ACCOUNTING (ACC)

ACC 100  3 C/45 CH  
Introduction to Accounting  
F, Sp, Sm  
Fundamental accounting techniques as related to small business firms. The accounting equation and account classification, journalizing, posting, adjustments and preparation of financial statements. For students desiring a single course in accounting or for students who need to strengthen a limited background prior to pursuing ACC 110.

ACC 105  3 C/45 CH  
Income Tax Accounting  
F, Sp, Sm  
Practical approach to fundamental tax laws affecting individuals. Development of proficiency in the preparation of individual, federal, state and municipal tax returns. Some attention given to partnership and corporate returns.

ACC 110  4 C/60 CH  
Principles of Accounting I  
F, Sp, Sm  
Current accounting theories and practices, presented from a financial and managerial viewpoint. Journal and ledger techniques, working papers, financial statements, inventory evaluation, depreciation methods, financial resources and cost/revenue matching.

ACC 111  3 C/45 CH  
Principles of Accounting II  
Prerequisite: ACC 110  

ACC 210  3 C/45 CH  
Intermediate Accounting I  
Prerequisite: ACC 111  
In depth study of accounting theory, analysis of stockholder’s equity (capital stock, retained earnings, dividends) and assets cash, receivables, inventories, investments.

ACC 211  3 C/45 CH  
Intermediate Accounting II  
Prerequisite: ACC 210  
Analysis of fixed assets, liabilities, and reserves, statements, reorganizations, income tax allocations, pension, accounting, parent and subsidiary accounting, and business combinations.

ADDICTION STUDIES (ADD)

ADD 102  3 C/45 CH  
Addictions Counseling: Theories and Techniques  
Prerequisite: Introduction to Addictions  
This course provides theory and skill acquisition by utilizing intervention strategies designed to obtain therapeutic information, support recovery, and prevent relapse.

ADD 110  3 C  
Introduction to Addiction  
This course explores the physical, emotional, psychological, and cultural aspects of the addictive process. Emphasis is placed on addiction to food, sex, alcohol, drugs, work, gambling, and relationships. This course provides foundational knowledge for counseling persons with addictive disorders. The student is introduced to working definitions of substance abuse, addiction, chemical dependency, and process addiction. Competencies and requirements for MCBAP & IC&RC certification are explained.
ADD 130  
Assessment, Diagnosis and Treatment of Addictions  
This is the first course in the methods sequence with the primary focus being on human service delivery to individual clients. Attention will be given to the development and enhancement of professional skills in social history taking, diagnostic assessment, and the relation of assessment to treatment planning/intervention with clients from various, diverse populations, and populations at risk.

ADD 135  
Addiction Field Practicum Methods Seminar I  
This is the second clinical course required for the addiction counseling program. Students will have the opportunity to work in community clinical settings that serve clients with addiction problems. They will gain first-hand experience and develop clinical competency in group facilitation, case-management, and system approaches to addiction treatment in a community setting. The course will consist of seminar and clinical experiences. Students will have supervision on-site, and then de-brief their experiences in class, sharing both their learning and their challenges. Students will also prepare for state certification and employment.

ADD 214  
Pharmacology of Addiction  
This course will acquaint the student with psychological, physiological, and sociological effects of mood altering substances and behaviors and their implications for the addiction process are discussed. Emphasis on pharmacological effects of tolerance, dependency/withdrawal, cross addiction, and drug addiction are discussed.

ADD 235  
Addiction Field Practicum/Methods Seminar II  
This is the second clinical course required for the addiction counseling program. Students will have the opportunity to work in community clinical settings that serve clients with addiction problems. They will gain first-hand experience and develop clinical competency in group facilitation, case-management, and system approaches to addiction treatment in a community setting. The course will consist of seminar and clinical experiences. Students will have supervision on-site, and then de-brief their experiences in class, sharing both their learning and their challenges. Students will also prepare for state certification and employment.

AFRICAN-AMERICAN STUDIES (AAS)

AAS 120  
Sociology and the African-American Community  
A survey of basic sociological concepts and theories of social organization from the African-American perspective. Emphasis on the nature of society and the factors affecting the development of culture; groups, and African American institutions.

AAS 131  
American Government & African American Struggle  
Structure and function of American government. Critical inspection of city, state, and federal government operations and their responsiveness to the needs of African Americans and other minorities.

AAS 140  
The Psychology of the African-American Experience  
Fundamental concepts and principles of psychology from the African-American perspective. Emphasis on behavioral elements affecting black and white relations, and on linkages between the behavior of traditional and contemporary African people. The role of the black family in the struggle for equality and liberation is explored.

AAS 150  
African-American People in Michigan History  
A course designed to give the student an historical perspective of the development of Michigan with emphasis on the accomplishments and roles the African-American has played in the development of the State and the surrounding region.
AAS 175  
**History of African-American Music**  
F, Sm  
This course traces the development of African-American music in America. An analysis of African music and its influence on the western world as well as the contributions and development of the blues, gospel, jazz and classical artists, such as Mahalia Jackson, Marion Anderson, William Grant Still, Charlie Parker, John Coltrane, Duke Ellington, etc.

AAS 180  
**Introduction to African Politics**  
F, Sp  
Examination of dynamics of African politics and nation-building and a comparison of various post-colonial African governments.

AAS 237  
**Illegal Drug Traffic and the African American Community**  
F, Sp  
Overview of illegal drug traffic and its impact upon the African-American community and the majority community, as well as the criminal justice system. Concentration on the development and functions of local and federal programs, the role of law enforcement and the courts, the rights of the accused, the trafficker and the current situation in the United States.

AAS 253  
**African Caribbean Literature**  
Sp, Sm  
Study of African Caribbean literature encompassing the West Indian islands and adjacent countries South America; Guiana, Suriname, French Guiana and Belize in Central America. Emphasis will be on the linguistic and cultural influences on the prose and poetry of Caribbean literature.

**ALLIED HEALTH (ALH)**

ALH 105  
**Medical Math**  
Prerequisite: MAT 100 or placement test  
Mathematical concepts for the health profession. Application of mathematical principles relative to computations/calculations in the health professions.

ALH 110  
**Medical Terminology**  
Introduction to the terminology of health professions.

Usage, definition, pronunciation and spelling of terms common to the health professions. Computerized study guides and audio cassette tapes are used to enhance student learning.

ALH 115  
**Medical Computer Systems**  
Exploration of computer systems used in the health care industry. Laboratory included.

ALH 214  
**Pharmacology**

Introduction to Pharmacology

ALH 230  
**Medical Ethics**  
Ethical principles and consideration for the allied health professional. Guidelines for practice and conduct relative to legal, moral and ethical duties and responsibilities.

ALH 240  
**Health & Wellness Services in the Community**  
This course is designed to provide students with an introduction to community health. Community health issues and the causes of health inequality will be examined. Power relations among racial, social, cultural and economic groups will also be discussed.

ALH 250  
**Community Health Issues**  
This course will examine social, behavioral and environmental community health-related issues and the controversies that surround them. Group and class presentation work will be emphasized.

ALH 260  
**Community Health Resources**  
This course examines health issues in the community in terms of organization, resources, programming, and special populations. Field trip experiences designed to connect and integrate theory with specific activities in a “real” environment are required in this course.
### ANTHROPOLOGY (ANT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Prerequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 150</td>
<td>3</td>
<td>45 CH</td>
<td></td>
<td>Introduction to Global Studies: F, Sp. This is an international study course that provides students an opportunity to explore many aspects of globalization as a driving force in human life. This interactive class is designed to engage students in a public intellectual conversation that contributes to our common life together and to our understanding of the wider world. This course prepares students for travel overseas after which two to three weeks are spent in the cultural context of a country with opportunities to participate in research, journal writing, creative projects and group sessions. Travel destinations will vary.</td>
</tr>
<tr>
<td>ANT 152</td>
<td>3</td>
<td>45 CH</td>
<td>F, Sp, Sm</td>
<td>Introduction to General Anthropology: The physical and cultural nature and development of humans in relationship to their environment. Race and human variation, archaeology and its uses, the nature and function of culture and the relevance and application of anthropology in modern society.</td>
</tr>
<tr>
<td>ANT 153</td>
<td>4</td>
<td>45 CH</td>
<td>F, Sp, Sm</td>
<td>Introduction to Physical Anthropology: A study of humans from a biological perspective: genetics, comparative behavior of human and nonhuman primates, human growth and development, the concept of “race” and racial variation, fossil evidence concerning human evolution. (Satisfies non-lab natural science requirement.)</td>
</tr>
<tr>
<td>ANT 154</td>
<td>3</td>
<td>45 CH</td>
<td>F, Sp, Sm</td>
<td>Introduction to Cultural Anthropology: A comparative study of different cultures and lifestyles throughout the world. From a cross-cultural perspective, such concepts as kinship, sex roles, taboos, food and eating customs, folklore, magic and religious practices are studied.</td>
</tr>
<tr>
<td>ANT 201</td>
<td>3</td>
<td>45 CH</td>
<td>Sp</td>
<td>Urban Life and Culture: Prerequisite: One Course in ANT or SOC. Using the city and its cultural settings as a classroom and field laboratory, this course is designed to help students develop an awareness and understanding of the nature and diversity of cultural patterns and life-styles within urban America in general and metropolitan Detroit in particular. Various ethnic, religious, social and sexual life-styles and traditions are studied through field experiences and cultural informants.</td>
</tr>
<tr>
<td>ANT 210</td>
<td>3</td>
<td>45 CH</td>
<td>Sp</td>
<td>Anthropology of Sex and Culture: Prerequisite: One Course in ANT or SOC. A cross cultural study of the range, diversity and cultural basis of human sexual behavior in the world and contemporary American Society.</td>
</tr>
<tr>
<td>ARA 101</td>
<td>4</td>
<td>60 CH</td>
<td>F, Sp</td>
<td>Introduction to Arabic I: Prerequisite: ARA 100 or equivalency test. Grammatical construction, vocabulary, simple idioms, oral and written drills to illustrate the linguistic pattern of the Arabic language.</td>
</tr>
<tr>
<td>ARA 102</td>
<td>4</td>
<td>60 CH</td>
<td>Sp, Sm</td>
<td>Introductory Arabic II: Prerequisite: ARA 101. Continuing the study of grammatical construction, vocabulary, simple idioms, oral and written drills to illustrate the linguistic pattern of the Arabic language.</td>
</tr>
<tr>
<td>ARA 105</td>
<td>4</td>
<td>60 CH</td>
<td>F, Sp</td>
<td>Conversational Arabic I: Prerequisite: ARA 102 or departmental approval. Application of skills learned in ARA 101 and 102 to conversation and dialogue. Attention given to various links between modern classical Arabic and the spoken language.</td>
</tr>
<tr>
<td>ARA 106</td>
<td>4</td>
<td>60 CH</td>
<td>Sp, Sm</td>
<td>Conversational Arabic II: Prerequisite: ARA 102 or departmental approval. Application of skills learned in ARA 101 and 102 to conversation and dialogue. Attention given to various links between modern classical Arabic and the spoken language with particular stress on media, broadcast</td>
</tr>
</tbody>
</table>
and various dialects (May be taken independently of ARA 105).

**ARA 201**  
Intermediate Arabic I  
4 C/60 CH  
**F, Sp**  
Prerequisite: ARA 101 and ARA 102  
An in-depth study of grammatical construction, composition and idioms with emphasis on the use of modern Arabic language in literature, newspaper and radio.

**ARA 202**  
Intermediate Arabic II  
4 C/60 CH  
**Sp, Sm**  
Prerequisite: ARA 201  
An extended development of Arabic 201.

**ART (ART)**

**ART 101**  
Drawing I  
3 C/90 CH  
**F, Sp, Sm**  
Supplies Cost Extra  
Introduction to perspective, composition, rendering and other fundamental techniques and elements of drawing. Explores the potentials working with various media with emphasis on drawing, value, perspective, rendering, proportion, color, and composition. All of the subject matter areas including still life, the figure and landscape are explored.

**ART 102**  
Drawing II  
3 C/90 CH  
**F, Sp, Sm**  
Supplies Cost Extra  
Prerequisite: ART 101  
An introduction to advanced techniques in drawing. Explores the potentials working with various media with emphasis on drawing, value, perspective, rendering, proportion, color, and composition. All of the subject matter areas including still life, the figure and landscape are explored. Greater emphasis on personal expression.

**ART 103**  
Drawing III  
3 C/90 CH  
**Sp**  
Supplies Cost Extra  
Prerequisite: ART 102  
This course explores the potentials working with various media with emphasis on drawing, value, perspective, rendering, proportion, color, and composition. All of the subject matter areas including still life, the figure and landscape are explored.

**ART 104**  
Intermediate Arabic I  
4 C/60 CH  
**F, Sp**  
Prerequisite: ARA 101 and ARA 102  
An in-depth study of grammatical construction, composition and idioms with emphasis on the use of modern Arabic language in literature, newspaper and radio.

