding

2 Credits

Introduction to the basic concepts of coding using ICD-9-CM (International Classification of Diseases, Ninth Revision, Clinical Modification) for diseases and current procedural terminology (CPT) to meet the requirements for physician office coding and billing.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): MA-102 or departmental approval.

HIM-135 Introduction to Coding with CPT

2 Credits

Introduction to coding using current procedural terminology (CPT) with emphasis on the basic skills required to code medical services and procedures.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): MA-103 or departmental approval.

HIM-137 Introduction to Coding with ICD-9-CM

2 Credits

Introduction to the theory and the basic principles required to code diseases and procedures using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) classification system.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): MA-103 or departmental approval.

HIM-220 Coding, Nomenclature and Classification Systems

3 Credits

Study of nomenclatures and classification systems with emphasis on the theory and application of skills required to code diagnoses and procedures using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) classification system.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): BIO-145, BIO-221, HTEC-161, and MA-103, or departmental approval.

HIM-222 Medicolegal Aspects of Health Care Services

3 Credits

Evaluation of health care records as legal documents; special emphasis on policies and procedures concerning release of medical information and patient confidentiality; principles and organizations of the judicial system; and risk management.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: HIM-118; and HIM-120 or HIM-133 or HIM-137.

HIM-224 Coding Using Current Procedural Terminology (CPT)

3 Credits

Theory and application of skills required to code medical services and procedures using CPT.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): BIO-145 and MA-103, or departmental approval.

HIM-226 Evaluating Health Care Services

3 Credits

Introduction to continuous quality improvement, utilization review and risk management programs in the health care setting, with emphasis on the increasing measurement of quality by outside entities on state and national levels.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): HIM-220 and HIM-222, or departmental approval.

HIM-228 Coding for Fiscal Reimbursement

2 Credits

Introduction to the prospective payment system, diagnosis related groups, data quality, and computer applications available to increase coding productivity; further development of skills necessary to code diagnoses and operations using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM).

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): BIO-222 and HIM-220, or departmental approval.

HIM-230 Management Practices in Health Information

3 Credits

Introduction to the aspects and techniques of collecting, analyzing, and managing health information functions, with emphasis on the duties and responsibilities of a supervisor in coordinating the goals of a health information management department; methods of control through work measurements; evaluating work performance; developing job descriptions and procedure manuals; training of personnel; and concepts of total quality management.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): HIM-224 and HIM-226, or departmental approval.

HIM-231 Advanced Medical Transcription

2 Credits

Further development of skills necessary to transcribe medical dictation with emphasis on speed and accuracy, the transcribing of medical reports dictated by physicians with foreign accents, and the practice of transcribing consultation, pathology, autopsy and radiology reports.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): MA-103 and HIM-131, or departmental approval.

HIM-232 Tumor Registry

3 Credits

Description of the group of abnormal neoplasms known as cancer, the description of the methods of diagnosis and treatment of the discipline known as oncology and the application of cancer data collected. Analysis and interpretation of end results known as tumor registry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): HIM-220 or departmental approval.

HIM-240 Clinical Experience I

3 Credits

Supervised directed practice experience designed to allow the student to apply technical knowledge and skills learned in the classroom to procedures performed in the health information management department. Assignment to nontraditional facilities to gain exposure to health information practices at these settings.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 15 hours per week.

Prerequisite(s): BIO-221 and departmental approval: sophomore status in the Health Information Management program.

HIM-242 Clinical Experience II

3 Credits

Supervised directed practice experience designed to allow the student to apply technical knowledge and skills learned in the classroom to procedures performed in the health information management department. Students will assume more responsibility and demonstrate the development of competencies involving speed and accuracy that are comparable to the competencies of an entry-level MRT graduate. Assignment to nontraditional facilities to gain exposure to health record practices at these settings.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 15 hours per week.

Prerequisite(s): HIM-240; and concurrent with HIM 224, HIM-226, and HIM-232; or departmental approval.

HIM-244 Clinical Experience III

3 Credits

Supervised directed practice experience designed to allow the student to apply technical knowledge and skills learned in the classroom to procedures performed in the health information department. Students to perform in an expanded role and assume more responsibility with less supervision from the directed practice supervisor. Assignment to nontraditional facilities to gain exposure to health information management practices at these settings.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 15 hours per week.

Prerequisite(s): HIM-242; and concurrent with HIM-230, and with HIM-228 or HIM-231; or departmental approval.

HISTORY - HIST

HIST-101 History of Civilization **3 Credits**

Major trends in the development of Western and Asiatic civilizations from ancient Eurasian times to the fall of Byzantium (1453). Basic approach: use of documents as well as textual materials.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-102 History of Civilization **3 Credits**

Major problems that are cultural, political, economic, and religious in the development of Western and non-Western civilizations from the fall of Byzantium to the Congress of Vienna (1453-1815). Basic approach: use of documents as well as textual materials.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-103 History of Civilization **3 Credits**

Major problems that are cultural, political, economic, and religious in the development of Western and non-Western civilizations since the Congress of Vienna (1815) to the present. Basic approach: use of documents as well as textual materials.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-151 United States History to 1841 **3 Credits**

American development from discovery, colonial foundations, movement for independence and early years of the Republic through Jackson's administration.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-152 United States History from 1841 to 1896 **3 Credits**

Jacksonian Democracy through the Populist Movement with emphasis on domestic, economic and political developments.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-153 United States History from 1896 to Present **3 Credits**

Populist Movement to the present emphasizing the reform movements, two world wars, and the rise of America as a world power.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-161 American Studies **3 Credits**

Introduction to American Studies. Discussion of approaches to subject matter, utilizing multidisciplinary techniques in which perceptions associated with minorities and minority viewpoints will be explored. A student journal and genealogical record will be maintained.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-162 American Studies **3 Credits**

Colloquium on selected contemporary issues and institutions employing a multidisciplinary approach.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-164 American Urban History **4 Credits**

Growth of the American city from the early period to the megalopolitan era. Emphasis on the development of the urban economy, the historical functioning of the political system and physical development. Includes the Black man and the city and our ethnic heritage.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): GEOG-103 or departmental approval.

HIST-170 History of Africa **4 Credits**

General survey of African history. Special emphasis on political, economic and social problems of the 19th and 20th centuries.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-171 African-American History to 1877 **4 Credits**

Role of African-American culture from origins in Africa, as slaves in the New World, in the making of America, the struggles to improve their status, and contributions to American culture through Reconstruction.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-172 African-American History from 1877 to Present **4 Credits**

Studies beginning with late nineteenth century racial intolerance and the birth of NAACP and the Urban League, Black migration, the Harlem Renaissance, and the struggle for civil rights, political power and important social and cultural trends.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

HIST-181 Independent Study

1 Credit

Must be taken concurrently with any 100-level course in history. Specific content to be arranged between the instructor and the student. May be repeated for an accrued maximum of nine credit hours.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Must be taken concurrently with a 100-level course in history.

HIST-205 History of Russia

4 Credits

Growth, development and decline of Kievan State. Evolution of the Muscovite tsardom and the expansion of the Russian Empire to 1917. Considers geopolitical, social, cultural and intellectual development. Emphasis on the theory of tsardom, which led to the emergence of a distinct civilization in Russia.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): HIST-103.

HIST-206 Modern Russian History and Politics

4 Credits

Development of the U.S.S.R. since the collapse of the Tsarist monarchy to the present. Emphasis is on the origins, development, establishment of power and rule by the Communist government. Analysis of the development and implementation of Soviet domestic and foreign policies.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): HIST-103.

HIST-210 American Vistas: Post WWII

3 Credits

Study of selected topics in the history of the United States designed to offer an in-depth and dynamic assessment of major issues in the post World War II period.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): HIST-153, HIST-103, and HIST-172; or departmental approval.

HIST-266 Women in American History

4 Credits

Study of the change in role of women in American life and thought; introduction to the current research and techniques used in the women's studies field; an analysis of the historical development of the American feminist movement--the preconditions, leadership, and development characteristics.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

HIST-270 Special Topics in History

1-4 credits

Study of selected topics or trends in history (see schedule booklet for current offerings). (Repeatable. No more than eight credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

HIST-281 Independent Research in History

1 Credit

Must be taken concurrently with any 200-level course in history. Specific content is to be arranged through a contract between the instructor and the student. May be repeated for an accrued maximum of three credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Instructor approval: must be taken concurrently with a 200-level course in history.

HEALTH - HLTH

HLTH-100 Introduction to Health Technologies **3 Credits**

Introduction and orientation to health careers including specific duties, certification and licensure requirements, work settings and conditions, career ladder opportunities, salary, and employment potential. Reviews the interaction of personality and values in the selection of a career choice.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

HLTH-101 Personal Health Education **4 Credits**

Introduction to the meaning and scope of health as related to the individual, family, and community. Focus on an introspective view of physical, emotional, intellectual, social, and spiritual factors with emphasis on mechanisms for positive behavior change.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

HLTH-106 Health and Medical Aspects of Chemical Dependency **4 Credits**

Focuses on health and medical considerations of drug use, with particular emphasis on alcohol and chemical dependency. Provides an overview of the history of alcohol and drug use, the etiology of drug dependency, the effects of drug use on the family, evaluation of the client and current treatment approaches.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

HLTH-140 Childhood Health and Safety **3 Credits**

Focus on the protection and promotion of children's health and safety in day care. Training is provided in communicable disease recognition, prevention and management, first aid, and child abuse recognition and prevention, as required by the Ohio Day Care Licensing Rules. Positive health practices are emphasized as integral elements in nurturing children's total development.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite: None.

HLTH-223 Standard First Aid and Personal Safety **2 Credits**

Basic level first aid and one-person CPR course to provide knowledge and skills necessary to minimize the consequences of injury or sudden illness until professional medical help arrives. Special emphasis placed on cause, effect and prevention in relation to emergency care. After successful completion of course, student is eligible for certification in Standard First Aid by the American National Red Cross.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): None.

HLTH-224 Advanced First Aid **2 Credits**

Emergency medical care instruction, with emphasis on advanced practical treatments for accidents and sudden illnesses. Students will be participating in the program established by the American National Red Cross and will become eligible for certification in Advanced First Aid.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): HLTH-223 and/or Standard First Aid certification.

HLTH-270 Special Topics in Health Education **1-4 Credits**

Study of selected topics, themes, or trends in the field of health (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling program requirements in the Associate of Arts and Associate of Science degrees.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): HLTH-101 or departmental approval: ability to read and analyze health information at sophomore level.

HOSPITALITY MANAGEMENT - HOSP

HOSP-101 Introduction to Hospitality Management 3 Credits

Introduction to the evolution, state-of-the-art and trends of the hospitality industry. Identification of components of the industry. Discussion of career paths, opportunities, and basic principles of business management functions. Overview of the hospitality industry in the Greater Cleveland area. Special projects and field trips.
Lecture 3 hours. Laboratory 0 hours.
Prerequisite(s): Eligibility for ENG-101.

HOSP-102 Sanitation and Safety 3 Credits

Sanitation and accident prevention practices in foodservice and lodging establishments. Management-oriented treatment for the prevention of food-borne illnesses, safe food handling, sanitary design and care of facilities and equipment, pest control, self inspection, and the interpretation of foodservice laws. Causes and prevention of accidents and discussion of elementary first aid including the Heimlich maneuver. Emphasis on employee training.
Lecture 3 hours. Laboratory 0 hours.
Prerequisite(s): Eligibility for ENG-101 and departmental approval: prior industry experience.

HOSP-103 Fundamentals of Foodservice Laboratory 1 Credit

Introduction to food preparation techniques and equipment used in commercial foodservice. Outside assignment may include field trips.
Lecture 0 hours. Laboratory 3 hours.
Prerequisite(s): HOSP-102 or concurrent enrollment, and HOSP-104 or concurrent enrollment, or departmental approval: industry related experience.

HOSP-104 Fundamentals of Foodservice 3 Credits

Basic concepts of kitchen organization and operation, heat transfer, basic terminology, use of standardized recipes, weights and measures, recipe conversion, food composition, nutrition, elementary menu construction and introduction to commercial equipment and work methods. Field trips may be required.
Lecture 3 hours. Laboratory 0 hours.
Prerequisite(s): Eligibility for MATH-093 and ENG-101.

HOSP-105 Food Preparation I 4 Credits

Basic principles of preparation of soups, sauces, salads, salad dressings, fruits and vegetables, pastas, rice, cereals, eggs, cheese dishes and breakfast items. Demonstration of professional cooking techniques, discussion of principles and selected hands-on experiences. ACF required competency skills included.
Lecture 2 hours. Laboratory 6 hours.
Prerequisite(s): HOSP-101 and HOSP-103, or departmental approval: industry related experience and HOSP-103.

HOSP-106 Food Preparation II 3 Credits

Identification, selection and appropriate preparation of cuts of meat, various kinds of poultry and seafood. Demonstration of cooking techniques, discussion and selected hands-on experiences and recognition of quality standards.
Lecture 1 hour. Laboratory 6 hours.
Prerequisite(s): HOSP-105 or departmental approval: industry related experience.

HOSP-110 Dining Room Operations 2 Credits

Dining room operations which include various types of service. Emphasis on individual training of service personnel.
Lecture 0 hours. Laboratory 6 hours.
Prerequisite(s): HOSP-103, and HOSP-145 or concurrent enrollment, or departmental approval: industry related experience and HOSP-103.

HOSP-120 Foodservice and Hotel Purchasing 3 Credits

Decision-making factors for purchasing for hotels, and food and beverage operations with emphasis on customer preferences for menu and service. Exploration of government regulations, industry standards, product availability, economic concerns, supplier relationships and the market. Field trips may be required.
Lecture 2 hours. Laboratory 2 hours.
Prerequisite(s): HOSP-105 or departmental approval: industry related experience.

HOSP-133 Quantity Food Production 3 Credits

Quantity foodservice operations, under departmental supervision with emphasis on quality food preparation and use of commercial equipment.
Lecture 0 hours. Laboratory 9 hours.
Prerequisite(s): HOSP-106 or departmental approval: industry related experience.

HOSP-138 Front Office Operations 3 Credits

Hotel and motel front office operations including organization, staffing, relationship to other services, staff-guest relationships, reservations, room management and night audit. Comparison of manual, machine assisted and computer methods for front office functions. Outside assignment of 16 hours of on-site observation of front office operations.
Lecture 2 hours. Laboratory 3 hours.
Prerequisite(s): HOSP-101, and CS-102 or concurrent enrollment.

HOSP-139 Baking Production

3 Credits

Fundamentals of professional baking. Development of skills for quality handcrafted products including elementary cake decorating. Emphasis on recognizing quality standards.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): HOSP-103 and HOSP-104, or departmental approval: industry related experience.

HOSP-140 Menu Planning and Management

3 Credits

Study of the central role of the menu in any food and beverage operation in terms of facility, equipment, staff, nutritional adequacy, merchandising and marketing for profitability.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): HOSP-106 or departmental approval: industry related experience.

HOSP-145 Food and Beverage Service Management

1 Credit

Study of managerial planning, organization and control of food and beverage service.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): HOSP-101, HOSP-102, and HOSP-104.

HOSP-148 Housekeeping Operations

3 Credits

Overview of professional housekeeping services in the lodging industry. Examines basic cleaning methods and equipment currently used; work production and quality control techniques peculiar to housekeeping management; and factors determining frequency workload and staffing. Outside assignment of 16 hours of observation at assigned site(s).

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): HOSP-101 and HOSP-102.

HOSP-160 Tourism in the Hospitality Industry

3 Credits

Overview of the tourism industry. Introduction to terminology, concepts and the various specialized fields that comprise the industry as well as the types of jobs and opportunities available. Field trips may be required.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): HOSP-101 or department approval: eligibility for MATH-106 and ENG-101.

HOSP-200 Hospitality Management I

4 Credits

Analysis of hospitality operations from a systems point of view. Responsibilities of a manager of each system, the interactions of systems, and techniques for more effective foodservice systems.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): HOSP-101.

HOSP-217 Garde Manger

2 Credits

Development of skills in the art of garde manger; artistic presentation of cold foods and buffet items.

Demonstration and hands-on laboratory experiences including preparation of plate presentations, table displays and showpieces. Outside assignment may include scheduled buffet event.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): HOSP-105 or departmental approval: industry related experience.

HOSP-218 Haute Cuisine

2 Credits

Introduction to haute cuisine or fine foods in modern foodservice. Principles of preparation, presentation and vocabulary. Demonstration and hands-on laboratory experience.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): HOSP-106 or departmental approval: industry related experience.

HOSP-221 Food and Beverage Cost Control

4 Credits

Basic procedures to control food, beverage, labor costs and sales income in food and beverage operations.

Analysis of factors that serve as the base for decision-making and improvement of operations that result in increased profits.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): HOSP-120 and ACCT-128.

HOSP-223 Hospitality Facilities Management and Design

3 Credits

Introduction to hospitality facility design and management knowledge that is needed for clear communication with those in charge of maintenance and engineering departments, lodging and foodservice facilities. Survey of blueprint reading; basic elements of electrical systems and appliances; plumbing and water systems; heating principals; refrigeration; ventilation and air conditioning; building transportation systems; swimming pools; sound and pollution controls; and energy conservation. Planning and evaluation of facilities and the selection of appropriate equipment. Field trips may be required.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): HOSP-104.

HOSP-224 Hospitality Marketing and Sales

3 Credits

Application of marketing and sales principles to the food and lodging industry. Strategies and techniques to increase sales with an emphasis on planned profits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): HOSP-101.

HOSP-234 Hospitality Management II

3 Credits

Duties and responsibilities of the first-line hospitality supervisor in hospitality operation. Development of standards and procedures for selecting, training and placement of personnel in the hospitality industry. Consideration of problems of high turnover, marginal and seasonal employees, low productivity, customer relations and rising labor costs characteristic of hospitality management.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): HOSP-200 or departmental approval: admission to Dietetic Technology program.

HOSP-235 Restaurant Management Operations

4 Credits

Development of responsibility for the operation of a restaurant. Students demonstrate their knowledge of food production and management systems and use hands-on skills in a functional foodservice operation.

Lecture 0 hours. Laboratory 12 hours.

Prerequisite(s): HOSP-140, HOSP-110, HOSP-200, and HOSP-221; and HOSP-234 or concurrent enrollment.

HOSP-250 Convention Management

3 Credits

Discussion of the wide spectrum of the convention market, the individual needs of the people who plan and are part of the group function and ways to service conventions effectively.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): HOSP-224 or departmental approval.

HOSP-258 Hospitality Law

4 Credits

Examination of legal considerations of hospitality property management. Discussion includes hotel-guest relationship, employment laws, antitrust regulations, food and beverage sales, wage and hour standards, social security and income tax withholding requirements, consumer protection laws, public health and safety requirements, tax laws and tip reporting, and product liability laws.

Lecture 4 hours. Laboratory 0 hours

Prerequisite(s): HOSP-101.

HOSP-263 Seminar

1 Credit

Presentation and discussion of special topics pertinent to the hospitality industry. Includes issues that have applications to work-related situations within the scope of hospitality careers. Outside assignment may include attending professional industry meetings.

Lecture 0 hours. Laboratory 0 hour.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): HOSP-234.

HOSP-265 Hospitality Practicum

3 Credits

Hospitality Management Department --supervised work experience in the hospitality industry, requiring students to function in a variety of job stations to reinforce learned classroom/lab skills. May be repeated for a maximum of nine credits with departmental approval.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): HOSP-101, HOSP-102, and departmental approval.

HOSP-270 Culinary Arts: Evaluation and Enhancement

1 Credit

Evaluation of culinary skills based on the standards established by the American Culinary Federation Educational Institute and other industry standards. Individualized guided practice of culinary skills learned in previous courses. Instruction and guided practice of selected culinary skills not covered in other courses. May be repeated up to a maximum of four credits but only one credit may be applied toward a hospitality degree program.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: student must have completed at least one food preparation laboratory course or have previous industry experience

HOSP-295 Hospitality Management Experience

3 Credits

Observation and practice of technical supervisory skills in a selected area of the hospitality industry. May be repeated for a maximum of six credits with departmental approval.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week of supervisory experience.

Seminar: 1 hour per week.

Prerequisite(s): HOSP-265 and departmental approval: site selection approval.

HEALTH TECHNOLOGIES - HTEC

HTEC-102 Integrated Basic Science

5 Credits

Introduction to basic sciences and pathology. Concepts of physics, chemistry and life sciences emphasizing application to human structure and function. Integrated approach to the study of the human body in health and as altered by various disease states.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): Eligibility for ENG-101.

HTEC-108 Introduction to Dental Health Careers

1 Credit

Introduction and orientation to dental health careers and dental team. Focus on dental terminology, relationship of auxiliaries, licensure, ethics and basic techniques.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: 10 hours observation in dental care and/or dental laboratory facilities.

Prerequisite(s): Eligibility for ENG-101.

HTEC-110 Ethics for Health Care Professionals

2 Credits

Survey course emphasizing basic definitions, concepts and issues of clinical law and ethics for health care professionals. Ethical decision-making models will be explained and utilized. The professional-patient relationship and case studies exemplifying ethical dilemmas will be discussed. Resources involving Allied Health professionals will be presented.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

HTEC-161 Introduction to Pharmacology

3 Credits

Basic principles and concepts of pharmacology. To provide an understanding of the indications, uses, therapeutic dosage ranges, and contraindications associated with drug classes, as well as pertinent information on drug administration and therapeutic management of major disease processes. Review of the basic mathematical skills needed to prepare and administer medications correctly.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Acceptance into a Health Career program, or departmental approval.

HTEC-171 EKG for the Health Care Technician

2 Credits

Theory and laboratory practice of entry level cardiovascular procedures for electrocardiography (EKG). Emphasis on technical accuracy in operational, problem solving and quality control skills.

Recommended for students currently enrolled in a health career program or employed in a health career field

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

HTEC-177 Patient Management for Health Career Professionals

3 Credits

Basic overview of how to manage any patient in various typical or atypical situations, to educate them, to deal with their feelings and to provide motivational plans based on their individual needs in pursuit of improvement in their long-term health status.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Acceptance into a Health Career program, or departmental approval.

Course Descriptions

Fall 1996-Summer 1998 Catalog

HUMANITIES - HUM

HUM-101 Introduction to Humanities: Humanities and the Individual 3 credits

Introduction to works of art and philosophy which define both the limitations and enduring nobility of humanity. Lectures, films, performances, exhibits and field trips.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite: None.

HUM-102 Introduction to Humanities: Humanities and Society 3 credits

Introduction to works of art and philosophy which reflect the struggle of individuals to maintain their individuality while members of society. Lectures, films, performances, exhibits and field trips.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite: None.

HUM-103 Introduction to Humanities: Humanities and the Cosmos 3 credits

Introduction to works of art and philosophy which reflect the individual's attempt to resolve his/her relationship to the cosmos. Lectures, films, performances, exhibits and field trips.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite: None.

HUM-185 Honors Forum: Critical Issues 3 Credits

To establish a coterie of honors scholars, this forum will focus on critical issues facing our local, national and global communities. By means of various faculty presentations, students will examine issues and themes across disciplines. Will serve as a vehicle for honor students to explore ways that the arts and sciences can advance students' understanding of the human community and their place in it.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: campus honors program faculty coordinator.

HUM-270 Special Topics in Humanities 1-4 Credits

Study of selected topics in the humanities relating to the individual, society and the larger issues which face human beings. Examination of how, through the arts, these topics are treated. (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): HUM-101 or HUM-102 or HUM-103 or any course which satisfies the humanities requirement.

MANUFACTURING/INDUSTRIAL TECHNOLOGY - INDT -

INDT-122 Introduction to Manufacturing Management 3 Credits

Basic planning for manufacturing costs and materials. Management of work force, production and inventory. Personnel and Public Relations. Basic sequence of manufacturing, automation and computer integrated manufacturing (CIM).

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

INDT-129 Motion and Time Study 3 Credits

Methods of motion and time study in various jobs. Identifying motions, limiting motions, basic motion times, and work sampling. Wage incentive plans and basic wage rates in relation to motion and time study.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

INDT-164 Inventory Management 3 Credits

Comprehensive coverage of principles and techniques utilized in managing inventory including inventory classification, methods of replenishment, safety stock determination, order quantities, lot sizing, stockroom organization and physical counting.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-116 or concurrent enrollment, or departmental approval.

INDT-166 Materials Requirements Planning 3 Credits

Forecasting materials requirements with bills of materials to establish a time phased program of inventory replenishment for assembled products. Roles of a forecast, bills of materials, lead time accuracy, computer software and shop capacity planning.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None

INDT-169 Shop Capacity and Floor Control 3 Credits

Converting sales forecasts into a production plan and a master schedule. Techniques used by managers to plan, schedule, control and evaluate the effectiveness of shop production operations including control of work in process, expediting, determining priorities and shop paperwork system.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None

INDT-215 Industrial Drawing Essentials **3 Credits**

Analysis and application of drawing symbols and terminology as applied to mechanical drawings and related to industrial processes. Topics will include detail and assembly drawings, geometric dimensioning and tolerancing, drawing notes and changes, and specialized print reading.

Lecture 2 hours.. Laboratory 2 hours.

Prerequisite(s): ENGR-121 and MECH-152, or departmental approval: equivalent courses and/or experience.

INDT-222 Manufacturing Management **3 Credits**

Production systems and their development with emphasis on planning, scheduling management and control of various production systems. Computer integrated manufacturing reviewed as a basis for production.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): INDT-237 or concurrent enrollment, or departmental approval.

INDT-224 Employee and Plant Safety (formerly INDT-134)

3 Credits

Safety and protection of employees and company property. Security personnel. Security personnel and training. Maintenance of property for safety, fire equipment and its use. Employee protection against unsafe practices. Discussion of Workmen's Compensation and Occupational Safety and Health Act

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

INDT-225 Introduction to Computer Integrated Manufacturing (formerly INDT-135)

3 Credits

By use of computer-driven planning for manufacturing, the student will be exposed to computer techniques available to industry in developing product design, planning, manufacturing and quality control

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): INDT-122.

INDT-226 CIM - Design (formerly INDT-136)

3 Credits

Design of a product or service to be organized and/or manufactured. Specifying part or service dimensions, materials and tolerance function performance. Standardization of parts or services to be produced. Modular design, reliability and quality evaluation of product or service. Use of computer integrated manufacturing techniques to complete the design process.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): INDT-225.

INDT-235 Computer Integrated Manufacturing Production Planning

3 Credits

By use of CIM methods and techniques, the student will use computer techniques and procedures to organize the people, machinery and materials for manufacturing a product or service.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): INDT-225 or departmental approval.

INDT-236 Computer Integrated Manufacturing Shop Floor Management

3 Credits

Using CIM methods and techniques, the student learns computer methods to direct, analyze and supervise manufacturing during the production process. Making modifications and changes during this activity will be included.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): INDT-225 or departmental approval.

INDT-237 Computer Integrated Manufacturing Production and Quality Control

4 Credits

Using CIM methods and techniques, the student will learn about verifying the quality and quantity of parts and total production as to accuracy and completeness. Review of the CIM process to correct and improve production procedures.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): INDT-225.

INDT-238 Industrial CAD I

4 Credits

Beginning through intermediate levels of computer-aided drafting. Basic and intermediate commands will be used for 2D and 3D drawings. Three dimensional wire-frame models will be rendered with different applications and rotated in space to produce different views. Multiple viewports will be used to enhance visualization and relate view projection

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ENGR-130A.

INDT-239 Industrial CAD II

4 Credits

Application of the computer, using drafting/design software, as a tool for industrial drafting. A complete set of production drawings are created using 2D and 3D drawing environments. Principles of size tolerancing, thread specification, welding joint description, and sectioned assemblies are directly applied. Emphasis is placed on 3D drawing by using wire frame rendering for enhanced part description. Software macros, and special language commands will be used to customize program operation. Analyzing mass properties for individual parts will be introduced. New manufacturing techniques relating drafting methods with production processes will be discussed

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): INDT-238.

INDT-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Cooperative Education Program

INDT-261 Introduction to Statistical Quality Control

3 Credits

Application of statistical techniques in the analysis of data for the control of product quality and costs. Control charts, sampling systems and procedures. Correction of product variability. Theory of probability fundamentals. Solution of statistical problems related to specifications, production or inspection. Statistical approach of acceptance sampling. Statistical quality control as a decision making tool.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

INDT-262 Internship

1-3 Credits

Limited to students in the Internship program. Employment in an approved training facility under College supervision. The requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Internship: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Internship program and formal admission into the Manufacturing/Industrial Technology program.

INDT-270 Special Topics in Manufacturing

1-4 Credits

New and current technology practices for manufacturing. Concepts are introduced and analyzed through lecture and demonstration. Topics offered will vary in response to changing technological trends. (Repeatable. No more than 3 credits of special topics courses may be applied toward the Manufacturing/Industrial Technology program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: industry experience or enrolled in second year of Manufacturing/Industrial Technology program; concurrent enrollment in INDT-272 may be required.

INDT-272 Special Topics in Manufacturing Laboratory Experience

1-2 Credits

New and current technology practices for manufacturing. Concepts are introduced and analyzed through demonstration and laboratory activities. Topics offered will vary in response to changing technological trends. (Repeatable. No more than 3 credits of special topics courses may be applied toward the Manufacturing/Industrial Technology program degree requirements.)

Lecture 0 hours. Laboratory 3-6 hours.

Prerequisite(s): Departmental approval: industry experience or enrolled in second year of Manufacturing/Industrial Technology program; concurrent enrollment in INDT-270 may be required.

INDT-291 Materials Handling and Plant Layout

3 Credits

Purpose, scope, transportation of materials, selection of equipment, objectives and cost of material handling are integrated with plant layout, materials, and product flows and the effective arrangement of manufacturing and service facilities. Emphasis is also placed on the coordination which is necessary between materials handling, plant layout, production planning and control, methods engineering, process engineering and production techniques.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): INDT-122 or equivalent.

INTERIOR DESIGN TECHNOLOGY - INTD

INTD-101 Introduction to Interior Design **2 Credits**

Designed to investigate the profession of interior design as a field for employment. Emphasis will be placed on identification, need and functions of the interior designer.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): None.

INTD-201 Introductory Interior Design **3 Credits**

Involves students in planning simple interior floor plans and elevations with consideration to traffic flow and room functions. Emphasis will be placed on exploring multiple-design solutions and analysis of design problems.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): ARCH-141, ART-107, and ART-110.

INTD-202 Intermediate Interior Design **3 Credits**

Provides practice in planning traditional and contemporary interiors. Coordination of schemes, styles and furnishings will be emphasized as related to commercial and residential design.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): INTD-201, INTD-205, and concurrent with INTD-210.

INTD-203 Advanced Interior Design **3 Credits**

Considers advance problems of commercial and residential interiors, working drawing, specifications and client-designer communication. Emphasis on total design product and presentation.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): INTD-202.

INTD-205 History of Interiors **3 Credits**

History of interior design from Egyptian to the present time. Emphasis will be placed on contemporary styles and contemporary interpretations of traditional styles.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

INTD-206 Architectural Materials and Methods **3 Credits**

Basic materials and methods of building construction, emphasizing wood, concrete, unit masonry and light steel construction. Laboratory projects include working drawings and interpretations, field trips to construction sites and fabricating plans.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): ARCH-141.

INTD-207 Interior Design Materials and Methods **3 Credits**

Reviews the various interior furnishings and materials available in the current market to the interior designer. Emphasis is placed on appropriate use of materials in design and on furniture materials construction.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): INTD-206.

INTD-208 Textiles **3 Credits**

How various fibers, both natural and man-made synthetics, are manufactured and utilized in interior design. Includes floor coverings, drapery, upholstery and wall coverings. Emphasis will be placed on style familiarity and appropriate usage.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

INTD-210 Interior Design Presentation **3 Credits**

Basic professional rendering techniques, emphasizing water color, casein and reproducible drawing techniques (such as felt tip pen, and pressure sensitive materials) through presentation of plans, elevations, perspectives and collages as well as quick sketch techniques used in the field of commercial and residential interior design.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): ARCH-141, ART-107, ART-110, and concurrent with INTD-202.