**ART 105**  
Intermediate Arabic II  
4 C/60 CH  
**Sp, Sm**  
Prerequisite: ARA 201  
An extended development of Arabic 201.

**ART 111**  
Design I  
3 C/90 CH  
**F, Sp**  
Supplies Cost Extra  
An introduction to Design and Composition. An exploration of line, value, texture, shape and space, color and mass through lectures, demonstrations and assignments related to these design elements through various projects.

**ART 112**  
Design II  
3 C/90 CH  
**F, Sp**  
Supplies Cost Extra  
Prerequisite: ART 111  
An introduction to Two Dimensional Design and Composition. An exploration of line, value, texture, shape and space, color and mass through a series of lecture/demonstrations and “Hands-On” assignments. Various elements and materials including glass, wood, metals, ceramic and other materials will be investigated through various projects.

**ART 115**  
Basic drawing for Animation  
3 C/45 CH  
**F, Sp**  
Supplies Cost Extra  
This course will introduce students to the fundamental principles of drawing and drawing for animation. The student will learn the basics skill for drawing principles with an emphasis in game development providing the foundation for understanding and creating animation. Topics are how to draw: animals, human anatomy, natural setting and drawing effectively for animation. The student will develop the essential drawing skill necessary to be a successful animator.

**ART 121**  
Painting I  
3 C/90 CH  
**F, Sp**  
Supplies Cost Extra  
An introduction to opaque media painting. Explores the potentials of painting media with emphasis on drawing, value handling, color, and composition. All of the subject matter areas including still life, the figure and landscape are explored.
ART 122                                               3 C/90 CH
Painting II                                                   Sp, Sm
Supplies Cost Extra       
Prerequisite: ART 121
Continuation of ART 121 with emphasis upon new techniques and materials and more complex subject matter. Explores the potentials of painting media with emphasis on drawing, value handling, color, and composition. All of the subject matter areas including still life, the figure and landscape are explored.

ART 123                                               3 C/90 CH
Painting III                                                        Sm
Supplies Cost Extra       
Prerequisite: ART 122
Continuation of ART 122 with emphasis upon personal expression. Composition, individual painting techniques and development of a painting portfolio will be important aspects of the course.

ART 131                                                3 C/90 CH
Ceramics I                                                       F , Sp
Lab fee
Introduction to fundamental techniques of creating ceramics. Course covers hand-construction clay objects, glaze preparation, glaze application, the kiln and firing. Supplies cost extra. (Meets six hours per week)

ART 132                                               3 C/90 CH
Ceramics II                                                     F , Sp
Lab fee
Prerequisite: ART 131
Continuation of ART 131 with emphasis upon the use of the potter’s wheel and related skills. Supplies cost extra. (Meets six hours per week)

ART 151                                                3 C/90 CH
Sculpture I                                                      F , Sp
Lab fee
Introduction to the fundamental techniques of sculpture. (Meets six hours per week)

ART 152                                               3 C/90 CH
Sculpture II                                                     F , Sp, Sm
Lab fee
Prerequisite: ART 151
Continuation of ART 151 with emphasis upon new techniques and materials. (Meets six hours per week)

ART 171                                       3 C/90 CH
Printmaking I                                F , Sp
Lab fee
Introduction to basic printmaking, multi-color silkscreen printing, relief printing and engraving.

ART 172                                         3 C/90 CH
Printmaking II                                             Sp
Lab fee
Prerequisite: ART 171
Additional printmaking methods including multi-color reductive woodcut and linecut, multi-etched etching, photo silk screen and paper lithography.

ART 173                                         3 C/90 CH
Printmaking III                                      Sp
Lab fee
Prerequisite: ART 172
Advanced printmaking techniques and methods including stone lithography, photo silk screen, collagraph and other printing processes.

ART 174                                         3 C/90 CH
Printmaking IV                                                    F
Lab fee
Prerequisite: ART 173
Emphasis will be placed on individual expression and concentration in one or two printmaking methods.

ASTRONOMY

AST 101                                                 3 C/45 CH
Astronomy I: New Solar System            F, Sp, Sm
A survey course including a study of the solar system, stars and constellations as well as some topics of current astronomical interest.

AUTOMOTIVE SERVICE TECHNOLOGY (AUT)

AUT 114                                               3 C/60 CH
Electrical/Electronic Systems I
Lab fee
Prerequisite: Program Approval
This course is a required course in the Automotive Technology certificate and associate degree programs.
This fundamental course provides students with the necessary skills and understanding to identify, describe, and locate basic parts of major electrical/electronic automotive systems. Electrical theory, operating principles, construction, and maintenance of various components will be applied in this class. Introduction to on-vehicle testing procedures and inspection of electrical components will be performed by students. There will be discussion and testing of on-board computers included. ASE certification requirements will be introduced in this course.

**AUT 115**  
**Electrical/Electronic Systems II**  
3 C/60 CH  
Lab fee  
Prerequisite: AUT 114  
This course is a required course in the Automotive Technology certificate and associate degree programs. This course provides students with the necessary skills and understanding to system construction and operations. Electrical theory, operating principles, construction, maintenance and repair of various components are included in the class. On-vehicle testing, inspection, and diagnoses will be performed by students. There will be discussion and testing of on-board diagnostic computers included in this course. In addition, ASE certification disciplines will be stressed and applied in this course.

**AUT 116**  
**Electrical/Electronic Systems III**  
3 C/60 CH  
Lab fee  
Prerequisite: AUT 114, AUT 115  
This course is a required course in the Automotive Technology certificate and associate degree programs. This advanced course provides students with the necessary skills and understanding of advanced inspection, diagnosis & repair of electrical/electronics in automotive vehicles. The student will perform advanced diagnosing, vehicle testing and repair on today's automobiles using the latest testing equipment. Students will perform the necessary service on OBD I & II vehicles with the use of scan tools and analyzers. In addition, sample ASE certification tests and procedures will be implemented and strongly applied in this course.

**AUT 117**  
**Electrical/Electronic Systems IV**  
3 C/60 CH  
Lab fee  
Prerequisite: AUT 114, AUT 115, AUT 116  
This course is a required course in the Automotive Technology certificate and associate degree programs. This advanced course provides students with the necessary skills and understanding of advanced inspection, diagnosis & repair of electrical/electronics in automotive vehicles. The student will perform advanced diagnosing, vehicle testing and repair on today's automobiles using the latest testing equipment. Students will perform the necessary service on OBD I & II vehicles with the use of scan tools and analyzers. In addition, sample ASE certification tests and procedures will be implemented and strongly applied in this course.

**AUT 118**  
**Engine Performance I**  
3 C/60 CH  
Lab fee  
Prerequisite: AUT 114, AUT 115, AUT 116, AUT 117  
This introductory course is designed to help the student identify engine and computer control systems on the modern automobile. Basic troubleshooting procedures will be used to diagnose the engines electrical, ignition, fuel and emissions systems. Other areas such as ASE certification techniques will also be introduced in this course.

**AUT 119**  
**Engine Performance II**  
3 C/60 CH  
Lab fee  
Prerequisite: AUT 114, AUT 115, AUT 116, AUT 117, AUT 118  
This course is a continuation of AUT 118 and is designed to help the student identify the complex engine and computer control systems on the modern automobile. Basic troubleshooting procedures will be used to diagnose the engines electrical, ignition, fuel and emissions systems. Other areas such as ASE certification techniques will also be introduced in this course.

**AUT 120**  
**Brakes I**  
3 C/60 CH  
Lab fee  
Prerequisite: AUT 114, AUT 115, AUT 116, AUT 117  
This course is designed to provide students with the necessary skills and understanding to research, diagnose, repair and maintain the automotive braking systems. In addition, it will provide the necessary skills to be prepared for the ASE certification brakes exam. Hydraulic theory, brake operating principles, anti-locking brake theory & systems, construction...
maintenance, and inspection will be performed by the student.

AUT 121 3 C/60 CH
Steering & Suspension I
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117
This course is designed to introduce the student to basic components and operations of the automotive suspension & steering systems. Troubleshooting, inspection, and diagnosing of suspension & steering problems will be applied in this course. The student is expected to perform these techniques to show competency in this area. In addition, ASE principles for certification will be highly stressed and applied in this course.

AUT 122 4 C/75 CH
Automatic Transmission
& Transaxle I
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 126, AUT 209
This course is designed to provide students with the necessary skills and understanding to research, diagnose, repair, overhaul and maintain automatic transmissions, operating principles, hydraulics, power flow, testing and overhaul procedures for transmissions and transaxles. On-vehicle inspection, diagnosis and repair are performed by the student.

AUT 124 4 C/75 CH
Engine Repair I
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117
Engine repair is the study of basic theory, design, service, and diagnosis of live automotive engines. Practical application of diagnosis, removal, inspection, measurement, repair, installation, and safety procedures will also be taught.

AUT 125 3 C/60 CH
Heating and Air Conditioning I
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117
This course is designed to provide students with the necessary skills and understanding to research, diagnose, repair and maintain the automotive Heating, Ventilation, and Air Conditioning systems. In addition, it will provide the necessary skills to be prepared for the ASE certification exam.

AUT 126 3 C/60 CH
Manual Drive Train & Axles
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117
This course is designed to provide students with the necessary skills and understanding to identify basic characteristics and components of the manual drive train and axle design. On-vehicle inspection, diagnosis, and repair are performed by the student. Identification of special tools used on these systems will also be explained. In addition, ASE principles for certification will be introduced to the student.

AUT 200 3 C/60 CH
Engine Performance III
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 118, AUT 119
This intermediate course is designed to help the student diagnose and repair the complex engine and computer control systems on the modern automobile. Basic diagnostic procedures will be used to troubleshoot and diagnose the engines electrical, ignition, fuel and emissions systems. Other areas such as ASE certification techniques will also be utilized in this course.

AUT 201 3 C/60 CH
Engine Performance IV
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 118, AUT 119, AUT 200
This advanced course is designed to provide the student with hands-on techniques to inspection, diagnose and repair of complex engine and computer control systems on modern automobiles. Advanced diagnostic procedures will be used to troubleshoot and diagnose the engines electrical, ignition, fuel and emissions systems. An understanding of employment opportunities, “pertaining to engine performance”, will be discussed. While utilizing these tasks, ASE certification principles will be highly stressed and applied in this course.
AUT 203  Brakes II  3 C/60 CH
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 120
This course is a continuation of Brakes I and will be used to exercise the student's abilities to perform theory, diagnosis and operations of automotive braking systems. The student will inspect, remove & replace braking system components, perform machining techniques, overhaul and repair braking systems. This automotive brakes class is a combination of (70%) laboratory experiences and (30%) lecture. Every student will be expected to participate in lab exercises and will be evaluated on an individual basis. The ASE certification requirements will be highly stressed in this course.

AUT 204  Steering & Suspension II  2 C/45 CH
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 121
This course is a continuation course of Steering and Suspension I. This course is designed to provide the student with the knowledge and skills to inspect, diagnose and perform repair procedures on automotive steering and suspension systems, as well as introduction to basic inspection and diagnosing of steering and suspension problems will be applied in this course. Identification of special tools used on these systems will also be explained. In addition, ASE principles for certification will be introduced to the student.

AUT 206  Automatic Transmission & Transaxle II  3 C/60 CH
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 126, AUT 209, AUT 122
This course is a continuation of Automatic Transmission and Transaxle I and will be used to exercise the student's abilities to perform research, diagnose, repair, overhaul and maintain automatic transmissions, operating principles, hydraulics, power flow, testing and overhaul procedures for transmissions and transaxles. On-vehicle inspection, diagnosis and repair are performed by the student.

AUT 207  Engine Repair II  √  3 C/60 CH
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 124
This course is a continuation of Engine Repair I and will be used to exercise the student's abilities to perform theory, diagnosis and operations of automotive engines. Students measure, inspect, recondition, disassemble, and assemble various engine components.

AUT 208  Heating, Ventilation, & Air Conditioning II  3 C/60 CH
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 125
This course is a continuation of Heating, Ventilation, and Air Conditioning I and will be used to exercise the student's abilities to perform theory, diagnosis and operations of automotive heating, ventilation, and air conditioning systems. In addition, it will provide the necessary skills to be prepared for the ASE certification exam.

AUT 209  Manual Drive Train & Axles II  2 C/45 CH
Lab fee
Prerequisite: AUT114, AUT115, AUT 116, AUT 117, AUT 126
This course is a continuation of AUT 126 and is designed to provide students with the necessary skills and understanding to diagnose, disassemble, and reassemble a manual transmission. On-vehicle inspection, diagnosis, and repair are performed by the student.

AVIATION AIRFRAME (APM)

APM 110  Mechanics Airframe and Powerplant  3 C/45 CH
Aviation Mechanics
Area, ratio, proportion, percentage and volume for various shapes and algebraic computations of positive and negative numbers.
APM 111  
Basic Electricity  
Theory of AC-DC electricity.

APM 114  
Materials and Processes  
Identification and selection of appropriate materials for the repair of aircraft and engines. Also includes basic machine shop operations: forming, heat treating and corrosion prevention.

APM 115  
Aircraft Drawing  
Use of drawing symbols and schematic diagrams for hydraulic and electrical systems, use of sketch for repair and developing drafting techniques.

APM 116  
Maintenance Forms Certification  
Use of maintenance forms and other publications in the return to service of the aircraft, including engine and components.

APM 117  
Cleaning and Corrosion Control  
Includes identification of corrosive agents and techniques of cleaning and preventive maintenance.

APM 118  
Test, Preparation and Practice (Core)  
Prerequisite: departmental approval  
Requirements for FAA graduation certificate should be taken with AFM 325 – Option I or PPM 307 Option II. Also recommended for the military veterans or any student meeting the experience requirements of FAR 65, 77. Review of all core subjects. FAA Approved School administers final test.

APM 119  
Weight and Balance, Aerodynamics, Physics  
Theory of aircraft and helicopter flight, including the weight and balance necessary to return the aircraft to service.

AVIATION POWERPLANT MECHANICS (PPM)

PPM 211  
Reciprocating Engines I  
Corequisite: PPM 217  
The principles of operation, construction and assembly of reciprocating engines.

PPM 212  
Reciprocating Engines II  
Prerequisite: PPM 211  
Advanced operations of assembly and overhaul of reciprocating engines.

PPM 216  
Reciprocating Engines III  
Prerequisite: PPM 212  
Specialized techniques in the overhaul of reciprocating engines to manufacturers’ specifications and flight standards.

PPM 217  
Lubrication Systems  
Corequisite: PPM 211  
Identification and selection of engine lubrication oil, the principles of operation for reciprocating and turbine engines and repair of lubrication systems and components.

PPM 218  
Turbine Engines and Ground Control  
Prerequisite: PPM 217  
The principles of operation, disassembly and assembly of turbine engines.

PPM 301  
Engine Electrical Systems I: Fire Protection  
Prerequisite: APM 111  
Repair and testing of electrical systems components and basic principles of fire protection.
BIOLOGY (BIO)

BIO 125 4 C/60 CH
Biology for Non-Science Majors  F, Sp, Sm
Lab fee
A lecture and laboratory course designed for students who have had little or no prior instruction in biology. Four major topic areas will be studied; (1) ecology; (2) cells and genetics; (3) human biology; and (4) hands-on biological methods. Course highlights include using the Internet to reinforce biological concepts and engaging in exciting laboratory-based and lecture-based activities. Strategies to help students apply biology to their everyday life will also be emphasized.

BIO 151 4 C/60 CH
Human Ecology  F, Sp, Sm
Lab fee
A course which develops interrelationships among living things and their environment, with emphasis on these interrelationships in the human community including environmental organization, life processes and conservation in everyday life. The student will be encouraged to offer solutions for environmental problems created by technology.

BIO 155 4 C/60 HL/30 HLB
Introductory Biology  F, Sp, Sm
Lab fee
Lecture and laboratory introductory course for the non-science as well as the pre-professional transfer student. Biological concepts covering the chemical and cellular basis of life will be presented, including such topics as cell structure and function, DNA, bioenergetics, reproduction, metabolic principles, genetics, plant and animal anatomy, ecology and evolution. (Meets six hours per week; four hours lecture and two hours laboratory.)

BIO 165 4 C/60 HL/30 HLB
Botany
Lab fee
Prerequisite: BIO 155
Lecture and laboratory course emphasizing principles of plant biology, including a survey of the plant kingdom with representative life cycles and relationships between plant groups. Emphasis is placed on the development, anatomy, physiology and evolution of gymnosperms and angiosperms. (Meets six hours per week; four hours lecture and two hours laboratory)

BIO 175 4 C/60 HL/30 HLB
Zoology
Lab fee
Prerequisite: BIO 155
Principles of animal biology as they apply to major animal phyla. A survey of the animal kingdom with emphasis on evolutionary and comparative relationships of the various phyla. A comparative study of major animal phyla emphasizing anatomy, physiology and ecological principles. (Meets six hours per week; four hours lecture and two hours laboratory)

BIO 204 4 C/60 CH
Life Science for Elementary School Teachers (Formerly ED 204)
Lab fee: $20.00
Prerequisite: ED 111 and BIO 125
Lecture and laboratory course dealing with life science concepts and the variety of strategies used to teach these concepts in elementary schools. Current State of Michigan life science teaching objectives and associated learning activities will be emphasized. In addition, students will develop a life science lesson and teach it to children in an elementary (K-8) school.

BIO 240 4 C/60 HL/30 HLB
Human Anatomy & Physiology I  F, Sp, Sm
Lab fee
Prerequisite: BIO 155
Lecture and laboratory course on the structure and function of the human body. The cellular, tissue, organ and systems levels are considered. Emphasis is on the integumentary, skeletal, muscular and nervous systems including the special senses. The laboratory supplements the lecture with the use of microscopes to study the four basic tissues. The use of the torso, models, articulated/disarticulated skeletons, dissection of sheep brain and bovine eyes are used to study the other systems. (Meets six hours per week; four hours lecture and two hours laboratory)
BIO 250
Human Anatomy & Physiology II
F, Sp, Sm
Lab fee
Prerequisite: BIO 240
Lecture and laboratory course that is a continuation of the systems found in the human body: circulatory, respiratory, digestion, metabolism, urinary, endocrine & reproductive systems. Body fluid, electrolytes & acid/base balance are also included. The laboratory supplements the lecture topics with the use of the torso, dissection of bovine heart models, charts and slides. (Meets six hours per week; four hours lecture and two hours laboratory)

BIO 252
Pathophysiology
F, Sp, Sm
Prerequisite: BIO 250
This course is designed to introduce mechanism and manifestation of different human diseases. The basic science of pathology is concerned with the etiology and pathogenesis of disease. Essential information is provided for understanding the diagnosis of disease in the clinical setting.

BIO 295
Microbiology
F, Sp, Sm
Prerequisite: BIO 155
Lecture and laboratory course studying the biology of microorganisms. Lecture topics survey the microbes, their uniqueness of cell structure and function, growth, physiological characteristics, genetics, physical and chemical control and selected communicable diseases. The laboratory emphasizes the use of the microscope, staining procedures, cultural and physiological techniques, use of keys to identify representatives of the various microbes. (Meets six hours per week; four hours lecture and two hours laboratory)

BUSINESS (BUS)

BUS 112
Personal Business Affairs
F, Sp, Sm
Phases of business activity in which the individual or family is normally involved: consumer rights, banking, taxation, among others.

BUS 150
Introduction to Business
F, Sp, Sm
An examination of the legal, economic and organizational environments in which modern business operates, including the global dimension of business. A survey approach to the functional areas of business-accounting, information systems, research, finance, management, supervision, human resources and marketing and how they relate to the overall organization.

BUS 175
Small Business Management
F, Sp
General business concepts with special application to small businesses. Detailed treatment of credit practices, franchising, location, inventory and other topics particularly crucial in a small business setting. Cases will be used to develop the student’s analytical.

BUS 177
Small Business Financing
Sp
Prerequisite: BUS 150
This course is a survey of financing policy for small business. Purchase discounts, borrowing, credit purchases, finance charges, consumer credit, financial management, financial statements, financial ratios and equity leverage are included.

BUS 221
Business Statistics
F, Sp, Sm
Prerequisite: MAT 113
Methods of gathering and presenting statistical data. Basic concepts of probability, sampling and tests of significance for decision making are emphasized.

BUS 225
Computer Application in Business
F, Sp, Sm
A study of the computer environment and practice of selected applications on the personal computer. Specific topics include Microsoft applications, the use of word processing with hands-on applications.
using Microsoft Word, spreadsheets with hands-on applications using Microsoft Access. Other topics of current interest in information processing and office automation will be discussed (Course is 75-80% hands-on).

**BUS 228**

**Internet Web Page Design**

3 C/45 CH

F, Sp, Sm

*Prerequisite: OIS 101 Recommended, BUS 225 or CIS 110*

A study of the Internet focusing on Web Page Design for Business Applications using software programs such as a Microsoft FrontPage as well as the HTML (Hypertext Markup Language). Course content is designed to provide students with hands-on applications using the above software tools.

**BUS 240**

**Business Communications**

3 C/45 CH

F, Sp, Sm

*Prerequisite: ENG 120*

An examination of the basic elements of oral and written communications applying basic skills already acquired in the business setting. A study and practice of writing letters, memoranda, short papers and a research paper drawing on business sources. Oral Presentations are required.

**BUSINESS LAW (BL)**

**BL 201**

**Business Law I**

4 C/60 CH

F, Sp, Sm

A survey of the American legal system designed to develop an understanding of the fundamentals of business law. Classes are conducted by using text and actual case studies for the purpose of observing the development and application of legal principles in a business activity. Topics covered include the nature of law, courts and court procedures, crimes and torts, contracts, sales and negotiable instruments.

**CHEMISTRY (CHM)**

**CHM 105**

**Introduction to Chemistry**

4 C/60 HL/30 HLB

*Lab fee*

F, Sp, Sm

Prerequisite: CHM 105, MAT 112

An introductory lecture and laboratory course in chemistry for persons without any previous high school chemistry or for those with an inadequate background for CHM 136. Topics include properties of matter, atomic theory and structure, chemical bonds, nomenclature, composition of compounds, chemical equations and calculations from chemical equations and stoichiometry (meets six hours per week; four hours lecture and two hours laboratory).

**CHM 136**

**General Chemistry I**

4 C/60 HL/30 HLB

*Lab fee*

Prerequisite: CHM 105, MAT 112

First lecture and laboratory course in a two semester general chemistry sequence. It includes a study of stoichiometry, solutions and concentrations of solutions, the gaseous state, molecular geometry and chemical bonding theory, reactions in aqueous solutions and a descriptive study of liquids and solids (meets six hours per week; four hours lecture and two hours laboratory).

**CHM 145**

**General Chemistry II**

4/ 60 HL/30 HLB

*Lab fee*

Prerequisite: CHM 136

This is the second lecture and laboratory course in a two-semester general chemistry sequence. It includes a study of chemical kinetics, chemical equilibrium,
acid-base concepts, acid-base equilibria solubility and complexion equilibria, thermodynamics and electrochemistry (meets six hours per week; four hours lecture and two hours laboratory).

CHM 155  
Survey Organic & Biochemistry  
4 C/60 HL/30 HL  
Lab fee  
Prerequisite: CHM 105 or CHM 136  
A lecture and laboratory course introducing the student to elementary structural organic chemistry as it relates to understanding biochemical reactions. The structure and function of protein, carbohydrates, lipids and nucleic acids are presented. The major metabolic pathways are explored. The role of food nutrition in optimizing metabolism and energy production is discussed (meets six hours per week; four hours lecture and two hours laboratory).

CHM 250  
Organic Chemistry I  
4 C/60 CH  
Prerequisite: CHM 145  
Corequisite: CHM 252  
First lecture course of a one-year sequence in organic chemistry designed for chemistry majors and for students planning to attend professional schools. Topics include introduction to the nomenclature of organic compounds, stereochemistry, reaction intermediates, spectroscopy, kinetics, and thermodynamics (meets four hours per week).

CHM 252  
Organic Chemistry II  
4 C/60 CH  
Prerequisite: CHM 250  
Corequisite: CHM 255  
Second course of a one-year sequence in organic chemistry designed for chemistry majors and for students planning to attend professional schools. Topics include aromatic structures and nomenclature, a more extensive study of reaction mechanisms and synthesis. The chemical basis of biological compounds will also be introduced (meets four hours per week).

CHM 255  
Laboratory for Organic Chemistry I & II  
4 C/90 HLB  
Lab fee  
Prerequisite: CHM 250  
Corequisite: CHM 252  
Preparations, properties, and identification of organic compounds provide the student with basic laboratory skills in organic chemistry (meets six hours per week; six hours laboratory).

CHILD CARE TRAINING (CCT)

CCT 101  
Introduction to Early Childhood Care  
3 C/45 CH  
F, Sp, Sm  
This is a survey class which will acquaint students with an understanding of early childhood and early childhood education programs. Theories and practices in early childhood curricula; the development of a multicultural approach to learning, pedagogy, and child management; national and state standards for licensing of programs; and NAEYC (National Association for the Education of Young Children) recommendations for child development are explored. Class recommended for those who are meeting the State of Michigan Child Care Directors’ 12 credit hours requirement.