INTD-220 Professional Practice of Interior Design **3 Credits**

Designed to give the student insight into and familiarity with the professional methods by which a design business is conducted.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Concurrent with INTD-221.

INTD-221 Interior Design Field Experience **2 Credits**

Limited to students in the second year of the interior design program. Students will be placed in a practical work environment under College supervision averaging fourteen hours per week at which time they will interact with professionals in the field of interior design and participate in practical applications of the skills and knowledge required of successful practitioners in the field.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): Concurrent with INTD-220.

ITALIAN - ITAL

ITAL-111 Beginning Italian I **5 Credits**

Introduction to Italian through multiple approach with emphasis on speaking. Practice in conversing in Italian in simple idiomatic sentences on topics of everyday interest.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

ITAL-112 Beginning Italian II **5 Credits**

Study of the Italian language with emphasis on speaking. Continued practice in speaking, understanding, reading and writing. Further development of conversational skills.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-111 or departmental approval.

ITAL-113 Beginning Italian III **5 Credits**

Study of the Italian language. Development of proficiency in speaking, understanding, reading and writing. Emphasis on strengthening conversational skills through discussions of selected readings and cultural topics.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-112 or departmental approval.

ITAL-201 Intermediate Italian I **4 Credits**

Increased vocabulary development and structural review through readings of cultural texts. Emphasis on oral expression and group discussions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-113 or departmental approval: two years of high school Italian.

ITAL-202 Intermediate Italian II **4 Credits**

Strengthening oral and written expression in Italian with emphasis on conversation. Further improvement of written skills. Reading of selected texts in order to deepen the understanding and appreciation of Italian culture.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-201 or departmental approval: two years of high school Italian.

ITAL-203 Intermediate Italian III **4 Credits**

Readings of simple prose texts and review of sentence structure in order to obtain oral and written proficiency in Italian. Emphasis on group discussion.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-202 or departmental approval: three years of high school Italian.

ITAL-241 Italian Conversation and Composition **4 Credits**

Discussion of topics of everyday life, colloquialisms, vocabulary augmentation and improvement of speech patterns. Practice in writing compositions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-203 or concurrent enrollment, or departmental approval: three years of high school Italian.

ITAL-242 Italian Civilization and Literature **4 Credits**

Introduction to the civilization and literature of Italy. Emphasis on the interrelationship between history and geography of Italy and its culture.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-203 or concurrent enrollment, or departmental approval: three years of high school Italian.

ITAL-243 Readings in Italian Literature **4 Credits**

Introduction to Italian literature of the medieval to the 20th centuries. Highlights of representative authors and their works. Emphasis on oral discussion.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ITAL-203 or concurrent enrollment, or departmental approval: three years of high school Italian.

JAPANESE - JAPN

JAPN-111 Beginning Japanese I **5 Credits**

Introduction to Japanese through listening, speaking, reading and writing with emphasis on speaking. Practice in conversation in informal and polite form.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

JAPN-112 Beginning Japanese II **5 Credits**

Study of the Japanese language with emphasis on speaking. Continued practice in speaking, listening, understanding, reading and writing.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-111 or departmental approval.

JAPN-113 Beginning Japanese III **5 Credits**

Continued study of the Japanese language. The basic mastery of grammar. Further practice in conversation through discussions of selected readings.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-112 or departmental approval.

JAPN-201 Intermediate Japanese I **4 Credits**

Increased vocabulary development and reading and writing improvement of Katakana, hiragana and Kanji.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-113 or departmental approval.

JAPN-202 Intermediate Japanese II **4 Credits**

Further practice in reading and writing of Katakana, hiragana and Kanji with emphasis on conversation.

Reading and interpretation of prose works.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-201 or departmental approval.

JAPN-203 Intermediate Japanese III **4 Credits**

Reading and writing of Katakana, hiragana and Kanji on an advanced level. An analysis of a novella.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-202 or departmental approval.

JAPN-241 Advanced Japanese I **4 Credits**

Study of three forms of speech and writing: abrupt, polite, honorific. Vocabulary augmentation and expansion of Kanji to 1,000. Reading and discussion of modern fiction.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-203 or concurrent enrollment, or departmental approval.

JAPN-242 Advanced Japanese II **4 Credits**

Introduction to the civilization and literature of Japan. Emphasis on the overview of the literal and cultural history of Japan. Expansion of Kanji to 1,500.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-203 or concurrent enrollment, or departmental approval.

JAPN-243 Advanced Japanese III **4 Credits**

Emphasis on the discussion and analysis of major modern writers in Japanese literature. Expansion of Kanji to 2,000.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JAPN-203 or concurrent enrollment, or departmental approval.

JOURNALISM - JOUR

JOUR-101 Introduction to Mass Communications **4 Credits**

Nature and function of mass media such as the press, television, radio and film. Impact and influence of the mass media on man in the democratic society.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

JOUR-131 News Writing and Reporting **4 Credits**

News gathering and writing for the print media. Emphasis on basic structure of the news story and writing against a deadline. Survey of career opportunities in print and broadcast journalism. Principal ethical, policy and legal questions confronting reporters and their newspapers.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

JOUR-132 News Writing and Reporting **4 Credits**

Emphasis on problems of news gathering using the community as a laboratory. Interpretive reporting. Attention to needs of a wide variety of types of newspapers and to journalistic specialties.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JOUR-131.

JOUR-141 Staff Practice **1 Credit**

Class laboratory experience in assembling, making-up and publishing the College newspaper. Detailed weekly analysis of the effectiveness of the news stories written and published as well as of the overall presentation of the College newspaper. Students are assigned to the staff of the College newspaper. May be repeated for credit, however not more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: consent of instructor.

JOUR-151 Broadcast Journalism **4 Credits**

News reading, news preparation, news reporting on audio tape, video tape, film and live camera for television and radio. Covers Federal Communications Commission rules and regulations on news. Fundamentals of what makes a story and how to get it. The art of interviewing. Field work, study of radio and television history.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

JOUR-161 Survey of the Black Press **3 Credits**

Nature and function of the Black press including broadcast, with emphasis on the history and function of the Black press and the impact of the Black press on minorities in general. Career opportunities for minorities and the problems of the Black journalist working on the general press are given special attention.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

JOUR-201 News Editing **4 Credits**

Copy desk methods. Copy and proofreading, headline writing, newspaper makeup and style. Introduction to newspaper law, including libel, right to privacy and press privileges. Editorial writing, problems and policy. Examination of major contemporary American newspapers.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JOUR-131.

JOUR-202 News Editing **4 Credits**

Copy desk methods continued. Copy and proofreading, headline writing, newspaper make-up and style. Newspaper law, including libel, right of privacy and press privileges. Editorial writing, problems and policy. Examination of major contemporary American newspapers.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): JOUR-201.

JOUR-260 Cooperative Education **1-3 Credits**

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Cooperative Education Program.

JOUR-270 Special Topics in Journalism **1-4 Credits**

Study of specialized topics in Journalism relating to current trends and issues involving society and the individual. (Repeatable. No more than 8 credits of special topics courses may be applied towards filling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: dependent upon the special topic, the Journalism counterparts will determine the prerequisite for each topic.

LATIN - LAT

LAT-111 Beginning Latin I

5 Credits

Introduction to Latin through multiple approaches with emphasis on comprehension of basic grammar. Practice in conversing in Latin. Analysis of Latin derivations of English vocabulary.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

LAT-112 Beginning Latin II

5 Credits

Continued study of the Latin language with emphasis on the more complex aspects of grammar. Introduction to Roman culture and mythology. Further stress on conversational Latin.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): LAT-111 or departmental approval.

LAT-113 Beginning Latin III

5 Credits

Continued study of the Latin language. Development of proficiency in reading, writing and speaking. Emphasis on reading selected classical works.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): LAT-112 or departmental approval.

LAW ENFORCEMENT - LAWE

LAWE-102 Introduction to Policing

3 Credits

Historical development of the police, identifying the various subsystems; the role and organization of police and their functions in a modern society.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None

LAWE-110 Police Supervision

3 Credits

Introduction to the concepts of first-line supervision for police. Emphasis on human relations aspects of supervision; leadership development; use of discipline; evaluation of personnel; complaint investigations; and training with the objective to improve both quality and quantity of operations through a subordinate oriented approach.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAWE-102 or departmental approval: equivalent experience.

LAWE-121 Criminal Law Procedure

3 Credits

Exploration of U.S. adversary system of criminal justice beginning with arrest and search, steps which precede trial as well as the trial process itself. Modern approaches to preliminary handling of criminal cases. Bail and pretrial release are reviewed and the criminal trial process is traced. Discussion of current theory on sentencing and corrections, and rules controlling post-trial proceedings: appeals, habeas corpus hearings, and the probation and parole process.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

LAWE-122 Constitutional Law

3 Credits

Development of the Federal Constitution and the history of the Bill of Rights. The substantive content of the first eight Amendments and corresponding state provisions with emphasis on recent court interpretations and trends.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAWE-121.

LAWE-123 Laws of Evidence

3 Credits

Thorough study of the evidence rules with specific emphasis on their application in preparing and presenting evidence. Discusses the admissibility of documentary and real evidence and practical considerations. Includes portions of requirements for Ohio Peace Officer certification.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAWE-122 or departmental approval.

LAWE-144 Probation and Parole

3 Credits

Reviews and examines the philosophy, history, and practice of probation and parole as they deal specifically with juvenile and adult offenders in federal, state, and local corrections systems. Covers all community-based aspects of corrections, but particular weight will be placed on probation and parole.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-102 or departmental approval: equivalent experience.

LAWE-150 Introduction to Security

3 Credits

Historical perspective on the development of security with a definition of current role and function; studies in the fundamental principles of risk assessment, physical protection, systems of defense, internal security, fire prevention and emergency opportunities in the security field. Includes portions of requirements for Ohio Peace Officer certification.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

LAWE-151 Principles of Loss Prevention

3 Credits

In-depth study of the principles of loss prevention including management's responsibilities, employee functions, physical security factors and shortage control systems. Changing role of security is critically examined with an emphasis on risk management.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-150 or departmental approval.

LAWE-152 Physical Security

3 Credits

Study of those measures necessary to protect a facility against the effects of unauthorized access, theft, fire, sabotage, loss or other intentional crime or damage. Examines the concepts of physical security integrated with management systems; physical security requirements and standards; alarms and surveillance devices, animate security costing, planning and engineering. Principles of safety practices and regulations; property conservation; occupational hazards and personal safeguards.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-150 or departmental approval.

LAWE-154 Security Administration

4 Credits

Comprehensive examination of the organization, staffing and administration of the security function. Concerned with general security management, security personnel management, operational management and public relations.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): LAW-150 or departmental approval.

LAWE-155 Security Investigation

3 Credits

All aspects of the criminal investigation function of security administration are fully covered from the preliminary investigation to the preparation of the case for review to determine further processing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-150 or departmental approval.

LAWE-156 Contemporary Security Problems

4 Credits

Analysis of current and special security problems.

Provides an opportunity for students to select areas of security for individual emphasis and further study, i.e., bank security, retail security, industrial security, hotel/motel security, computer security, cargo security, airline security, hospital security, campus security, etc.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): LAW-150 or departmental approval.

LAWE-157 Legal Considerations in Security

3 Credits

Overview of federal and state laws and their impact on the decision-making processes of the security administration.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-154 and LAW-123, or departmental approval.

LAWE-160 Introduction to Basic Training

2 Credits

Basic introduction to the Ohio Peace Officer training program. Defines the expectations of the student within the program; needs and reasons for training. Discussion of canons and ethics of law enforcement and introduction to basic military customs and courtesies. Introduction to basic military drills and ceremonies. Designed to fulfill specific requirements for Ohio Peace Officer certification.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval, or contract for Ohio Peace Officer certification.

LAWE-164 Patrol Techniques

4 Credits

Examination of the techniques required in performing the patrol function. Covers preparation, vehicle patrol, foot patrol, crimes in progress, prowler calls, building searches, performance of stops and approaches, vehicle identification, and prisoner booking and handling.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): LAW-102 or departmental approval: equivalent experience.

LAWE-170 Introduction to Corrections

3 Credits

Introduction to the processes, procedures and issues in contemporary corrections. Evolution of the various elements of the juvenile and adult corrections systems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

LAWE-200 Ohio Criminal Law

4 Credits

Intensive examination and study of the criminal and traffic statutes of the Ohio Revised Code. Designed to provide the student with the ability to recognize specific violations of both criminal and traffic law from the elements present in a given situation.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): LAW-121 or departmental approval: equivalent experience.

LAWE-201 Delinquency Prevention and Control

3 Credits

Problems of juvenile delinquency; police programs and community resources for prevention of juvenile delinquency. Juvenile court organization and procedure, detention, filing and police procedures in enforcement of juvenile code. Includes portions of requirements for Ohio Peace Officer certification.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-121.

LAWE-211 Criminal Investigation

4 Credits

Fundamental principles and techniques applicable to police investigation from incident to trial. Use of communications systems, records and principles. Specific procedures in more frequent violations will be individually presented. Includes portions of requirements for Ohio Peace Officer certification.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): LAW-121 or departmental approval: in-service personnel.

LAWE-212 Criminalistics

3 Credits

Techniques of scientific investigation and assistance of various scientific aids to the police officer or field investigator. Special techniques employed in particular kinds of investigation. Includes portions of requirements for Ohio Peace Officer certification.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-211.

LAWE-220 Traffic Enforcement

3 Credits

Examination of traffic accident investigation, traffic enforcement and other control procedures utilized in the highway transportation system. Includes a comprehensive study of traffic enforcement principles, problems, and procedures and how a traffic accident investigation program relates to a traffic enforcement program. Students learn how to investigate an accident scene and methods for the enforcement of specific driving violations.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-102 or departmental approval: equivalent experience.

LAWE-221 Police Administration

4 Credits

Introduction to public administration focused on the police function. Relationships of police administration to the community and political environments are discussed. Emphasis is on public management theory, the human element in administration, communications, human resource management, the planning process, administering police functions, manpower allocation and controlling stress. Includes portions of requirements of Ohio Peace Officer certification.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): LAW-110 or departmental approval.

LAWE-227 Community Intervention Resources

3 Credits

Survey of community-based resources designed for intervention, prevention and control or rehabilitation of the juvenile or adult offender.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-144.

LAWE-228 Correction Case Management

3 Credits

Application of counseling-interviewing techniques applicable to the correctional offender. Field and clinical situations are simulated so the student can gain experience in interviewing, chronological recording, report writing, and oral presentation of cases.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-170 or departmental approval: equivalent experience.

LAWE-229 Corrections: Principles and Practices

3 Credits

Pre-service student is placed in a criminal justice agency facility under the direction of experienced and qualified corrections personnel. Primary learning takes place through field experience in a corrections environment. Students learn to apply corrections principles. Class time is spent in small group discussions of specific theories and their applications. Students will spend 15 hours per week in field work and two hours per week in a scheduled on-campus seminar.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 15 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): Departmental approval: completion of 15 hours in corrections concentration.

LAWE-230 Criminology

3 Credits

Development of criminology, sociology of criminal law, the legal order and crime control, and patterns of criminal law. Also deals with social reaction to crime and future crime control in American society.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-144 or departmental approval.

LAWE-242 Crime Prevention

3 Credits

Philosophy, style and methods of providing police service and managing the police organization relative to crime prevention. Many approaches are explored including neighborhood policing and problem-oriented policing, with a strong emphasis on community policing. Examples of successful programs throughout the United States are examined.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-102 or departmental approval: equivalent experience.

LAWE-250 Computers in Criminal Justice

3 Credits

Overview of computer applications to the criminal justice of study will include records systems, computer aided dispatch, information systems, crime analysis, access control systems, fire/security and uses in a correctional environment.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): LAW-102, LAW-150, and LAW-170, or departmental approval: equivalent experience.

LAWE-257 Special Issues in Criminal Justice

2 Credits

Review of special and contemporary issues in the field of criminal justice. Discussion of varying viewpoints and aspects of problems faced in these fields. A critical and analytical approach is used to understand the role and relationship of the criminal justice system to today's society.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: completion of all law courses except final quarter of requirements for graduation, or equivalent experience.

LAWE-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

LAWE-268 Police Report Writing

2 Credits

Examination of report writing required of police officers. Discussion of the various types and forms of reports necessary and the methods for the accurate completion. Use and structure of field notes. Investigative report form and content and use of proper grammar and spelling in narrative reports. Fulfills specific requirements for Ohio Peace Officer certification.

Students must have specific permission to register.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: contract for Ohio Peace Officer certification.

LAWE-270 Law Enforcement: Special Topics

1-3 Credits

Provides opportunity to engage in specific law enforcement related endeavors. Precise nature will be detailed in contract between student and instructor. May include, but is not limited to, research, group study, case studies, or practical experience under faculty guidance. Written and/or oral presentations as well as demonstrative skill may be required at conclusion of course. Students must attend specified curricular presentations as stipulated by agreement. May include materials mandated by the State Attorney General's office, law enforcement procedures, or other topics necessary to success in law enforcement. (Repeatable. No more than 6 credits of special topics courses may be applied toward the law enforcement program degree requirements.)

Lecture 1-3 hours. Laboratory 1-4 hours.

Prerequisite(s): Departmental approval: contractual agreement.

MEDICAL ASSISTING - MA

MA-100 Introduction to Medical Terminology **3 Credits**

Introduction to medical terminology used by health care professionals with emphasis on the basics of word building, defining, spelling, reading practice, and pronunciation. Designed to provide students with foundation for medical word building and to help students who intend to enroll in Medical Terminology I and/or Anatomy and Physiology I in Biology.
Lecture 3 hours. Laboratory 0 hours.
Prerequisite(s): ENG-098 or eligibility for ENG-099.

MA-102 Medical Terminology I **3 Credits**

Terminology utilized by health care professionals. Emphasis on spelling, definition, pronunciation, and usage of basic and complex medical terms related to body as a whole and musculoskeletal, digestive, respiratory, urinary, female reproductive and male reproductive systems. Proficient use of medical dictionary is emphasized.
Lecture 3 hours. Laboratory 0 hours.
Prerequisite(s): Eligibility for ENG-101; recommended: concurrent enrollment in BIO-143.

MA-103 Medical Terminology II **3 Credits**

Terminology utilized by health care professionals. Emphasis on spelling, definition, pronunciation, and usage of basic and complex medical terms related to cardiovascular, hematology, lymphatic, integumentary, special senses, nervous, and endocrine systems. Proficient use of medical dictionary is emphasized.
Lecture 3 hours. Laboratory 0 hours.
Prerequisite(s): MA-102 or departmental approval: related work experience.

MA-122 Sterile Processing and Distribution I **4 Credits**

Principles of sterilization; basic microbiology and fundamentals of cleaning in central service; instrumentation and maintenance of equipment used in central service.
Lecture 4 hours. Laboratory 0 hours.
Prerequisite(s): Eligibility for ENG-101, or departmental approval: persons working in the medical assisting industry and applying for certification.

MA-123 Sterile Processing and Distribution II **4 Credits**

Principles of decontamination; principles of chemical, heat and gas sterilization; proper packaging; preparation of procedure trays; care of traction equipment and reusable needles and syringes; inventory control, storage and distribution of supplies.
Lecture 4 hours. Laboratory 0 hours.
Prerequisite(s): MA-122 or departmental approval: admission to the program

MA-126 Sterile Processing and Distribution Management **2 Credits**

Sterilization monitoring systems and quality assurance in central service; safety principles; role of central service in infection control; isolation procedures; evaluating use of disposables versus reusables; cost containment.
Lecture 2 hours. Laboratory 0 hours.
Prerequisite(s): MA-123, and concurrent with MA-129, or departmental approval.

MA-129 Sterile Processing Directed Practice **4 Credits**

Supervised learning experience. Students observe and practice basic functions of sterile processing technician; sterile practices, decontamination, detergents, disinfectants and instrumentation; wrapping, sterile set-ups; safety rules, regulations and quality assurance; inventory control and record keeping.
Lecture 2 hours. Laboratory 0 hours.
Other Required Hours: Directed Practice: 10 hours per week.
Prerequisite(s): MA-122.

MA-160 Medical Office Lab I **4 Credits**

Instruction and practice in microscopy, physical, chemical and microscopic examination of urine, and basic office serology. Proper specimen collection, quality control and safety in the medical office lab. Basic principles of metric system.
Lecture 3 hours. Laboratory 3 hours.
Prerequisite(s): Departmental approval: admission to the program.

MA-170 Medical Office Lab II **4 Credits**

Instruction and practice in basic office hematology, capillary blood collection, blood typing, coagulation studies and basic office chemistry.
Lecture 3 hours. Laboratory 3 hours. Prerequisite(s): MA-160.

MA-248 Medical Office Procedures **5 Credits**

Specific application of administrative duties and responsibilities to the medical office. Mailing, telephone services, appointments, written and oral communications, accounting, fee collections, record maintenance, insurance forms, machine transcription, typing and preparation of physicians' speeches and manuscripts.
Lecture 3 hours. Laboratory 4 hours.
Prerequisite(s): MA-102 and OADM-121, and department approval: admission to the program.

MA-249 Clinical Medical Assisting

5 Credits

Orientation to patient care in the physician's examination room: purpose, content and procedure for the health history; preparing the patient; and assisting the physician during the physical exam. Instruction on principles and practices in aseptic techniques, which include assisting with minor surgery, sterilization of instruments, preparation of basic surgical setups, and understanding and applying concepts and principles of universal precautions. Principles and practice of electrocardiography, venipuncture and injection. Fundamentals of nutrition and application of physical therapy and x-ray to medical assisting are also presented.

Lecture 3 hours. Laboratory 4 hours.

Prerequisite(s): Concurrent with MA-248, or departmental approval.

MA-254 Applied Medical Assisting

1 Credit

Principles, procedures and practical application of administrative, clinical and special medical assisting procedures. Provides an opportunity to compare and contrast practices in a variety of clinical settings. Discussion of certification and preparation to function as a certified medical assistant. Discussion of future trends in the medical assisting profession.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Concurrent with MA-255, and/or departmental approval.

MA-255 Medical Office Practicum

3 Credits

Supervised clinical experiences. Students will spend a minimum of twenty-four hours each week, which may include Saturdays, performing duties of a medical assistant while rotating through administrative and clinical areas of a physician's office, clinic or hospital.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 24 hours per week.

Prerequisite(s): MA-103, MA-248 and MA-249; and concurrent with MA-254.

MA-256 Allied Health Seminar

3 Credits

The Allied Health professional, evolving concepts, issues and problems. Interpersonal relations, communication, professional decorum, responsibilities and organizations. Professional development, continuing education, resources, the outline, annotated bibliography, and equivalency and proficiency examinations. Certification examination requirements. Employment opportunities, the resume and personal interview.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 3 hours per week.

Prerequisite(s): Eligibility for ENG-101.

MA-260 Medical Billing

2 Credits

Specific application of universal concepts of medical insurance and billing procedures. Understanding of insurance terminology, types of insurance coverage, obtaining consent for release of information, assignment of insurance benefits and claim forms preparation. Beneficial for persons practicing in the medical assisting or allied fields in updating medical billing skills.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): MA-100 or MA-102, or departmental approval.

MARKETING - MARK

MARK-201 Principles of Marketing

4 Credits

Introduction to the functions, institutions and basic problems associated with the marketing of goods and services from the viewpoint of the manager of a business firm operating within the social, economic and legal environments of today's business world.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

MARK-202 Principles of Salesmanship

4 Credits

Fundamentals of retail, wholesale, outside and service selling. Customer impact, merchandise and sales presentation. Closing and post-sale service. Principles of self-management, practice on sales preparation and demonstration. Relationship of the sales process to promotion and advertising.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): BADM-102 or departmental approval.

MARK-207 Retail Management

4 Credits

Introduction to the retail industry with a management perspective. Study of retailing environment, retail institutions, consumer behavior, location, organization, merchandise planning, pricing, customer services, promotion and career opportunities. Review of selected cases.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201 and BADM-102.

MARK-209 Marketing Management

4 Credits

Viewpoint of the marketing manager. Case approach to marketing policies and strategies, buyer behavior, product management, marketing channels, promotion and pricing.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201.

MARK-211 Introduction to World Trade

4 Credits

Current world export/import pattern. International credits, payments and collections. World geography. Transportation modes. Economics environment.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201 or departmental approval: the equivalent.

MARK-212 Import/Export-Procedures and Documentation

4 Credits

Import/export procedures and documentation in world trade. Import/export practices in a variety of raw, semi-finished and finished materials. Import/export companies. Documentation procedures.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201 or departmental approval: the equivalent.

MARK-213 International Payments, Credits & Collections

4 Credits

International payments, credits and collections. International currency exchange. International banking procedures.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201 or departmental approval: the equivalent.

MARK-224 Effective Selling Practices

4 Credits

Fine tuning the skills of the individuals who plan to sell professionally. Focus is on varied sales environments and the techniques suitable to productive selling in those environments. Number of sales roles will be assumed by the student. Small group instruction is emphasized.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-202.

MARK-225 Promotion Management

4 Credits

Study of the promotional mix-advertising, sales promotion, publicity and professional selling. Consideration given to promotion selection criteria including target markets, competition, budget constraints, and message credibility.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201.

MARK-250 Industrial Marketing

4 Credits

Principles and problems involved in marketing materials, equipment and supplies to manufacturers, other business firms and institutions which use the goods in further production. Analysis of the characteristics of the industrial market, channels of distribution, industrial selling, promotional practices and marketing policies.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-201.

MARK-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

MARK-266 Sales Management

4 Credits

Planning, implementing, and controlling the on-going sales program in an organization. Sales team, time and territory management are included. Focus on practical applications and case analysis.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MARK-224, or BADM-112 or concurrent enrollment.

MARK-270 Special and Current Topics in Marketing

1-4 Credits

Specialized course focusing on advances, changes, trends and emerging technology in marketing. Involves flexible program of guided reading, discussion and written assignments. (Repeatable. No more than 4 credits of special topics courses may be applied toward the marketing program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

MATHEMATICS - MATH

MATH-090 Basic Arithmetic

3 Credits

Review of basic arithmetic operations with whole numbers, decimals and an introduction to fractions. Applications and activities will build skills in estimation and approximation. Topics will include place value, reading and writing numbers, rounding the operations with whole numbers and decimals and the U.S. system of measurement.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MATH-091 Arithmetic and Prealgebra

3 Credits

Review of basic arithmetic and an introduction to some algebra concepts. Includes a basic review of whole numbers and decimals, addition, subtraction, multiplication and division of fractions, order of operations, ratio and proportion, percents, measurement with the metric system, estimation, applications, an introduction to integers and simple linear equations, and some definitions in geometry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-090 or departmental approval: appropriate placement test score.

MATH-092 Beginning Algebra I

3 Credits

Real numbers, basic algebraic operations and simplification of polynomials, linear equations and inequalities and applications.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-091 or departmental approval: appropriate placement test score or departmental evaluation.

MATH-093 Basic Algebra I

4 Credits

Real numbers, basic algebraic operations and simplification of polynomials, factoring, linear equations and inequalities, graphing lines and applications.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-091 or departmental approval.

MATH-094 Beginning Algebra II

3 Credits

Rectangular coordinate system, linear systems with applications, factoring, and introduction to algebraic fractions.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-092 or departmental approval.

MATH-096 Beginning Algebra III

3 Credits

Review of factoring, arithmetic operations with algebraic fractions and applications, exponents, radicals, quadratic equations and applications.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-094 or departmental approval.

MATH-097 Basic Algebra II

4 Credits

Rectangular coordinate system, solution of linear systems, quadratic equations, review of factoring, arithmetic operations with algebraic fractions, exponents, radicals and applications.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-093 or departmental approval.

MATH-098 Intensified Basic Algebra

6 Credits

Sets, real numbers, basic algebraic operations and simplification of polynomials, factoring, linear equations and inequalities, rectangular coordinate system, the straight line, solution of linear systems, algebraic fractions, exponents and radicals, solution of quadratic equations and applications.

Lecture 6 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: previous algebra class in high school or college, and sufficient score on departmental placement test.

MATH-100N Allied Health Sciences Mathematics

4 Credits

Fundamental operations of fractions and decimals, linear equations, percents, ratio and proportion, metric system, apothecary system, household (English) system, conversion factors, medication dosage calculations, solution, and pediatric dosages.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-093 or MATH-094, or departmental approval.

MATH-106 Survey of Mathematics

5 Credits

Mathematics in problem solving; problem solving using the scientific method, algebra, geometry, descriptive statistics, probability and the calculator/computer.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-093 or MATH-094 or MATH-098, or departmental approval.

MATH-107 Geometry

5 Credits

Geometry as a mathematical system, reasoning by analogy, induction and deduction, proofs involving congruent triangles, geometric constructions, indirect proofs, parallel lines, quadrilaterals, polygons, circles, similarity, non-euclidean geometries.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-096 or MATH-097 or MATH-098, or departmental approval.

MATH-114 Applied Algebra

3 credits

Designed to satisfy the mathematics graduation requirement for selected technical and health programs. Study of algebraic fractions, the metric system and denominate numbers, function and graphs, exponents and radicals, scientific notation, quadratic equations and descriptive geometry or descriptive statistics.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-096, or MATH-097, or MATH-098, or departmental approval.

MATH-116 Technical Mathematics I

5 Credits

Functions, rectangular coordinates and the graph of a function, right triangle trigonometry and its applications, systems of linear equations and determinants, factoring, quadratic equations, exponential and logarithmic functions, ratio, proportion and variation.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-096 or MATH-097 or MATH-098, or departmental approval.

MATH-120 Intermediate Algebra

5 Credits

Algebraic operation; solving equations and inequalities; lines, inequalities, and their graphs; introduction to conic sections; introduction to functions; exponential and logarithmic functions; systems of equations; application and techniques of problem solving; and awareness of computer applications to algebra.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-096 or MATH-097 or MATH-098, or departmental approval.

MATH-123 Mathematics for Medical Laboratory Technology

3 Credits

Basic mathematics, the metric system, conversion factors, measurement and temperature conversion, solutions, dilutions, PH-value, descriptive statistics and control charts.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-120 or departmental approval.

MATH-124 Business Statistics

4 Credits

Statistical concepts and techniques used in business decision-making activities. Includes organization, presentation, and description of data; probability distributions; sampling methods; sampling distribution of the mean -- estimation and hypothesis testing, simple and multiple correlation and regression analysis; index numbers; and time series analysis.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-120 or departmental approval.

MATH-125 Applied Algebra for Technology
4 credits

Designed for Tech Prep students in the Automotive Technology Program. Review of the real number system including operations, absolute value and inequalities, study of algebraic formulas, linear, quadratic, exponential and logarithmic functions, descriptive geometry and descriptive statistics. Applications and techniques of problem solving are stressed. Use of the graphing calculator/computer is an integral component of the course.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Identified Tech Prep student with appropriate placement score or with MATH-096, or MATH-097, or MATH-098, or departmental approval: equivalent knowledge.

MATH-126 Technical Mathematics II
5 Credits

Trigonometric functions of any angle, applications of vectors and oblique triangles, the j-operator, natural logarithms, sequences and series, and conic sections.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-116 or departmental approval.

MATH-135 Trigonometry
4 Credits

Trigonometric functions and their signs and values for all angles, vectors and oblique triangles, graphs of trigonometric functions, trigonometric identities and equations.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-120 and MATH-107, or departmental approval.

MATH-136 College Algebra
4 Credits

Polynomial, rational, exponential and logarithmic functions and graphs. Conic sections, inequalities, matrices and determinants. Theory of equations, series, sequences, binomial theorem and mathematical induction.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-120 or departmental approval.

MATH-141 Elementary Probability and Statistics I
4 Credits

First of a two-course introductory sequence on probability and statistics. Sequence is for students majoring in liberal arts, business, sciences, engineering, and education who desire an introduction to probability and statistics. Includes the study of descriptive statistics, elementary probability, probability distributions, normal distribution, binomial distribution, sampling concepts, sampling distribution of sample mean, estimation and hypothesis testing.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-116 or MATH-120, or departmental approval: equivalent knowledge.