CCT 104  
Methods & Techniques in Child Care: Infant & Toddler Development  
4 C/60 CH  
F, Sp, Sm  
Prerequisite: CCT 101 or permission to enroll, EMT 101, ENG 119, HUS 105 or PSY 101, program admittance, police clearances, FIA clearance, immunizations, physical exam and food handler’s card  
Students will explore methods that meet the needs and stimulate the development of infants and toddlers. Students will learn various child management techniques that ensure an environment that is socially, emotionally, communicatively, cognitively, creatively and physically supportive. A multicultural approach to learning is emphasized. Students will be required to complete 45 hour field experience in an infant and toddler setting. Course will meet partial requirements in preparation for the CDA assessment. (One credit hour for practicum and three credit hours for in-class time.) Class recommended for those completing the State of Michigan Child Care Directors’ 12 credit hours requirement and will work with infants and toddlers. AAS degree students enrolled in CCT 104 must complete CCT 257.
COURSE DESCRIPTIONS

CCT 106                                         4 C/60 CH
Methods & Techniques F, Sp, Sm
Pre-School Development
Prerequisite: CCT 101 or permission to enroll, ENG 119, HUS 105, PSY 101, EMT 101 program admittance, police clearances, FIA clearances, immunizations physical exam and food handler’s card
Students will explore methods that meet the needs and stimulate the development of preschool children ages 2 1/2 to 5. Students will learn various child management techniques that ensure an environment that is socially, communicatively, emotionally, cognitively, creatively and physically supportive. A multicultural approach to learning is emphasized. Students will be required to complete a 45 hour field experience in a preschool setting. Course will meet requirements in preparation of the CDA assessment. (One credit hour for practicum and three credit hours of in-class time.) Class is not interchangeable, nor will it be substituted for CCT 105. Class recommended for those who are meeting the State of Michigan Child Care Directors’ 12 credit hours requirement and will work with preschoolers. Students enrolled in CCT 106 must enroll in ENG 285.

CCT 111                                         3 C/45 CH
Child Assessment Techniques: F, Sp, Sm
Child Development Associate
Prerequisite: CCT 101, EMT 101, ENG 119, HUS 105, PSY 101
Students will explore tools and techniques utilized in the evaluation of cognitive, creative, communicative, emotional, social and physical development of children birth through five years of age. The course will explore standardized measures and observational techniques to meet CDA course requirement. Class is not interchangeable, nor can it be substituted for CCT 110.

CCT 120                                         3 C/45 CH
Parent-Child Teacher Relationship Sp, Sm
Prerequisite: HUS 105 and CCT 101 or permission to enroll, ENG 119, PSY 101, ENG 285 or CCT 257 and EMT 101
Students will explore methods and techniques that maintain an open, friendly and cooperative relationship with parents; encourage parental involvement, and support the children’s relationship with her or his family. Class recommended for those who are meeting the State of Michigan Child Care Directors’ 12 credit hours requirement.

CCT 157                                       4 C/164 CH
Child Care Practicum & Seminar I
Prerequisite: ENG 119, HUS 105, HUS 135, CCT 101, CCT 104 or CCT 106, PSY 101 and EMT 101
A supervised practical learning experience in which students work with children (infant and toddlers or preschool ages) in actual facilities under the direction of certified professional staff. Students preparing for the CDA certification will use the field placement to prepare for assessment. Students will meet with their instructor on a weekly basis for a seminar. Class is not interchangeable, nor will it be substituted for CCT 156.

CCT 210                                                     3 C/45 CH
Special Populations F, Sp
Prerequisite: CCT 101, EMT 101, ENG 119, HUS 105, PSY 101 program admittance
A survey class with an emphasis on the identification of the cognitive, communicative, creative, emotional, physical and social growth of infants, toddlers and preschoolers with special needs, accelerated, physical, and emotional; and methods used in the address of these needs to stimulate development. Class will aid CDA students in the completion of the CDA portfolio.

CCT 220                                         3 C/45 CH
Children, Instruction and the Media F, Sm
Prerequisite: ENG 119, HUS 105, HUS 135, CCT 101, CCT 104 or CCT 106, PSY 101 and EMT 101
A curriculum design course, students will learn to design curriculum and use content analytical methods to examine various forms of media (i.e., audio recorders, CDs, computers, display boards, film, overhead transparencies, radio, tape recorders, television, text, video and visuals), and utilize media to augment and enhance classroom curricula. Class recommended for those meeting the State of Michigan Child Care Directors’ 12 credit hours requirement.

CCT 227                                             4 C/ 164 CH
Child Care Practicum & Seminar II F, Sp
Prerequisite: CCT 101, CCT 157 EMT 101, ENG 119, HUS 105, HUS 135, PSY 101, program admittance
A supervised practical learning experience in which students work with children (infant and toddlers or preschool ages) in actual facilities under the direction of certified professional staff. Students preparing for

C = Credits     CH = Contact Hours     HL = Hours Lecture     HLB = Hours Lab
F = Fall     Sp = Spring     Sm = Summer
the CDA certification will use the field placement to prepare for CDA assessment. Students will meet with their instructor on a weekly basis for a seminar. Class is not interchangeable, nor will it be substituted for CCT 226.

CCT 230  
Program Management & Supervision  
F, Sp  
Prerequisite: PSY 101, HUS 105, ENG 119, CCT 101 and EMT 101  
This course will focus on the administrative program management, and supervision fundamental to the operation of early childhood programs and centers. Includes establishment of an organizational system, budget development and controls, licensing, business proposal writing, staffing, staff evaluation and supervision. CDA course requirement. Class recommended for those who are meeting the State of Michigan Child Care Directors’ 12 credit hours requirement.

CCT 257  
Infant Literature;  
Birth to 36 Months  
F, Sp, Sm  
Prerequisite: ENG 119, CCT 101, PSY 101  
The “Infant Literature” course is designed in response to developing literature foundations among infants and toddlers ages two weeks to 36 months, and identify methods to assist parents. Recommended for CDA students who are seeking certificate upgrade. CCT 104 students must also enroll in this class.

CCT 260  
Portfolio -Methods and Techniques  
F, Sp, Sm  
Prerequisite: CCT 101, 104, 106,110, 120, 157, 210, 220, 230 and ENG 119.  
Students will construct a portfolio using data collected from previous course work and/or practical experiences. The portfolio can be used to meet CDA requirements. It can serve as a demonstration of knowledge and experience when applying to university and for employment.

CHINESE (CHN)

CHN 101  
Introduction to Chinese Language  
F, Sp, Sm  
This course is designed for beginning students and aimed at developing the four skills of listening to, speaking, reading, and writing Chinese. Emphasis is on grammatical constructions, vocabulary, basic idioms, and phonetics. Special emphasis will be on development of conversational Chinese.

COMMUNITY COLLEGE ORIENTATION (CCO)

CCO 100  
Community College Orientation  
F, SP, Sm  
This course is designed to assist new students in making a successful adaptation to the college environment and enhancing basic study skills. The course emphasis is on improving students’ academic, social and interpersonal skills through introduction to the life and study skills essential for academic success. This course is designed to increase student’s awareness and use of resources both within and outside of the college (meets two hours per week for seven and one-half weeks).

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 110  
Introduction to Computer Information Systems  
F, Sp, Sm  
Designed as a first course for Computer Information Systems majors which will introduce the vocabulary and concepts of computer hardware and software. The computer information industry, career paths, systems, concepts, societal impacts and ethical issues will be discussed.

CIS 112  
Structured Design  
Corequisite: CIS 110  
Designed to introduce problem solving methods, algorithm development and designing, coding, debugging and documenting programs using techniques of top-down, structured programming style.
CIS 203  
3 C/45 CH
Visual Basic Programming Language  
Prerequisites: CIS 110, CIS 112
This course is designed to introduce the student to Visual Basic programming language. This course covers Visual Basic concepts, tools, and programming methodology to create user friendly Microsoft Windows Application.

CIS 207  
4 C/60 CH
Java Programming Language  
Prerequisites: CIS 110, CIS 112
This course is designed to introduce the student to Java programming including providing the knowledge and skills necessary for object-oriented programming. The student will learn how to program in Java which includes its syntax, its environment and its support for graphical user interface.

CIS 209  
4 C/60 CH
C Programming Language  
Prerequisites: CIS 110, CIS 112
This course is designed to develop an understanding of the C programming language. C is a general-purpose programming language widely used in both systems programming and application programming. Students will solve programming assignments using C what is a programming known for its brevity of expression, modern control flow and data structures, and a rich set of operators.

CIS 210  
3 C/45 CH
Introduction to Unix Operating Systems  
Prerequisites: CIS 110  
This course is designed as a first course for computer information systems majors, and novice Unix users with computer skills but no experience with any operating system. This course is a comprehensive overview of the Unix Operating System, and the environment in which it functions. Students will use the college’s desktop computers, ubiquitous network, and Unix Server to facilitate their understanding.

CIS 212  
4 C/60 CH
Linux  
Prerequisites: CIS 110, CIS 210
In this course students will define and identify origins, benefits, drawbacks, and uses of the Linux operating system. The students will log in, enter commands, shut down and restart your Linux workstation, create and configure users and groups, and manage the filesystem. The students will use Linux text editors and redirection to create and modify files, archive files with tar, cpio, and other commands. The students will work in the X Window environment, manage print services, and add and update packages through package management utilities.

CIS 213  
3 C/45 CH
Web Design Methodology and Technology  
Prerequisites: CIS 110, CIS 241
This course teaches students how to create and manage Web sites with Multimedia tools such as Macromedia Dreamweaver and Flash, FrontPage, Dynamic HTML, and various multimedia and CSS standards. Students will also implement strategies to develop third-generation Web sites, evaluate design tools, discuss future technology standards, and explore the incompatibility issues surrounding current browsers. This course also focuses on theory, design and Web construction.

CIS 223  
3 C/45 CH
COBOL I  
Prerequisites: CIS 110, CIS 112
Cobol I is designed to enable the students to learn the COBOL programming language from algorithm development and designing to coding, debugging, and documenting programs using structured programming methodologies.

CIS 237  
7 C/105 CH
Cisco CCNA  
Prerequisites: CIS 110, CIS 240
In this class the students will broaden their working knowledge of routing protocols. Through hands on work with Cisco switches and routers the student will install, configure and operate small networks.

CIS 240  
3 C/45 CH
Networking Essentials  
Prerequisite: CIS 110
This course will be an introduction to network concepts. The students will describe the features and functions of networking components, and possesses the knowledge and skills needed to install, configure and troubleshoot basic networking hardware. Protocols and standards, network implementation, and network support are also covered in this course.
CIS 241 4 C/60 CH
Internet Foundations
Prerequisites: CIS 110
This course teaches students about internet connection methods, protocols, hypertext markup language, along with networking technologies. Students will learn about how websites are developed, wireless networking, and networking troubleshooting.

CIS 242 3 C/45 CH
Web Administration
Prerequisites: CIS 110, CIS 210 and CIS 244
This class is a comprehensive course that teaches students how to install a website and keep it in up and running. Students will also learn how to keep the hosting server working in different operating systems. At the end of this course, students will be able to provide essential services for anyone interested in establishing an effective e-business presence.

CIS 243 3 C/45 CH
Network Security Fundamentals
Prerequisites: CIS 110, CIS 210 and CIS 240
This course will teach students the latest security industry recommendations and how to properly protect servers from attacks in a variety of settings. Students will learn how to keep servers reconfigure the operating system to fully protect it, and scan hosts for known security problems. By the end of the course, students will have a solid understanding of the security architectures used by Windows and Linux.

CIS 244 3 C/45 CH
TCP/IP Concepts and Practices
Prerequisites: CIS 110 and CIS 240
In this course the students will learn Transmission Control Protocol/Internet Protocol (TCP/IP) key concepts and protocols. Network routing, network troubleshooting and network management also will be addressed.

CIS 245 3 C/45 CH
Wireless Networking
Prerequisites: CIS 110 and CIS 240
This course will introduce the student to wireless networking over a range of applications, from local area networks to broadband wide area network links. Students will be able to describe the advantages and disadvantages of wireless communication in general, and understand the difference between radio and infrared. The course will cover WLANs, configuration and security problems.

CIS 246 4 C/60 CH
Oracle Database Administrator I
Prerequisites: CIS 285
In this course the student will gain a conceptual understanding of the Oracle database and how its components work and interact with one another. Students will learn how to create a working database and properly manage it including performance monitoring, database security, user management, and backup/recovery techniques.

CIS 247 4 C/60 CH
Oracle Database Administrator II
Prerequisites: CIS 246
In this class, the students will learn how to configure an Oracle database for multilingual applications. Students will practice various methods of recovering the database, using RMAN, SQL, and Flashback technology. Tools to monitor database performance and improve database performance.

CIS 248 3 C/45 CH
Computer Support II
Prerequisites: CIS 110, CIS 240 and CT 211
In this class the student will learn how to resolve end-user operating systems problems by phone or, by connecting to the system remotely. It also gives the students skills needed to support end-users from Microsoft windows in a corporate environment or at home.

CIS 249 3 C/45 CH
Computer Support I
Prerequisites: CIS 110, CIS 240 and CT 211
In this course the student will over view the operating systems concept and how to troubleshoot windows. The students will also learn how to answer end-user questions and troubleshoot security settings.

CIS 250 3 C/45 CH
E-Commerce Strategies and Practices
Prerequisites: CIS 110, CIS 241
The E-Commerce Strategy and Practices course teaches students how to conduct business online and how to manage the technological issues associated with their operations.
with constructing an electronic-commerce website. Students will implement a genuine transaction-enabled business-to-consumer website, examine strategies and products available for building electronic-commerce sites, examine how such sites are managed, and explore how they can complement an existing business infrastructure. Students get hands-on experience implementing the technology to engage cardholders, merchants, issuers, payment gateways and other parties in electronic transactions.

**CIS 258**
4 C/60 CH

**JavaScript /PERL**

*Prerequisite: CIS 110, CIS 112*

This course teaches developers JavaScript Fundamentals and how to use the features of the JavaScript language. Students will also learn how to write JavaScript programs, script for the JavaScript object model, control program flow, validate forms, animate images, target frames, and create cookies.

**CIS 259**
4 C/60 CH

**C++ Object Oriented Programming Language**

*Prerequisite: CIS 209*

Designed to foster an understanding of object oriented programming and to develop a working knowledge of the C++ programming language, this course stresses the use of objects and designing and implementing individual classes using C++. Students will be using computers to solve programming assignment which practice the syntax of C++.

**CIS 260**
3 C/45 CH

**System Analysis and Design**

*Prerequisite: CIS 110, CIS 112*

This course is designed to introduce the systems design process in designing systems using project management techniques. Emphasis is placed on systems concepts and systematic thinking. Major topics include the basic tools and methods of traditional systems development, traditional analysis, design, and implementation through the data flow analysis and systems development life cycle approach, and methods for structured analysis and design.

**CIS 266**
3 C/45 CH

**Introduction to Graphic Design**

*Prerequisites: CIS 110*

This course is designed to enhance the computer skills of those using graphics programs to prepare images for the Web or for print in 2D. Students will learn to enhance and create digital images using Photoshop; optimize images for speed of download; place and manipulate type in an image; work with layers and masks; use filters for special effects; work with background images and transparent gifs; create image maps; use Image Ready to create animations, slices, web photo gallery, and rollovers.

**CIS 267**
3 C/45 CH

**Understanding and Developing Multimedia**

*Prerequisites: CIS 110*

*Recommended: CIS 266*

Students in this course will create dynamic media that communicates effectively through the use of sound, images, motion, and text. The students in this course will also examine in detail the concepts and tools necessary for producing their own interactive projects using a number of professional authoring tools, including Macromedia Flash and Dreamweaver.

**CIS 285**
3 C/45 CH

**Introduction to Database Concepts**

*Prerequisites: CIS 203, CIS 209, CIS 223, or CIS 259*

*Recommended: CIS 266*

This course is designed to introduce the student to the concepts of database design. The student will learn the fundamentals of SQL (Structure Query Language) using one of the most popular database management systems available today: Oracle8. The student will learn to create, query, update and change tables in database using SQL commands, as well as create reports, use forms, and embed SQL commands in another programming language.

**COMPUTER TECHNOLOGY (CT)**

**CT 203**
4 C/75 CH

**Digital Logic I**

*Lab fee*

This course covers Boolean algebra, operation of digital combinational gates, flip-flop circuitry, shift registers and clock circuits and design combinational and sequential circuits. Laboratory is an essential phase of this course, which emphasizes the use of logic probes, logic pulsers and logic clips on gating circuits, flip-flops, counters, shift registers and multiplexers and demultiplexers.
CT 205 4 C/75 CH
Introduction to Microprocessors
Lab fee
Prerequisite: CIS 110
An introduction to microprocessor systems, instruction sets, algorithm development and detail description of microprocessor system hardware. The instruction set of Motorola and Intel family microprocessors are used to write various application programs. Laboratory experience involves program generation and interfacing.

CT 207 3 C/60 CH
Digital Logic II
Prerequisite: CT 203
An advanced course in digital electronics as applied in the modern digital computer. This course covers the various types of memories, ALU’s, interfacing (A/D and D/A), conventional codes and large-scale shift register memories. Laboratory is an essential phase of this course which includes digital counters, multiplexers, memories and multivibrators. Techniques of interfacing and input/output devices are examined.

CT 209 4 C/90 CH
Computer Repair
Prerequisite: CIS 110 or CT 205
This course is designed to provide an in-depth study of various areas that are related to servicing computers and peripheral devices. Areas of study include assembly, disassembly of computers, upgrading hardware, troubleshooting hardware, installation and troubleshooting of operating systems such as DOS, Windows 9x, Windows 2000 and Windows XP. This course prepares students for the A+ certification exams.

CT 210 6 C/90 CH
Comptia A+
Prerequisite: CIS 110
The student will gain the experience required to build, troubleshoot and repair current microcomputer systems. Student takes a close look at all of the major competency in microcomputer technology to gain a thorough understanding of how the components work together and the symptoms when they do not. By performing hands-on configurations, the student will gain experience with as multitude of input/output port devices such as video, sound, network interfaces, USB, IDE serial, and parallel just name a few.

CT 211 4 C/60 CH
Computer Networking I
Prerequisites: CT 209
This course covers Managing and Maintaining a Microsoft Windows Server 2003 Environment. Topics include: creating and managing users and groups; administrating server and web resources; managing hardware, access to files, disk and data storage, backup and disaster and basic security.

CT 213 4 C/60 CH
Computer Networking II
Prerequisites: CT 211
Installing, Configuring, and Administering Microsoft Windows XP Professional. Also include users, group, profiles and policies, security and access controls, network protocols, internetworking with groups, printing and faxing, performance tuning, application support, booting, registry, fault tolerance, and troubleshooting of Windows XP.

CT 217 4 C/60 CH
Computer Networking IV
Prerequisites: CT 215
This course covers introduction to Microsoft Windows Directory Services Infrastructure. Topics include active directory overview, planning the active directory structure, directory sites, replication, groups, policies and certificates, planning and implementing active directory connectors, upgrading to Windows NT domain models to active directory.
CORRECTIONS (COR)

COR 100  
Introduction to Corrections  
3 C/45 CH  
F, Sp, Sm  
Introduction to the history, theory and practice of corrections. The role of probation, parole, prisoner rights in correctional institutions and community-based corrections. Course needed to satisfy the requirements to become a State of Michigan Corrections Officer. Before students enroll in COR 100 they should have completed the ENG 115 requirements designated by the COMPASS examination.

COR 101  
Introduction to Juvenile Justice  
3 C/45 CH  
F, Sp, Sm  
Prerequisite: COR 100  
Overview of the juvenile justice system; its history, philosophy and interrelationship with other components in the criminal justice system. Evaluation of major court decisions effecting juvenile rights and specific diversion programs. Course is recommended for those enrolled in the “Registered Social Work Technician” program and desire to work with juveniles in the criminal justice system.

COR 105  
Introduction to Correctional Counseling  
3 C/45 CH  
F, Sp, Sm  
Prerequisite: COR 100  
The course will differentiate between normal and criminal behavior. Discussions will include psychological influences as it relates to behavior as well as the role of environment and the family on behavior. Various correctional intervention strategies will be discussed. Course needed to satisfy the requirements to become a State of Michigan Corrections Officer.

COR 110  
Introduction to Deviant Behavior  
3 C/45 CH  
F, Sp, Sm  
Prerequisite: COR 105  
Definitions and characteristics of behavior classified as deviant. Overview of theories and schools of thought for understanding deviant behaviors and their diagnosis, discrimination of minorities in Michigan, and formation of attitudes, ethics and values.

COR 200  
Social Science for Correctional Personnel  
3 C/45 CH  
F, Sp  
Prerequisite: COR 100  
The course will define the personal, psychological and environmental meanings of culture in contemporary society. The impact and meaning of discrimination will be discussed. The student will be expected to identify ways in which the various environments impact the development of attitude formation. Professional responses in the correctional setting will be discussed.

COR 205  
Institution Corrections Personnel  
3 C/45 CH  
F, Sp  
Prerequisite: COR 100 and COR 105  
This course will review the history and philosophy of correctional institutions' personnel and human growth and development. Study of institutional administration, management, supervision and personnel in parole, probation, community intervention strategies, treatment and control. Overview of specific problems of substance, medical and mental abuse. Course needed to satisfy the requirements to become a State of Michigan Corrections Officer.

COR 210  
Correctional Institution Facilities  
3 C/45 CH  
F, Sp  
Prerequisite: COR 100 and COR 105  
An in-depth study of the purpose of prisons and correctional institutions. There will be discussion of the management and organization of correctional institutions with specific description of traditional job roles. Custodial care and safety/security issues will be discussed as well as other institutional concerns in reference to incarceration. Course needed to satisfy the requirements to become a State of Michigan Corrections Officer.

COR 215  
Correctional Fieldwork  
3 C/45 CH  
F, Sp  
Prerequisite: COR 200  
This course will examine interpersonal relationships in correctional systems and the dynamics of attitude change. The course is a supervised work experience in a correctional setting under the direction of a faculty adviser and a field supervisor, in which students will maintain a log of their work activity and meet weekly with their advisor.
COR 218  
Race Relations - COR Personnel  
Prerequisite: COR 200  
Examines racial tensions as they relate to correctional personnel, including emphasis on case histories of institutional problems and psychological games. Confrontation tactics for attitude change, economic oppression and competition, educational deprivation and social injustices and their relationship to institutional actions are discussed. Examines the woman's identity, and life choices and position in society in relation to correctional work in the criminal justice system.

COR 255  
Legal Issues in Corrections  
Prerequisite: COR 200  
This course is an overview of the major legal issues, trends and the political and social dimensions of convictions. An analysis of constitutional law, courts decisions, current legislation of the federal and state law affecting prisons and the judicial proceedings. Examines a forum for the legal rights of prisoners and the responsibilities of the legal system and the adjudication of juveniles and the alternatives to incarceration. Course needed to satisfy the requirements to become a State of Michigan Corrections Officer.

CJ 100  
Introduction to Criminal Justice  
This course is an overview of the criminal Justice system, the police, the legislature, the prosecutor, the public defender, the court, corrections, probation and parole techniques that are essential in addition to decision-making within the system. An analysis of the roles, changes and problems of law enforcement in a democratic society will be conducted.

DAN 102  
Modern Dance II  
Prerequisite: DAN 101  
Continuation of DAN 101 with emphasis on advanced elements of contemporary dance.

DAN 103  
Modern Dance III  
Prerequisite: DAN 102  
Continuation of DAN 102 with emphasis on advanced elements of contemporary dance.

DAN 111  
Ballet I  
Training in the fundamental techniques and terminology of classical ballet.

DAN 115  
African-American Dance  
African-American dance combines the dance disciplines of both traditional African dances and modern jazz dance techniques.

DAN 211  
Choreography and Performance  
Prerequisite: DAN 102 or equivalent  
Training in creating large and small group dances with opportunities for performance.

DEN 100  
Professional Development  
An introductory course designed to prepare the dental programs student to become a member of today's dental health team. Along with basic dental terminology, an orientation to the profession of dentistry, the student is instructed in developing skills necessary for success as a member of the dental health team. Emphasis is placed on professional standards, ethics, assertive communication, empathy training, time management, goal setting and job preparation.

DEN 112  
Medical and Dental Emergencies  
Prerequisite: Program Admission  
This course will familiarize the student with common medical emergencies in the dental office. Preventive
measures and management of these emergencies will be reviewed. Additionally, information on the basic physiology and pathophysiology occurring with common medical emergencies as well as variations in clinical signs will be presented. Reinforcement occurs throughout the students clinical experiences by real or simulated emergencies. Students upon entering the program are to be certified by the American Heart Association and/or the American Red Cross at the Basic Life Healthcare provider level.

DEN 200                                          2 C/30 CH  
Dental Radiology Theory  
This course includes lectures on the nature, effects, and use of radiology in dentistry with special emphasis on radiation hazards and protection.

DEN 201                                          1 C/30 CH  
Dental Radiology Lab  
This course concentrates on the practical aspect of exposing, developing, and mounting diagnostic radiographs with emphasis on the two intra-oral techniques: bisecting and paralleling. In addition, students will be able to identify normal radiographs landmarks. It is strongly recommended that this course be taken simultaneously with DEN 200 or after the completion of DEN 200.

DENTAL ASSISTING

DA 104                                                    3 C  
Dental Materials  
A lecture and laboratory course which provides the student with a fundamental knowledge of the dental materials commonly used in dental practice. Lecture: Presents physical, chemical, and manipulative characteristics of impression materials, cements, bases, cavity liners, cavity varnishes, waxes, composites, gypsum products, metals and resins Laboratory: Prepares students to correctly manipulate these materials. Students also acquire the skill to obtain preliminary impressions and occlusal registrations; pour, trim and polish study casts; fabricate custom impression trays from preliminary impressions; clean and polish removable appliances and prostheses; and fabricate provisional restorations.

DA 106                                                                         4 C  
Applied Sciences  
This course provides the student with a basic understanding of the structure and function of the body systems and an in-depth knowledge of oral anatomy including: head and neck anatomy, tooth anatomy and function, and embryology and histology of oral tissues.