MATH-142 Elementary Probability and Statistics II
4 Credits

Chi-square distribution and F distribution and their applications, inferences on variances and proportions, comparing two means, categorical data; correlation, simple and multiple regression, analysis of variance, nonparametric tests and use of computer.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-141 or departmental approval.

MATH-146 Technical Mathematics III
4 Credits

The derivative, applications to the derivative, integration and applications of integration.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-126 or departmental approval.

MATH-147 Mathematical Concepts I
4 Credits

Linear equations, linear inequalities, functions, linear systems. Matrix algebra, linear programming techniques as applied to business problems and the simplex method.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-120 or departmental approval.

MATH-148 Mathematical Concepts II
4 Credits

Fundamentals of differential calculus. Solution of exponential and logarithm equations, economic and business applications.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-147 or departmental approval.

MATH-149 Mathematical Concepts III
4 Credits

Fundamentals in integral calculus. Basic theory of probability. Applications to business and economics.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-148.

MATH-160 Numerical Methods
4 Credits

Computer programming and interactive methods to solve mathematical problems. FORTRAN language is used. Solving quadratic equation and linear systems, simulation and statistical problems, numerical methods for finding roots of high order equations and area under a curve, graphing.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-135 or departmental approval.

MATH-171 Elementary Mathematical Analysis I
4 Credits

Real numbers, equations and inequalities, functions and graphs, sequences and series, mathematical induction, theory of equations, systems of equations and inequalities.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-120.

MATH-172 Elementary Mathematical Analysis II **4 Credits**

Conic sections, exponential and logarithmic functions, trigonometric functions, elementary algebra of vectors, and complex numbers.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-171.

MATH-181 Calculus I **5 Credits**

Cartesian coordinates, functions and graphs, limits and continuity, differentiation of algebraic and trigonometric functions, and applications.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-172 or departmental approval.

MATH-182 Calculus II **5 Credits**

Differentials and antiderivatives, definite integral and its applications, logarithmic and exponential functions, trigonometric and inverse trigonometric functions.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-181.

MATH-183 Calculus III **5 Credits**

Techniques of integration, polar coordinates, conics, indeterminate forms and improper integrals, and infinite series.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-182.

MATH-211 Calculus IV **5 Credits**

Vectors, parametric equations, analytic geometry of space, partial differentiation, and multiple integrals.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-183.

MATH-241 Introduction to Linear Algebra **5 Credits**

Vector spaces, linear transformations and matrices, determinants, invariant subspaces, characteristic values and vectors, and applications.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-211.

MATH-252 Differential Equations **5 Credits**

Differential equations of first and higher-order; simultaneous, linear and homogeneous differential equations; solution by power series; laplace transforms; applications.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MATH-211.

MATH-270 Special Topics in Mathematics **1-5 Credits**

In-depth explorations of special topics in mathematics, statistics, and numerical methods. Topics offered will vary in response to the demands of industry, business, and students. (Repeatable. No more than 8 credits of special topics courses may be applied toward fulfilling elective graduation degree requirements.)

Lecture 1-5 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: dependent upon the special topics, the math counterparts will determine the prerequisite for each topic.

MANUFACTURING/INDUSTRIAL TECHNOLOGY - INDT -

INDT-122 Introduction to Manufacturing Management 3 Credits

Basic planning for manufacturing costs and materials. Management of work force, production and inventory. Personnel and Public Relations. Basic sequence of manufacturing, automation and computer integrated manufacturing (CIM).

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

INDT-129 Motion and Time Study 3 Credits

Methods of motion and time study in various jobs. Identifying motions, limiting motions, basic motion times, and work sampling. Wage incentive plans and basic wage rates in relation to motion and time study.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

INDT-164 Inventory Management 3 Credits

Comprehensive coverage of principles and techniques utilized in managing inventory including inventory classification, methods of replenishment, safety stock determination, order quantities, lot sizing, stockroom organization and physical counting.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-116 or concurrent enrollment, or departmental approval.

INDT-166 Materials Requirements Planning 3 Credits

Forecasting materials requirements with bills of materials to establish a time phased program of inventory replenishment for assembled products. Roles of a forecast, bills of materials, lead time accuracy, computer software and shop capacity planning.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None

INDT-169 Shop Capacity and Floor Control 3 Credits

Converting sales forecasts into a production plan and a master schedule. Techniques used by managers to plan, schedule, control and evaluate the effectiveness of shop production operations including control of work in process, expediting, determining priorities and shop paperwork system.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None

INDT-215 Industrial Drawing Essentials 3 Credits

Analysis and application of drawing symbols and terminology as applied to mechanical drawings and related to industrial processes. Topics will include detail and assembly drawings, geometric dimensioning and tolerancing, drawing notes and changes, and specialized print reading.

Lecture 2 hours.. Laboratory 2 hours.

Prerequisite(s): ENGR-121 and MECH-152, or departmental approval: equivalent courses and/or experience.

INDT-222 Manufacturing Management 3 Credits

Production systems and their development with emphasis on planning, scheduling management and control of various production systems. Computer integrated manufacturing reviewed as a basis for production.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): INDT-237 or concurrent enrollment, or departmental approval.

INDT-224 Employee and Plant Safety (formerly INDT-134) 3 Credits

Safety and protection of employees and company property. Security personnel. Security personnel and training. Maintenance of property for safety, fire equipment and its use. Employee protection against unsafe practices. Discussion of Workmen's Compensation and Occupational Safety and Health Act

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

INDT-225 Introduction to Computer Integrated Manufacturing (formerly INDT-135) 3 Credits

By use of computer-driven planning for manufacturing, the student will be exposed to computer techniques available to industry in developing product design, planning, manufacturing and quality control

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): INDT-122.

INDT-226 CIM - Design (formerly INDT-136) 3 Credits

Design of a product or service to be organized and/or manufactured. Specifying part or service dimensions, materials and tolerance function performance.

Standardization of parts or services to be produced. Modular design, reliability and quality evaluation of product or service. Use of computer integrated manufacturing techniques to complete the design process

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): INDT-225.

INDT-235 Computer Integrated Manufacturing Production Planning

3 Credits

By use of CIM methods and techniques, the student will use computer techniques and procedures to organize the people, machinery and materials for manufacturing a product or service.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): INDT-225 or departmental approval.

INDT-236 Computer Integrated Manufacturing Shop Floor Management

3 Credits

Using CIM methods and techniques, the student learns computer methods to direct, analyze and supervise manufacturing during the production process. Making modifications and changes during this activity will be included.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): INDT-225 or departmental approval.

INDT-237 Computer Integrated Manufacturing Production and Quality Control

4 Credits

Using CIM methods and techniques, the student will learn about verifying the quality and quantity of parts and total production as to accuracy and completeness. Review of the CIM process to correct and improve production procedures.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): INDT-225.

INDT-238 Industrial CAD I

4 Credits

Beginning through intermediate levels of computer-aided drafting. Basic and intermediate commands will be used for 2D and 3D drawings. Three dimensional wire-frame models will be rendered with different applications and rotated in space to produce different views. Multiple viewports will be used to enhance visualization and relate view projection

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ENGR-130A.

INDT-239 Industrial CAD II

4 Credits

Application of the computer, using drafting/design software, as a tool for industrial drafting. A complete set of production drawings are created using 2D and 3D drawing environments. Principles of size tolerancing, thread specification, welding joint description, and sectioned assemblies are directly applied. Emphasis is placed on 3D drawing by using wire frame rendering for enhanced part description. Software macros, and special language commands will be used to customize program operation. Analyzing mass properties for individual parts will be introduced. New manufacturing techniques relating drafting methods with production processes will be discussed

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): INDT-238.

INDT-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program

INDT-261 Introduction to Statistical Quality Control

3 Credits

Application of statistical techniques in the analysis of data for the control of product quality and costs. Control charts, sampling systems and procedures. Correction of product variability. Theory of probability fundamentals. Solution of statistical problems related to specifications, production or inspection. Statistical approach of acceptance sampling. Statistical quality control as a decision making tool.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

INDT-262 Internship

1-3 Credits

Limited to students in the Internship program. Employment in an approved training facility under College supervision. The requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of 12 credits

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Internship: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Internship program and formal admission into the Manufacturing/Industrial Technology program.

INDT-270 Special Topics in Manufacturing

1-4 Credits

New and current technology practices for manufacturing. Concepts are introduced and analyzed through lecture and demonstration. Topics offered will vary in response to changing technological trends. (Repeatable. No more than 3 credits of special topics courses may be applied toward the Manufacturing/Industrial Technology program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: industry experience or enrolled in second year of Manufacturing/Industrial Technology program; concurrent enrollment in INDT-272 may be required.

INDT-272 Special Topics in Manufacturing Laboratory Experience

1-2 Credits

New and current technology practices for manufacturing. Concepts are introduced and analyzed through demonstration and laboratory activities. Topics offered will vary in response to changing technological trends. (Repeatable. No more than 3 credits of special topics courses may be applied toward the Manufacturing/Industrial Technology program degree requirements.)

Lecture 0 hours. Laboratory 3-6 hours.

Prerequisite(s): Departmental approval: industry experience or enrolled in second year of Manufacturing/Industrial Technology program; concurrent enrollment in INDT-270 may be required.

INDT-291 Materials Handling and Plant Layout

3 Credits

Purpose, scope, transportation of materials, selection of equipment, objectives and cost of material handling are integrated with plant layout, materials, and product flows and the effective arrangement of manufacturing and service facilities. Emphasis is also placed on the coordination which is necessary between materials handling, plant layout, production planning and control, methods engineering, process engineering and production techniques.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): INDT-122 or equivalent.

MECHANICAL ENGINEERING TECHNOLOGY - MECH

MECH-150 Machine Tools

3 Credits

Fundamentals of metal cutting theory and factors affecting machinability. Cutting tools, speeds and feeds, cutting fluids, metal cutting and grinding machines, measurement and gaging.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

MECH-151 Metal Fabrication Methods

3 Credits

Various metal fabrication methods are discussed and experienced. Oxyacetylene, electro arc and tungsten inert gas welding, Brazing, soldering, low-temperature and resistance welding. Fasteners, adhesives and sheet metal joining and forming are covered.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

MECH-152 Manufacturing Processes

3 Credits

Theory and application of manufacturing methods, processes, tooling and equipment as related to modern industry. Introduction to process and physical metallurgy. Hot and cold forming of metals and plastics, heat treating and finishing methods are highlighted.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-116.

MECH-161 CNC Machining-Turning

3 Credits

Fundamental methods and uses of G-code programming for turning. Programming, memory inputs, editing and canned cycles. Calculating for angles, tangent points, speeds, feeds. Tool utilization, set-up procedures, threading and inspection.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MECH-150 or departmental approval.

MECH-162 CNC Machining-Milling

3 Credits

Fundamental methods and uses of numerical control by digital systems. Practice in manual programming, setup and machining of work pieces. Elements of computer-assisted programming.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MECH-150 or departmental approval.

MECH-163 Robotics I

3 Credits

Systems approach to the study of industrial robots. Overview of the history, definitions and classification. Robot arm geometry, power sources, path control, end-of-arm tooling, control, safety and programming. Robotic programs showing machine tending operations will also be examined.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: eligibility for MATH-126.

MECH-164 Robotics II

3 Credits

Introduction to robotic programming and robot subsystems. Operation of controllers, teach pendants, work cell programming and an introduction to system interfacing. Application in stacking, machine tool parts loading and unloading and assembly operations.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MECH-163.

MECH-201 Industrial Hydraulics

4 Credits

Oil hydraulics systems with applications to modern industrial uses such as transfer of power and automatic control of machines. Pumps, filters, valves, cylinders and accumulators as components of working circuits. Laboratory experience includes construction and testing of hydraulic circuits.

Lecture 3 hours. Laboratory 2 hours.

Prerequisite(s): PHYS-103 or departmental approval.

MECH-212 Machine Design

3 Credits

Elements of design and stress analysis as applied to basic machine elements including shafts, bearings, gears, chains, belts, springs, clutches and brakes.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENGR-254, ENGR-252, and ENGR-128.

MECH-214 Mechanisms

3 Credits

Displacement, velocity and acceleration applied to linkages, cams, gears and mechanical drives. Graphical techniques are employed to determine the operating characteristics of machines.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): ENGR-128 or MECH-241; and ENGR-252.

MECH-221 Applied Instrumentation - Measurement and Control

3 Credits

Theory and practice applied to industrial measuring and controlling instrumentation. Types of equipment used to measure weight, pressure flow, temperature and humidity are examined. Automatic control of the measured quantity is investigated.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): PHYS-103.

MECH-241 Mechanical CAD I

4 Credits

Applied engineering drawing course using the computer to produce drawings typically used in mechanical engineering applications. Instruction in the use of tolerances and tolerancing standards. Threads and threaded fasteners will be studied. Gearing, cam design and weldment design principles will be explained. Use of computer with AUTOCAD software to produce several detail drawings involving the use of various drawing commands. Standard format developed and used for these drawings. Use of threads, orthographic drawing, dimensioning and notations, and sectioning. Introductory assembly drawing, complete with bill of material, will be prepared. Set of welding symbols will be developed, stored and used in the production of a weldment drawing.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): ENGR-130A.

MECH-242 Mechanical CAD II

4 Credits

Applied engineering drawing course using the computer to produce drawings in advanced applications. Tablet calibration and configuration, and generation of tablet menus. Principles of geometric tolerancing and true position dimensioning will be explained, and computer aided drawings will be generated using symbols from specially prepared tablet menus. CAD macros will be explained and generated; introduction to use of AutoLISP. Approach to generation of three dimensional drawings, such as used in technical illustration applications, will be explained.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): MECH-241

MECH-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisite(s): Formal acceptance into the Cooperative Education Program.

MEDICAL LABORATORY TECHNOLOGY - MLT

MLT-103 Introduction to Blood Collection

4 credits

Introduction to the theory and practice of phlebotomy. Students learn proper aseptic technique and become familiar with phlebotomy equipment. Students perform several venipunctures and skin punctures on each other during the course. CDC guidelines for safety of the phlebotomist and patient are strictly enforced.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: acceptance into any College health careers/nursing degree, certificate, or competency program, and eligibility for ENG-101.

MLT-104 Clinical Phlebotomy Techniques

2 Credits

Reinforces theory and techniques of phlebotomy procedures introduced in the prerequisite. Students discuss and present additional tests and equipment introduced during clinical practice. Emphasis is placed upon communication, interpersonal skills, and ethical considerations relating to patients. Students perform a phlebotomy on each other while following strictly enforced CDC guidelines for safety.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): MLT-103 or departmental approval.

MLT-215 Medical Laboratory Technology Practicum

4 Credits

Supervised clinical experience. Students rotate through hematology, urinalysis, chemistry, microbiology, serology and immunohematology laboratories 28 hours per week meeting performance objectives of medical laboratory personnel at the MLT level. Course may be repeated for a maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 28 hours per week.

Prerequisite(s): MLT-103 or departmental approval.

MLT-216 Medical Laboratory Procedures

4 Credits

Introduction to hematology and immunohematology. Red and white cell counts. Normal leukocyte differentials, sedimentation rate, eosinophil count. Micro-hematocrit, manual hemoglobin, and selected coagulation studies.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MLT-103 and departmental approval.

MLT-217 Medical Laboratory Procedures

4 Credits

Introduction to immunology, blood banking, and serology. ABO and rh typing. Laboratory testing based on antigen-antibody reactions. Immunoglobulins. Diagnostic uses of serological tests. Genetic principles and antigens of blood grouping.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MLT-103 and departmental approval.

MLT-218 Medical Laboratory Procedures

4 Credits

Introduction to clinical microbiology. Identification of bacteria, fungus, and parasites. Culture media. Identification of pathogenesis and serologic detection of selected infectious agents. Asepsis and sterilization.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MLT-103 and departmental approval.

MLT-219 Medical Laboratory Procedures

4 Credits

Routine urinalysis and other selected renal function tests. Review of the urinary system. Handling and identification of glassware and equipment. Lab safety. Introduction of pH, indicators, buffers and stains.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MLT-103 and departmental approval.

MLT-220 Medical Laboratory Procedures

4 Credits

Application of fundamental clinical chemistry to the medical laboratory. Introduction to colorimetry and instrumentation. Selected manual tests. Preparation of reagents. Quality control methods.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MLT-103 and departmental approval.

MLT-240 Medical Technology Procedures

5 Credits

Principles, procedures and applications of complex, advanced diagnostic tests performed by medical laboratory personnel at the MLT level. Principles of advanced hematology and coagulation, including case studies.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MLT-216, MLT-217, MLT-218, MLT-219, MLT-220, and departmental approval.

MLT-241 Medical Technology Procedures

5 Credits

Principles, procedures and application of complex advanced diagnostic tests performed by medical laboratory personnel at the MLT level. Principles of advanced chemistry, urinalysis and renal function.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MLT-216, MLT-217, MLT-218, MLT-219, MLT-220, and departmental approval.

MLT-242 Medical Technology Procedures

5 Credits

Principles, procedures and applications of complex, advanced diagnostic tests performed by medical laboratory personnel at the MLT level. Principles of advanced blood banking, serology and microbiology.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): MLT-216, MLT-217, MLT-218, MLT-219, MLT-220, and departmental approval.

MUSIC - MUS

MUS-103 Survey and Appreciation of Music **4 Credits**

Introduction to elements and style of the musics of Western civilization. Artists and works are also studied in their cultural and historical context. Emphasis on increasing student's ability to listen to Western music with understanding. Minimum of four hours per week required in listening and analyzing recorded and/or live examples of Western music selected by the instructor. Recordings reserved in the library. Attendance at live performances required.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-104 Survey of Jazz **4 Credits**

Students are introduced to the basic elements and techniques of jazz. The function of jazz instrumentation is studied as well as jazz forms, jazz improvisation, and other musical elements and conventions which are indigenous to jazz. Characteristic features of various jazz styles and personalities are also studied. Emphasis on increasing student's ability to listen to jazz with understanding. Minimum of four hours per week required in listening and analyzing recorded and/or live examples of jazz selected by the instructor. Recordings will be on reserve in the library. Attendance at live performances will be required.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-105 Introduction to Music Business **3 Credits**

Orientation to the world of the music industry including careers in the recording and performing fields, retail music, publishing, arranging, composing (song writing) and showmanship.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-106 Survey of Rock and Roll **4 Credits**

Survey of the most influential and representative works and artists of rock music from the origins to the present. Includes the terminology, techniques, style, instrumentation, orchestration and lyrics, with references to the cultural and historical context. Also involves listening, reading and discussion of artists and recordings. Minimum of four hours per week required in listening and analyzing recorded and/or live examples of Western music selected by the instructor. Recordings will be on reserve in the library. Attendance at live performances will be required.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-111 Introduction to Music **3 Credits**

Introduction to the elements of music, music appreciation and elementary theory for pre-music and non-music majors. Terms, symbols, forms and concepts of music are explored through art and folk music styles to develop an understanding of how the basic materials of music combine.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-112 Music Reading Skills **3 Credits**

Introduction to the concepts and skills of reading music and music theory for pre-music and non-music majors. Includes notation, rhythm, scales, key signatures, intervals and triads.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-113 Introduction to Music Theory **3 Credits**

Introduction to terminology, symbols, skills and concepts of music theory for pre-music and non-music majors. Includes intervals, chords, compositional devices, transposition, analysis and basic music forms.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-112 or departmental approval.

MUS-118 African-American Music from 1700s through 1920s **3 Credits**

Chronological study of the history of African-American music from the eighteenth century to the 1920s. Oral traditions and performance practices are studied in their cultural and historical context. Religious, folk, popular and classical music, as well as the precursors of jazz, will be discussed. Student's awareness and understanding of the music will be increased. Outside assignment: listening and analyzing recorded and/or live examples of African-American music selected by instructor may be required.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-127 Basic Aural Skills **2 Credits**

Introduction to the development of aural skills for pre-music and non-music majors. Students learn pitch and rhythmic perception and discrimination skills necessary for elementary music performance.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): Departmental approval.

MUS-131 Class Keyboard 1

2 Credits

First course in basic piano techniques and performance skills for non-music and pre-music majors. Emphasis is placed on keyboard development in the areas of sight reading, improvisation and creativity, transposing and harmonizing melodies in various styles such as pop, jazz, hymns and classical. Solo and ensemble literature are included in the class procedures.

Lecture 1 hour. Laboratory 2 hours. Prerequisite(s): None.

MUS-132 Class Keyboard 2

2 Credits

Second course in functional piano techniques and keyboard skills for non-music and pre-music majors. Keyboard development in second level sight reading, transposition, improvisation and ensemble playing. Development of second level solo repertoire.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-131 or departmental approval.

MUS-133 Class Keyboard 3

2 Credits

Third course in functional piano skills for non-music and pre-music majors. Keyboard development in third level solo repertoire, sight reading, improvisation and ensemble playing. Emphasis on the jazz and pop styles.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-132 or departmental approval.

MUS-136 Class Voice

2 Credits

Basic techniques of voice production including breathing, diction, projection, tone-color and interpretation for non-music and pre-music majors. Progressive vocal exercises and studies. Application of principles to simple songs in English.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

MUS-140 Basic Applied Music

1 Credit

Individual instruction for non-music or pre-music majors on any standard band, orchestral instrument or voice. May be repeated for credit, however, no more than six credits may be applied to degree requirements. Special fee charge.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): Departmental approval.

MUS-141A Applied Double Bass 1

2 Credits

First level private double bass instruction. Includes bow choice, instrument and body placement for proper tone production; selected solo literature; selected method literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141B Applied Clarinet 1

2 Credits

First level private clarinet instruction. Includes emphasis on tone production, breathing techniques, proper embouchure formation, hand position, finger movement and articulation; selected solo and ensemble literature; selected method literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141C Applied Flute 1

2 Credits

First level private flute instruction. Includes emphasis on tone production, breathing techniques, proper embouchure formation, hand position, finger movement and articulation, and selected method literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141D Applied French Horn 1

2 Credits

First level private French horn instruction. Includes fundamental breathing technique, embouchure development, medium to intermediate solo literature, and medium to intermediate technical method literature. Performance jury is required at end of quarter. First in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141E Applied Guitar 1

2 Credits

First level private guitar instruction (technique and literature) with emphasis on contemporary styles. Performance jury required at end of quarter. First in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141F Applied Oboe 1

2 Credits

First level private oboe instruction. Includes emphasis on tone production, breathing techniques, proper embouchure formation, hand position, finger movement and articulation; selected solo, ensemble and method literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141G Applied Percussion 1

2 Credits

First level private percussion instruction. Includes studies in tone techniques and literature of the snare drum. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141H Applied Piano Minor 1

1 Credit

First level piano instruction for student with piano as minor instrument. Includes technical studies, scales, touch development, sight-reading and interpretation of easy-to-medium solo repertoire. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141J Applied Piano 1

2 Credits

First level private piano instruction. Includes primary velocity studies and transportation, performance practices, sight-reading and memorization techniques, and interpretation of advanced intermediate solo repertoire. Performance jury and one student accompaniment piece required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141K Applied Saxophone 1

2 Credits

First level saxophone instruction. Includes emphasis on tone production, breathing techniques, proper embouchure formation, hand position, finger movement and articulation; selected solo, ensemble and method literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141L Applied Trombone 1

2 Credits

First level private trombone instruction. Includes fundamental breathing techniques; mouthpiece, tongue and jaw placement for proper tone production; selected solo literature; selected method literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141M Applied Trumpet 1

2 Credits

First level private trumpet instruction. Includes fundamental breathing technique, embouchure development, medium to intermediate solo literature, and medium to intermediate technical method literature. Performance jury required at end of quarter. First in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141N Applied Tuba 1

2 Credits

First level private tuba instruction. Includes fundamentals breathing technique, embouchure development, medium to intermediate solo literature, and medium to intermediate technical method literature. Performance jury required at end of quarter. First in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141P Applied Viola 1

2 Credits

First level private viola instruction. Includes emphasis on tone production; wrist, finger and bow coordination and articulation; hand and arm position; selected solo and method literature. First in a series of six levels. Performance jury required at end of quarter.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141Q Applied Violin 1

2 Credits

First level private violin instruction, Includes emphasis on tone production; wrist, finger and bow coordination and articulation; hand and arm position; selected solo and method literature. First in a series of six levels. Performance jury required at end of quarter.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-141R Applied Voice 1

2 Credits

First level private voice instruction includes building self-confidence, values of correct posture, the importance of breath control including breathing and tonal production exercises, and selected song literature. Performance jury required at end of quarter. First in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): Placement audition, or departmental approval.

MUS-142A Applied Double Bass 2 2 Credits

Second level private double bass instruction. Includes attack and articulation techniques, high range hand position, selected solo and method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141A or departmental approval.

MUS-142B Applied Clarinet 2 2 Credits

Second level private clarinet instruction. Includes continued study and refinement of embouchure, breath control and tone quality, selected solo literature and selected method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141B or departmental approval.

MUS-142C Applied Flute 2 2 Credits

Second level private flute instruction. Includes attack and articulation techniques, continued study of breath control and tone quality, selected solo and method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141C or departmental approval.

MUS-142D Applied French Horn 2 2 Credits

Second level private French horn instruction. Includes articulation techniques (double-tongue), embouchure strength and flexibility, medium to intermediate solo literature, and medium to intermediate technical literature. Performance jury required at end of quarter. Second in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141D or departmental approval.

MUS-142E Applied Guitar 2 2 Credits

Second level private guitar instruction (technique and literature) with emphasis on contemporary styles. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141E or departmental approval.

MUS-142F Applied Oboe 2 2 Credits

Second level private oboe instruction. Includes continued study and refinement of embouchure, breath control and tone quality, selected solo literature and selected method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141F or departmental approval.

MUS-142G Applied Percussion 2 2 Credits

Second level private percussion instruction. Includes studies in tone techniques and literature of the snare drum and its roll in the drum set. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141G or departmental approval.

MUS-142H Applied Piano Minor 2 1 Credit

Second level private piano instruction for student with piano as minor instrument. Includes technical studies, scales, touch development, sight-reading and interpretation of medium-level solo repertoire. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): MUS-141H or departmental approval.

MUS-142J Applied Piano 2 2 Credits

Second level private piano instruction. Includes velocity studies and transposition, advanced intermediate sight reading and memorization techniques, and interpretation of advanced intermediate solo repertoire. Performance jury and one student accompaniment piece required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141J or departmental approval.

MUS-142K Applied Saxophone 2 2 Credits

Second level saxophone instruction. Includes continued study and refinement of embouchure, breath control and tone quality, selected solo literature and selected method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141K or departmental approval.

MUS-142L Applied Trombone 2 2 Credits

Second level private trombone instruction. Includes articulation techniques (double-tongue), embouchure strength and flexibility, selected solo literature and selected method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141L or departmental approval.

MUS-142M Applied Trumpet 2 2 Credits

Second level private trumpet instruction. Includes articulation techniques (double-tongue), embouchure strength and flexibility, medium to intermediate solo literature, and medium to intermediate technical literature. Performance jury required at end of quarter. Second in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141M or departmental approval.

MUS-142N Applied Tuba 2 2 Credits

Second level private tuba instruction. Includes articulation techniques (double-tongue), embouchure strength and flexibility, medium to intermediate solo literature, and medium to intermediate technical literature. Performance jury required at end of quarter. Second in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141N or departmental approval.

MUS-142P Applied Viola 2 2 Credits

Second level private instruction. Includes vibrato and bowing techniques (detache, martele, slurs), application of first through third hand positions, and selected solo and method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141P or departmental approval.

MUS-142Q Applied Violin 2 2 Credits

Second level private violin instruction. Includes vibrato and bowing techniques (detache, martele, slurs), application of first through third hand positions, and selected solo and method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141Q or departmental approval.

MUS-142R Applied Voice 2 2 Credits

Second level private voice instruction. Includes concentration on the attach and release, types of breathing, freedom, resonance, color, sonority, and beauty of tone. Selected solo and method literature. Performance jury required at end of quarter. Second in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-141R or departmental approval.

MUS-143A Applied Double Bass 3 2 Credits

Third level private double bass instruction. Includes introduction to the development of jazz walking bass lines, jazz pizzicato tone production, selected solo and method literature. Performance jury and one student recital piece required at end of quarter. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142A or departmental approval.

MUS-143B Applied Clarinet 3 2 Credits

Third level private clarinet instruction. Includes studies of trills, grace notes, and alternate fingerings as applied to selected method and solo literature. Performance jury at end of quarter and one student recital piece required. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142B or departmental approval.

MUS-143C Applied Flute 3 2 Credits

Third level private flute instruction. Includes double tonguing and various slur techniques, selected solo and method literature. Performance jury and one student recital piece required at end of quarter. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142C or departmental approval.

MUS-143D Applied French Horn 3 2 Credits

Third level private French horn instruction. Includes fundamentals of range development, elementary transposition, intermediate solo literature, intermediate technical method literature. Performance jury and one student recital piece required at end of quarter. Third in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142D or departmental approval.

MUS-143E Applied Guitar 3

2 Credits

Third level private guitar instruction (technique and literature) with emphasis on contemporary styles. Performance jury required at end of quarter. Third in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142E or departmental approval.

MUS-143F Applied Oboe 3

2 Credits

Third level private oboe instruction. Includes studies of trills, grace notes, and alternate fingerings as applied to selected method and solo literature. Performance jury at end of quarter and one student recital required. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142F or departmental approval.

MUS-143G Applied Percussion 3

2 Credits

Third level private percussion instruction. Includes studies in tone production, techniques and literature of the xylophone or marimba. Performance jury at end of quarter and one student recital piece required. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142G or departmental approval.

MUS-143H Applied Piano Minor 3

1 Credit

Third level private piano instruction for student with piano as minor instrument. Includes technical studies, minor scales, sight-reading and interpretation of medium to intermediate-level solo repertoire. Special emphasis placed on basic improvisational skills. Performance jury required at end of quarter. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): MUS-142H or departmental approval.

MUS-143J Applied Piano 3

2 Credits

Third level private piano instruction for student with piano as major instrument. Includes dexterity and velocity studies and transposition, memorization techniques, and interpretation of intermediate to advanced solo repertoire. Performance jury, one student accompaniment piece and one student recital piece required at end of quarter. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142J or departmental approval.

MUS-143K Applied Saxophone 3

2 Credits

Third level saxophone instruction. Includes studies of trills, grace notes and alternated fingerings as applied to selected method and solo literature. Performance jury and one student recital piece required at end of quarter. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142K or departmental approval.

MUS-143L Applied Trombone 3

2 Credits

Third level private trombone instruction. Includes fundamentals of range development, elementary transposition, selected solo and method literature. Performance jury at end of quarter and one student recital piece required. Third in a series of six.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142L or departmental approval.

MUS-143M Applied Trumpet 3

2 Credits

Third level private trumpet instruction. Includes fundamentals of range development, elementary transposition, intermediate solo literature and intermediate technical method literature. Performance jury and one student recital piece required at end of quarter. Third in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142M or departmental approval.

MUS-143N Applied Tuba 3

2 Credits

Third level private tuba instruction. Includes fundamentals of range development, elementary transposition, intermediate solo literature and intermediate technical method literature. Performance jury and one student recital piece required at end of quarter. Third in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142N or departmental approval.

MUS-143P Applied Viola 3

2 Credits

Third level private viola instruction. Emphasis on bowing techniques (spiccato, martele, slurs), attack and release, bow control, and selected solo and method literature. Performance jury at end of quarter and one student recital piece required. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142P or departmental approval.

MUS-143Q Applied Violin 3

2 Credits

Third level private violin instruction. Emphasis on bowing techniques (spiccato, martele, slurs) attack and release, bow control, and selected solo and method literature. Performance jury at end of quarter and one student recital piece required. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142Q or departmental approval.

MUS-143R Applied Voice 3

2 Credits

Third level private voice instruction. Includes concentration on diction as it pertains to vowels, consonants, articulations, diphthongs and triphthongs. Selected solo and method literature. Performance jury at end of quarter and one student recital piece required. Third in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-142R or departmental approval.

MUS-144 Aural Skills 1

2 Credits

First level interval identification, identification of chord quality, introduction to harmonic function, melodic dictation, rhythmic dictation, sight-singing and holistic listening. First in series of five levels.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): MUS-127 or departmental approval.

MUS-145 Aural Skills 2

2 Credits

Second level interval identification, identification of chord quality, harmonic function, melodic dictation, rhythmic dictation, sight-singing and holistic listening. Second in series of five levels.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): MUS-144 or departmental approval.

MUS-146 Aural Skills 3

2 Credits

Third level interval identification, identification of chord quality, harmonic function, melodic dictation, rhythmic dictation, sight-singing and holistic listening. Third in a series of five levels.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): MUS-145 or departmental approval.

MUS-147 Theory 1

3 Credits

Rudiments of musical materials to include harmonic, melodic, rhythmic and basic formal procedures with correlated, creative works and analysis. Integrates harmonic, contrapuntal, compositional and analytical approaches to the musical materials. First in a series of six courses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Placement examination, or departmental approval.

MUS-148 Theory 2

3 Credits

Harmonization of figured bass and chorale writing, including all diatonic inversions and melodic procedures, and all non-harmonic tones. Analysis of common-practice literature. Correlated, creative works and analysis. Integrates harmonic, contrapuntal, compositional and analytical approaches to the musical materials. Second in a series of six courses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-147 or departmental approval.

MUS-149 Theory 3

3 Credits

Introduction of modulation, chromatic materials and 20th century techniques. Correlated, creative works and analysis. Integrates harmonic, contrapuntal, compositional and analytical approaches to the musical materials. Third in a series of six courses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-148 or departmental approval.

MUS-151 Music for Elementary Education

3 Credits

Designed to orient elementary teachers to the role of music in the child's growth and development. Emphasis on creating a musical environment in the elementary school classroom. Study of the child's voice. Basic theory, including piano keyboard, musical symbols and terms. Use of the autoharp, recorder and rhythm instruments.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

MUS-152 Choir

1 Credit

Performance class with concentration on vocal problems and techniques. Development of standard repertoire, both sacred and secular, accompanied and a cappella for mixed voices. School and public performances required. May be repeated for credit; however, no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Placement audition, or departmental approval.

MUS-153 Choral Ensemble

1 Credit

Performance of choral literature from Renaissance through 20th century for small select ensemble. Public performance required. May be repeated for credit; however, no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Placement audition, or departmental approval.

MUS-155 Jazz Ensemble

1 Credit

Study and experimentation in performance of jazz ensemble literature and styles. Public performance required. May be repeated for credit; however, no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Placement audition, or departmental approval.

MUS-159 Concert Band

1 Credit

Performance of band and wind ensemble literature by wind and percussion players. Public performance required. May be repeated for credit; however, no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Placement audition, or departmental approval.

MUS-162 Orchestra

1 Credit

Performance of selected orchestra literature. Public performance required. May be repeated for credit; however, no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Placement audition, or departmental approval.

MUS-163 Instrumental Ensemble

1 Credit

Performance of selected instrumental ensemble traditional and contemporary literature. Public performance required. May be repeated for credit; however, no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): Placement audition, or departmental approval.

MUS-166 Jazz Theory 1

3 Credits

Introduction to the theoretical foundations of jazz including a systematic examination of scales and hybrid modes and their practical applications, chord construction and notation, chord/scale relationships and applications, melodic construction and development, and analysis of transcribed solos and compositions from the jazz repertoire.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-113 or departmental approval: placement test.

MUS-167 Jazz Theory 2

3 Credits

Second level study of the theoretical foundations of jazz including diatonic and chromatic harmony, harmonic embellishment and substitution, voicings, rhythm and meter, blues progressions and forms, and analysis of transcribed solos and compositions from the jazz repertoire.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-166 or departmental approval: placement test.

MUS-168 Jazz Theory 3

3 Credits

Third level study of the theoretical foundations of jazz including modal structures, rhythm changes and substitutions, composition and improvisation, and analysis of transcribed solos and compositions from the jazz repertoire.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-167 or departmental approval: placement test.

MUS-178 Improvisation 1

2 Credits

Introduction to melodic and rhythmic improvisation in a variety of styles such as rock, jazz, fusion, blues.

Application of basic scales and modes in performance with prerecorded rhythm section tapes. Recordings will be utilized to discuss and analyze major improvisational styles and performers. Introduction to transcribing techniques. Open to all instruments.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval.

MUS-179 Improvisation 2

2 Credits

Second level study of melodic and rhythmic improvisation in a variety of jazz styles. Emphasis is placed on the mixolydian and bebop seventh scales, the ii-V7-I progression, and the blues scale, blues form, and chord substitutions. Improvisational skills, instrumental performance, and jazz repertoire unique to this level will be developed with live and pre-recorded rhythm section accompaniment. Recordings and transcriptions of master performances will be utilized to discuss, analyze, and perform in improvisational styles assigned to this level. Open to all instruments.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-178 or departmental approval: audition.

MUS-181 Improvisation 3

2 Credits

Third level study of melodic and rhythmic improvisation in a variety of jazz styles. Emphasis on the locrian and aeolian scales, the minor ii7-V7-i progression, the lydian and phrygian modes, sectional forms and rhythm changes. Improvisational skills, instrumental performance, and jazz repertoire unique to this level will be developed with live and pre-recorded rhythm section accompaniment. Recordings and transcriptions of master performances will be utilized to discuss, analyze, and perform in improvisational styles assigned to this level. Open to all instruments.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-179 or departmental approval: audition.

MUS-186 Songwriting 1

3 Credits

Group instruction in art of contemporary songwriting including consideration of form, rhythm, lyric content, harmony, melody, arranging and development of individual style. Development of listening skills and criticism utilizing songs of class members and established artists. Includes discussion of music industry as pertains to songwriting.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

MUS-188 Introduction to Music Synthesis

3 Credits

Origin, development, and present-day applications of synthesized music. Principles of sound manipulation, prototypical synthesizers, MIDI sequencing, drum machines and digital sampling will be discussed and demonstrated.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-189 Music Business 1

3 Credits

Multiple facets of the music industry including exploration of career options, music business contracts, marketing of songs, music publishing, copyrights, and the recording industry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-190 Introduction to Music Recording

3 Credits

Overview of the music recording industry - its technology, business, and artistic considerations. Covers the roles of the producer, recording engineer, and other related occupations; the techniques, procedures and concepts of music recording; and recording equipment and processing, including basic principles of acoustics. Also offers career orientation/exploration.

Lecture 3 hour. Laboratory 0 hours.

Prerequisite(s): None.

MUS-194 Methods of Music Recording

3 Credits

Study of methods for music recording including acoustic, electric, analog, and digital recording; stereo imaging, audio to visual recording, stereo miking techniques, sampling and quantizing.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

MUS-195 Recording Mix 1

3 Credits

Introduction to the fundamentals of sound mixing and reproduction, covering the functions of the mixing console, equalization, compression/limiting and other processing equipment. Hands-on mixing projects.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MUS-194 or departmental approval.

MUS-197 Music Recording 1

3 Credits

Application of basic to intermediate level of procedures for recording music including studio set-up, signal-to-tape monitoring, microphone selection and positioning, use of direct boxes and gain-staging for optimum signal-to-noise ratio.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): None.

MUS-198 Sound Reinforcement 1

3 Credits

Application of basic to intermediate level of procedures for live sound reinforcement including system set up, equipment handling, microphone selection and placements, use of direct boxes and system evaluation.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MUS-195.

MUS-200 Music Seminar

1 Credit

Discussions on current topics related to music careers including presentations, performances, recitals and demonstrations; music academic and career exploration. May be repeated for an accrued maximum of nine credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Music pre-major, or departmental approval.

MUS-201 Recording Mix 2

3 Credits

In-depth study of sound mixing concepts, utilizing advanced techniques in signal processing for the creative mix. Hands-on training and lecture.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MUS-195.

MUS-202 Music Business 2

3 Credits

Artist promotion, management, music agents, music in advertising, concert promotion, arts administration and music entrepreneurship.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-189.

MUS-205 Production Techniques 1

3 Credits

Role of the recording producer, and commercial music production techniques; analysis of professional recordings; student production projects and in-class critiques.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MUS-189 and MUS-197.

MUS-206 Music Production for Advertising 3 Credits

Writing, recording and producing music commercials for radio and television; analysis of successful jingles; in-class observation and participation in producing music for advertising; student production of a music advertisement.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): None.

MUS-211 MIDI Synthesis and Sequencing 1 3 Credits

MIDI equipment, MIDI sequencing and recording techniques. Includes MIDI terminology, applications, and programming of the drum machine. Also covers MIDI hook-up and tape synchronization. Instruction through a combination of lecture and hands-on training.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MUS-188.

MUS-212 MIDI Synthesis and Sequencing 2 3 Credits

MIDI sequencing covering various keyboards, sequencers and controllers. Includes MIDI programming, editing, and interfacing. Students will have hands-on training with instructor supervision.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): MUS-211.

MUS-222 Music History and Literature 1 3 Credits

Chronological study of the history of Western European art music with detailed attention to selected pieces from Medieval, Baroque and Renaissance periods. Minimum of four hours per week spent in listening to and analyzing musical examples. Attendance at live performances may be required.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 and MUS 146, or departmental approval.

MUS-223 Music History and Literature 2 3 Credits

Chronological study of the history of Western European art music and its origins from mid-18th century through 19th century; detailed attention to selected pieces from Classic and Romantic periods. Minimum of four hours per week spent in listening to and analyzing musical examples. Attendance at live performances may be required.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 and MUS 146, or departmental approval.

MUS-224 Music History and Literature 3 3 Credits

Chronological study of the history of Western European art music and its origins from end of 19th century to current times; detailed attention to selected pieces from 20th century. Minimum of four hours per week spent in listening to and analyzing musical examples. Attendance at live performances may be required.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 and MUS 146, or departmental approval.

MUS-226 Jazz History and Literature 3 Credits

Chronological study of the history of jazz from its origins to the present with detailed attention to selected jazz masters and analysis of their most important works. Listening to and analyzing musical examples outside of class time may be necessary. Attendance at live performances may be required.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 or MUS-168 or MUS-181.

MUS-232 British Invasion 3 Credits

Survey of most influential and representative works and artists of the British Invasion (starting in 1964). The Beatles, Who, Rolling Stones, Kinks and their contemporaries will be studied. Aesthetics, terminology, technique, style, instrumentation, orchestration, lyrics and technology will be covered. Exposure to and discussion of recordings by those surveyed, as well as books, photos and possibly films.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-106 or departmental approval.

MUS-241A Applied Double Bass 4 2 Credits

Fourth level private double bass instruction. Includes orchestral techniques and excerpts, development of sight-reading skills and selected solo and method literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143A or departmental approval.

MUS-241B Applied Clarinet 4 2 Credits

Fourth level private clarinet instruction. Includes development of transpositional skills as well as extensions of technique through selected solo literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143B or departmental approval.

MUS-241C Applied Flute 4

2 Credits

Fourth level private flute instruction. Includes studies of trills, grace notes, development of formal analysis skills, as well as extension of techniques through solo literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143C or departmental approval.

MUS-241D Applied French Horn 4

2 Credits

Fourth level private French horn instruction. Includes medium to intermediate sight-reading skills, medium to intermediate transposition skills, intermediate solo literature, intermediate technical method literature.

Performance jury required at end of quarter. Fourth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143D or departmental approval.

MUS-241E Applied Guitar 4

2 Credits

Fourth level private guitar instruction (technique and literature) with emphasis on contemporary styles. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143E or departmental approval.

MUS-241F Applied Oboe 4

2 Credits

Fourth level private oboe instruction. Includes extensions of technique and musical form analysis through selected literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143F or departmental approval.

MUS-241G Applied Percussion 4

2 Credits

Fourth level private percussion instruction. Includes studies in tone production, techniques and literature of mallet instruments. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143G or departmental approval.

MUS-241H Applied Piano Minor 4

1 Credit

Fourth level private piano instruction for student with piano as minor instrument. Includes technical studies, minor scales, sight-reading and interpretation of intermediate solo repertoire. Emphasis is placed on improvisation skill 2. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): MUS-143H or departmental approval.

MUS-241J Applied Piano 4

2 Credits

Fourth level private piano instruction. Includes dexterity studies and transportation, improvisational skills and interpretation of advanced solo repertoire. Performance jury and one student accompaniment piece required at end of quarter. Fourth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143J or departmental approval.

MUS-241K Applied Saxophone 4

2 Credits

Fourth level saxophone instruction. Includes development of transpositional skills as well as development of vibrato and extensions of techniques through selected solo literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143K or departmental approval.

MUS-241L Applied Trombone 4

2 Credits

Fourth level private trombone instruction. Includes development of intermediate sight-reading skills, intermediate transposition skills, selected solo and method literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143L or departmental approval.

MUS-241M Applied Trumpet 4

2 Credits

Fourth level private trumpet instruction. Includes medium to intermediate sight-reading skills, medium to intermediate transposition skills, intermediate solo literature, intermediate technical method literature. Performance jury required at end of quarter. Fourth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143M or departmental approval.

MUS-241N Applied Tuba 4

2 Credits

Fourth level private tuba instruction. Includes medium to intermediate sight-reading skills, medium to intermediate transposition skills, intermediate solo literature, intermediate technical method literature. Performance jury required at end of quarter. Fourth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143N or departmental approval.

MUS-241P Applied Viola 4

2 Credits

Fourth level private viola instruction. Emphasis on orchestral techniques, advanced bowing techniques (tremolo, glissando, slurs) and selected solo and method literature. Performance jury at end of quarter required. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143P or departmental approval.

MUS-241Q Applied Violin 4

2 Credits

Fourth level private violin instruction. Emphasis on orchestral techniques, advanced bowing techniques (tremolo, glissando, slurs), and selected solo and method literature. Performance jury at end of quarter required. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143Q or departmental approval.

MUS-241R Applied Voice 4

2 Credits

Fourth level private voice instruction. Includes emphasis on legato and sostenuto, agility and flexibility, ornamentation and embellishment, accent and meter. Selected solo and method literature. Performance jury required at end of quarter. Fourth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-143R or departmental approval.

MUS-242A Applied Double Bass 5

2 Credits

Fifth level private double bass instruction. Includes idiomatic techniques of the bass, introduction to bass pedagogy and selected solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241A or departmental approval.

MUS-242B Applied Clarinet 5

2 Credits

Fifth level private clarinet instruction. Concentration on special problems of the clarinet, orchestral excerpts, introduction to clarinet pedagogy, solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241B or departmental approval.

MUS-242C Applied Flute 5

2 Credits

Fifth level private flute instruction. Includes orchestral techniques and excerpts, triple-tonguing and flutter tongue techniques, selected solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241C or departmental approval.

MUS-242D Applied French Horn 5

2 Credits

Fifth level private French horn instruction. Concentration in idiomatic techniques of the French horn, orchestral excerpts, introduction to French horn pedagogy, intermediate to advanced solo literature, intermediate to advanced method literature. Performance jury required at end of quarter. Fifth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241D or departmental approval.

MUS-242E Applied Guitar 5

2 Credits

Fifth level guitar instruction (technique and literature) with emphasis on contemporary styles. Performance jury required at end of quarter. Fifth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241E or departmental approval.

MUS-242F Applied Oboe 5

2 Credits

Fifth level private oboe instruction. Concentration on special problems of the oboe, orchestral excerpts, introduction to oboe pedagogy, solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241F or departmental approval.

MUS-242G Applied Percussion 5

2 Credits

Fifth level private percussion instruction. Includes studies in tone production, techniques and literature of the timpani. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241G or departmental approval.

MUS-242H Applied Piano Minor 5

1 Credit

Fifth level private piano instruction for student with piano as minor instrument. Includes technical studies, white key modes, sight-reading and interpretation of intermediate-level to advanced intermediate-level solo repertoire. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): MUS-241H or departmental approval.

MUS-242J Applied Piano 5

2 Credits

Fifth level private piano instruction for student with piano as major instrument. Includes dexterity studies and transposition, improvisational skills and interpretation of advanced solo repertoire. Performance jury and one student accompaniment piece required at end of quarter. Fifth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241J or departmental approval.

MUS-242K Applied Saxophone 5

2 Credits

Fifth level saxophone instruction. Concentration on special problems of the saxophone, introduction of the soprano saxophone pedagogy, solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241K or departmental approval.

MUS-242L Applied Trombone 5

2 Credits

Fifth level private trombone instruction. Concentration in idiomatic techniques of the trombone, orchestral excerpts, introduction to trombone pedagogy, solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241L or departmental approval.

MUS-242M Applied Trumpet 5

2 Credits

Fifth level private trumpet instruction. Concentration in idiomatic techniques of the trumpet, orchestral excerpts, introduction to trumpet pedagogy, intermediate to advanced solo literature, intermediate to advanced method literature. Performance jury required at end of quarter. Fifth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241M or departmental approval.

MUS-242N Applied Tuba 5

2 Credits

Fifth level private tuba instruction. Concentration in idiomatic techniques of the tuba, orchestral excerpts, introduction to tuba pedagogy, intermediate to advanced solo literature, intermediate to advanced method literature. Performance jury required at end of quarter. Fifth in series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241N or departmental approval.

MUS-242P Applied Viola 5

2 Credits

Fifth level private viola instruction. Emphasis on idiomatic bowing techniques in orchestral excerpts (harmonics, evaluations, double stops) and selected solo and method literature. Performance jury at end of quarter required. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241P or departmental approval.

MUS-242Q Applied Violin 5

2 Credits

Fifth level private violin instruction. Emphasis on idiomatic bowing techniques in orchestral excerpts (harmonics, elevations, double stops) and selected solo and method literature. Performance jury at end of quarter required. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241Q or departmental approval.

MUS-242R Applied Voice 5

2 Credits

Fifth level private voice instruction. Includes emphasis on extending the range, extending dynamic range, intonation, and singing recitative style. Selected solo and method literature. Performance jury required at end of quarter. Fifth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-241R or departmental approval.

MUS-243A Applied Double Bass 6

2 Credits

Sixth level private double bass instruction. Includes diagnostic practices, analysis of bass literature (solo, ensemble and orchestral) and bass method literature. Performance of selected solo and method literature. Performance jury and one student recital piece required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242A or departmental approval.

MUS-243B Applied Clarinet 6

2 Credits

Sixth level private clarinet instruction. Includes analysis of solo and orchestral clarinet literature, and special problems of the clarinetist. Performance of solo and method literature. Performance jury at end of quarter and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242B or departmental approval.

MUS-243C Applied Flute 6

2 Credits

Sixth level private flute instruction. Includes diagnostic practices, analysis of flute literature (solo, ensemble and orchestral) and flute method literature. Performance of solo and method literature. Performance jury and one student recital piece required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242C or departmental approval.

MUS-243D Applied French Horn 6

2 Credits

Sixth level private French horn instruction. Includes diagnostic practices, analysis of French horn literature (solo and orchestral) and French horn method literature. Performance of advanced solo and method literature. Performance jury and one student recital piece required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242D or departmental approval.

MUS-243E Applied Guitar 6

2 Credits

Sixth level private guitar instruction (technique and literature) with emphasis on contemporary styles. Performance jury required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242E or departmental approval.

MUS-243F Applied Oboe 6

2 Credits

Sixth level private oboe instruction. Includes analysis of solo and orchestral oboe literature, and special problems of the oboist. Performance of solo and method literature. Performance jury at end of quarter and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242F or departmental approval.

MUS-243G Applied Percussion 6

2 Credits

Sixth level percussion instruction. Includes studies in tone production, techniques and literature of the bass drum, cymbals, guiro, ratchet, tambourine, wind chimes, orchestra bells, castanets, anvil, vibra-slap, finger cymbals, triangle, and other sundry percussion instruments. Performance jury at end of quarter and one student recital piece required.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242G or departmental approval.

MUS-243H Applied Piano Minor 6

1 Credit

Sixth level private piano instruction for student with piano as minor instrument. Includes technical studies, all scales and modes, sight-reading and interpretation of advanced intermediate solo repertoire. Performance jury required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 7 hours per week. Prerequisite(s): MUS-242H or departmental approval.

MUS-243J Applied Piano 6

2 Credits

Sixth level private piano instruction for student with piano as major instrument. Includes virtuoso studies, community service performances, practice and interpretation of advanced solo repertoire. Performance jury, one student accompaniment piece and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242J or departmental approval.

MUS-243K Applied Saxophone 6

2 Credits

Sixth level saxophone instruction. Includes analysis of solo saxophone literature, and special problems of the saxophonist. Performance of solo and method literature. Performance jury and one student recital piece required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242K or departmental approval.

MUS-243L Applied Trombone 6

2 Credits

Sixth level private trombone instruction. Includes diagnostic practices, analysis of trombone literature (solo and orchestral) and trombone method literature.

Performance of solo and method literature. Performance jury at end of quarter and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242L or departmental approval.

MUS-243M Applied Trumpet 6

2 Credits

Sixth level private trumpet instruction. Includes diagnostic practices, analysis of trumpet literature (solo and orchestral) and trumpet method literature.

Performance of advanced solo and method literature. Performance jury and one student recital piece required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242M or departmental approval.

MUS-243N Applied Tuba 6

2 Credits

Sixth level private tuba instruction. Includes diagnostic practices, analysis of tuba literature (solo and orchestral) and tuba method literature. Performance of advanced solo and method literature. Performance jury and one student recital piece required at end of quarter. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242N or departmental approval.

MUS-243P Applied Viola 6

2 Credits

Sixth level private viola instruction. Includes diagnostic practices, analysis of viola literature (solo, ensemble and orchestral) and viola method literature. Performance jury at end of quarter and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242P or departmental approval.

MUS-243Q Applied Violin 6

2 Credits

Sixth level private violin instruction. Includes diagnostic practices, analysis of violin literature (solo, ensemble and orchestral) and violin method literature. Performance jury at end of quarter and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242Q or departmental approval.

MUS-243R Applied Voice 6

2 Credits

Sixth level private voice instruction. Includes emphasis on interpretive ability, stage department, program building, and memorization. Selected solo and method literature. Performance jury at end of quarter and one student recital piece required. Sixth in a series of six levels.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Concentrated practice: 14 hours per week. Prerequisite(s): MUS-242R or departmental approval.

MUS-244 Aural Skills 4

2 Credits

Fourth level interval identification. Identification of seventh chords, harmonic function, melodic dictation, rhythmic dictation, sight-singing and holistic listening. Fourth in a series of five levels.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): MUS-146 or departmental approval.

MUS-245 Aural Skills 5

2 Credits

Fifth level interval identification. Identification of seventh chords, harmonic function, melodic dictation, rhythmic dictation, sight-singing and holistic listening. Fifth in a series of five levels.

Lecture 0 hours. Laboratory 4 hours.

Prerequisite(s): MUS-244 or departmental approval.

MUS-247 Theory 4

3 Credits

Theory, analysis and composition of Western European art music and its origins through mid-18th century with detailed attention to selected pieces from the Medieval, Renaissance and Baroque periods. Fourth in a series of six courses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 and MUS-146, or departmental approval.

MUS-248 Theory 5

3 Credits

Theory, analysis and composition of Western European art music from mid-18th century through 19th century with detailed attention to selected pieces from Classic and Romantic periods. Fifth in a series of six courses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 and MUS-146, or departmental approval.

MUS-249 Theory 6

3 Credits

Theory, composition and analysis of Western European art music from end of 19th century to current times with detailed attention to selected pieces from the 20th century. Sixth in a series of six courses.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MUS-149 and MUS-146, or departmental approval.

MUS-270A Special Topics in Music

1-4 credits

Study of selected topics in art or pop music and in emerging music technologies (see schedule booklet for current offerings). (Repeatable. No more than eight credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

MUS-272 Special Topics in Music Laboratory Experience

1-4 credits

Specialized lab focuses on problem solving and performance within a selected topic (see schedule booklet for current offerings). (Repeatable. No more than eight credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 2-8 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

MUS-278 Improvisation 4

2 Credits

Fourth level study of melodic and rhythmic improvisation in a variety of jazz styles. Emphasis on the diminished modes, the whole-tone scale, the harmonic and melodic minor modes, harmonic structures and Coltrane substitutions. Improvisational skills, instrumental performance, and jazz repertoire unique to this level will be developed with live and pre-recorded rhythm section accompaniment. Recordings and transcriptions of master performances will be utilized to discuss, analyze, and perform in improvisational styles assigned to this level. Open to all instruments.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-181 or departmental approval: audition.

MUS-279 Improvisation 5

2 Credits

Fifth level study of melodic and rhythmic improvisation in a variety of jazz styles. Emphasis on locrian #2, diminished/whole-tone scales, minor cadences, lydian augmented and lydian dominant scales, and free forms. Improvisational skills, instrumental performance, and jazz repertoire unique to this level will be developed with live and pre-recorded rhythm section accompaniment. Recordings and transcriptions of master performances will be utilized to discuss, analyze, and perform in improvisational styles assigned to this level. Open to all instruments.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-278 or departmental approval: audition.

MUS-281 Improvisation 6

2 Credits

Sixth level study of melodic and rhythmic improvisation in a variety of jazz styles. Emphasis on pentatonic scales, four-note groupings derived from pentatonic scales, and intervallic improvisation. Improvisational skills, instrumental performance, and jazz repertoire unique to this level will be developed with live and pre-recorded rhythm section accompaniment. Recordings and transcriptions of master performances will be utilized to discuss, analyze, and perform in improvisational styles assigned to this level. Open to all instruments.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): MUS-279 or departmental approval: audition.

MUS-295 Special Studies in Jazz

1-2 Credits

Specially presented educational experiences related to the subject of jazz, attained through the media of television. Live performance or jazz clinics will serve as the basis for formalized lectures and discussion on campus that will examine aspects of jazz from the perspective of historical significance and performance techniques. Particular attention will be given to the elements of style, form, harmonic structure, melody and rhythm as related to the theory of jazz and as presented in such special performances. Students may earn up to 2 credits in one quarter; however, no more than 3 credits may be applied to degree requirements.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): MUS-104 or departmental approval.

NURSING - NURS

NURS-107 Basic Health Assessment

2 Credits

Focuses on the development of basic assessment skills including obtaining a health history, performing a physical assessment of the adult and documenting the findings. Major emphasis will be on developing interviewing skills and utilization of the basic assessment techniques of inspection, auscultation and palpation. Consideration will also be given to basic laboratory screening procedures.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): Departmental approval: completion of requirements for admission into the first clinical nursing course.

NURS-108 Basic Self-Care Needs

6 Credits

Basic nursing care of adults with minimal self-care deficits. Introduction to major curriculum themes: nursing process, communication, human development, cultural diversity, and associate degree nurse role. Basic concepts of pharmacology and normal nutrition.

Lecture 3 hours. Laboratory 9 hours.

Prerequisite(s): NURS-107 or concurrent enrollment; BIO-143 or concurrent enrollment; and PSY-102 or concurrent enrollment.

NURS-109 Health Deviations I

8 Credits

The nursing process provides the framework for delivery of nursing care for adults with self-care needs related to respiratory and musculoskeletal function, fluid and electrolyte balance, surgery and diabetes. Concepts of pain, teaching/learning and discharge planning will be addressed.

Lecture 4 hours. Laboratory 12 hours.

Prerequisite(s): NURS-108; BIO-144 or concurrent enrollment; and BIO-221 or concurrent enrollment.

NURS-110 Deviations in Mental Health

4 Credits

The nursing process provides the framework for delivery of nursing care for patients of various age groups experiencing mental health deviations. Concepts of anxiety, depression, mania and schizophrenia will be addressed. Skills of communication and problem solving will be learned.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): NURS-109; BIO-145 or concurrent enrollment; and PSY-202 or concurrent enrollment.

NURS-111 Self-Care - Elderly

4 Credits

Study of specialized care of the elderly and of the nursing care of conditions which most commonly occur in the elderly. Emphasis will be placed upon nursing process, communication, developmental needs, cultural diversity, and the nurse's role in providing care for this segment of our population.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): NURS-109; BIO-145 or concurrent enrollment; and PSY-202 or concurrent enrollment.

NURS-181 ACCESS in Nursing

4 Credits

Designed to ease the transition of Licensed Practical Nurses into the Associate Degree Nursing Program. Focuses on concepts basic to transition, therapeutic communication, nursing process and methods of teaching/learning.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval.

NURS-214 Self-Care - Childbearing

4 Credits

Focuses on the principles of self-care and the nursing process which provide the basis for family centered nursing care for patients throughout the childbearing cycle and neonatal period. Emphasis will be placed on normal childbearing, childbearing at risk and the high risk neonate.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): NURS-110 and NURS-111.

NURS-215 Health Deviations II

4 Credits

Focuses on health promotion and selected self-care deficits of patients and families from the onset of puberty throughout adulthood. Content emphasizes family structure and function, health promotion, health compromising behaviors, issues of sexuality and developmental needs across the reproductive life span. Additional content includes reproductive disorders, fertility, infertility and family planning, infectious disorders, oncology, urologic disorders and family violence.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): NURS-110 and NURS-111.

NURS-216 Health Deviations III

4 Credits

Focuses on the patient with chronic health deviations. Orem's principles of self care are utilized as the framework for the application of the nursing process in providing care for the culturally diverse patient. Emphasis is on alterations in circulation, ingestion and elimination, protective functioning, and self concept.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): NURS-214 and NURS-215.

Course Descriptions

Fall 1996-Summer 1998 Catalog

NURS-217 Self-Care - Children

4 Credits

Emphasis on the nursing process, developmental self-care needs, and health-deviation/self-care needs of the child ages infant through adolescent, and the family. Communication theory including teaching/learning strategies, cultural diversity, human growth and development, and the role of the nurse are integrated throughout the course as they relate to nursing care of the child and the family.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): NURS-214 and NURS-215.

NURS-218 Health Deviation IV

7 Credits

Focuses on the acute and critically ill patient. Utilizes Orem's principles of self-care and the nursing process for provision of care to culturally diverse patients and groups of patients. Emphasis is on care required to meet preventative, therapeutic and rehabilitative self-care deficits. Principles of management will be applied through a nursing leadership experience.

Lecture 3 hours. Laboratory 12 hours.

Prerequisite(s): NURS-216 and NURS-217; and concurrent with NURS-219.

NURS-219 Health Management

2 Credits

Exploration of Associate Degree Nursing role and transition into practice with emphasis on major health care issues, trends and patterns of care. Presentation and analysis of management concepts in health care organizations.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): NURS-216 and NURS-217; and concurrent with NURS-218.

NURS-281 Independent Study in Nursing

2 Credits

Independent study designed to provide a bridge among specific nursing courses. Content and mandatory objectives to be met will be determined by the Course Coordinators of the Nursing Program. May be repeated for an accrued maximum of four credits.

Lecture 1-2 hours. Laboratory 0-3 hours.

Prerequisite(s): Departmental approval.

OFFICE ADMINISTRATION - OADM

OADM-108 Business Language Skills

3 Credits

Fundamentals of business language with emphasis on grammatical correctness, acceptable usage, spelling, vocabulary, punctuation, capitalization, correct number usage, and proofreading. Limited writing involves choice of correct word usage, effective sentence structure, and paragraph construction. Required course for all OADM majors and certificate programs.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

OADM-109 Introductory Shorthand

4 Credits

Introduction to the theory and principles of Gregg shorthand with emphasis on reading, writing and transcription in preparation for speed dictation and transcription in more advanced courses in shorthand.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

OADM-111 Shorthand II

3 Credits

Brief and intensive review of Gregg shorthand and presentation of additional theory. Instruction in the taking of dictation and the preparation of typed transcripts from shorthand notes. Development of speed and accuracy.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-109, OADM-108, and OADM-119; or departmental approval: equivalent proficiency.