DA 107                                                                         2 C  
Introduction to Expanded Functions  
This course laboratory is one of the courses designed to prepare the student to sit for the Registered Dental Assistant examination in the State of Michigan. Topics to be included, but not limited to: infection control basics, disease transmission, hazardous waste management, placement and removal of non-metallic temporary restorations,

DA 110                                                               3 C  
Clinical Dental Assisting  
This is a lecture and laboratory course with emphasis on clinical infection control procedures and chairside four-handed dental assisting skills. Lecture: Presents concepts of the oral health team including the history of dentistry and the allied dental career fields, dental equipment and maintenance, infection control management, team positioning, medical histories and vital signs, instrument identification and tray setups, basics of four-handed technique (four-handed transfer, tissue retraction, irrigation, illumination, and evacuation), and dental charting. Laboratory: Includes experience in working with and maintaining dental equipment, managing asepsis, infection and hazard control protocol consistent with published professional guidelines; team and patient positioning; completing histories, vital signs and dental charting, and practice in four-handed technique and instrument tray setups.

DA 115                                                               1 C  
Preventive Dentistry  
This lecture course provides students with a basic understanding of patient education with an emphasis on individualized oral health counseling. The course includes instruction in the following topics: dietary considerations for oral health, dental plaque and other deposits, disclosing agents, tooth stains and discolorations, fluorides, periodontal tissues, home care for appliances and techniques for the prevention of oral diseases.
Clinical Practice I
This course is designed to perfect the students' competencies in performing dental assisting functions. Practice is provided in clinical chairside assisting in a dental setting. There is a one hour weekly seminar in conjunction with the field experience to integrate theoretical, laboratory, and clinical instruction and to provide opportunities for students to share their experiences.

Dental Specialties
Prerequisite: DA 110
This is a lecture course designed to expose the dental assisting student to the dental specialties. Areas covered are oral surgery, endodontics, orthodontics, pediatrics, prosthetics and periodontics.

Clinical Practice II
Prerequisite: DA 117
This course is a continuation of Clinical Practice I. Students will be assigned to a dental practice settings for continued practice in chairside clinical dental assisting. There is a 15 hour seminar in addition to the field experience.

Pathology, Pharmacology & Medical/Dental Emergencies
Prerequisite: DA 106
The topics discussed during the course include: emergency carts/kits, administration of oxygen, emergency drugs, allergic reactions, syncope emergencies, circulatory emergencies, respiratory emergencies, epilepsy, diabetes and drug related emergencies. The course provides a basic knowledge of the names, uses, and effects of drugs commonly used in dentistry. The course includes concepts of developmental/growth disturbances, diseases of microbiological origin, injury and repair, metabolic and disease disturbances, and oral manifestations of various diseases and conditions.

Dental Office Management
Prerequisite: DA 110
This lecture course is an introduction to basic dental practice management procedures. In addition, telephone management, appointment control, maintaining patient treatment records, bookkeeping, inventory and supplies, recall systems, and third party payment plans will be presented.

Legal, Ethical & Communication Issues
Prerequisite: DA 110
This lecture course includes basic concepts in oral and written communication and applied psychology. The purpose of this course is to prepare students to work effectively with patients and the allied health team with in the law. Content areas include principles of human behavior, patient anxiety, special patients, coping mechanisms, principles of learning, verbal and nonverbal communications, and listening skills. The course will also explore the state and national dental practice acts as they pertain to members of the dental health team as well as explore the ethical role of team members through role-playing situations. Students will also prepare a resume and job search plan.

Expanded Functions for the Dental Assistant
Prerequisite: DA 117
This lecture/laboratory course is designed to prepare the student to sit for the RDA examination in the State of Michigan. Expanded functions not already covered as allowed under Michigan law will be taught. Topics include but are not limited to: placement and removal of rubber dam, placement and removal of nonmetallic temporary restorations, removing excess cement from supragingival surfaces of a tooth with non-rotary instruments, applications of anticarcinogenics after prophylaxis, mouth mirror inspection and charting of the oral cavity, sizing of temporary crowns and bands, removal of sutures, and the placement and removal of periodontal dressings.
DENTAL HYGIENE (DHY)

DHY 101                                3 C/45 CH
Fundamentals of Dental Hygiene
Prerequisite: Program Admission
Corequisite: DHY 120
Fundamentals of dental hygiene is that portion of the dental hygiene curriculum focused on developing the cognitive, affective and psychomotor skills necessary for delivery of preventive, educational and therapeutic services to the public. This course will prepare the dental hygiene student with cognitive, psychomotor and affective skills for entry into clinical dental hygiene practice. Also this course will expose the student to selected services and skills performed by the dental hygienist. Fundamentals of Dental Hygiene is an introduction to the principles of dental hygiene practice. The students will be presented with topics to prepare them to perform basic skills safely and effectively. Theory of taking a complete medical and dental history, intra/extraoral examination, dental charting, periodontal charting, basic instrumentation, scaling and polishing of the teeth and topical fluoride application will be covered. Students will practice procedures in the clinical course DHY 120. Emphasis will also be placed on professional standards, ethics, effective communication and confidentiality.

DHY 110                                3 C/60 CH
Oral Anatomy and Physiology
Prerequisite: Program Admission
An introduction to anatomical nomenclature and descriptive gross anatomy of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy and occlusion. Tooth morphology is the area of dental science that deals with the structure and form of the tooth. Head and neck anatomy includes the study of the oral cavity and its surrounding structures, including osteology, muscles, nerves, arterial supply, venous drainage, lymphatics, salivary glands, and sinuses. Occlusion is described as the relationship of the teeth in the maxillary and mandibular arches to each other, focusing on a working knowledge of the dental arch forms, inter- and intra-arch tooth alignment, and intercuspal relationships.

Students are required to complete selected carvings of selected teeth during lab sessions. The first half of the semester will cover in great depth the anatomy of the individual teeth and the functional interrelationship between the individual teeth and the periodontal tissues. During the second half of the semester, the course will concentrate on head and neck anatomy which will include an in-depth understanding of the skeletal, muscular, vascular, and neural structures of this anatomical region and their individual and interrelating functions.

DHY 111                                   3 C/45 CH
Histology and Oral Embryology
Prerequisite: DHY 101, DHY 110, DHY 120
Histology and Oral Embryology encompasses the development of the oral facial complex including the formation of the enamel, dentin and pulp root formation, the attachment apparatus and the eruption and shedding of the teeth. The course focus is on the ontogeny of humans with emphasis on the development of the maxillofacial area and dental structures. Study will be divided into 3 parts.

The first part of the course will cover basic and general histology, such as the study of the cell and its organelles, epithelium, connective tissue, blood and its cellular elements, cartilage, bone, muscle, nerve tissue, etc. The second part of the course will cover the histology of the oral and dental structures, such as the oral epithelium, enamel, dentin, pulp, cementum, alveolar bone, PDL, etc. The third part of the course will cover the embryology of the oral and head and neck structures. This course is a fascinating one that promises to be quite challenging and interesting. In this course, you will study the various tissues and organs and organ systems of the human body from a microscopic view. In other words, gross anatomy deals with structures that can be seen with the naked eye, whereas histology deals with structures that require a microscope (whether light or electron) to visualize. In addition to learning about the microscopic anatomy of the afore-mentioned, you will also learn about these structures from a biochemical point of view. Perhaps even more fascinating is the embryology portion of this course that will teach you the basis for the development of the human being. Again when studying the development of the human, you will learn and study this process from a microscopic and biochemical vantage.

C = Credits     CH = Contact Hours     HL = Hours Lecture     HLB = Hours Lab
F = Fall       Sp = Spring    Sm = Summer
DHY 120
Clinical Techniques
Prerequisite: Program Admission
Corequisite: DHY 101
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes.

Clinical Techniques is designed to develop skills in the techniques utilized for dental hygiene practice. Students will practice techniques on typodonts and student partners. Assessment of competency is performed on student partners. Each topic covered in the didactic course DHY 101 will be practiced and assessed in this course. Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

DHY 121
Oral Pathology
Prerequisite: DHY 110, DHY 111, DHY 131, DHY 132
Oral Pathology will focus on the study of disease and the disease process with an emphasis on the detection, symptoms and treatment of diseases of the oral region and the oral manifestations of systemic diseases.

DHY 129
Clinical Dental Hygiene I – Lecture
Prerequisite: DHY 101, DHY 120
Corequisite: DHY 130
Clinical dental hygiene is that portion of the dental hygiene curriculum focused on developing the cognitive, affective and psychomotor skills necessary for delivery of preventive, educational and therapeutic services to the public. This course will prepare the dental hygiene student with cognitive, psychomotor and affective skills for entry into clinical dental hygiene practice. Also this course will expose the student to all of the selected services and skills performed by the dental hygienist.

DHY 130
Clinical Dental Hygiene I – Lab
Prerequisite: DHY 101, DHY 120
Corequisite: DHY 129
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes. Clinical dental hygiene focuses on developing the cognitive, affective and psychomotor skills necessary for the delivery of preventive, educational and therapeutic services to the public. Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

DHY 131
Clinical Dental Hygiene II – Lecture
Prerequisite: DHY 129, DHY 130
Corequisite: DHY 132
Clinical dental hygiene is that portion of the dental hygiene curriculum focused on developing the cognitive, affective and psychomotor skills necessary for delivery of preventive, educational and therapeutic services to the public. The course will prepare the dental hygiene student with cognitive, psychomotor and affective skills for entry into clinical dental hygiene practice.

Also this course will expose the student to all of the selected services and skills performed by the dental hygienist. Clinical Dental Hygiene Lecture II will introduce additional topics to enhance the student’s ability to provide comprehensive dental hygiene services to clients.
DHY 132 3 C/72 CH
Clinical Dental Hygiene II – Lab
Prerequisite: DHY 129, DHY 130
Corequisite: DHY 131
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes. Clinical dental hygiene focuses on developing the cognitive, affective and psychomotor skills necessary for the delivery of preventive, educational and therapeutic services to the public.

Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

DHY 209 2 C/30 CH
Clinical Dental Hygiene III – Lecture
Prerequisite: DHY 130, DHY 131, DHY 132
Corequisite: DHY 210
This course is a continuation of Clinical Dental Hygiene II lecture with emphasis on the process of utilizing assessment, diagnosis and planning, implementation, and evaluation and maintenance as they relate to the development and revision of a dental hygiene care plan. In addition, general and dental dietary habits are discussed as part of the overall health of the patient.

DHY 210 5 C/240 CH
Clinical Dental Hygiene III – Lab
Prerequisite: DHY 130, DHY 131, DHY 132
Corequisite: DHY 209
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes. Clinical dental hygiene focuses on developing the cognitive, affective and psychomotor skills necessary for the delivery of preventive, educational and therapeutic services to the public.

Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

DHY 211 3 C/45 CH
Pharmacology
Prerequisite: DHY 129, DHY 130
Pharmacology may be defined as the science of drugs. As a biomedical science, pharmacology embraces the physical and chemical properties of drugs, the preparation of pharmaceutical agents, the pharmacokinetics of drugs, and the effects of drugs on living systems. As a clinical discipline, pharmacology encompasses the therapeutic application of medicines, toxicity, and practical and legal issues pertaining to the development, marketing, and dispensing of drugs. Pharmacology is clearly a complex and dynamic subject with new drugs entering the market place very frequently.

DHY 213 2 C/30 CH
Periodontology
Prerequisite: DHY 129, DHY 130
Periodontology is the scientific study of the periodontium in health and disease. This course covers the diagnosis, treatment, and prevention of pathologic conditions affecting the supporting and surrounding tissues of the teeth, the gingiva, periodontal ligament, alveolar bone and cementum.

DHY 214 3 C/45 CH
Local Anesthesia and Pain Control
Prerequisite: Program Approval, DHY 211, DHY 131, DHY 132
This course is designed to provide students with the
basic and current concepts of local anesthetics, nitrous oxide sedation and pain control. Systemic effects, tissue diffusion and the toxicity of anesthetics and dental therapeutic agents used in dentistry will be reviewed. Assessment of the patient’s health status, level of apprehension and pain threshold will be included in determining the indications and contraindications of pain control and alleviation of pain. Selection and administration of appropriate anesthetic agents and evaluation of the proper technique will be evaluated. The student will learn to administer local anesthesia, safely, effectively and painlessly. The student will learn to safely administer and monitor nitrous oxide oxygen sedation in the clinical setting in compliance with Michigan Law. Utilization of fail-safe equipment and scavenger systems will be employed.

DHY 219                                      2 C/30 CH
Clinical Dental Hygiene IV – Lecture
Prerequisite: DHY 209, DHY 210
Corequisite: DHY 220
This course is a continuation of Clinical Dental Hygiene III (DHY 209) with an in-depth study of specific medical and dental conditions as they relate to dental hygiene care, including but not limited to: diabetes, asthma, HIV, chemical dependencies, eating disorders, and pregnancy and menopause.

DHY 220                                5 C/240 CH
Clinical Dental Hygiene IV – Lab
Prerequisite: DHY 209, DHY 210
Corequisite: DHY 219
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes.