OADM-112 Shorthand III

3 Credits

Instruction in taking dictation and the transcription of mailable documents from shorthand notes. Emphasis on the development of speed and accuracy and the production of mailable documents.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-111, OADM-121, and OADM-108; or departmental approval: equivalent proficiency.

OADM-115 Accounting/Business Applications With Electronic Calculators

4 Credits

Development of the touch system on the 10-key calculator. Application of simple mathematical procedures to typical accounting, financial, marketing, economic, and other business problems. Instruction and practice in the operation of calculators as used in solving these problems.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): MATH-091 or equivalent.

OADM-116 Basic Filing

3 Credits

Study of the fundamentals of records handling from creation to destruction. Includes basic rules for filing and a study of the five basic methods.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

OADM-118 Keyboarding

2 Credits

Mastery of alphabetic keyboard using the touch system. Especially designed for the data processor, accountant and home/personal computer user. Also valuable for executives and managers using professional work stations. Minimum goal of 15 words a minute with not more than 5 errors on a three-minute timed writing. This course will not substitute for OADM course, "Introductory Typewriting".

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

OADM-119 Introductory Typewriting

3 Credits

Mastery of the alphabetic and numeric/symbol keyboard using the touch system, basic formatting, and introduction to word processing techniques with emphasis on the transfer of skills and knowledge learned to other types of electronic equipment. Minimum goal of 25 words a minute with not more than five errors on a three-minute timed writing. OADM course "Keyboarding" may not be substituted for this course.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): None.

OADM-121 Business Typewriting

3 Credits

Formatting and keying business correspondence, tables, and reports. Minimum goal of 35 words a minute with not more than five errors on a five-minute timed writing. Students with previous typewriting/keyboarding experience should consult with the OADM department prior to registration.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-119 or departmental approval: previous formal typewriting instruction.

OADM-122 Intermediate Business Typewriting

3 Credits

Formatting and keying business letters with special features, interoffice memorandums, ruled and boxed tables, business forms and advanced reports containing footnotes. Minimum goal of 45 words a minute with not more than five errors on a five-minute timed writing. Students with previous typewriting/keyboarding experience should consult with the OADM department prior to registration.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-121 or departmental approval: two quarters of previous formal typewriting instruction.

OADM-123 Typewriting Refresher

3 Credits

Accelerated review of typewriting concepts and skills. Designed for students who have had at least one year of formal typewriting instruction and desire a review of the information and skills taught in those courses. Minimum goal of 45 words a minute with not more than five errors on a five-minute timed writing. Not open to students who have received credit for OADM courses

"Introductory Typewriting" and "Business Typewriting".

As an option, student may select six (6) elective OADM credits.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: successful completion of at least one year of typewriting instruction other than at Cuyahoga Community College.

OADM-130 Microcomputer Word Processing

3 Credits

Development of techniques and skills used on a microcomputer utilizing an integrated software package combining three computer applications: word processing, database management, and spreadsheet analysis. Practical application in the creation and printing of documents with graphics, charting, and reporting capabilities. Especially designed for administrative assistants, executives and managers using professional work stations. Open to students with basic typewriting skills.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-118 or departmental approval.

OADM-131 Integrated Office Technology for Business

4 Credits

Development of skills on a microcomputer utilizing a variety of word processing, electronic spreadsheet, and database software packages. Practical applications in the creation and printing of graphs and the integration of graphics and financial applications with text. Especially designed for administrative assistants, accountants, and business persons utilizing a personal computer.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): OADM-119 Introductory Typewriting.

OADM-210 Business Communications

4 Credits

Study of modern business communication theory with its application to business. Instruction in business letters, research techniques, dictation, and formal and informal report preparation.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): ENG-102 or concurrent enrollment, or departmental approval.

OADM-215 Information Processing Concepts

3 Credits

Introduction to current information processing concepts and practices in the structure of the office, office environment, and career paths. Includes insight into the total concept of word/information processing.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

OADM-216 Basic Word/Information Processing

3 Credits

Development of basic techniques and skills used on a word/information processing system through practical application utilized to process data in an automated office.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-118 or OADM-119; or OADM-215 or concurrent enrollment; or instructor approval: verification of 15 wpm typewriting speed.

OADM-217 Intermediate Word/Information Processing

3 Credits

Development of word/information processing skills with emphasis on sophisticated applications using word processing systems.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-216 or departmental approval: equivalent proficiency.

OADM-218 Word/Information Processing Applications

3 Credits

Development of techniques and skills used to perform word/information processing applications on dedicated word processors and microcomputer-based systems. Includes an application to the integration of word processing with data processing, telecommunications, records processing and data base management to achieve a total information network.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-217 or departmental approval: equivalent proficiency.

OADM-219 Machine Transcription/Skill Building

3 Credits

Development of proficiency in transcribing a variety of high-quality business documents from machine dictation. Includes operation of transcription equipment, development of speed and accuracy in transcription, and mastery of other related skills. Minimum goal of 55 words a minute with not more than five errors on a five-minute timed writing.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): OADM-108; and OADM-217 or concurrent enrollment.

OADM-223 Telecommunications

4 Credits

Study of the range of worldwide information movement using the latest advances in telecommunications systems, applications, and equipment. Explores how telecommunications is the key that will link and interconnect other information processing segments. Student will develop a working knowledge of global and local systems, on-line data banks, satellite communications, and applications for integrating telecommunications into the automated office and electronic home.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

OADM-225 Information Processing Management

3 Credits

Procedures for determining the feasibility of organizing an information processing center. Guidelines for establishing, operating, and supervising an information processing system within the greater confines of an automated office system including personnel management.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): OADM-218 or concurrent enrollment.

OADM-230 Records Management

3 Credits

Study of the control of information and records with emphasis on management techniques for the electronic office to include micrographics, automation, electronic media, optical storage, and mass storage systems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): OADM-116 or departmental approval.

OADM-255 Office Administration Procedures and Practices

4 Credits

Finishing course for Office Administration majors designed to update knowledge in the rapidly changing office environment, and preparation for initial employment as well as promotions to supervisory and administrative positions.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): Departmental approval: sophomore standing.

OADM-260 Cooperative Field Experience

1-3 Credits

Employment in an approved training facility under College supervision. Experience in integrating and extending previously learned knowledge and skills to develop production level techniques and responsibilities common to office workers. One credit is awarded for 120 clock hours of approved work. Students may earn up to 3 credits in one quarter. Limited to students in the Cooperative Education Program. May be repeated for a cumulative maximum of 12 credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Cooperative Education Program.

OADM-270 Special Topics: Office Careers

Update/Trends

1-4 Credits

Specialized course focusing on current trends and developments in Office Administration. Involves flexible program of guided reading, discussion and written assignments. (Repeatable. No more than 3 credits of special topics courses may be applied toward the office administration program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): None.

OADM-272 Special Topics: Office Careers

Update/Trends Laboratory Experience

1-2 Credits

Specialized lab focuses on application portion of subject matter addressed in the special topics lecture .

Concentration on producing documents with systems software applications currently being used in the electronic office. (Repeatable. No more than three credits of special topics courses may be applied toward the Office Administration program degree requirements.)

Lecture 0 hrs. Laboratory 2-4 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

OPTICAL TECHNOLOGY - OPT

OPT-105 Theoretical Optics I

1 Credit

History of the optical field, and the manufacturing of glasses and plastic lenses. Introduction to modern lens construction and basis for design.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the optical technology program

OPT-106 Theoretical Optics II

1 Credit

Study of types of astigmatic refraction errors, optics of the cylinder, transportation and neutralization.

Lecture 1 hour. Laboratory 0 hours. Prerequisite(s): OPT-105.

OPT-107 Theoretical Optics III

1 Credit

Acquaint the student with the bifocal and trifocal lenses, the difference between the near and intermediate fields, the use of the Snelling Chart, and the ability to match a prescription to a lens style.

Lecture 1 hour. Laboratory 0 hours. Prerequisite(s): OPT-106

OPT-121 Mechanical Optics

3 Credits

Introduction to ophthalmic laboratory procedures. Abrasive cutting, lapping, surface inspection, and calculations for prisms and spheres. Care of laboratory equipment.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): Departmental approval: admission to the program.

OPT-122 Mechanical Optics

3 Credits

Astigmatic refraction errors. Lens aberrations and corrected curve series. Introduction to cylindrical surfacing.

Lecture 1 hour. Laboratory 6 hours. Prerequisite(s): OPT-121.

OPT-123 Mechanical Optics

3 Credits

Accommodations, visual fields and multifocal types. Anisometropia and bicentric grinding calculations. Surfacing techniques for various bifocal types.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): OPT-122.

OPT-124 Mechanical Optics

3 Credits

Theory and guide to plastic lenses with the application of lap selection, tints, and dyes.

Lecture 1 hour. Laboratory 6 hours. Prerequisite(s): OPT-123.

OPT-195 Ophthalmic Dispensing I

2 Credits

Introduction, history and development of modern opticianry, spectacles and fitting procedures.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to the program.

OPT-196 Ophthalmic Dispensing II

2 Credits

Principles of interpersonal relationships, instruction in basic frame types and parts and terminology used in basic frame markings and measurements.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): OPT-195.

OPT-197 Ophthalmic Dispensing III

3 Credits

Familiarize the student with verifying a prescription, ordering the correct absorptive or tinted lenses, inserting into the frame and keeping accurate records for future use.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-196.

OPT-198 Ophthalmic Refraction

3 Credits

Entry level knowledge of the theory and performance of refraction as it relates to the human eye. Study of the ocular media, ametropia neutralization, astigmatism, objective and subjective refraction, anomalies of vision, and clinical refraction and retinoscopy. A study of the pitfalls, aids to the refractionist and didactic refraction will be covered.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-106 or departmental approval: equivalent educational/work experience.

OPT-200 Optical Business

2 Credits

Responsibilities in an optical department, performance reviews, hiring personnel, scheduling work hours, inventory control, financial data and goal emphasis.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): OPT-197.

OPT-201 Ophthalmic Dispensing IV

3 Credits

Cataract lens fitting, vertex distance, progressive lenses, invisible lenses and clinical practice adjusting frames to patients.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-197.

OPT-202 Ophthalmic Dispensing V

3 Credits

On-site clinical practice and individual instruction in fitting, adjusting and dispensing of eyeglasses.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-201.

OPT-203 Ophthalmic Dispensing Applications

1 Credit

Participation in on-the-job problem solving applications, technical correlation and clinical applications as related to spectacles.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): OPT-202.

OPT-205 Contact Lenses I

2 Credits

Focuses on the history of contact lenses, the differences between hard and soft contact lenses, and the physical and physiological properties of contact lenses.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

OPT-211 Lens Design

3 Credits

Development of specifications and applications of the available multifocals, cataract lenses, and other special lens forms.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-122.

OPT-212 Contact Lenses II

3 Credits

Principles of operation and design of instruments applicable to fitting of contact lenses. Optical principles and materials applicable to the design processes and their relationship to the physical condition and structure of the eye in its abnormal state.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-205.

OPT-214 Contact Lenses III

3 Credits

Techniques of contact lenses fitting are examined and practical application of these techniques in the fitting process are experienced. Practice in fitting contact lenses. Fitting rules, wearing schedules and optics of contact lenses will be examined. Hard and soft contacts will be covered.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): OPT-212.

OPT-215 Contact Lenses Applications

1 Credit

Students will participate in on-the-job problem solving applications, technical correlation and clinical applications as related to contact lenses.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): OPT-202.

OPT-225 Mechanical Optics

3 Credits

Ophthalmic prisms, their effects, and designations. Lens design.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): OPT-124.

OPT-226 Mechanical Optics

3 Credits

Lens aberrations. Analysis of the visible spectrum, absorptive lenses and the theory and use of toughened safety lenses. Layout of different multifocal lenses. Emphasis on all phases of surfacing and finishing procedures for multifocal lenses.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): OPT-225.

OPT-227 Mechanical Optics

3 Credits

Formulas and their specific applications. Emphasis on lens identification, rimless and semi-rimless work.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): OPT-226.

OPT-275 Ophthalmic Dispensing Practicum

3 Credits

Students will work in selected optical departments performing general duties associated with the optical field. Each student will be assigned to a clinical site rotating from spectacle through contact lenses fitting and dispensing.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): Departmental approval: final quarter standing in optical technology.

OCCUPATIONAL THERAPY ASSISTANT - OTAT

OTAT-104 Resident Activity Coordinator Course

3 Credits

Introductory knowledge for people either considering or currently working in long-term care facilities.

Satisfactory completion of the course entitles the participant to a certificate from the Ohio Health Care Association.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

OTAT-111 Occupational Therapy Principles

3 Credits

Introduces the profession of occupational therapy, its place in the health care system, and the role and function of occupational therapy personnel. Includes the origins of the field, basic concepts, philosophy and practice functions of personnel. Also includes an overview of the process of service delivery, patterns of health care in the U.S., and specialty areas in the field.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to the program.

OTAT-112 Occupational Therapy Media

3 Credits

Development of skills in the use of selected media as a basic approach to occupational therapy practice. Includes general concepts of activity analysis and problem solving applied to the therapeutic process.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): BIO-143 and departmental approval.

OTAT-113 Fundamentals of Developmental

Disabilities

3 Credits

Overview of physical and psychosocial conditions commonly referred to and treated by occupational therapists presented within a developmental frame of reference covering infancy through adolescence.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): OTAT-111 and departmental approval.

OTAT-115 Techniques in Developmental Disabilities

4 Credits

Application of occupational therapy skills and techniques in treatment programs planned for patients in infancy through adolescence.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): OTAT-112 and departmental approval.

OTAT-117 Field Practice in Developmental Disabilities 2 Credits

Use of knowledge and skills learned in concurrent OTAT courses in clinical sites under the supervision of occupational therapy personnel in pediatric settings. Students will spend a minimum of 55 hours off-campus in assigned health agencies in addition to scheduled coursework.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Field practice: 55 hours per quarter off-campus. Prerequisite(s): OTAT-112 and departmental approval.

OTAT-120 Occupational Therapy Leisure Skills Development 3 Credits

Focuses on selection and use of recreational activities as a therapeutic modality in occupational therapy practice. Students will research appropriate recreational activities for all age groups in both physical disabilities and psychiatric occupational therapy settings. Simulated and actual patient/client experiences will further develop the therapeutic application of recreation in occupational therapy practice.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PSY-202 and departmental approval.

OTAT-123 Fundamentals of Physical Dysfunction 3 Credits

Overview of the dysfunctions typically seen in adulthood and commonly referred to and treated by occupational therapists.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PTAT-103, OTAT-113, and departmental approval.

OTAT-125 Techniques in Physical Dysfunction 4 Credits

Application of occupational therapy skills and techniques in treatment program planned for the patient/client with physical dysfunctions.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): OTAT-115, PTAT-103, and departmental approval.

OTAT-127 Physical Dysfunction Field Practice 2 Credits

Practice of knowledge and techniques learned in concurrent courses in clinical sites under the supervision of occupational therapy personnel. Student will spend a minimum of 55 hours off-campus in assigned health care agencies in addition to class work.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Field practice: 55 hours per quarter off-campus.

Prerequisite(s): OTAT-117 and departmental approval.

OTAT-213 Fundamentals of Psychosocial Dysfunction 3 Credits

Overview of psychosocial dysfunctions commonly seen in adults referred to occupational therapy for treatment.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PSY-107, OTAT-123, and departmental approval.

OTAT-215 Techniques in Psychosocial Dysfunction 4 Credits

Application of skills and techniques used in treatment programs for patients with psychosocial dysfunction.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PSY-107, OTAT-125, and departmental approval.

OTAT-217 Psychosocial Field Practice 2 Credits

Practice of knowledge and techniques learned in concurrent courses at clinical sites under the supervision of occupational therapy personnel. Student will spend a minimum of 55 hours off-campus in assigned health care agencies in addition to class work.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Field practice: 55 hours per quarter off-campus. Prerequisite(s): PSY-107, OTAT-127, and departmental approval.

OTAT-223 Fundamentals of Long Term Care 3 Credits

Overview of clinical conditions of geriatric patients and those in long-term care who are commonly referred to occupational therapy for treatment.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): OTAT-213 and departmental approval.

OTAT-225 Techniques in Long Term Care 4 Credits

Applications of skills and techniques in treatment programs planned for patients and those in long-term care facilities.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): OTAT-215 and departmental approval.

OTAT-227 Long Term Care Field Practice 2 Credits

Practice of knowledge and techniques learned in concurrent courses at clinical sites under the supervision of occupational therapy personnel. Student will spend a minimum of 55 hours off-campus in assigned health care agencies in addition to class work.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Field practice: 55 hours per quarter off-campus. Prerequisite(s): OTAT-217 and departmental approval.

OTAT-250 Occupational Therapy Topics

2 Credits

Integrates knowledge and skills acquired in academic work and field practice placements to clarify the role and function of the certified Occupational Therapy Assistant, involving issues and concepts and responsibility to professional organizations, continuing education and public relations.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

OTAT-264 Occupational Therapy Field Work Experience I

4 Credits

Students will be assigned to a full-time field placement under the supervision of a registered Occupational Therapist. This experience will be six weeks and provide the student opportunities to apply principles and techniques learned in class to the real treatment situation.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 40 hours per week for 6 weeks. Prerequisite(s): OTAT-225 and departmental approval

OTAT-265 Occupational Therapy Field Work Experience II

4 Credits

Students will be assigned to a second full-time field work placement under the supervision of a registered Occupational Therapist. This experience will run six weeks and complement the first experience. It will provide the student opportunities to apply principles and techniques learned in class to the real treatment situation.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 40 hours per week for 6 weeks. Prerequisite(s): OTAT-264 and departmental approval.

PHYSICIAN ASSISTANT - PA

PA-117 Technical Clinical Skills

1 Credit

Presentation and supervised practice of selected technical skills utilized by health care provider in the diagnostic and therapeutic management of patients.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant program.

PA-130 Introduction to Interviewing & Counseling

2 Credits

Instruction and practice in the fundamental skills required for effective patient-practitioner communication and the development of therapeutic interpersonal relations. Includes discussion of basic counseling theory and techniques, and obtaining and recording a complete medical history.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Admission to Physician Assistant or Surgeon's Assistant program, or departmental approval.

PA-131 History and Physical Examination Techniques I

2 Credits

Instruction, study and practice of the skills required to obtain a medical history; includes an introduction to medical record systems and recording of medical information. Instruction, study and practice of the skills required to perform a physical examination including recognition of normal and abnormal results.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): PA-130 or departmental approval.

PA-132 History and Physical Examination Techniques II

2 Credits

Instruction, study and practice of the skills required to perform a physical examination including recognition of normal and abnormal results. Includes instruction and practice for refinement of the skills related to medical history and medical record keeping.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): PA-131 or departmental approval.

PA-140 Pharmacology and Therapeutic Principles

4 Credits

Review of modern drug therapy including issues related to drug classification, pharmacodynamics, and the judicious use of pharmacotherapy, including drug product selection, administration and the recognition of adverse effects of drugs. Legal and regulatory aspects of drug therapy and the role of the physician/surgeon assistant will also be discussed.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

PA-145 Primary Care Psychiatric and Social Problems 2 Credits

Introduction to the psychiatric illnesses which may be encountered in a primary-care practice. Early recognition and management, including appropriate community agency referral, are discussed. Includes discussion of health maintenance measures, and social problems and their management.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PA-150 Introduction to Clinical Medicine 3 Credits

Presentation and discussion of medical problems and diseases encountered in primary care practice. Includes etiology, signs, symptoms, diagnostic data interpretation, clinical course, methods of management and potential complications. Differential diagnosis of related and similar diseases is also included.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

PA-151 Clinical Medicine 4 Credits

Presentation and discussion of medical problems encountered in both outpatient and inpatient settings. Includes etiology, signs, symptoms, interpretation of diagnostic data, methods of management and potential complications. Differential diagnosis of related and similar diseases is also included.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PA-150 or departmental approval.

PA-155 Primary Care Patient Management 2 Credits

Instruction and supervised practice in primary care patient management, including selected diagnostic and therapeutic procedures, correlations of medical history and physical examination data and integration of diagnostic skills through simulated case studies and problem-solving activities.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to the Physician Assistant program.

PA-250 Obstetrics, Gynecology and Pediatrics 3 Credits

Introduction to the evaluation and management of common gynecologic problems including family planning. Obstetrical evaluation and management from diagnosis of pregnancy through the six weeks postpartum check. Approach to the evaluation and management of common pediatric problems and diseases, and preventive medicine.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PA-271 Clinical Field Experience I 3 Credits

Supervised clinical field experience designed to emphasize the role of the assistant to the primary care physician as it relates to comprehensive health and medical care. Students are assigned to clinical rotations, and under the direct supervision of medical personnel gain exposure to professional practices. Rotations in surgery and emergency room may be included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): Departmental approval.

PA-272 Clinical Field Experience II 3 Credits

Supervised clinical field experience designed to emphasize the role of the assistant to the primary care physician. Students will be expected to demonstrate advancing assessment skills necessary to provide comprehensive health and medical care. Students will assume more individual responsibility as members of the medical team in the care of patients. Rotations in surgery and emergency room may be included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PA-271.

PA-273 Clinical Field Experience III 3 Credits

Supervised clinical field experience designed to emphasize the role of the assistant to the primary care physician. Students will be expected to perform in an expanded role and assume more responsibility with less direct supervision from medical personnel.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PA-272

PA-274 Clinical Field Experience IV 3 Credits

Supervised clinical field experience designed to emphasize the role of the assistant to the primary care physician. Students will be expected to perform in an expanded, competent, and professional role and assume more responsibility with less direct supervision from medical personnel.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PA-273.

PA-291 Clinical Seminar I 2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. Focuses on patient and professional communication and "lifelong learning."

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PA-271 and PA-272.

Course Descriptions

Fall 1996-Summer 1998 Catalog

PA-292 Clinical Seminar II

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. Focuses on job search skills and organization of the health care delivery system.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PA-273.

PA-293 Clinical Seminar III

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. Focus on professional associations and political/legislative issues.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PA-274.

PE - PHYSICAL EDUCATION

PE-103 Archery

1 Credit

Stresses skill development, safety practices and procedures in archery and its value as a lifetime activity.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-104 Volleyball

1 Credit

Stresses skill development, safety practices, procedures and competitive experience in volleyball and its value as a lifetime activity.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-105 Men's Basketball

1 Credit

Stresses skill development, safety practices and competitive experience in basketball and its value as a lifetime activity.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-106 Women's Basketball

1 Credit

Stresses skill development, safety practices and competitive experience in basketball and its value as a lifetime activity.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-107 Golf I

1 Credit

Instruction in and development of skills. Fundamentals of the swing and physical skills of the game. Includes history, rules and etiquette with stress on value as a lifetime activity. Additional fee required.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-108 Golf II

1 Credit

Advanced class in golf emphasizing a high level of proficiency in skill performance. Instruction will be on an individual basis directed toward improvement of the golf swing. Includes instruction and practice in the various shots. Additional fee required.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): PE-107 or departmental approval.

PE-109 Recreational Activities

1 Credit

Recreational games, activities with emphasis on skill development, participation, knowledge of rules and value as a lifetime activity. Activities may include badminton, table tennis, shuffleboard, darts and horseshoes, etc.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-110 Beginning Tennis

1 Credit

Instruction, practice, and skill development in forehand, backhand, serve, volley, rules and scoring will be included.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-111 Advanced Beginning Tennis

1 Credit

Instruction, practice and skill development in overhead smash, slice, chop and lob. Additional instruction and drills of beginner skills will be included.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-112 Intermediate Tennis

1 Credit

Instruction, practice and skill development in singles and doubles strategy and game play. Review and practice in beginner and advanced beginner skills.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-113 Racquetball

1 Credit

Instruction and participation in racquetball including competition.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-114 Advanced Racquetball

1 Credit

Advanced instruction and participation in racquetball including competition.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-115 Adapted Physical Education

1 Credit

Individualized instruction program for students with temporary or permanent physical limitations.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: contact Physical Education department.

PE-116 Jogging/Walking

1 Credit

Instruction and practice in jogging and/or walking including warmup, stretching, activity and cool down.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-117 Physical Conditioning I

2 Credits

Introduction to techniques, principles, and benefits of weight training using Universal and/or Nautilus equipment. Flexibility and aerobic activities will also be included.

Lecture 1 hour. Laboratory 2 hours. Prerequisite(s): None.

PE-118 Physical Conditioning II

1 Credit

Designed for students who have completed Physical Conditioning I and desire additional activity and instruction in the use of Universal and/or Nautilus equipment, aerobic activity and flexibility to establish a lifetime exercise program.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-119 Lifetime Fitness I

2 Credits

Instruction and participation in activities which incorporate the five components of fitness: body composition, cardiovascular fitness, muscle strength, muscle endurance and flexibility.

Lecture 1 hour. Laboratory 2 hours. Prerequisite(s): None.

PE-120 Lifetime Fitness II

1 Credit

Designed for students who completed Lifetime Fitness I and are interested in establishing a lifetime fitness program.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-122 High/Low Aerobics

1 Credit

Includes instruction and practice in aerobic dance movements which emphasize individual performance levels. Class will include ways to improve cardiovascular fitness, flexibility, muscle tone and strength. The aerobic phase of the class will include a mixture of high and low impact movements.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None

PE-124 Low Impact Aerobics

1 Credit

Instruction and practice in aerobic dancing movements which involve minimum stress of joints. Includes exercises to improve cardiovascular fitness, flexibility, muscle tone and strength.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-126 Step Aerobics

1 Credit

Instruction and practice in aerobic dance movements utilizing a step with emphasis on individual performance levels. Includes ways to improve cardiovascular fitness, flexibility, muscle tone and strength.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-126A Intermediate Step Aerobics

1 Credit

Instruction and practice in aerobic dance movements utilizing a step, with emphasis on individual performance levels. Students should have step aerobics experience as this course includes power movements, interval and circuit training. Students should have knowledge of basic step movements and terminology
Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): PE-126.

PE-128 Deep Water Exercise

1 Credit

Designed to promote health, physical fitness and cardiovascular fitness in the aquatic medium. Activities will be designed to fit the needs of swimmers of diverse abilities including fitness swimming, cardiovascular activities, muscle toning, strengthening, and flexibility. Students must be comfortable in deep water without use of a flotation device.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-129 Swim Conditioning

1 Credit

Emphasis on endurance swimming to improve cardiovascular level and general fitness.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-130 Shallow Water Exercise

1 Credit

Designed to promote health, physical fitness and cardiovascular fitness in the aquatic medium. Activities will be provided to fit the needs of persons of diverse abilities, both swimmers and non-swimmers, with emphasis upon the role of water exercise as a media for improving physical fitness.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-131 Beginning Swimming

1 Credit

Fundamental swimming skills for non-swimmers which include adjustment to water, floating, breathing techniques, kicking and stroking.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-132 Advanced Beginning Swimming

1 Credit

Development of deep water skills and instruction in swimming strokes including front crawl, elementary back stroke and side stroke. Knowledge of water safety skills included.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-133 Intermediate Swimming

1 Credit

Instruction and practice in front crawl, elementary back stroke, side stroke, breast stroke and back crawl.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-138 Skin and Scuba Diving

2 Credits

Instruction and participation in basic skills necessary for safe underwater diving. Additional fee required.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-141 Wrestling (Men)

1 Credit

Instruction and participation in wrestling as an individual sport. Emphasis on development of skills, physical condition and knowledge needed in the sport of wrestling.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-143 Fencing I

1 Credit

Instruction and participation in the elements of foil fencing. Emphasis placed on skill development, rules and safety for the beginner.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-144 Fencing II

1 Credit

Continued instruction and participation in foil as well as beginning instruction in sabre and epee. Emphasis placed upon skill development, rules, and safety practices.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-145 Fencing III

1 Credit

Skill development in epee and sabre. Stress rules, strategy and etiquette in competitive fencing.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-147 Soccer

1 Credit

Stresses individual skills, team play, rules and strategy.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-148 Track and Field

1 Credit

Introduction to techniques of track and field events. Opportunity for specialization.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-149 Skiing

1 Credit

Stresses skill development. Safety practices and their value as a lifetime activity. Extra fee required.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-150 Handball

1 Credit

Provides the student with an opportunity to learn to play handball, with emphasis on skill development, safety practices, competitive experience and instilling values as a lifetime sport.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-151 Outdoor Activities

2 Credits

Introduction to outdoor activities which includes instruction and participation in a specific area such as whitewater rafting, canoeing or sailing. Lecture sessions include preparations for the outdoor experience. Activity may include weekend and/or overnight participation.

Additional laboratory fees will vary according to activity. Check schedule planner for specific information.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

PE-152 Outdoor Activities II

2 Credits

Introduction to outdoor activities which includes instruction and participation in a specific area such as backpacking, hiking, or orienteering. Lecture sessions include preparation for the outdoor experience. Activity may include weekend and/or overnight participation.

Additional laboratory fees will vary according to activity. Check schedule planner for specific information.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): None.

PE-154 Self-Defense

1 Credit

Instruction, practice and skill development in basic self-defense. Appreciation of fitness and self-discipline.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-155A Tae-Kwon-Do

1 Credit

Participation and practice in advanced Korean Tae-Kwon-Do. Provides an increased understanding of the martial arts concept.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-156 Tumbling and Gymnastics

1 Credit

Introduction and practice in basic tumbling activities. Emphasis on techniques and development of skills and their combination. Conditioning, strengthening and flexibility exercises are introduced along with methods of presenting each activity.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-158 Gymnastic Apparatus

1 Credit

Introduction and practice in activities on the gymnastic apparatus (balance beam, uneven parallel bars, vaulting, floor exercise, pommel horse, rings, parallel bars and horizontal bar).

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): PE-156 or concurrent enrollment, or departmental approval.

PE-160 Bowling

1 Credit

Instruction and participation in bowling. Includes history, rules and etiquette. Practice in score keeping and tournament competition. Stress on value as a lifetime sport. Additional fee required.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): None.

PE-161 Bowling

1 Credit

Advanced class in bowling techniques. Instruction includes "corrections" of individual faults, various releases, proper lane adjustments, league organizations, league play and tournament competition. Additional fee required.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PE-163 Softball

1 Credit

Instruction and participation in softball including the rules and strategy.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-164 Fall Sports

1 Credit

Instruction and participation in season activities, of current interest to students, which are not included in course offerings.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-165 Spring Sports

1 Credit

Instruction and participation in season activities, of current interest to students, which are not included in course offerings.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-166 Winter Sports

1 Credit

Instruction and participation in season activities, of current interest to students, which are not included in course offerings.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-167 Judo

1 Credit

Instruction, practice and skill development in judo. Appreciation of fitness and self-discipline.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-168 Self Protection (Women)

1 Credit

Instruction in practical self-protection techniques with emphasis on using prevention skills to avoid physically threatening situations.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-169 Cycling

1 Credit

Emphasis on purchase of a bicycle to fit individual needs and price range, cycling safety, cycle repair and maintenance, conditioning for cyclists and cycling trips in and around the greater Cleveland area.

Lecture 0 hours. Laboratory 2 hours. Prerequisite(s): None.

PE-170 Individual Circuit Fitness I

2 Credits

Emphasis on individual participation in cardiovascular and resistance exercises employing various techniques. Affirming proper functioning of the body including the principles of fitness which are muscular strength and endurance, flexibility, cardiovascular endurance and body composition. An appreciation for the wellness concept and lifelong total fitness, utilizing a computer to chart one's progress, and doing self-appraisal and evaluations.

Lecture 1 hour. Laboratory 2 hours. Prerequisite(s): None.

PE-171 Individual Circuit Fitness II

1 Credit

Designed for students who have completed Individual Circuit Fitness I and desire advanced workouts and conditioning on Universal, Nautilus and various cardiovascular exercise equipment.

Lecture 0 hour. Laboratory 2 hours. Prerequisite(s): PE-170.

PE-172 Adaptive Individualized Circuit Training

1 Credit

Designed for student who desires to participate in an individualized circuit training program and has physical limitations which prevent participation in the individualized current fitness courses. Students must be registered with the Access Office to enroll. Contact Director for Physical Education.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: must be registered with Access Office.

PE-236 Lifeguard Training

2 Credits

Provides the necessary minimum skills training for a person to qualify to serve as a non-surf lifeguard.

Students who successfully complete the course will receive certification from the American Red Cross in Lifeguarding, First Aid and CPR for the Professional Rescuer. *Lecture 1 hour. Laboratory 2 hours.*

Prerequisite(s): Departmental approval: entry level skills required.

PE-239 Lifeguard Training Instructor

2 Credits

Provides the instruction in teaching all skills contained in the American Red Cross Lifeguarding, CPR for Professional Rescuer, and Community Water Safety courses. Upon successful completion of the course, students will receive American Red Cross certification as a Lifeguard and CPR for Professional Rescuer Instructor. *Lecture 1 hour. Laboratory 2 hours.*

Prerequisite(s): Departmental approval: entry level skills required.

PE-240 Water Safety Instructor

3 Credits

Provides instruction in teaching all skills and courses in the American Red Cross Learn-to-Swim program, Infant and Pre-school classes, Community Water Safety and Longfellow's Whale Tales. Upon successful completion of the course students will receive American Red Cross certification.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: entry level skills required.

PHILOSOPHY - PHIL

PHIL-100 Critical Thinking

4 Credits

Study of the principles of critical and creative thinking with emphasis on practical applications.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

PHIL-101 Introduction to Philosophy

4 Credits

Introduction to the basic concepts, reasoning skills, and attitudes employed in philosophical inquiry. Study and analysis of perennial philosophical problems through a critical examination of the writings of classical and contemporary philosophers. Helps prepare for further work in philosophy as well as in any area of learning requiring reasoned views.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHIL-102 Introduction to Logic

4 Credits

Introduction to the evaluation of arguments. Concentration on basic principles of formal logic and their application to the evaluation of arguments. Explores the notions of implication and proof, and includes the use of modern techniques of analysis.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHIL-201 Comparative World Religion

4 Credits

Study of the origin, nature and meaning of major world religions: Judaism, Christianity, Islam, Buddhism, Hinduism and Confucianism.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHIL-202 Ethics

4 credits

Study of systems and problems of human conduct and their application to man's moral problems and decisions.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

PHIL-203 Introduction to the Philosophy of Science

4 credits

Study of the formation of scientific concepts and examination of the structure of scientific investigation and its methods.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHIL-209 Bioethics

4 credits

Study and analysis of moral philosophy as related to issues in medicine with emphasis on developing the student's ability to correctly identify moral problems and to correctly defend their moral judgments in the area of medicine.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHIL-240 Philosophy of Art

4 credits

Examination of types of aesthetic theories, theory implications for art interpretation, art criticism, the creative activity of the artist and the appreciation of art objects.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHIL-270 Special Topics in Philosophy

1-5 Credits

Specialized course which focuses on selected topics in the philosophy. (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-5 hours. Laboratory 0 hours.

Prerequisite(s): None.

PHARMACY TECHNOLOGY - PHM

PHM-101 Introduction to Pharmacy

4 Credits

Introduction to pharmacy practice and the technician's role in hospital and community pharmacies. Topics include the pharmacy environment, pharmacy organizations and management, regulations and laws related to pharmacy practice and a general review of the various aspects of pharmacy practice.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PHM-102 Pharmaceutical Compounding

2 Credits

Introduction to pharmaceutical compounding and the technician's role relating in in-patient and out-patient medication preparation. Topics include the manufactured dosage forms as well as those specialty items which are made to the specifications for individual patients.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite: Admission to the Pharmacy Technology Program or departmental approval: permission of the program manager.

PHM-105 Hospital Pharmacy I

4 Credits

Technical procedures for the safe and accurate preparation of drugs in the hospital setting under the supervision of a registered pharmacist. Includes a review of the hospital pharmacy environment, drug compounding, packaging and labeling, and the theory and practice of outpatient, unit dose and controlled drug handling systems.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PHM-101.

PHM-106 Hospital Pharmacy II

4 Credits

Technical procedures associated with the preparation of drugs under the supervision of a pharmacist in the hospital setting. Major topics include aseptic techniques, sterile compounding, intravenous admixture systems, and purchase and inventory control.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PHM-105.

PHM-115 Pharmacology I

4 Credits

Basic overview of the body structure and functions as they relate to an understanding of the general principles of pharmacology: drug absorption, drug distribution, drug metabolism, and drug excretion.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Concurrent enrollment in BIO-121 and departmental approval: admission to the program.

PHM-116 Pharmacology II

4 Credits

Basic overview of the drug classes including generic and trade names, the disease states associated with the drug class as well as the drug therapy, indications, side-effects, along with the parameters for safe drug use. Drug classes include analgesics, cardiovasculars, antihypertensives, diuretics, hormones, and antibiotics.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PHM-115 or departmental approval.

PHM-117 Pharmacology III

4 Credits

Basic overview of the drug classes including generic and trade names, the disease states associated with the drug classes as well as the drug therapy, indications, side effects, along with the parameters for safe drug use. Drug classes include bronchodilators, vitamins, ophthalmics, hypoglycemics, antitussives, and otics.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PHM-116 or departmental approval

PHM-120 Community Pharmacy

4 Credits

Pharmacy as practiced in the community or retail setting. Emphasis is placed on a general knowledge of over-the-counter preparations and devices, prescription processing and pricing, business and inventory management, patient services and special health aids. Laboratory concentrated on the actual procedures required in the community pharmacy setting.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PHM-105.

PHM-123 Alternative Practices

2 Credits

Alternative practice possibilities for pharmacy technicians with the main emphasis on home health care, nursing home, health maintenance organizations, and drug sales representation.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): PHM-101.

PHM-124 Pharmacy Law and Ethics

1 Credit

Study of professional ethics and the philosophy, requirements, administration, and enforcement of local, state, and federal laws related to the practice of the profession of pharmacy.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): PHM-101.

PHM-211 Pharmacy Clinical I

4 Credits

Emphasizes the basics of pharmacy practice and exposes the student to practical aspects of dispensing, compounding and inventory control.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): PHM-106 and PHM-120.

PHM-212 Pharmacy Clinical II

4 Credits

Advanced practical experience in outpatient dispensing, inpatient dispensing, unit-dose systems, IV admixture systems, bulk and sterile compounding, purchasing and inventory control.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): PHM-211.

PHM-213 Pharmacy Clinical III

4 Credits

Provides the student with experience in the real world of pharmacy practice. Students attend a weekly seminar.

Supervision by instructional staff at the practice site.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Seminar: 2 hours per week.

Prerequisite(s): PHM-212.

PHM-270 Advanced Topics in Pharmacy Practice

2 Credits

Current topics and changes in the profession of pharmacy. Among topics discussed are legislative changes before the legislature, computer software advances, the emerging role of the technician in professional organizations and the changing roles of the pharmacist and pharmacy technician.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): PHM-212.

PHYSICS - PHYS

PHYS-101 Introductory Physics

4 credits

Introduction to elementary classical mechanics with emphasis on behavior of bodies under the influence of equilibrium and non-equilibrium forces. Study of rotational and translational motion. Selected topics from theory of fluids.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MATH-120, or MATH-116, or departmental approval: equivalent math knowledge.

PHYS-102 Introductory Physics

4 credits

Development of oscillatory phenomena with topics from simple harmonic motion, waves on a string and electromagnetic waves. Applications to such areas as direct current and alternating current circuits and optics.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MATH-120, or MATH-116, or departmental approval: equivalent math knowledge.

PHYS-103 Introductory Physics

4 credits

Laws of thermodynamics and such central concepts as specific heat. Topics from modern physics such as special relativity, atomic spectra, photoelectric and laser phenomena, atomic and nuclear physics, with emphasis on their influence on modern technology.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MATH-120, or MATH-116, or departmental approval: equivalent math knowledge.

PHYS-105 Everyday Physics

3 Credits

Explores the application of various fields of physics to everyday living. Household applications, sports applications and many others are discussed. Time will also be spent on some modern physics topics.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): ENG-101; and MATH-096 or MATH-097 or MATH-098.

PHYS-110 Physics of Ultrasound

3 Credits

Basic physics and related mathematics as applied to cardiac ultrasound. Study of basic acoustical principles, sound transmission, signal processing, instrumentation and bioeffects will be covered.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): MATH-114 and departmental approval: admission to Cardiovascular Technology program or Radiography/Diagnostic Medical Sonography program or current equivalent educational/clinical experience.

PHYS-111 Physics for Health Technologies

4 Credits

Basic physics as applied to health technologies; encompassing measurement techniques, force and motion of solids and fluids, pressure, mechanical advantages, energy and work, electricity, wave phenomena and heat.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): MATH-091 or departmental approval.

PHYS-130 Physics of Optical Materials

6 Credits

Study of the basic structure and properties of materials related to opticianry. Includes structure, density, conductivity, and the effects of mechanical forces on the materials. Special emphasis will be given to the nature and theory of light and its application to ophthalmic optics.

Lecture 4 hours. Laboratory 6 hours.

Prerequisite(s): MATH-120 and departmental approval: admission to the Optical Technology program.

PHYS-226 Fundamentals of Radiographic Physics and Quality Control

5 Credits

Study of x-ray circuitry, x-ray generators, mobile radiographic equipment, and radiographic quality control. Emphasis on the art of automatic exposure devices. Includes laboratory application of quality assurance testing tools.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval.

PHYS-227 Advanced Sonography Physics

3 Credits

Ultrasound physics and principles including instrumentation, equipment standards, calibration, operation and quality control. Biological effects of ultrasound.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PHYS-110 or departmental approval: current equivalent educational/clinical experience.

PHYS-231 Engineering Physics I

5 Credits

Discussion of classical mechanics at the calculus level. Theory covers kinematics, dynamics, translations, and rotations as is traditional for physics and engineering majors.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): Concurrent with MATH-181, and departmental approval: completion of PHYS-101, or high school physics.

PHYS-232 Engineering Physics II

5 Credits

Discussion of electricity and magnetism at the calculus level. Theory covers electrostatics, electrodynamics, magnetism, etc. as is traditional for physics and engineering majors.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): PHYS-231; and concurrent with MATH 182.

PHYS-233 Engineering Physics III

5 Credits

Discussion of wave phenomena including sound waves, mechanical waves, geometrical and wave optics, light and quantum physics.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): PHYS-232; and concurrent with MATH-183.

PHYS-240 Modern Physics

4 Credits

Discussion of modern physics for students in science and engineering. Relativity, wave nature of matter, hydrogen atom, properties of the nucleus and nuclear relations and X-rays are discussed.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PHYS-232; and concurrent with MATH-183.

PHYS-270 Special Topics in Physics

1-4 Credits

In-depth study of topics in the field of physics, primarily 20th century or "modern" physics. Topics such as relativity, lasers, chaos, elementary particles, nuclear physics, rocket propulsion, alternative energy sources, etc. are possible topics. Topics may vary from quarter to quarter. (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

PARALEGAL STUDIES - PL

PL-101 Introduction to the Paralegal Profession **3 Credits**

Discussion of the practical realities of the legal field, with special emphasis on the legal status of paralegals and the ethical constraints placed upon those involved in the legal profession. Students will be introduced to specific paralegal skills, a variety of legal settings, an overview of the U.S. legal system, and the organization of a typical law case, and will be expected to begin their professional development, including exploring employment opportunities and paralegal organizations.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

PL-103 Civil Procedure **4 Credits**

Overview of the Rules of Ohio Civil Courts which govern the civil lawsuit. The reading, interpretation, and application of Civil rules of court pleadings, venue, commencement of an action, service, motion practice and discovery. Initiation of a portfolio of pleadings and legal documents to be further developed throughout the student's program of study.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PL-112 Real Property Transactions **3 Credits**

Survey of the law of personal and real property, including landlord-tenant laws, as well as the more common types of real estate conveyances. Landlord-tenant statutory law is examined. Emphasis placed on practical application of theory. Actions that tenants and landlords may take to protect their interests are also examined.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PL-103 or departmental approval.

PL-121 Legal Research and Drafting **3 Credits**

Introduction to the rudiments essential to the effective identification, analysis, and research of legal issues. Students will learn to formulate research plans which will provide for efficient use of the law library and the utilization of a working knowledge of those reference books and indices which are most commonly used in the court system of the State of Ohio. Legal writing will be emphasized throughout the course by means of research projects requiring the students to draft legal memoranda and opinion letters consistent with professional standards of format, style and quality. Special emphasis will be placed on the methods of verification and cite-checking used in today's law office.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): PL-101.

PL-125 Law Practice Management **3 Credits**

Introduction to the daily tasks handled in the law office. Emphasis placed on understanding office procedures necessary to the law office, including accurate record-keeping, financial management, budgets, marketing, administrative and practice systems, personnel, billing and docketing procedures. Lab requires that students "sample" computer programs in the areas of word processing, database, spreadsheet, scheduling, billing and indexing.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): PL-103, or departmental approval: equivalent knowledge and/or work experience.

PL-130 Business Transactions **4 Credits**

Introduction to the laws that structure various business relationships such as agency, contracts, bailments, sales, secured transactions and commercial paper. Utilization of appropriate forms to structure such relationships.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PL-204 Business Organizations **4 Credits**

Introduction to various business entities including sole proprietorships, partnerships, corporations and licensed professional associations. Drafting of partnership agreements and incorporation documents. Introduction tax consideration and Securities and Exchange Commission ramifications.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PL-130, or departmental approval: equivalent knowledge.

PL-205 Advanced Legal Research and Drafting **4 Credits**

Study of the fundamentals of computer-assisted legal research. Training in formulating, processing, compiling and evaluating research via the LEXIS and/or WESTLAW data bases. Emphasis on the relationship between manual or traditional research methods and computer-assisted research. Refinement of analysis and writing skills to prepare and submit a number of succinct, but comprehensive, legal memoranda requiring research via LEXIS and/or WESTLAW.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PL-121.

PL-212 Legal Practicum

2 Credits

Supervised work experience in the paralegal profession and the legal work world. Placement in a law firm or other legal setting, and performance of paralegal duties under the direct supervision of an attorney.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 14 hours per week.

Prerequisite(s): Concurrent enrollment in PL-213, and departmental approval: completion of all required courses and completion of all program requirements. (May be taken concurrently with one Paralegal elective.)

PL-213 Legal Practicum Seminar

1 Credit

Seminar course to be taken concurrently with paralegal course "Legal Practicum". Students will meet weekly to discuss experience gained from practicum experience and various issues to enrich their work experience.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Concurrent enrollment in PL-212, and departmental approval: completion of all required courses and completion of all program requirements. (May be taken concurrently with one Paralegal elective.)

PL-215 Probate Law

3 Credits

Study of the common forms estate administration, including a study of the Ohio Probate Code. Procedure for estate administration including discovery and determination of assets, taxation of estates and transfer of property from decedent to beneficiaries.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

PL-220 Domestic Relations

4 Credits

Overview of the basic principles and current trends in family law including marriage, annulment, dissolution, divorce, child support and custody, visitation, and adoption. Emphasis will be placed on the drafting of appropriate documents and various court proceedings.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PL-103.

PL-221 Litigation and Trial Preparation

4 Credits

Emphasis on coordinating paralegal and attorney responsibilities in the trial setting. Students will be expected to prepare a trial notebook which includes the theory for a civil claim, pleadings and motions, discovery documents, direct and cross-examination questions, and exhibits for use in trial. Overview of criminal procedure, and a thorough study of the rules of evidence.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PL-103 and departmental approval.

PL-222 Worker's Compensation Law

3 Credits

Study of the Worker's Compensation Bureau and the Ohio Industrial Commission. Emphasis on the various procedures and forms involved in the filing of a Worker's Compensation claim. Proper channels for appeal of decisions also reviewed.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PL-103 or departmental approval.

PL-223 Bankruptcy Law

3 Credits

Introduction to the Law of Bankruptcy, specifically Chapters 7, 11 and 13 of the United States Bankruptcy Code and applicable Ohio law. Preparation of bankruptcy petitions, related schedules and any other documents needed for the initial filing of petitions under the United States Bankruptcy Code Chapters 7 and 11.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PL-103 or departmental approval.

PL-270 Special Topics in Paralegal Studies

1-4 Credits

Specialized course focuses on current trends and developing specialties in the field of law for the paralegal. Topics may include tort law, tax law, alternative dispute resolution, estate planning, environmental law, etc. (Repeatable. No more than 8 credits of special topics courses may be applied toward the paralegal studies program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

POLITICAL SCIENCE - POL

POL-101 American National Government

4 Credits

Nature, purpose and forms of government of the United States at the national level. Relationship between process, function, and structure. Dynamics of political change. Outstanding problems of modern society.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

POL-102 State and Local Government

4 Credits

Examination of state and local governments, with special attention to Ohio governments, intergovernmental relations, metropolitan problems and public policy.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

POL-106 Political Systems of Africa

4 Credits

Comparative discussion of selected topics on national and international politics in black Africa with particular focus on the interrelationship between internal and external affairs. Examination of colonial policies, party systems, interest groups and modes of development.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): POL-101.

POL-110 Introduction to Constitutional Law

4 Credits

Origins and development of the American constitutional system and basic concepts of jurisprudence relating to the political and social systems. Emphasizes role of Supreme Court in policy making and its major decisions concerning important areas of litigation.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): POL-101.

POL-201 Contemporary World Affairs

4 Credits

Problem study of modern international relations and of the forces which confront policymakers. Special emphasis on current areas of crisis. Designed primarily for students who seek an understanding of the United States in a tense and highly competitive political world.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): POL-101 or departmental approval.

POL-203 Western Representative Governments

4 Credits

Study of European representative political systems: Great Britain, France and West Germany. Comparative approach to the study of politics, institutions, processes, problems, public policy and prospects.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): POL-101.

POL-204 Communist Governments

4 Credits

Study of communist political systems: Soviet Union, China, and Eastern Europe. Governing political concepts, institutions, processes, problems and prospects.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): POL-101.

POL-270 Special Topics in Political Science

1-4 Credits

Study of selected topics, themes or trends in political science (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied toward fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): None.

POL-281 Independent Research in Political Science

1 Credit

Must be taken concurrently with any 200-level course in political science. Specific content is to be arranged through a contract between the instructor and the student. May be repeated for an accrued maximum of three credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Instructor approval: must be taken concurrently with a 200-level course in political science.

PRACTICAL NURSING - PNUR

PNUR-101 Fundamentals of Nursing

6 credits

Introduction to the fundamentals of nursing care with emphasis on meeting the basic daily needs of the patient utilizing the nursing process. Nursing knowledge and skills necessary for safe and accurate delivery of nursing care are stressed. Basic communication and mental health concepts within the cultural context are introduced. Applied learning experiences take place in the college nursing laboratory and long-term facilities.

Lecture 3 hours. Laboratory 1 hour.

Other Required Hours: Clinical lab: 8 hours per week.

Prerequisite(s): Departmental approval; admission to the program; BIO-121 or concurrent enrollment; ENG-101 or concurrent enrollment; and MATH-114 or concurrent enrollment.

PNUR-102 Nursing Management of Adults I

8 credits

Use of the nursing process and scientific principles in providing care for clients/patients with various health problems, the body's response to illness and stress and its adaptations. Identifies common nursing interventions to meet basic needs of the adult patient. Applied learning experience takes place in the college nursing laboratory and long-term care facilities.

Lecture 4 hours. Laboratory 1 hour.

Other Required Hours: Clinical Lab: 11 hours per week.

Prerequisite(s): BIO-143 or concurrent enrollment; NURS-107 or concurrent enrollment; PNUR-101; and PSY-101 or concurrent enrollment.

PNUR-103 Nursing Management of Adults II

9 credits

Focuses on the care of adults with both acute and reoccurring medical and surgical conditions. Students learn to develop skills in problem-solving through the use of the nursing process as applied to individual situations. Learning experiences are provided in acute care and long term care facilities to reinforce classroom content with the goal of providing safe, competent, and standard nursing interventions to the individual adult/client.

Lecture 4 hours. Laboratory 1 hour.

Other Required Hours: Clinical Lab: 11 hours per week.

Prerequisite(s): PNUR-102, and PSY-102 or concurrent enrollment.

PNUR-104 Nursing Care of Families

6 credits

Includes obstetrics and pediatrics. Presents basic concepts relating to human reproduction and the childbearing cycle. Emphasis is placed on nursing responsibility in observation of normal and abnormal occurrences. The childbearing experience, nursing skills, and measures related primarily to ill newborn, children, and adolescents are considered in relation to the entire family. Emotional as well as physical aspects are incorporated into the discussion.

Lecture 3 hours. Laboratory 1 hour.

Other Required Hours: Clinical lab: 8 hours per week.

Prerequisite(s): PNUR-103, and PSY-202 or concurrent enrollment.

PLANT OPERATION SERVICES - POS

POS-101 Steam Plant Operation I **3 Credits**

Theory and practice of steam plant and powerhouse operations. Design, layout, function and maintenance of steam boilers and pumps typically used in steam plant operation.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

POS-102 Steam Plant Operation II **3 Credits**

Design, layout, function, operation and maintenance of steam engines and turbines as well as auxiliary steam plant equipment.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

POS-103 Water Treatment **3 Credits**

Water usage and purification. Industrial filtration. Design, layout, function, operation, and maintenance of water softeners, cooling towers and filters. Theory and practice of filtration systems in industry.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

POS-104 Industrial Water Treatment **3 Credits**

Design, layout function, operation and maintenance of waste water and water as well as auxiliary plant equipment.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

SURGEON'S ASSISTANT - PSA

PSA-112 Electrocardiography **1 Credit**

Study of the electrocardiogram recording technique and interpretation of electrocardiographic abnormalities, including arrhythmias.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-116 Clinical Laboratory Interpretation **2 Credits**

Study of common laboratory methods or techniques utilized as diagnostic tools and theory clinical interpretation. Includes hematology, immunology, general chemical diagnostic enzymes and other tests of body functions.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PSA-118 Special Diagnostic and Therapeutic Procedures **2 Credits**

Introduction to diagnostic and therapeutic techniques in radiographics and respiratory therapy. Includes lecture and discussion of radiologic and respiratory procedures; their indications and general principles of interpretation.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant Program.

PSA-119 Basic Surgical Skills **2 Credits**

Presentation and discussion of fundamental skills and techniques, including aseptic technique, instruments, positioning, prepping, draping, knot tying and wound closure, required to function within the operating room.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-120 Advanced Surgical Skills **3 Credits**

Presentation, discussion and observation of surgical skills required to perform first assistant tasks during an operative procedure. Outside assignment: observation in the operating room and participation in live tissue lab.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): PSA-119 and departmental approval: admission to the program.

PSA-131 Surgical Anatomy I

2 Credits

Study of the surgical anatomy of the common pathological processes amenable for surgical therapy, and common surgical procedures used for the treatment of these pathological processes. Includes head, neck, thorax and abdomen.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-132 Surgical Anatomy II

2 Credits

Study of the surgical anatomy of the common pathological processes amenable for surgical therapy, and common surgical procedures used for the treatment of these pathological processes. Includes abdomen, pelvis, genitalia and extremities.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-145 Surgical Patient Management

2 Credits

Presentation and discussion of specific aspects of the care and preparation of a surgical patient in the perioperative period including risk factors affecting surgical morbidity and mortality.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to the program.

PSA-220 Emergency Medicine

2 Credits

Presentation and discussion of patient assessment, management and treatment in an emergency room setting.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

PSA-231 Fundamentals of Clinical Surgery I

3 Credits

Study of the pathophysiology and clinical manifestations and therapeutic management of surgically related disorders of the abdominal walls, alimentary tract, biliary tract, liver, spleen, pancreas, head and neck, endocrine glands, breast, and benign and malignant tumors.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PSA-232 Fundamentals of Clinical Surgery II

3 Credits

Study of the pathophysiology and clinical manifestation and therapeutic management of surgically related disorders of the blood vessels, chest and lungs, heart and great vessels, acute conditions in infants and children, and fractures and head injuries.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PSA-231.

PSA-271 Clinical Field Experience I

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, and assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotation in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-120.

PSA-272 Clinical Field Experience II

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotations in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-271.

PSA-273 Clinical Field Experience III

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotations in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-272.

PSA-274 Clinical Field Experience IV

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotations in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-273.

PSA-291 Clinical Seminar I

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. The focus is on patient and professional communication and "lifelong learning."

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PSA-271 and PSA-272.

PSA-292 Clinical Seminar II

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. The focus is on job search skills and organization of the health care delivery system.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PSA-273.

PSA-293 Clinical Seminar III

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. The focus is on professional associations and political/legislative issues.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PSA-274.

PHYSICAL SCIENCE - PSCI

PSCI-101 Physical Science - Astronomy

3 Credits

Designed primarily for non-science majors. Topics include history of astronomy, planets, comets and asteroids, the sun, stars and galaxies. Also includes current developments in astronomy and space exploration. To fulfill laboratory science requirements, students should enroll in "Physical Science Lab - Astronomy".

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

PSCI-102 Physical Science - Chemistry

3 Credits

Designed for non-science majors who wish to know more about their chemical world. Includes basic concepts and applications of chemistry, e.g., consumer chemistry, periodicity, acids and bases, organic and environmental chemistry. To fulfill laboratory science requirements, students should enroll in "Physical Science Lab - Chemistry".

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

PSCI-103 Physical Science - Earth

3 Credits

Designed primarily for non-science majors. Topics include earth's structure and composition, the hydrologic cycle and earth's atmosphere, earthquakes, volcanism, plate tectonics, resources, energy alternatives and other current issues in physical science. To fulfill laboratory science requirements, students should enroll in "Physical Science Lab - Earth".

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

PSCI-107 Physical Science Lab - Astronomy

1 Credit

Designed primarily for non-science majors enrolled in "Physical Science - Astronomy". Exercises on measurements, optics, the sun telescopes, constellations, and other astronomy-related subjects are included. Laboratory activities and experiments augment lecture topics.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): PSCI-101 or concurrent enrollment.

PSCI-108 Physical Science Lab - Chemistry

1 Credit

Designed primarily for non-science majors enrolled in "Physical Science - Chemistry". Exercises on measurements, separation methods, reaction rates, conservation, water analysis, household chemicals, organic synthesis, biochemical reactions and environmental concerns may be included. Laboratory experiments and exercises augment lecture topics.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): PSCI-102 or concurrent enrollment.

PSCI-109 Physical Science Lab - Earth

1 Credit

Designed for non-science majors enrolled in "Physical Science - Earth". Exercises on minerals and rocks, soils, weather, plate tectonics, energy, and other current science issues and trends may be included. Laboratory experiments and exercises augment lecture topics.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): PSCI-103 or concurrent enrollment.

PSCI-115 Physical Science for Technology

5 Credits

Study of chemistry and physics where technical applications are emphasized. Includes the following topics: measurement, matter and energy, atomic structure, bonding, nomenclature, chemical equations, solutions, acids and bases, force and motion, heat and thermodynamics, electricity and magnetism. Weekly laboratory hours reinforce the curriculum with technological applications.

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: one year of high school algebra or equivalent; student must be enrolled in the Automotive Technology program.

PSCI-270 Special Topics in Physical Science

1-4 Credits

Study of selected topics or current issues in the field of physical science. Opportunity to explore various aspects of the physical sciences (astronomy, chemistry, geology and meteorology) in greater detail. Topics offered will vary as new topics of interest arise in the physical sciences (see class schedule for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Dependent on special topic, physical science counterparts will determine appropriate prerequisite when approving topical outline.

PSCI-272 Special Laboratory Topics in Physical Science

1-3 Credits

Study of selected topics or current issues in the field of physical science. Opportunity to gain laboratory experience and investigative skills to further one's understanding of the physical sciences (astronomy, chemistry, geology and meteorology.) Topics offered will vary as new topics of interest and techniques arise in the physical sciences (see class schedule for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 3-9 hours.

Prerequisite(s): Dependent on special topic, physical science counterparts will determine appropriate prerequisite when approving topical outline.

PLANT SCIENCE TECHNOLOGY - PST

PST-101 Introduction to Horticulture

5 Credits

Plant terminology, structure and function are examined. Emphasis on environmental conditions for growth.

Lecture 4 hours. Laboratory 3 hours. Prerequisites: None.

PST-103 Soil Technology

4 Credits

Exposure to the various types of soils including factors which affect them. Soil testing and judging are extensions of basic topics.

Lecture 3 hours. Laboratory 3 hours.

Prerequisites: PST-101; and PSCI-102 or CHEM-101; or departmental approval: equivalent or work related experience.

PST-113 Plant Production

3 Credits

Examination of sexual/asexual propagation of plant material. Emphasis on basic greenhouse and nursery operations from harvesting to selling.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: PST-101 or departmental approval: equivalent or work related experience.

PST-120 Practicum in Horticulture

1 Credit

Practical experience in plant science technology laboratory. Emphasis on developing competencies in the laboratory related to occupations in the horticulture industry.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Prerequisites: PST-101.

PST-121 Woody Plants I

3 Credits

Techniques for correct identification of ornamentals, shrubs, trees, and fruits and nuts.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: PST-101 or concurrent enrollment; or departmental approval: equivalent or work related experience.

PST-122 Woody Plants II

3 Credits

Advanced course for the identification, landscape use and cultural practices of less common ornamental trees, shrubs, vines, and ground covers.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: PST-121 or departmental approval: equivalent or work related experience.

PST-125 Landscape Practices

4 Credits

Study of techniques and equipment used in the installation and proper seasonal care of trees, shrubs, perennials, annuals, and turf. Specifications of the American Nursery Association standards are emphasized and the diagnosis and resolution of plant problems are considered.

Lecture 2 hours. Laboratory 6 hours.

Prerequisites: PST-141 or concurrent enrollment; or departmental approval: equivalent or work related experience.

PST-140 Basic General Contracting

3 Credits

Provides an operational knowledge of basic contracting rules and regulations with special emphasis on live plant material contracting. Focus also on wood, cement, stone and brick features.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: Departmental approval: equivalent or work related experience.

PST-141 Equipment Operations and Maintenance

3 Credits

Review of common horticulture tools and equipment. Power hand tools will be explained as to operation and safety as well as maintenance. Record keeping related to equipment operation.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval.

PST-209 Foliage Plant Identification

3 Credits

Identification, culture and use of tropical plants in the home and interior plantscapes.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: PST-101 or departmental approval: equivalent or work related experience.

PST-210 Entomology

3 Credits

Identification, classification, life cycles and body structures of insect pests of landscape plants, greenhouse, crops, nursery crops, foliage plants and turf, with emphasis on integrated pest management.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): None.

PST-212 Advanced General Contracting

3 Credits

Survey of landscape design plans and blueprints, including local, state and national laws. Examination of subcontracting in various areas.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: PST-140 or departmental approval: equivalent or work related experience.

PST-214 Herbaceous Plants

3 Credits

Identification of bulbs, annuals, perennials and foliage plant materials including selection, growth habits and cultural practices.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): PST-101.

PST-215 Landscape Design

3 Credits

Basic landscape design theories including site conditions and customer needs. Included are techniques to move from a preliminary sketch to a final design.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): PST-121.

PST-221 Plant Pathology

4 Credits

Survey of common pathological conditions which affect plants. Emphasis on plant pesticides and their common applications and a review of pest management strategies.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PST-101 or departmental approval.

PST-230 Introduction to Turfgrass

3 Credits

In-depth study of commercial lawn care and installation including fertilization, spraying, mowing, irrigation, selection and establishment, weed and pest identification, and diagnosis of disorders as pertains to commercial, residential, and municipal applications

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): PST-210 or PST-221 or departmental approval: equivalent or work related experience.

PST-245 Arboriculture

3 Credits

Detailed study of commercial tree care including fertilization, spraying, pruning, cabling, equipment operation and diagnosis of disorders as pertains to commercial arboriculture, urban forestry, and others.

Lecture 2 hours. Laboratory 3 hours.

Prerequisites: PST-101 or departmental approval: equivalent or work related experience.