Clinical dental hygiene focuses on developing the cognitive, affective and psychomotor skills necessary for the delivery of preventive, educational and therapeutic services to the public. Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

DHY 221                                3 C/60 CH
Dental Biomaterials
Prerequisite: DHY 101, DHY 120
Biomaterials is the science and technology of materials used in dentistry. Chemical, physical and manipulative characteristics of various restorative and procedural materials will be explored in the prevention and treatment of oral disease. Laboratory experiences develop skills in working with these materials. Laboratory experiences develop skills in working with these materials and illustrate the characteristics and uses of dental materials.

DHY 223                                3 C/45 CH
Dental Health Education
Prerequisite: DHY 130, DHY 131, DHY 132
Dental health education is concerned with the knowledge, attitudes, skills and behaviors necessary to promote oral health and prevent oral disease through educational efforts. This course will explain the principles and theories of education which will enhance the ability of the dental hygiene student as an oral health educator. The approach taken will provide students with the knowledge and skills necessary to meet the needs of community groups as distinct from the traditional clinical approach designed to meet the needs of individual patients. Students are required to assess, plan, implement and evaluate an oral health educational plan giving them a sense of responsibility and commitment toward improving oral health in the community.

DHY 225                                              3 C/45 CH
Management of Special Patients
Prerequisite: DHY 209, DHY 210
Introduces the characteristics and unique dental health needs of patients with medical, physical, mental, social, emotional, the elderly, and selected medical and compromising conditions. Emphasis is placed on modified dental hygiene treatment for these special populations. Dental hygiene care of the individual with special needs deals with the special
requirements of persons with developmental and/or acquired conditions.

**DHY 226**
1 C/15 CH
**Advanced Periodontology**
*Prerequisite: DHY 213*
Advanced Periodontology is designed to acquaint the dental hygiene student with the clinical diagnosis and treatment of periodontal diseases with special emphasis on the surgical techniques utilized.

**DHY 227**
1 C/15 CH
**Radiology II**
*Prerequisite: DEN 200, DEN 201*
Continuation of the science and clinical practice of oral radiography, including radiographic interpretation, normal anatomy on periapical and extraoral films, recognition of abnormalities and the limitations of radiography.

**DHY 229**
2 C/30 CH
**Clinical Dental Hygiene V – Lecture**
*Prerequisite: DHY 219, DHY 220*
*Corequisite: DHY 230*
This course is a continuation of Clinical Dental Hygiene IV and offers other aspects of clinical practice. This course also examines the practice of dental hygiene from many aspects including business, career alternatives, job seeking skills, resume’ preparation and professional responsibilities.

**DHY 230**
5 C/144 CH
**Clinical Dental Hygiene V – Lab**
*Prerequisite: DHY 219, DHY 220*
*Corequisite: DHY 229*
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes.

Clinical dental hygiene focuses on developing the cognitive, affective and psychomotor skills necessary for the delivery of preventive, educational and therapeutic services to the public. Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

**DHY 230-C**
2.5 C/40 CH
**Clinical Dental Hygiene V – C**
*Prerequisite: DHY 229, DHY 230*
The delivery of comprehensive care is accomplished through adherence to the process of care: assessment of patient needs, formulation of a dental hygiene diagnosis, planning for the prevention and treatment of oral disease, implementation of various dental hygiene interventions (services) and evaluation of both the patient and practitioner efforts and oral health outcomes.

Clinical dental hygiene focuses on developing the cognitive, affective and psychomotor skills necessary for the delivery of preventive, educational and therapeutic services to the public. Clinical practice is provided in collaboration with the clinical dental hygiene faculty through an assessment of patient needs, planning for treatment and disease control. Treatment includes implementation of various clinical dental hygiene services and an evaluation of treatment effectiveness based on the patient/clinic and practitioners efforts. Sequential courses are designed to increase the student’s speed and ability. Assessment of student progress in attaining program and clinical competency is ongoing.

**DHY 231**
4 C/60 CH
**Community Dentistry**
*Prerequisite: DHY 209, DHY 210*
Community dental health is concerned with the knowledge, attitudes, skills and behaviors necessary to promote oral health and prevent oral disease through community based efforts. This course is designated to introduce students to the basic principles of dental public health and the responsibilities of the dental hygienist in promoting oral health and preventing oral disease in a community. The health care system including the social, political, psychological, cultural and economic forces directing the system will be
discussed. Special emphasis is placed on the role of the dental hygienist in community practice as distinct from the traditional clinical private practice; and the theoretical base for assessing, designing, implementing and evaluating community dental health programs. Students are required to assess, plan, implement and evaluate oral health programs giving them a sense of responsibility and commitment toward improving oral health in the community.

DHY 233                                          2 C/30 CH
Dental Hygiene Seminar
Prerequisite: DHY 219, DHY 220
Provide a comprehensive approach and review of the theories and practice of dental hygiene. This course is designed to apprise students of national and regional state board requirements, strengthen test-taking skills and provide an opportunity for review of topic areas evaluated on these board examinations. Guest speakers will provide a review of pertinent subject matter.

DENTAL LABORATORY TECHNOLOGY (DLT)

DLT 101                                          3 C/45 CH
Introduction to Dental Laboratory Technology
An introduction to Dental Laboratory Technology. This course examines the principles of dental laboratory management, the daily operation of the dental laboratory, its equipment, safety procedures, and routine business operation. Included are legal and ethical issues related to the Dental Laboratory. Infection control protocol, infectious diseases and aseptic procedures will be described as it relates to the dental laboratory professional.

DLT 110                                          3 C/30 CH
Basic Anatomy and Tooth Morphology
Prerequisite: DLT 101, DEN 100
A study of the occlusal anatomy and morphology of human dentition. This course will focus primarily on posterior teeth and will also discuss associated bones and musculature. Laboratory sessions are designed to develop waxing skills for application in the crown and bridge specialty area.

DLT 115                                          4 C/195 CH
Basic Crown and Bridge Techniques
A study of the theories and techniques required to fabricate cast crowns and bridges. Laboratory competency is developed in model and die, waxing, investing, casting, finishing, polishing, and corrective soldering techniques.

DLT 120                                          3 C/60 CH
Basic Occlusion for Dental Laboratory Technology
Prerequisite: DLT 101, DEN 100
A study of the basic principles of occlusion as they relate to crown and bridge restorations. Topics include centric occlusion, functional occlusion, and the TMJ.

DLT 125                                          2 C/30 CH
Basic Dental Laboratory Techniques Practicum
Prerequisite: DLT 101, DEN 100
This course is an introduction to the design and fabrication of fixed appliances, such as full crowns, bridges, inlays and onlays. This course will provide hands-on appliance design requirements, construction and methods of wax pattern fabrication. This course affords the student the opportunity to complete laboratory projects.

DLT 130                                           3 C/60 CH
Advanced Anatomy and Morphology for Dental Technicians
Prerequisite: DLT 110
Primarily a study of the anatomy and morphology of the permanent human dentition will be continued throughout this course. This course will focus on anterior and posterior tooth anatomy and will also discuss basic Head and Neck Anatomy. We will discuss the basics in Osteology, Muscles of Mastication, the TMJ, Muscles of Facial expression, Soft Palate anatomy, Circulatory system of the head and neck, Salivary glands, Nervous system, and Lymphatics and spread of infection. Laboratory sessions are designed to continue to develop waxing skills for application in the crown and bridge specialty area.
DLT 140  2 C/45 CH
Esthetic Factors for Dental Restoration (Dental Ceramics)
Prerequisite: DLT 115
A study of the factors that determine the esthetic success of fixed restorations. Laboratory sessions are designed to support the required laboratory performance in Dental Ceramics with a focus on color, shade, size, shape, position, and harmony between natural and restored teeth.

DLT 145  5 C/195 CH
Introduction to Basic Dental Ceramics
Prerequisite: DLT 110
A study of the properties, handling characteristics, and applications of dental porcelain as a restorative material. Laboratory sessions are designed to develop competency in the fabrication of porcelain-fused-to-metal restorations.

DLT 155  4 C/60 CH
Advanced Dental Laboratory Technology Practicum
Prerequisite: DLT 110
This course is designed to increase the proficiency and productivity of the dental laboratory technology student. The laboratory projects reinforce and build on the basic knowledge and techniques acquired in previous course studies. The student will become proficient in the design and construction of fixed prosthetics.

DLT 165  10 C/240 CH
Dental Laboratory Technology Internship
Prerequisite: Completion of all prior DLT coursework
Practical skills are developed and laboratory competency is enhanced through a formal internship experience. Students are assigned to selected commercial and in-house laboratories to work with practicing dental technicians to perfect their skills.

DIETETIC TECHNOLOGY (DT)

DT 111  2 C
Dietetics Orientation  F, Sm
Dietetics Orientation is the first course in the program sequence. Students are introduced to the profession of dietetics, the American Dietetics Association, the Code of Ethics and professional conduct. Career opportunities are explored and students are encouraged to define career goals. Other topics include developing a portfolio, reviewing research in professional journals, self-assessment, time management; problem solving skills and study skills are also emphasized.

DT 130  3C
Fundamentals of Nutrition  F, Sp, Sm
Prerequisite: BIO 155
Fundamentals of Nutrition provides a sound and concise introduction to the science of human nutrition. Students explore the six essential nutrients and their functions in the body. These functions are developed around three fundamental problems of sustaining human life that nutrition solves: energy, tissue building, and regulation and control. Students are also introduced to the application of these nutrition concepts to normal adults, prenatal, infant, pre-school and elderly populations.

DT 210  2 C
Nutrition Assessment Laboratory  F
Prerequisite: DT 130
Students learn various assessment methods and practice techniques for gathering data, integrating the findings and forming nutrition care plans. Practice labs include interactive computer simulations as well as individual client interviews and counseling under the supervision of a registered dietitian. This course is structured as a one-hour seminar and two-hour lab.

DT 212  3 C
Community Nutrition  Sp
Corequisite: DT 213
This didactic course explores current nutrition theory regarding the nutritional needs of people in the various phases of life, from birth through the elderly years. Students complete case studies on each life cycle phase.

Students learn the public health model and the interdisciplinary approach to assessing the nutrient
requirements, developing care plans and delivering sound nutrition advice for clients. Students are required to develop education and training materials. Students use the action research model to initiate change.

**DT 213**  
**Nutrition Practicum I**  
*Corequisite: DT 210*  
This practicum course offers each student the opportunity to explore the nutritional needs of people in the various phases of life, from birth through the elderly years. Students use the public health model and the interdisciplinary approach to assessing the nutrient requirements, developing care plans and delivering sound nutrition advice for clients. Students are assigned to public health clinics, nursing homes, senior feeding programs, Headstart centers and Detroit Public Schools.

Students observe and then practice the techniques of clinical nutrition care. An emphasis is placed on problem identification and problem solving from the perspective of the Dietetic Technician in clinical care. This practicum requires students to participate in 20 on-site sessions and scheduled seminars.

**DT 252**  
**Clinical Nutrition**  
*Prerequisites: DT 130, BIO 250*  
*Corequisite: DT 253*  
The principles of assessment for diet modification are taught using a case study approach. Students will integrate food intake, diet analysis, drug interactions, food preferences and laboratory values as they explore various disease etiologies. Disease etiologies include diabetes, cardiovascular problems, gastrointestinal, renal, HIV, and cancer. Computer applications are used to gather and analyze data.

**DT 253**  
**Clinical Nutrition Practicum II**  
*Corequisite: DT 252*  
This course provides an opportunity to practice clinical nutrition skills in a health care facility under the guidance of a registered dietitian or a registered dietetic technician for twenty (eight-hour day) sessions. Students will observe the dietitian or dietetic technician in the nutritional care of patients and demonstrate competency in performing the observed task. Emphasis is placed on data collection, nutrition assessment, development of patient care plans, documentation, problem identification and problem solving, from the perspective of the technician in clinical care. The student will be expected to perform the observed functions in a professional manner. DT 252 should be taken concurrently. Seminar meets for one hour weekly.

**DT 261**  
**Dietetics Seminar**  
*Prerequisite: Students admitted to the DT program only*  
The Dietetics Seminar is designed as the final course in the program sequence. Students will review career goals and pathways. The requirements for professional memberships to promote lifelong learning are discussed. Competency examination review sessions are conducted. Resumes are developed; job opportunities explored and mock interviews prepare the student to transition into the professional arena.

**DIGITAL MEDIA PRODUCTION (DMP)**

**CTE 103**  
**Writing for the Media**  
*Prerequisites: ENG 119*  
This course covers basic writing for different audiences and different media outlets. Various writing styles and formats will be studied such as new stories, screenplays, press releases, radio and print advertising, writing for the internet, blogs and websites.