PST-250 Horticulture Seminar

2 Credits

Practical experience exploring horticulture occupations and job availability. Business evaluation skills. Factors in job performance.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 2 hours per week.

Prerequisites: PST-101 or departmental approval: admission to the program.

PST-260 Cooperative Field Experience

2 Credits

Employment in an approved training facility under college supervision.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour.

Prerequisites: PST-101, and formal acceptance into the Cooperative Education program.

PST-270 Special Topics in Horticulture

1-4 Credits

In-depth study of special topics in landscaping, hardscapes, irrigation, lighting, and other subjects not covered by the regular curriculum. Topics offered will vary depending on student and/or industry needs and interests. (Repeatable. No more than 3 credits of special topics courses may be applied toward the plant science program degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisites: PST-101 or departmental approval: work related experience. Concurrent enrollment in PST-272 may be required.

PST-272 Special Topics in Horticulture Lab

1-2 Credits

In-depth study of special topics in landscaping, hardscapes, irrigation, lighting, and other subjects not covered by the regular curriculum. Topics offered will vary depending on student and/or industry needs and interests. (Repeatable. No more than 3 credits of special topics courses may be applied toward the plant science program degree requirements.)

Lecture 0 hours. Laboratory 3-6 hours.

Prerequisites: PST-101 or departmental approval: work related experience. Concurrent enrollment in PST-270 may be required.

PSYCHOLOGY - PSY

PSY-101 General Psychology

3 Credits

Introduction to fundamental psychological concepts and principles derived from a scientific approach to the study of human and animal behavior, sensation and perception, states of consciousness and learning.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

PSY-102 General Psychology

3 Credits

Emphasis on motivation, emotion, personality, behavior disorders and their treatments and social psychology.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PSY-101.

PSY-107 Psychology of Human Behavior

4 Credits

Introduction to psychological concepts and terminology for non-majors. Emphasis on social living, problem solving, adjustment and the healthy personality.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

PSY-201 Child Growth and Development

4 Credits

Growth, development and guidance of the child from conception through puberty. Interpretation and significance of creativeness, adjustment abilities and child-adult relationships. Emphasis on both physiological and psychological growth stages of the child.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102.

PSY-202 Human Growth and Development

5 Credits

Study of normal human growth and development from infancy through the aged with emphasis on the maturation patterns of human biopsychosocial development. The role of activity as reflected in life tasks throughout the life cycle is emphasized.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102.

PSY-203 Educational Psychology

4 Credits

Introduction to major psychological factors in the school learning-teaching situation. Concepts in human development related to problems in the school situation. Teacher's role in motivation, conceptual learning and problem solving. Development of emotional behavior, attitudes and values. Learning of skills, retention and transfer. Measurement of student abilities and achievement.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102.

PSY-204 Social Psychology

4 Credits

Social influence on the individual's ideas and behaviors; emphasis on issues such as attraction, prejudice, conformity and interpersonal communication.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 or PSY-107, or departmental approval.

PSY-205 Psychology of Personality

4 Credits

Interpretation of human behavior with special emphasis on motivation, emotion and the adjustment process. Implications of theory and methodology in the study of personality.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 and departmental approval: sophomore standing.

PSY-206 Adolescent Psychology

4 Credits

Physical, social, maturational, and intellectual development of the personality through the adolescent years in contemporary society.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 or departmental approval.

PSY-207 Behavior Modification

4 Credits

Basic conditioning and learning principles, emphasizing conditioned reinforcers, social reinforcement and token economies. Applications to normal and abnormal behaviors in home, school, hospital and correctional settings. Students will conduct individual experiments.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 or PSY-107; and departmental approval.

PSY-208 Abnormal Psychology

4 Credits

Descriptive survey of behavioral and mental disorders. Topics include past and present views of abnormal human behavior, assessment, psychiatric classification, etiology, prevention and treatment.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 or PSY-107, or departmental approval.

PSY-210 Introduction to Aging

4 Credits

Overview of the psycho-social aspects of aging in our society. Emphasis on the interrelationships between physical and psychological variables in the life of the aging person as they are influenced by environmental factors.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 or departmental approval.

PSY-270 Special Topics in Psychology

1-4 Credits

Study of selected topics, themes, or trends in psychology (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied toward fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): PSY-102 or departmental approval.

PSY-281 Independent Research in Psychology

1 Credit

Must be taken concurrently with any 200-level course in psychology. Specific content is to be arranged through a contract between the instructor and each student. May be repeated for an accrued maximum of three credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Instructor approval: must be taken concurrently with a 200-level course in psychology

PHYSICAL THERAPIST ASSISTING TECHNOLOGY - PTAT

PTAT-102 Functional Anatomy I **4 Credits**

Study of the anatomy and function of the human body as related to the lower extremity and trunk. Normal and pathological gait. Study of motion of human body as basic to application of exercise.

Lecture 3 hours. Laboratory 3 hours.

Prerequisites: PTAT-104, and BIO-143 or concurrent enrollment.

PTAT-103 Functional Anatomy II **4 Credits**

Emphasis on the head, neck, shoulder girdle and upper extremity. Study of functional problems for the analysis of body movement.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): PTAT-102 and departmental approval.

PTAT-104 Fundamentals of Physical Therapy **4 Credits**

History and principles of physical therapy. The physical therapy assistant role in relation to the licensed physical therapist. Functions and duties of the physical therapy assistant in health agencies. Survey of physical therapy treatment procedures

Lecture 2 hours. Laboratory 4 hours.

Prerequisites: Admission into PTAT program.

PTAT-110 Introduction to Physical Therapy Assisting **2 Credits**

History and principles of physical therapy. Role of the physical therapist assistant in relation to the physical therapist. Survey of physical therapy treatment procedures. Legal and ethical responsibilities relating to health care service. Discussion of stress, its symptoms and behaviors as they relate to physical therapy.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PTAT-120 Introduction to Clinical Conditions **2 Credits**

Injury and process of inflammation and repair of tissue. Introduction to medical conditions commonly encountered in the practice of physical therapy and which affect integumentary, cardiovascular and endocrine systems.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program, and MA-102 or concurrent enrollment.

PTAT-122 Musculoskeletal Dysfunction **3 Credits**

Disease and injury and its effect on the human body as it relates to the neuromusculoskeletal system.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PTAT-103.

PTAT-151 Physical Therapy Procedures: Treatment without Physical Agents.

3 Credits

Theory and techniques of treatment procedures. Maintenance of equipment and supplies.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): BIO-143 and PTAT-154.

PTAT-153 Clinical Observation

2 Credits

Selected experience in local physical therapy departments for the observation of application of physical therapy skill. Discussion and problem solving approach to clinical experiences. Presentation of medical specialities, abbreviations and note writing.

Lecture 1 hour. Laboratory 3 hours.

Prerequisite(s): PTAT-104.

PTAT-154 Physical Therapy Procedures: Physical Agents

4 Credits

Lecture, demonstration and practice in the use of physical agents in physical therapy

Lecture 2 hours. Laboratory 4 hours.

Prerequisites: PTAT-104.

PTAT-204 Physical Rehabilitation Procedures **3 Credits**

Principles and techniques of therapeutic exercise and rehabilitation in physical therapy. Practice and application of these techniques in selected disabilities.

Lecture 1 hour. Laboratory 4 hours.

Prerequisite(s): PTAT-205.

PTAT-205 Physical Therapy Procedures **3 Credits**

Physical therapy procedures with an emphasis on therapeutic exercise.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): PTAT-122; and PHYS-101 or PHYS-111.

PTAT-206 Physical Therapy Procedures: Electrical Modalities

3 Credits

Physical therapy procedures with emphasis on the electrical modalities, traction, diathermy and biofeedback.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): PTAT-122 and PTAT-154.

PTAT-254 Application of Physical Therapy **4 Credits**

Clinical education in selected physical therapy department for four weeks on a full-time basis.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Clinical hours: 40 hours per week for 5 weeks. Prerequisite(s): PTAT-204.

PTAT-255 Application of Physical Therapy I 4 Credits

Practical application of learned physical therapy techniques in a clinical setting. Student will be required to participate in directed practice averaging twenty clock hours per week.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): PTAT-153.

PTAT-256 Application of Physical Therapy II 4 Credits

Practical application of learned physical therapy techniques in a clinical setting. Student will be required to participate in directed practice averaging twenty clock hours per week.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): PTAT-255.

PTAT-257 Application of Physical Therapy III 4 Credits

Practical application of learned physical therapy techniques in a clinical setting.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Clinical hours: 40 hours per week for 5 weeks.

Prerequisite(s): PTAT-256 and departmental approval.

PTAT-262 Functional Anatomy III 3 Credits

Study of neuroanatomy and physiology and associated neurological conditions frequently seen in a physical therapy department.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PTAT-103 and BIO-144.

PTAT-263 Geriatric Physical Therapy 2 Credits

Special considerations of physical therapy role and procedures regarding the geriatric population.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): BIO-144. and PTAT-205.

PTAT-264 Pediatric Physical Therapy 2 Credits

Special considerations of physical therapy role and procedures regarding the pediatric population.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): BIO-144., PTAT-205, and PTAT-206.

RADIOGRAPHY - RADT

RADT-103 Introduction to Cross-Sectional Anatomy and Gynecological Sonography 3 Credits

Introductory study of terminology, anatomical scanning planes, standard presentation and labeling.

Abdominopelvic cavity, basic anatomy and physiology of vessels, scanning protocol. Includes the study of the normal and abnormal female pelvis and reproductive system as it relates to sonogram procedures including pathology visualized by ultrasound. Slides, films and case studies will be presented.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program or current equivalent educational/clinical experience.

RADT-121 Radiologic Pathology 3 Credits

Pathological diseases of the human body. Various pathological conditions which should be known by the technologist in performing X-ray examinations and to produce high quality radiographs. Includes medical terminology for the body systems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

RADT-123 Introduction to Abdominal Ultrasound 2 Credits

Introduction to basic abdominal scanning techniques and preparation. General study of the anatomy, physiology and pathology of abdominal organs including liver, gallbladder, pancreas, and spleen as visualized by sonography.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program or current equivalent educational/clinical experience.

RADT-125 Methods of Patient Care 2 Credits

Introduction to the basic nursing skills required in order to give more comprehensive and direct care. Emphasis on the role of the radiographer in diagnostic, surgical and emergency care.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

RADT-152 Fundamentals of Radiography 5 Credits

Basic study of X-radiation relative to its nature, production, interaction with matter and effect on radiographic quality. Also includes the fundamentals of radiation protection, film processing and darkroom.

Lecture 4 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval.

RADT-155 Radiographic Positioning - A **3 Credits**

Nomenclature and fundamentals of radiographic positioning for upper extremities, lower extremities, chest, pelvis, abdomen, gallbladder, gastrointestinal examinations and intravenous pyelograms including the use of contrast media, equipment and patient preparation.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to the program.

RADT-160 Radiographic Positioning - B **3 Credits**

Essentials of radiographic procedures involving cerebral and facial cranium, vertebral column, thoracic cage, and special projections of upper extremity articulations.

Techniques and positioning variations for trauma, pediatric and atypical patients are included.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): RADT-155 or departmental approval.

RADT-218 Special Imaging Procedures **3 Credits**

Introduction to the specialized imaging procedures in diagnostic radiography to provide individuals with knowledge and skills to effectively contribute as a member of the specialized imaging teams.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BIO-110 or departmental approval.

RADT-231 Imaging Systems **3 Credits**

Advanced concepts in physics for X-ray to develop an understanding and operating skill of certain radiographic equipment, and special imaging processes, stereography and tomography. Includes fluoroscopy, image intensification, cinefluorography and video-tape recorders. Special imaging processes emphasized are duplication and subtraction thermography, ultrasound and xeroradiography.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PHYS-226 or concurrent enrollment.

RADT-233 Introduction to Sonography Clinical Experience **5 Credits**

Supervised practical applications of sonography scanning techniques in a hospital setting, under direct supervision of a registered diagnostic sonographer or qualified physician. Development of skills related to sonography department procedures.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): Admission to the program, or departmental approval.

RADT-234 Abdominal Sonography Anatomy and Pathology **2 Credits**

Study of abdominal anatomy, physiology and pathology as it pertains to diagnostic ultrasound. Emphasis on renal, adrenal and lymphatic systems.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): RADT-123.

RADT-235 Obstetrical Ultrasound - The First Trimester **2 Credits**

Anatomy, physiology and pathology of the first trimester. Includes conception, implantation, embryonic development, ectopic pregnancy, molar pregnancy and monitoring the infertile patient. Case studies, films and slides will be utilized.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): RADT-103.

RADT-242 Radiographic Technique **4 Credits**

Analysis and the application of radiographic factors that influence the recording and visibility of the radiographic image. Students are required to conduct x-ray exposure experiments under supervision, using energized equipment to satisfy laboratory requirements.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): RADT-152 or departmental approval.

RADT-243 Intermediate Sonography Clinical Experience **5 Credits**

Continued supervised practical applications of sonography scanning techniques in a hospital setting under the direct supervision of a registered diagnostic sonographer or qualified physician. Patient care and department procedures will be emphasized.

Lecture 1 hour. Laboratory 0 hour.

Other Required Hours: Directed practice: 20 hours per week.

Prerequisite(s): RADT-233.

RADT-244 Cross-Sectional Anatomy of Small Parts and Vascular Studies **2 Credits**

Anatomy of the male reproductive system including testicular ultrasound, prostate ultrasound, transabdominal and transrectal and penile studies. Ultrasound studies of the breast, thyroid and ophthalmic studies will also be covered. Introduction to vascular carotid and arterial studies.

Lecture 2 hours. Laboratory 0 hour.

Prerequisite(s): RADT-234.

RADT-245 Obstetrical Ultrasound and Interventional Procedures

2 Credits

Continuation of obstetrical ultrasound anatomy and pathology of the second and third trimester. Conditions involving sonography procedures for the mother and fetus will be examined as well as amniocentesis and chorionic villus sampling.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): RADT-235.

RADT-253 Advanced Sonography Clinical Experience

5 Credits

Continued supervised practical applications of sonography scanning techniques in a hospital setting under the direct supervision of a registered diagnostic sonographer or qualified physician. Advanced scanning skills will be emphasized.

Lecture 1 hour. Laboratory 0 hours.

Other Required Hours: Directed Practice: 20 hours per week.

Prerequisite(s): RADT-243.

RADT-255 Advanced Obstetrical Anatomy and Pathology

2 Credits

Sonographic anatomy and pathology of obstetrical and gynecology including non-pregnant uterus and early pregnancy examinations. Fetal anatomy and pathology, congenital anomalies and infertility monitoring will also be reviewed. Problems of pelvis inflammatory diseases and pelvic abscesses.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): RADT-245.

RADT-265 Introductory Radiologic Clinical Experience I

6 Credits

Supervised sessions emphasizing the practical application of theory to the positioning of patients for routine diagnostic examinations, the selection of appropriate radiographic exposures and the methods of radiation protection. Student must demonstrate skills related to departmental procedures which are fundamental to the operation of the X-ray department. Clinical experience in a hospital environment.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Clinical experience: 35 hours per week for twelve weeks.

Prerequisite(s): Departmental approval.

RADT-266 Introductory Radiologic Clinical Experience II

6 Credits

Supervised sessions emphasizing the practical application of theory to the positioning of patients for diagnostic examinations including the operation of mobile equipment. Clinical experience in a hospital environment.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Clinical experience: 35 hours per week for 12 weeks.

Prerequisite(s): RADT-265 or departmental approval.

RADT-267 Intermediate Radiologic Clinical Experience

6 Credits

Supervised clinical practice includes modified views of skeletal X-ray examinations and X-ray examinations utilizing contrast mediums. Clinical experience in a hospital setting.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours:

Clinical experience: 35 hours per week for 12 weeks.

Prerequisite(s): RADT-266 or departmental approval.

RADT-268 Advanced Radiological Clinical Experience

6 Credits

Clinical experience emphasizing selected radiographic procedures. Also includes the use of specialized equipment.

Lecture 0 hours. Laboratory 0 hours. Other Required Hours:

Clinical experience: 35 hours per week for 12 weeks.

Prerequisite(s): RADT-267 or departmental approval.

RADT-269 Final Radiological Clinical Experience

6 Credits

Supervised clinical practice emphasizing surgical procedures and adjunct departmental rotations. Clinical experience in a hospital setting.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Clinical experience: 35 hours per week for 12 weeks.

Prerequisite(s): RADT-268 or departmental approval.

RADT-270 Trends in Diagnostic Radiography

1 Credit

Current topics in the state-of-the-art diagnostic radiography and comprehensive review for the American Registry Examination.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Concurrent with RADT-269 or departmental approval.

RADT-275 Vascular Ultrasound and Color Flow Studies

2 Credits

Study of Doppler and color flow ultrasound of the arteries and veins of the body. Abdominal flow and measurements will be demonstrated. In-depth material on the carotid-cerebral vascular system will also be examined along with the techniques and measurements utilized.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite: RADT-244 or departmental approval: current equivalent educational/clinical experience..

RADT-283 Final Clinical Sonography Experience

6 Credits

Continued supervised practical applications of sonography scanning techniques in a hospital setting under the direct supervision of a registered diagnostic sonographer or qualified physician. Advanced techniques and practical applications of ultrasound.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 35 hours per week.

Seminar: 1 hour per week.

Prerequisite(s): RADT-253.

REAL ESTATE - REAL

REAL-101 Real Estate Principles and Practices **3 Credits**

Introduction to real estate as a business and as a profession designed to acquaint the student with the wide range of subjects necessary to the practice of real estate. Topics include license law, ethics, purchase agreements, escrow and title work, advertising, appraisals, sales market trends, the role and influence of real estate in the economy, taxes and assessments.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

REAL-102 Real Estate Brokerage

3 Credits

Study of the factors necessary for the establishment and efficient operation of sales and brokerage office. Salesman-broker relations, terminology, listings, purchase agreements, loans, land contracts, office locations, records and procedures.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): REAL-101 or departmental approval.

REAL-111 Valuation of Residential Properties

3 Credits

Study of those elements which affect values of residential properties. Emphasis placed on the methods of evaluating property.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

REAL-121 Real Estate Law

3 Credits

Legal phase of realty transactions, from the listing of the property to the closing of the escrow. Review for owners, brokers, salespersons, mortgage and escrow officers.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

REAL-151 Real Estate Management

3 Credits

Basic coverage of real estate management embracing the areas of leasing, maintenance, budgeting, creative market analysis, public relations, collections, office procedures, zoning and development. Relationship of management to other specialized real estate areas.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): REAL-101 or departmental approval.

REAL-171 Real Estate Financing

3 Credits

Study of the procedures and techniques requisite to the analysis of risks involved in financing real estate property. The sources of funds, lending institutions, their limits and requirements, types of mortgages including conventional, Federal Housing Administration, Veterans Administration and construction loans. Application forms, credit evaluations, interest rates, loan costs, loan closings and competition in the money market.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

REAL-211 Real Estate Sales

3 Credits

Deals with the current sales techniques. Approach to everyday problems in selling and sales management with particular emphasis on consumer motivation and reactions.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): REAL-101 or departmental approval.

REAL-251 Valuation of Income Properties

3 Credits

Factors which influence the value of commercial properties. Demonstration of the methods which apply to the preparation of the appraisal cost. Analysis of comparative and capitalization approaches. Problems taken from actual appraisals.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): REAL-111 or departmental approval: consent of instructor.

REAL-271 Commercial and Industrial Real Estate

3 Credits

All aspects relative to the ownership and operation of shopping centers, industrial complexes, large apartments and related properties: leasing, broker functions, management, taxes, financing and construction methods.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

RELIGIOUS STUDIES - REL

REL-101 Introduction to Religious Studies

4 Credits

Comprehensive introduction to religious studies. Topics include the concept of religion, attributes of God, myth and symbol, faith and reason, rituals, and an overview of the major historical religions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

REL-201 Religious Traditions of Western Christianity

4 Credits

Comprehensive introduction to the history, writings, teachings, and liturgical practices of Western Christianity. Topics include the historical Jesus, the new testament church, the patristic church, the medieval church, the Protestant Reformation, and the Church today (including ecumenical concerns following the Second Vatican Council).

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

REL-202 Religious Traditions of Judaism

4 Credits

Comprehensive introduction to the history, writings, teachings, and liturgical practices of Judaism. Topics include historical background, the Old Testament, special Jewish festivals, and Judaism's adaptation to modern society.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

REL-203 Religious Traditions of Islam

4 Credits

Comprehensive introduction to the history, writings, teachings, and liturgical practices of Islam. Topics include historical background, the Koran, special Islamic festivals, and Islam's adaptation to modern society.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

REL-204 Religious Traditions of India

4 Credits

Comprehensive introduction to the history, writings, teachings, and liturgical practices of the religious traditions of India. Religious traditions studied include Hinduism, Jainism, and Sikhism.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

REL-205 Religious Traditions of China and Japan

4 Credits

Comprehensive introduction to the history, writings, teachings, and liturgical practices of Buddhism, Confucianism, and Taoism. Topics include the life and teaching of Buddha and Confucius, and Tao immortality.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

REL-270 Special Topics in Religious Studies

1-4 Credits

Study of selected topics in religious studies which concern the relationship of religion and religious issues to the individual, to the diversity of religious groups and to the larger national and international society. Particular emphasis on the impact of religious beliefs and practices on these three components of human life. (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours Laboratory 0 hours.

Prerequisite(s): Eligibility for ENG-101.

RESPIRATORY CARE - RESP

RESP-119 Applied Physics for Respiratory Care 4 Credits

Overview of the application of physical principles pertaining to physiologic function and the diagnostic and therapeutic modalities employed in the field of respiratory therapy. Emphasis is on motion, fluid pressures, states of matter, humidity and electricity. *Lecture 3 hours. Laboratory 2 hours.*
Prerequisite(s): Departmental approval: admission to the program, and MATH-114 or concurrent enrollment.

RESP-121 Respiratory Therapy Equipment 4 Credits

Function and operation of respiratory therapy equipment: primary gas systems, gas regulating devices, oxygen controllers, humidifiers, nebulizers, oxygen administering devices, oxygen analyzers, airways, manual resuscitators, monitoring and measuring equipment and sterilization methods. *Lecture 3 hours. Laboratory 3 hours.*
Prerequisite(s): RESP-119.

RESP-129 Respiratory and Renal Acid-Base Physiology 3 Credits

Overview of acid-base regulation, integrating the physiologic functions of the renal and respiratory systems. Emphasis on fluid and electrolyte regulation, body buffer systems, oxygen and carbon dioxide transport systems and basic chemistry. Principles of operation of equipment used in the analysis of acid base and oxygenation status. *Lecture 3 hours. Laboratory 0 hours.*
Prerequisite(s): RESP-150 or concurrent enrollment; and BIO-121.

RESP-131 Pharmacology for Respiratory Care 3 Credits

General principles of pharmacology and calculations of drug dosages. Discussion of pharmacologic principles and agents used in the treatment of cardiopulmonary disorders. *Lecture 3 hours. Laboratory 0 hours.*
Prerequisite(s): RESP-129.

RESP-150 Cardiopulmonary Physiology 4 Credits

Physiology of the cardiovascular and pulmonary systems with emphasis on electrophysiology of the heart, electrocardiography interpretation, blood flow characteristics and hemodynamics. Pulmonary system emphasis is on lung volumes, dynamics of ventilation, diffusion, ventilation to perfusion characteristics, gas transport and control of ventilation. *Lecture 4 hours. Laboratory 0 hours.*
Prerequisite(s): Departmental approval: admission to the program, and BIO-144 or concurrent enrollment.

RESP-155 Assessment of the Cardiopulmonary System 4 Credits

Theory and application of cardiopulmonary assessment with an initial introduction to the clinical setting hospital and departmental structure, professionalism in the work place, and medical records and charting. Physical assessment techniques, laboratory assessment radiologic evaluation, vital signs, EKG testing, assessment of ventilatory mechanics, and arterial blood analysis associated with specific disease entities. *Lecture 3 hours. Laboratory 3 hours.*
Prerequisite(s): RESP-121, RESP-129, and RESP-150.

RESP-157 Pulmonary Pathophysiology 2 Credits

Study of the etiology and pathophysiology of obstructive and restrictive, pulmonary diseases. Disease entities will include emphysema, chronic bronchitis, asthma, bronchiectasis, cystic fibrosis, pneumoconiosis, adult respiratory distress syndrome, pneumonia, pulmonary edema, cancer, AIDS, tuberculosis, scoliosis, kyphoscoliosis, myasthenia gravis, guillain-barre and amyotrophic lateral sclerosis. Emphasis is placed on the causes, development and characteristics of the specific disease entity. *Lecture 2 hours. Laboratory 0 hours.*
Prerequisite(s): RESP-129 and RESP-150.

RESP-158 Pulmonary Diseases 2 Credits

Identifying signs and symptoms of the pulmonary diseases, the respiratory management of the patient and prognosis of the disease entity. Disease entities will include emphysema, chronic bronchitis, asthma, bronchiectasis, cystic fibrosis, pneumoconiosis, adult respiratory distress syndrome, pneumonia, pulmonary edema, cancer, acquired immune deficiency syndrome, tuberculosis, scoliosis, kyphoscoliosis, myasthenia gravis, Guillain-Barre and amyotrophic lateral sclerosis. Emphasis is placed on the respiratory practitioner's responsibility in identifying and treating these disease entities. *Lecture 2 hours. Laboratory 0 hours.*
Prerequisite(s): RESP-157.

RESP-223 Basic Therapeutic Procedures 4 Credits

Theory, clinical application and analysis of basic respiratory care procedures with emphasis on oxygen therapy, medical gas therapy, tracheal suctioning, humidity and aerosol therapy, chest physical therapy, incentive spirometry, intermittent positive pressure breathing, airway management, bronchoscopy and thoracotomy tubes. *Lecture 3 hours. Laboratory 3 hours.*
Prerequisite(s): RESP-155.

RESP-226 Respiratory Care Clinicals I **4 Credits**

Directed practice in the clinical setting on respiratory care equipment, policies and procedures. Emphasis on patient assessment, arterial blood gas punctures and analysis, laboratory, bedside pulmonary function testing and oxygen therapy.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 24 hours per week.

Prerequisite(s): RESP-155.

RESP-229 Respiratory Homecare/Rehabilitation **2 Credits**

Identification of the therapist's role in homecare and pulmonary rehabilitation. Presentation of oxygen therapy and delivery systems in the private home. Procedure for institution and maintenance of home mechanical ventilation. Outline of new trends in home care and pulmonary rehabilitation. Guidelines on setting up hospital-based pulmonary rehab programs along with patient management and follow-up strategies.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): RESP-223 and RESP-226.

RESP-233 Mechanical Ventilators **4 Credits**

Function and principles of operating for adult volume and pressure ventilators, high frequency ventilators and continuous positive airway pressure devices with concentration on specific controls, internal/external circuitry, monitoring systems and alarms.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): RESP-223.

RESP-236 Respiratory Care Clinicals II **5 Credits**

Directed practice in the clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on aerosol therapy, bronchopulmonary hygiene, incentive spirometry, intermittent positive pressure breathing and manual ventilation and suctioning. Clinical activities also include proficiencies completed in patient assessment, arterial blood gas punctures and analysis, bedside pulmonary function testing and oxygen therapy.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 24 hours per week.

Prerequisite(s): RESP-223.

RESP-243 Clinical Application of Mechanical Ventilation **4 Credits**

Theory and application of mechanical ventilation techniques with emphasis on physiologic effects, patient set-up and evaluation, maintenance of oxygenation, weaning techniques, nutritional concerns and hemodynamic monitoring. Ventilator management and the use of high frequency ventilation. Medicolegal issues involving life support systems.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): RESP-233.

RESP-246 Respiratory Care Clinicals III **5 Credits**

Directed practice in the clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on adult volume and pressure ventilation, patient transport and home care ventilators and continuous positive airway pressure. Clinical activities also include proficiencies completed in patient assessment, arterial blood gas punctures and analysis, and bedside pulmonary function testing, oxygen therapy, aerosol therapy, bronchopulmonary hygiene, incentive spirometry, intermittent positive pressure breathing, and manual ventilation and suctioning.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 24 hours per week.

Prerequisite(s): RESP-243 or concurrent enrollment.

RESP-249 Neonatal and Pediatric Respiratory Care **3 Credits**

Presentation of the theory and its practical application to pediatric and neonatal respiratory disease states including pathophysiology, etiology, patient assessment and treatment using equipment unique to this specialty area. Presentation of neonatal resuscitation techniques, stabilization and transport emphasizing the respiratory practitioner's role.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): RESP-233; and RESP-243 or concurrent enrollment.

RESP-253 Management Practices in Respiratory Care **1 Credit**

Overview of the fiscal, administrative, and human resource management practices employed in the daily operations of the respiratory therapy department. Presentations of management methodologies utilized in supervisory management.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): RESP-243.

RESP-256 Respiratory Care Clinicals IV **5 Credits**

Directed practice in the clinical setting on respiratory therapy equipment, policies, and procedures. Emphasis on pediatric patient care, homecare, rehabilitation, and weaning from mechanical ventilation. Clinical activities also include proficiencies completed in patient assessment, arterial blood gas punctures and analysis, and bedside pulmonary function testing, oxygen therapy, aerosol therapy, bronchopulmonary hygiene, incentive spirometry, intermittent positive pressure breathing, manual ventilation and suctioning, adult volume and pressure ventilation, patient transport and home care ventilators, high frequency ventilators and continuous positive airway pressure.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Directed practice: 8 hours per day, 24 hours per week. Prerequisite(s): RESP-229 and RESP-249.

RESP-258 Patient Management Problems

2 Credits

Reinforces the clinical education components of information gathering and decision-making specific to the assessment and treatment of cardiopulmonary impairment. Emphasis placed on the methodologies involved in obtaining and prioritizing diagnostic information. Evaluating the need for immediate or continued respiratory therapy treatment. Comprehensive self-assessment at entry and advanced practitioner level of respiratory care.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

RESP-262 Introduction to Respiratory Care Research

1 Credit

Introduction to clinical research and steps involved in the research process. Emphasis on the development of a research question, literature review and data collection.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): RESP-226, RESP-236, and RESP-246.

RESP-264 Advanced Respiratory Assessment

2 Credits

Presentation of advanced concepts and techniques in physical and laboratory assessment of cardiopulmonary pathology. Focus on those tests and procedures that are commonly used to assess for the presence and degree of illness. Student self-assessment through group discussions of case presentations.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Second-year enrollment in a College health career program or departmental approval: graduation from an AMA approved respiratory care program or equivalent experience.

RUSSIAN - RUSS

RUSS-111 Beginning Russian I

5 Credits

Introduction to modern Russian language with emphasis on speaking, reading and writing through multiple approach. Basic study of grammar and pronunciation.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

RUSS-112 Beginning Russian II

5 Credits

Continued study of grammar and vocabulary. Oral and written exercises. Reading of elementary texts.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-111 or departmental approval.

RUSS-113 Beginning Russian III

5 Credits

Continued study of grammar and vocabulary. Oral and written exercises. Reading of texts of medium difficulty. Developing of oral expression through discussion and study of speech patterns.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-112 or departmental approval.

RUSS-201 Intermediate Russian I

4 Credits

Introduction to more advanced vocabulary and speech patterns; continuation of in-depth study of Russian grammar in order to facilitate the transition from simple to complex understanding, speaking, reading and writing. Cultural exposure through text reading, movie viewing and discussions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-113 or departmental approval.

RUSS-202 Intermediate Russian II

4 Credits

Continuing study of advanced vocabulary and speech patterns, complex sentence structures and Russian grammar in depth. Furthering of complex understanding, speaking, reading and writing skills. Continuing cultural exposure through text reading, movie viewing and discussions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-201 or departmental approval.

RUSS-203 Intermediate Russian III

4 Credits

Additional studies of advanced vocabulary and speech patterns, complex sentence structures and Russian grammar. Advanced skills in speaking, reading and writing. Continuing cultural exposure through text reading, movie viewing and discussions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-202 or departmental approval.

RUSS-241 Russian Conversation and Composition 4 Credits

Facilitating aural comprehension and prompt oral response using idiomatic expressions based on topics of everyday life, which will also serve in the writing of compositions. Use of idiomatic expressions will be augmented by wordbuilding exercises.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-203 or concurrent enrollment, or departmental approval, or three years of high school Russian.

RUSS-242 Russian Civilization 4 Credits

Survey of the development of various facets of Russian civilization and intellectual life and traditions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-203 or concurrent enrollment, or departmental approval, or three years of high school Russian.

RUSS-243 Readings in Russian Literature 4 Credits

Survey of Russian literature with an emphasis on 19th and 20th centuries, highlighting the prose and verse of representative authors and their works.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): RUSS-203 or concurrent enrollment, or departmental approval, or three years of high school Russian.

SOCIOLOGY - SOC

SOC-101 Introductory Sociology 4 Credits

Survey of the principles, theory, concepts and research methods used in sociology. Intensive study of such concepts as culture, social organization, norms, status and social stratification.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

SOC-102 Social Institutions 4 Credits

Examination of social institutions with special emphasis on the five pivotal institutions--the family, education, religion, economy and government--employing principles, concepts, theories and research methods introduced in the prerequisite course "Introductory Sociology".

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101 or SSCI-103.

SOC-121 Marriage and Family Life 3 Credits

Examination of contemporary marriage and family relations from a social-psychological perspective; special emphasis on the man-woman relationship in transition; alternative models examined.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101 or PSY-102.

SOC-201 Social Problems 4 Credits

Pathology of modern American society, including topics such as juvenile delinquency, adult crime, alcoholism, mental health, rural-urban conflict or other problems of current concern.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101.

SOC-205 Introduction to Social Services 4 Credits

History of social services with emphasis on the United States from colonial times to the present; the emergence of social work as a profession; the helping services in perspective.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101 and departmental approval: sophomore standing.

SOC-210 Aging in Comparative Cultures 3 Credits

Social processes of aging and social characteristics of old age in a variety of simple and complex societies which will include examination of changes in social roles; friendships and family patterns; relationship of aging to political and economic institutions; variations due to class, ethnicity, gender and religion; and characteristics of ageism in society.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101.

SOC-231 Contemporary American Black-White Relations

4 Credits

Sociological and psychological analysis of contemporary American black-white relations. Study of minority-majority behavior patterns as they are related to social-historical structure, stratification and power.

Consideration of programs, movements and realistic alternatives to present conditions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101 or departmental approval.

SOC-251 Urban Sociology

4 Credits

Nature and scope of the American urban environment.

Urban condition as it relates to politics, technology, bureaucracy, ecology, work and leisure, inequality, racism, sexism, youth, education, human aggression, alienation, new life styles; alternatives to the urban crisis considered.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SOC-102 or SOC-201.

SOC-255 Racial and Ethnic Relations

4 Credits

Cultures, problems and strengths of racial and ethnic groups and their comparative patterns of interaction, assimilation and adaptation. Emphasis on social structure, nature, and consequences of power differences and forms of prejudice and discrimination in the United States and in other modern countries.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SOC-101 or departmental approval.

SOC-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Cooperative Education Program.

SOC-270 Special Topics in Sociology

1-4 Credits

Study of selected topics, themes or trends in sociology (see schedule booklet for current offerings). (Repeatable. No more than 8 credits of special topics courses may be applied towards fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

SOC-281 Independent Research in Sociology

1 Credit

Must be taken concurrently with any 200-level course in sociology. Specific content is to be arranged through a contract between the instructor and each student. May be repeated for an accrued maximum of three credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Instructor approval: must be taken concurrently with a 200-level course in sociology.

SPANISH - SPAN

SPAN-111 Beginning Spanish I

5 Credits

Introduction to Spanish through multiple approach with emphasis on speaking and understanding. Practice in conversational Spanish and aural comprehension on topics of daily interest. Practice in writing basic sentences and simple paragraphs on relevant topics, and in reading short paragraphs. Outside assignment: listening to cassettes in Spanish may be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): None.

SPAN-112 Beginning Spanish II

5 Credits

Study of the Spanish language with emphasis on speaking. Continued practice in speaking, understanding, reading, and writing. Further development of conversational skills. Outside assignment: listening to cassettes in Spanish may be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-111 or one year of high school Spanish.

SPAN-113 Beginning Spanish III

5 Credits

Continued study of the Spanish language. Development of proficiency in understanding, speaking, reading and writing. Emphasis on strengthening conversational skills through discussions of selected readings, cultural topics and more conversational opportunities. Outside assignment: listening to cassettes in Spanish may be required.

Lecture 5 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-112 or two years of high school Spanish.

SPAN-201 Intermediate Spanish I

4 Credits

Intensive exercises in written and oral expression. Grammar review and vocabulary building. Study of Spanish and Mexican civilizations. Introduction to literature.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-113 or three years of high school Spanish.

SPAN-202 Intermediate Spanish II

4 Credits

Intensive exercises in written and oral expression. Continuation of grammar review and vocabulary building. Continuation of introduction to literature.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-201 or three years of high school Spanish.

SPAN-203 Intermediate Spanish III

4 Credits

Intensive exercises in written and oral expression. Emphasis on advanced grammar review and vocabulary building. Continuation of the study of literature.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-202 or three years of high school Spanish.

SPAN-241 Spanish Conversation and Composition

4 Credits

Discussion on topics of everyday life, colloquialisms, vocabulary augmentation and improvement of speech patterns. Practice in writing compositions.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-203 or concurrent enrollment, or departmental approval: three years of high school Spanish.

SPAN-242 Spanish Civilization and Literature

4 Credits

Introduction to Spanish civilization and literature from early beginning to the present day. Special emphasis on the interrelationship between history, geography and literature of Spain and its culture.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-203 or concurrent enrollment, or departmental approval: three years of high school Spanish.

SPAN-243 Readings in Spanish Literature

4 Credits

Introduction to Spanish Latin American literature from the Golden Age to the twentieth century. Highlights of representative authors and their works.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-203 or concurrent enrollment, or departmental approval: three years of high school Spanish.

SPAN-262 Civilizacion y Literatura de Puerto Rico

4 Credits

This course is taught in Spanish. Civilization and literature of Puerto Rico from the pre-Columbian period to the present.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPAN-203 or concurrent enrollment, or departmental approval: three years of high school Spanish.

SPEECH COMMUNICATION - SPCH

SPCH-091 Basic Communication Skills 4 Credits

Demonstration of the many ways in which communication can be processed, distorted or shared. Special emphasis on personal communication growth, processing information, message analysis and verbal expression as basic communication skills necessary for college achievement.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

SPCH-100 Fundamentals of Interpersonal Communication 4 Credits

Involvement and experience in the purpose and process of verbal and non-verbal communication in order to strengthen daily communication needs. Special emphasis is given to perception, self-concept, expressing feelings, empathy and listening as learned interpersonal skills. Applies theoretical concepts with experiential learning through lecture, discussion and simulations.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

SPCH-101 Fundamentals of Speech Communication 4 Credits

Effective speech communication. Application of principles of speech content and delivery to a variety of practical speaking and listening situations.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

SPCH-105 Voice and Articulation 4 Credits

Practical course in the application of both theory and technique to conscious vocal control and development of articulation and pronunciation standards. Individual and group practice. Performance through exercises and readings.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

SPCH-118 Speaking English as a Second Language 4 Credits

Group drill and individual instruction designed to help students achieve adequate proficiency in the use of voice and production of speech sounds in English. Designed for international students as well as those with individual problems in speaking or understanding speech.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

SPCH-119 Speaking English as a Second Language 4 Credits

Emphasis upon achieving carryover of newly corrected speech sounds into connected speech. Designed for international students as well as those with individual problems in speaking or understanding speech.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-118 or departmental approval: placement by department.

SPCH-120 Speaking English as a Second Language 4 Credits

Emphasis on more confident carryover of connected speech (structured situations) into conversational speech (spontaneous situations) appropriate in the work place and social settings. Designed for international students as well as those with individual problems in speaking or understanding speech.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-118 or SPCH-119, or instructor approval: adequate language assessment.

SPCH-121 Group Discussion 4 Credits

Designed to develop more effective and efficient participation in small groups through an understanding and practical application of the knowledge, attitudes and methods of group discussion.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): None.

SPCH-201 Advanced Public Speaking 4 Credits

Organizing and presenting informative speeches, persuasive speeches and speeches for special occasions. Emphasis on using evidence and reasoning to support ideas, adapting to the audience, developing effective oral style and improving physical and vocal attributes of delivery.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-101 or departmental approval.

SPCH-205 Oral Interpretation 4 Credits

Development of a student's oral ability to communicate various types of written material with understanding and appreciation.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-105 or departmental approval: consent of instructor.

SPCH-211 Argumentation and Debate 4 Credits

Discovering, selecting and evaluating evidence and its arrangement into orderly, persuasive oral and written argument. Special emphasis on causes and effects of prejudice, remedies and the influence of language on human behavior.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-101 or departmental approval: consent of instructor.

SPCH-212 Forensics Activity 1 Credit

Participation in a variety of forensic activities by assignment including intercollegiate debate, choral reading, readers theater and individual events. May be repeated for a maximum of six credit hours.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): SPCH-211 or SPCH-205, or departmental approval: consent of instructor.

Course Descriptions

Fall 1996-Summer 1998 Catalog

SPCH-213 Business and Professional Communication 4 Credits

Familiarizes students with theories and practices of oral communication which occur in the organizational/business environment in individual and group situations.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-100, SPCH-101, and SPCH-121; or departmental approval: consent of instructor.

SPCH-215 Introduction to Speech Pathology 4 Credits

Survey of the profession of speech pathology and an introduction to the various organic and functional speech disorders including deviant articulation, delayed speech development and stuttering. Techniques for diagnosis and treatment are explored.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-105 or departmental approval: consent of instructor and sophomore standing.

SPCH-251 Intercultural Communication 4 Credits

Theory and application of communication concepts operating between people of different cultures, subcultures and national systems. Examination of communication and culture. Developing cultural extensions, perception, verbal and non-verbal elements, ethnocentrism, conflict, informal and international communication.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

SOCIAL SCIENCE - SSCI

SSCI-103 Introduction to Social Science 3 Credits

Interdisciplinary approach to the social sciences outlining the roles of the separate disciplines as they pertain to anthropological, sociological, and psychological behavior of man.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

SSCI-104 Introduction to Social Science 3 Credits

Interdisciplinary approach to the social sciences outlining the roles of the separate disciplines as they pertain to the economic and political behavior of man.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): SSCI-103 or SOC-101.

SSCI-105 Introduction to Social Science 3 Credits

Interdisciplinary approach to the social sciences through selected topics and readings on the behavior of man.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): SSCI-104.

SURGEON'S ASSISTANT - PSA

PSA-112 Electrocardiography

1 Credit

Study of the electrocardiogram recording technique and interpretation of electrocardiographic abnormalities, including arrhythmias.

Lecture 0 hours. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-116 Clinical Laboratory Interpretation

2 Credits

Study of common laboratory methods or techniques utilized as diagnostic tools and theory clinical interpretation. Includes hematology, immunology, general chemical diagnostic enzymes and other tests of body functions.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PSA-118 Special Diagnostic and Therapeutic Procedures

2 Credits

Introduction to diagnostic and therapeutic techniques in radiographics and respiratory therapy. Includes lecture and discussion of radiologic and respiratory procedures; their indications and general principles of interpretation.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant Program.

PSA-119 Basic Surgical Skills

2 Credits

Presentation and discussion of fundamental skills and techniques, including aseptic technique, instruments, positioning, prepping, draping, knot tying and wound closure, required to function within the operating room.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-120 Advanced Surgical Skills

3 Credits

Presentation, discussion and observation of surgical skills required to perform first assistant tasks during an operative procedure. Outside assignment: observation in the operating room and participation in live tissue lab.

Lecture 2 hours. Laboratory 2 hours.

Prerequisite(s): PSA-119 and departmental approval: admission to the program.

PSA-131 Surgical Anatomy I

2 Credits

Study of the surgical anatomy of the common pathological processes amenable for surgical therapy, and common surgical procedures used for the treatment of these pathological processes. Includes head, neck, thorax and abdomen.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-132 Surgical Anatomy II

2 Credits

Study of the surgical anatomy of the common pathological processes amenable for surgical therapy, and common surgical procedures used for the treatment of these pathological processes. Includes abdomen, pelvis, genitalia and extremities.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to Physician Assistant or Surgeon's Assistant programs.

PSA-145 Surgical Patient Management

2 Credits

Presentation and discussion of specific aspects of the care and preparation of a surgical patient in the perioperative period including risk factors affecting surgical morbidity and mortality.

Lecture 1 hour. Laboratory 2 hours.

Prerequisite(s): Departmental approval: admission to the program.

PSA-220 Emergency Medicine

2 Credits

Presentation and discussion of patient assessment, management and treatment in an emergency room setting.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

PSA-231 Fundamentals of Clinical Surgery I

3 Credits

Study of the pathophysiology and clinical manifestations and therapeutic management of surgically related disorders of the abdominal walls, alimentary tract, biliary tract, liver, spleen, pancreas, head and neck, endocrine glands, breast, and benign and malignant tumors.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

PSA-232 Fundamentals of Clinical Surgery II

3 Credits

Study of the pathophysiology and clinical manifestation and therapeutic management of surgically related disorders of the blood vessels, chest and lungs, heart and great vessels, acute conditions in infants and children, and fractures and head injuries.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): PSA-231.

PSA-271 Clinical Field Experience I

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, and assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotation in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-120.

PSA-272 Clinical Field Experience II

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotations in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-271.

PSA-273 Clinical Field Experience III

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotations in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-272.

PSA-274 Clinical Field Experience IV

3 Credits

Clinical field experience rotations in which students are assigned to medical/surgical services with responsibility for history and physical examination, assisting in surgery, following the clinical course of surgical patients, and carrying out pre-operative and post-operative care procedures assigned by and under the supervision of the surgeon or resident surgical staff. Rotations in emergency room and internal medicine are included.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): PSA-273.

PSA-291 Clinical Seminar I

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. The focus is on patient and professional communication and "lifelong learning."

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PSA-271 and PSA-272.

PSA-292 Clinical Seminar II

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. The focus is on job search skills and organization of the health care delivery system.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PSA-273.

PSA-293 Clinical Seminar III

2 Credits

Integrates the concepts and knowledge gained from the clinical field experience rotations into a total learning process. The focus is on professional associations and political/legislative issues.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 20 hours per quarter.

Prerequisite(s): Concurrent enrollment in PSA-274.

THEATRE ARTS - THEA

THEA-101 Theatre Appreciation

4 Credits

Examination of the theatre as an art form: how playwrights, directors, actors, scenic designers, costumers, make-up artists and technicians approach their crafts. Students are not required to perform.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-110 Survey and Appreciation of Musical Theatre

4 Credits

Survey and appreciation of dramatic, musical and staging development of American musical theatre from the 18th century through the 20th century.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-121 Development of Drama I

3 Credits

Survey of dramatic presentations, conventions and techniques from classical Greece through the Commedia dell'arte.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-122 Development of Drama II

3 Credits

Survey of dramatic presentations, conventions and techniques from the Renaissance through the 18th century.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-123 Development of Drama III

3 Credits

Survey of dramatic presentations, conventions and techniques from the 19th century to the present.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-130 Fundamentals of Theatrical Make-Up

3 Credits

Practical application of theory and techniques of make-up for performers.

Lecture 2 hours. Laboratory 2 hours. Prerequisite(s): None.

THEA-140 Introduction to Scenic Design

3 Credits

Theory and practice of set design. Orientation to elements of scenery.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-141 Introduction to Scenic Design

3 Credits

Preparation of floor plans, elevations and color renderings of scaled model.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): THEA-140 or departmental approval: consent of instructor.

THEA-142 Stage Lighting Design

3 Credits

Examination of contemporary scenic design and study of stage lighting.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-150 Fundamentals of Acting

3 Credits

Theory and practice of the basic techniques of acting: body movement, voice production and diction. Introduction to scene study.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

THEA-151 Improvisation and Character Study

3 Credits

Study of improvisational techniques leading to creation and analysis of character through theatre games, situational problems, developmental techniques and behavioral motivation.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

THEA-152 Vocal Characterization

3 Credits

Emphasis on voice training and vocal interpretation applicable to stage performance and involving techniques necessary for versatility of characterization.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): None.

THEA-153 Stagecrafts

1 Credit

Workshop in technical theatre. Scenery, lighting, costumes, properties and sound by assignment in campus theatrical productions. May be repeated for credit, however no more than six credits may be applied to degree requirements.

Lecture 0 hours. Laboratory 3 hours.

Prerequisite(s): None.

THEA-154 Rehearsal and Performance

2 Credits

Practical experience for students accepted as members of a College theatre company as actors, stage managers or in positions created by the needs of the specific production other than technical. May be repeated for an accrued maximum of eight credits.

Lecture 0 hours. Laboratory 12 hours.

Prerequisite(s): Departmental approval: by audition.

THEA-172 Introduction to Radio and Television

4 Credits

Survey of the radio and television industry and its impact on contemporary society with a critical study of broadcast programming including production, direction and writing.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

THEA-180 Television Performance Techniques

3 Credits

Practical course in studio situation to learn basic techniques and to acquire on-camera experience for use in professional settings or for personal advancement.

Lecture 3 hours. Laboratory 1 hour. Prerequisite(s): None.

THEA-210 Arts Management I

3 Credits

Introduction to the principles and methods of management of non-profit arts and cultural institutions including funding, financial control, production, facilities, marketing and community relations.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval.

THEA-211 Arts Management II

3 Credits

Detailed study of techniques of grant proposals, funding solicitations, organizational structures, sales, subscriptions, purchasing, contracts and legal problems.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): THEA-210 or departmental approval.

THEA-250 Advanced Acting

3 Credits

Scene study, methods of characterization. Consideration of styles of acting. Refinement of acting techniques of the individual student.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): THEA-152 or departmental approval: consent of instructor.

THEA-251 Advanced Acting

3 Credits

Scene study and methods of characterization. Consideration of styles of acting. Refinement of acting techniques of the individual student.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): THEA-152 or departmental approval: consent of instructor.

THEA-252 Advanced Acting

3 Credits

Scene study and methods of characterization. Consideration of styles of acting. Refinement of acting techniques of the individual student.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): THEA-152 or departmental approval: consent of instructor.

THEA-260 Cooperative Field Experience

1-3 Credits

Limited to students in the Cooperative Education Program. Employment in an approved training facility under College supervision. Requirement for one credit is 120 hours of approved work. Students may earn up to three credits in one quarter. May be repeated to a cumulative maximum of twelve credits.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: 120 clock hours of approved work per credit hour. Prerequisite(s): Formal acceptance into the Cooperative Education Program.

THEA-270 Special Topics in Theatre

1-4 Credits

Specialized course focusing on lectures of selected topics in the traditional theatre arts and television areas. (Repeatable. No more than eight credits of special topics courses in Theatre Arts may be applied toward fulfilling elective graduation degree requirements.)

Lecture 1-4 hours. Laboratory 0 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

THEA-272A Special Topics in Theatre - Laboratory Experience

1-4 Credits

Specialized 2-hour lab per credit focusing on problem solving within a selected topic. Emphasis will be on performance and production. (Repeatable. No more than eight credits of special topics courses may be applied toward fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 2-8 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

THEA-272B Special Topics in Theatre - Laboratory Experience.

1-4 Credits

Specialized 3-hour lab per credit focusing on problem solving within a selected topic. Emphasis will be on performance and production. (Repeatable. No more than eight credits of special topics courses may be applied toward fulfilling elective graduation degree requirements.)

Lecture 0 hours. Laboratory 3-12 hours.

Prerequisite(s): Faculty counterparts determine appropriate prerequisite/corequisite for each topic.

THEA-281 Advanced TV Performance

3 Credits

Video performance training leading to the preparation of sample reels; audition procedures and conduct and financial aspects of the local and national market.

Lecture 3 hours. Laboratory 1 hour.

Prerequisite(s): THEA-180 or departmental approval.

THEA-282 Film Performance Techniques

3 Credits

Performance course preparing students to adapt their acting/presentation skills to the technical demands of cinematic form including direction for camera, focus, movement, interaction and shot composition.

Lecture 3 hours. Laboratory 1 hour.

Prerequisite(s): THEA-180 or departmental approval.

THEA-290 Radio Broadcast Performance I

4 Credits

Introduction to principles and techniques of performance for the audio broadcast media with background in broadcast conventions and production procedures.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): SPCH-105 or departmental approval.

THEA-291 Radio Broadcast Performance II

4 Credits

Principles of radio production including various forms of announcement, commercial copy, delivery and interpretation and other forms of radio performance, including new reading and interview techniques. Emphasis on preparation of a professional audition tape and marketing one's talents.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): THEA-290 or departmental approval.

URBAN STUDIES - UST

UST-101 Introduction to Urban Studies

4 Credits

Examination of the background of major urban problems, with an overview of U.S. urban history. Emphasis on comprehension of the roots of contemporary urban America.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

UST-102 Urban Geography

4 Credits

Geographical study of cities and their regions. Emphasizes area aspects of urban centers. Arrangements of cities in space and their internal patterns, including human behavior and the impact of natural resources.

Lecture 4 hours. Laboratory 0 hours. Prerequisite(s): None.

UST-111 History of Immigration in America

3 Credits

Analyzes how and why America became a home for diverse nationalities and races from the rest of the world. Explanation of how each group's background, time of arrival, settlements and assimilation shaped life in America. Exploration of the relationships between and among different groups. Explanation of their contributions to America and how cultural differences should be tolerated and celebrated as an asset.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): UST-101 or departmental approval: permission of instructor.

UST-112 History of Cleveland

3 Credits

Analyzes the development of Cleveland from a New England village to a metropolitan area of over one million people. Examines the role of economic and technical change, immigration, reform, world war, demographics, labor unions, transportation and political leadership. Study of how each major era of the city shaped the present.

Lecture 3 hours. Laboratory 0 hours. Prerequisite(s): None.

UST-113 Ethnic and Minority Communities in Cleveland

3 Credits

Provides an understanding of Cleveland's neighborhoods. Analyzes how and why Cleveland became an industrial metropolis of diverse immigrant and migrant communities. Explores the extent to which various groups first achieved a sense of community and then assimilated into the host society. Religious institutions, the family and work patterns, fraternal societies, public and parochial education and other political social institutions will be treated from the perspective of their role in the formation and maintenance of communities in Cleveland.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): UST-101 or departmental approval: permission of instructor.

UST-202 Urban Cultures

4 Credits

Examination of cultural diversity within urban populations. Special emphasis on interaction of groups and value systems.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): ANTH-101 or SOC-101.

UST-206 Urban Politics

4 Credits

Study of the variety of problems, politics, and public policies as related to American cities. Inner cities, suburbs, and metropolitan areas are characterized and analyzed. Emphasis is placed upon the endeavor to make cities function more efficiently and to improve the quality of life of their inhabitants.

Lecture 4 hours. Laboratory 0 hours.

Prerequisite(s): POL-101.

UST-281 Independent Research in Urban Studies

1 Credit

Must be taken concurrently with any 200-level course in urban studies. Specific content is to be arranged through a contract between the instructor and each student. May be repeated for an accrued maximum of three credits.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Instructor approval: must be taken concurrently with a 200-level course in urban studies.

VETERINARY TECHNOLOGY - VT

VT-100 Veterinary Terminology

2 Credits

Terminology and abbreviations commonly used by the veterinary profession and animal owners. Emphasis placed on common colloquialisms, word construction, word analysis and the usage of basic and complex terms commonly encountered in veterinary medicine.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: completion of high school biology or a College equivalent course.

VT-102 Breeds of Domestic Animals

2 Credits

Recognition of physical and behavioral characteristics of commonly encountered breeds of dogs, cats, horses, cattle, sheep and pigs. Commonly encountered breed associated hereditary and congenital clinical abnormalities are emphasized.

Lecture 2 hours. Laboratory 0 hours. Prerequisite(s): None.

VT-104 Veterinary Science I

4 Credits

Introduction to Veterinary Technology, basic companion animal and laboratory animal behavior, husbandry and nutrition. Laboratory focuses on non-invasive clinical management techniques including physical examination, grooming and other in-office procedures.

Lecture 3 hours. Laboratory 3 hours.

Prerequisite(s): Departmental approval: admission to veterinary technology program.

VT-106 Veterinary Radiography

3 Credits

Introduction to X-radiation production, utilization and maintenance of radiographic equipment, techniques of exposure and development of diagnostic radiographs, radiographic positioning and special contrast procedures. Field trips are included for large animal studies.

Lecture 2 hours. Laboratory 3 hours.

Prerequisite(s): VT-104, VT-100, and BIO-141.

VT-110 Veterinary Law and Ethics

1 Credit

Overview of the federal, state and local laws and agencies which currently impact veterinary medicine. Discussion of the technician's role in malpractice litigation. Review of malpractice cases and ethical dilemmas common in veterinary medicine today.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.

Course Descriptions

Fall 1996-Summer 1998 Catalog

VT-112 Veterinary Office Applications I

2 Credits

Introduction to veterinary practice management including veterinary medical record keeping, marketing, facility design, staff responsibilities, interoffice communications and public relation techniques.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): Admission to program or departmental approval: field experience.

VT-114 Veterinary Office Applications II

2 Credits

Study of automated veterinary office processing and record-keeping. Computer hardware and software commonly found in small to mid-sized veterinary practices will be described along with office procedures and work flow.

Lecture 1 hours. Laboratory 3 hours. Prerequisite(s): VT-112.

VT-118 Veterinary Parasitology

4 Credits

Study of identification techniques, nomenclature, life cycles, epidemiology and control of internal and external parasites of small animals, horses and cattle.

Lecture 2 hours. Laboratory 4 hours.

Prerequisite(s): VT-100, BIO-142, and departmental approval: admission to the program.

VT-120 Animal Health and Disease I

3 credits

Physiological systems approach to the most frequently encountered diseases and metabolic problems of dogs and cats including disease names, definition and history, animals at risk, causes and signs, diagnosis, treatment and prevention.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BIO-142, and VT-214.

VT-122 Veterinary Science II

5 Credits

Basic food animal and equine behavior, husbandry and nutrition. Laboratory focuses on restraint, handling and performance of common veterinary procedures used as part of large animal management and/or treatment of common clinical conditions. Field trips are included for the laboratory portion of this course. (Students must provide their own transportation to these facilities.)

Lecture 4 hours. Laboratory 3 hours.

Prerequisite(s): VT-104, VT-102, VT-100, and BIO-142.

VT-131 Veterinary Anatomy and Physiology

3 Credits

Comparative presentation and discussion of the anatomy and physiology of the canine, feline, equine and bovine species. Study of the clinically significant anatomy and physiology of these domestic species as required for the veterinary technician.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): BIO-145 or concurrent enrollment.

VT-200 Clinical Practicum I

1 Credit

Clinical experience. Students observe and assist with common procedures in both small animal practice and animal population control settings.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Prerequisite(s): Concurrent enrollment in VT-202 or VT-206 or VT-210; and departmental approval: admission to program.

VT-202 Clinical Seminar I

1 Credit

Study of individual clinical situations occurring during the clinical practicum experience. Expanded study of the technician's role in euthanasia of an animal including methodology, mental preparation and understanding the grieving owner.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Concurrent enrollment in VT-200 or VT-204 or VT-208.

VT-204 Clinical Practicum II

1 Credit

Clinical experience. Students observe and assist with common procedures in equine and laboratory animal settings.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Prerequisite(s): Concurrent enrollment in VT-202 or VT-206 or VT-210; and departmental approval: admission to program.

VT-206 Clinical Seminar II

1 Credit

Study of individual clinical situations occurring during the clinical practicum experience. Expanded study of the technician's role in pediatrics and first aid.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Concurrent enrollment in VT-200 or VT-204 or VT-208.

VT-208 Clinical Practicum III

1 Credit

Clinical experience. Students observe and assist with common procedures in food animal and exotic animal settings.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Practicum: 7 hours per week.

Prerequisite(s): Concurrent enrollment in VT-202 or VT-206 or VT-210; and departmental approval: admission to program.

VT-210 Clinical Seminar III

1 Credit

Study of individual clinical situations occurring during the clinical practicum experience. Preparation for the search for employment including resume preparation and simulated job interviews.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Seminar: 1 hour per week.

Prerequisite(s): Concurrent enrollment in VT-200 or VT-204 or VT-208.

VT-212 Veterinary Surgical Nursing and Assisting 4 Credits

Basic fundamentals of routine veterinary surgery including instrumentation, aseptic technique, fluid therapy, wound healing, specialized procedures and general nursing care.

Lecture 1 hour. Laboratory 6 hours.

Prerequisite(s): MATH-100N and VT-104.

VT-214 Pharmacology for Veterinary Technicians 2 credits

Introduction to veterinary pharmacology including common drug terminology, classifications and usages of drugs, dosage calculations, methods of drug administration, side effects and contraindications.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): MATH-100N, BIO-121, BIO-142, and VT-104.

VT-216 Electrocardiology 1 Credit

Introduction to electrocardiography including operation of the electrocardiograph, origin of the ECG tracing and recognition of common cardiac arrhythmias.

Lecture 1 hour. Laboratory 0 hours.

Prerequisite(s): BIO-142 and departmental approval: admission to program.

VT-218 Avian and Exotic Animal Medicine 2 Credits

Introduction to avian and exotic animal husbandry, physical examination, clinical procedures and common clinical conditions. Field trips included.

Lecture 2 hours. Laboratory 0 hours.

Prerequisite(s): BIO-221 and VT-118.

VT-220 Clinical Pathology I 3 Credits

Veterinary medical laboratory procedures including complete blood counts, coagulation tests, clinical chemistries, urinalysis and serologic diagnostics which are performed commonly in veterinary practices.

Lecture 0 hours. Laboratory 6 hours.

Prerequisite(s): BIO-142 and BIO-221; and departmental approval: admission to program.

VT-222 Clinical Pathology II 3 Credits

Veterinary medical laboratory procedures including veterinary microbiologic techniques, cytology, necropsy and specimen collection and preservation procedures which are performed commonly in veterinary practices. Field trips included.

Lecture 0 hours. Laboratory 6 hours.

Prerequisite(s): VT-220.

VT-224 Animal Health and Disease II 3 Credits

Study of the most frequently encountered diseases and clinical problems of horses, cows, sheep and swine including disease names, definition and history, animals at risk, causes and signs, and treatment and prevention.

Lecture 3 hours. Laboratory 0 hours.

Prerequisite(s): VT-214.

VT-226 Anesthesiology, Emergency Techniques and Dentistry 4 Credits

Fundamentals of veterinary anesthesiology, emergency medicine and veterinary dentistry. Students learn how to administer and monitor anesthesia, assist with cardiopulmonary resuscitation and perform routine veterinary dental prophylactic techniques.

Lecture 2 hours. Laboratory 6 hours.

Prerequisite(s): VT-212, VT-214 and VT-122.

VT-250 Clinical Field Experience 3 credits

Clinical practice of the techniques commonly used in veterinary medicine. Students are assigned to two different types of veterinary practices. Site options may include small animal practices, animal emergency clinics, referral practices, equine practices, mixed practices, food animal practices, laboratory animal facilities and the Cleveland Metroparks Zoo.

Lecture 0 hours. Laboratory 0 hours.

Other Required Hours: Field experience: 36 hours per week.

Prerequisite(s): VT-200, VT-204, VT-208 and VT-226.

VT-270 Special Topics in Veterinary Technology 1-2 Credits

Specialized course focusing on the advances, changes, developing specialties and emerging technology in veterinary medicine. Involves a flexible program of guided reading, discussion and written assignments. (Repeatable. No more than 3 credits of special topics courses may be applied toward the veterinary technology program degree requirements.)

Lecture 1-2 hours. Laboratory 0 hours.

Prerequisite(s): Departmental approval: admission to the program.