**DMP 101**  
**Story Elements for a Digital Environment**  
*Prerequisite: DT 252*  
This seminar course explores how meaning, message and story are conveyed through images. Students will learn about storytelling, story elements and organizations, archetypes, visual and perception theory, the organization of visual elements to create meaning, the history of the image, typography, visual imagery in cinema and the use of the image in digital media today.
### DRAFTING (DRT)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Pre-requisites</th>
<th>Description</th>
</tr>
</thead>
</table>
| DRT 101     | 3       | C/45 CH       |                | Blueprint Reading: This course will help the student to prepare Apple Certified Pro in Final Cut Pro exam. 
Fundamentals of blueprint reading as applied to specific problems. Designed for pre-engineers, draftsmen, machine operators, machine repairmen, electronic technicians, inspectors and supervisors. |
| DRT 102     | 4       | C/90 CH       | DRT 101        | Fundamentals of Mechanical Drawing: This course is focused on detailed drawings of a variety of parts, based on projection techniques, sectional views, threads and fasteners, dimensional fundamentals and other conventional drawing practices. Students will execute charts and graphs for data display and analysis and practice required instrument skills to produce ink drawings. |
| DRT 103     | 3       | C/45 CH       |                | Technical Drawing Applications: This course is focused on detailed drawings of a variety of parts, based on projection techniques, sectional views, threads and fasteners, dimensional fundamentals and other conventional drawing practices. Students will execute charts and graphs for data display and analysis and practice required instrument skills to produce ink drawings. |
| DRT 112     | 3       | C/45 CH       | DRT 102        | Descriptive Geometry: Occupational oriented solutions to descriptive geometry problems involving points, lines, planes and single and double curved surfaces and their intersections. |

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DMP 102  
Digital Video Production I  
F, Sp, Sm  
Certification: This course will help the student to prepare Apple Certified Pro in Final Cut Pro exam. 
Digital Media Production teaches student basic camera components, project organization and management, basic video production values such as story elements, lighting design, camera use, framing, and camera angles. Students will also learn the fundamentals of digital editing software, file organization and management, sound integration, and DVD creation.

**DRAFTING (DRT)**

### Blueprint Reading

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</table>
| DRT 101     | 3       | C/45 CH       |                | Blueprint Reading: This course will help the student to prepare Apple Certified Pro in Final Cut Pro exam. 
Fundamentals of blueprint reading as applied to specific problems. Designed for pre-engineers, draftsmen, machine operators, machine repairmen, electronic technicians, inspectors and supervisors. |
| DRT 102     | 4       | C/90 CH       | DRT 101        | Fundamentals of Mechanical Drawing: This course is focused on detailed drawings of a variety of parts, based on projection techniques, sectional views, threads and fasteners, dimensional fundamentals and other conventional drawing practices. Students will execute charts and graphs for data display and analysis and practice required instrument skills to produce ink drawings. |
| DRT 103     | 3       | C/45 CH       |                | Technical Drawing Applications: This course is focused on detailed drawings of a variety of parts, based on projection techniques, sectional views, threads and fasteners, dimensional fundamentals and other conventional drawing practices. Students will execute charts and graphs for data display and analysis and practice required instrument skills to produce ink drawings. |
| DRT 112     | 3       | C/45 CH       | DRT 102        | Descriptive Geometry: Occupational oriented solutions to descriptive geometry problems involving points, lines, planes and single and double curved surfaces and their intersections. |

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D = Credits  
CH = Contact Hours  
HL = Hours Lecture  
HLB = Hours Lab  
F = Fall  
Sp = Spring  
Sm = Summer
### ECONOMICS (ECO)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO 101</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Principles of Economics I</td>
<td>F, Sp, Sm</td>
<td></td>
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</tbody>
</table>

This course is the study of macroeconomics. The following topics are discussed: operation of the national economy, unemployment, inflation, money and banking and international economic relations.

<table>
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</thead>
<tbody>
<tr>
<td>ECO 102</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Principles of Economics II</td>
<td>F, Sp, Sm</td>
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</tbody>
</table>

Prerequisite: ECO 101

This course is a continuation of Economics 101, Microeconomics. Supply and demand, theory of the firm, price determination and resource allocation is discussed.

<table>
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<tr>
<th>Course Code</th>
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</thead>
<tbody>
<tr>
<td>ECO 232</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Consumer Economics</td>
<td>Sp</td>
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</tbody>
</table>

This course is an analysis of consumer oriented issues; the economics of the cost and availability of consumer credit, insurance options, personal investments, housing and personal income taxation.

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</thead>
<tbody>
<tr>
<td>ECO 272</td>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>Money and Banking</td>
<td>F, Sp</td>
<td></td>
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</tbody>
</table>

Prerequisite: ECO 102

This course is an analysis of the factors influencing bank reserves and the money supply. The ability of the Federal Reserve System to shape these factors; monetary policy and the determination of national income are discussed.

### ELECTRICAL/ELECTRONICS (EE)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
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</thead>
<tbody>
<tr>
<td>EE 101</td>
<td>4</td>
<td>90</td>
</tr>
<tr>
<td>Direct Current Fundamentals</td>
<td>F, Sp, Sm</td>
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</tbody>
</table>

The fundamentals of direct current (DC) as applied to all aspects of the electrical/electronics field. Direct current electron flow theory, Ohm's Law, series and parallel and compound resistive circuits, network theorems, capacitors, magnetic circuits and inductors will be covered. Students experimentally verify the fundamentals discussed in the course by constructing and testing circuits. Instruments such as multimeters DC power supplied are used.

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</thead>
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<tr>
<td>EE 102</td>
<td>4</td>
<td>90</td>
</tr>
<tr>
<td>Alternate Current Fundamentals</td>
<td>F, Sp</td>
<td></td>
</tr>
</tbody>
</table>

Prerequisite: EE 101

This course deals with fundamental concepts of AC waveforms, effective and average values of both current and voltage, series parallel and compound circuits, inductive and capacitive time circuits, time constants, resonance, passive filters bandwidth, Q of a circuit, polyphase systems and transformers. Instruments such as multimeters, AC power supplies, signal generators, oscilloscopes are used.

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<tr>
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<td>45</td>
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<tr>
<td>Electrical</td>
<td>F</td>
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</tr>
</tbody>
</table>

This course covers electrical symbols, schematic diagram, terms, series and parallel circuits, Ohm's Law, repair and operation of single phasemotor and three phase motor controls. Also, lightening-both incandescent and fluorescent, lighting and ballast specifications, safety precaution and trouble shooting techniques, identification of load and control circuits, load common and ground connection. Use of electrical lighting instruments, multimeters, other circuit testing instruments. Ground fault circuit interrupters (GFCI), receptacles and circuit breakers.
COURSE DESCRIPTIONS

EE 105 2 C/45 CH
Electronic Fabrication & Design  F, Sp
Prerequisite: EE 102
An introduction to electronic fabrication and design techniques. It includes circuit drafting, PCB design and etching, assembly, soldering and use of hand tools. Students are required to build circuits assigned by the instructor.

EE 107 4 C/60 CH
Math for E/E I  F, Sp, Sm
Prerequisite: MAT 105
Provides detailed coverage of areas of introductory algebra used in electrical engineering.

EE 111 3 C/60 CH
Solid State Fundamentals  F, Sp, Sm
Prerequisite: EE 101
This course will cover diodes, transistors, power supplies, limiters, clippers, clammers, voltage multipliers, biasing, amplifiers and frequency effects. Students will assemble and test electronic circuits discussed in the course. Instruments such as DC power supplies, multimeters, oscilloscope, signal generators, transistors and diode testers will be used.

EE 115 4 C/60 CH
Math for E/E II  Sp
Prerequisite: EE 107
Simultaneous equations, complex algebra, quadratic equations, trigonometry, vectors, series, derivatives and integrals are used to analyze, AC circuits, filter networks and electronic semiconductor circuits.

EE 205 2 C/45 CH
Linear Integrated Circuits  F, Sp
Prerequisite: EE 111
This course will cover the fundamental of linear integrated circuits and their application. It will be concentrated on the design analysis of basic op-amps and their applications to comparators, integrators, differentiators, oscillators, amplifiers, timers, function generators, filters and phase circuits. Students will test the above circuits and devices in the lab using DC power supplies, signal generators, multimeters and oscilloscope.

EMERGENCY MEDICAL TECHNOLOGY (EMT)

EMT 101 2 C/30 CH
First Aid  F, Sp, Sm
This course is designed to provide the citizen responder with the knowledge and skills necessary in an emergency to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness until professional help arrives.

EMT 105 3 C/67.5 CH
Medical First Responder  F, Sp, Sm
This course is an overview of emergency medical services, including Basic Life Support (BLS), patient assessment, triage, patient handling and management, bleeding and shock control, management of fractures, childbirth and other medical emergencies. This is a State of Michigan approved course. If all comprehensive written and practical examinations are passed successfully the students are eligible to apply for licensure exams. This program is recommended for police officers, security officers, corrections officer, health professionals, fire fighters, or anyone who may have a duty to act during emergency situations.

EMT 114 4 C/90 CH
Basic EMT I  F, Sp, Sm
Prerequisite: Program Admission
Lectures and lab sessions of this course include current principles and techniques in EMS operations, medical/legal issues, anatomy and physiology, patient assessment, respiratory emergencies, oxygen therapy, airway management, cardiovascular disease, CPR, triage, patient handling. This is a State of Michigan approved course. If all comprehensive written and practical examinations and corequisites are completed successfully the students are eligible to apply for licensure exams.

EMT 124 4 C/90 CH
Basic EMT II  F, Sp, Sm
Prerequisite: Program Admission
The lectures and lab sessions of this course include principles and techniques in communicable diseases, stress management in EMS, traumatic injuries, abdominal illness, shock, IV maintenance, diabetes, the Central nervous system, rescue, extrication,
geriatric, obstetrical, gynecological, pediatrics, environmental emergencies and hazardous materials, behavioral emergencies, poisons, and substance abuse. This is a State of Michigan approved course. If all comprehensive written and practical examinations and corequisites are passed successfully the students are eligible to apply for licensure exams.

EMT 126
Basic EMT Clinical Experience
1 C/30 CH
Prerequisite: Program Admission
This course is designed to provide Hospital and EMS experience to EMT Basic students to learn the psychomotor, affective and apply cognitive skills needed for entry level work as an Emergency Medical Technician Basic. These include but are not limited to Patient Assessment, Spinal Immobilization, Bleeding Control, and Donning and doffing of PPE’s. This is a State of Michigan approved course. If all comprehensive written and practical examinations and corequisites are completed successfully the students are eligible to apply for licensure exams. Students are required to complete an orientation session prior to attending the clinical experience.

EMT 211
EMT Specialist
4 C/90 CH
Prerequisite: Program Admission
This course is designed to prepare Basic EMTs who are seeking employment with ALS agencies or hospital emergency departments. The course will emphasis enhancing basic skills, patient assessment, advanced airway management, IV fluid therapy and fluids and electrolytes. This is a State of Michigan approved course. If all comprehensive written and practical examinations and corequisites are completed successfully the students are eligible to apply for licensure exams.

EMT 217
EMT Specialist Clinical Experience
3 C/45 CH
Prerequisite: Program Admission
This Course is designed to provide Hospital and EMS experience for EMT Specialist students in order to learn the psychomotor, affective and apply cognitive skills needed for entry level work as an Emergency Medical Technician Specialist. This is a State of Michigan approved course. If all comprehensive written and practical examinations and corequisites are completed successfully the students are eligible to apply for licensure exams. Students are required to complete an orientation session prior to attending the clinical experience.

EMT 221
Paramedic I
10 C/150 CH
Prerequisite: Program Admission
This course will include lecture and lab sessions on patient assessment, infectious and communicable diseases, behavioral and psychiatric disorders, pulmonary, gynecology, obstetrics, trauma, environmental conditions, allergies and anaphylaxis, neonatology, pediatrics, and geriatrics.

EMT 231
Paramedic II
10 C/150 CH
Prerequisite: Program Admission.
This course will include lecture and lab sessions on patient assessment, infectious and communicable diseases, behavioral and psychiatric disorders, pulmonary, gynecology, obstetrics, trauma, environmental conditions, allergies and anaphylaxis, neonatology, pediatrics, and geriatrics.

EMT 236
Paramedic Clinical Exp. I
6 C/135 CH
Prerequisite: Program Admission
This Course is designed for EMT Paramedic students to practice the psychomotor skills in a hospital and EMS setting needed for entry level work. These include but are not limited to Medication administration, IV therapy, Cardiac Monitoring, and Airway Management.

EMT 241
Paramedic III
3 C/45 CH
Prerequisite: Program Admission
This course will include lecture on neurology, endocrinology, gastroenterology, renal/urology, toxicology and hematology.
EMT 242 2 C/30 CH
Paramedic IV
Prerequisite: Program Admission
This course will include lecture on ethics, life span development, abuse and assault, patients with special challenges, acute interventions for the chronic care patient, and the well being of the paramedic.

EMT 243 2 C/30 CH
Paramedic V
Prerequisite: Program Admission
This course will include lecture on ambulance operations, medical incident command, rescue awareness and operations, hazardous materials incidents, illness and injury prevention and crime scene awareness.

EMT 244 3 C/45 CH
Paramedic VI
Prerequisite: Program Admission
This course will include lecture and lab session on assessment based management.

EMT 246 6 C/90 CH
Paramedic Clinical Exp. III
Prerequisite: Program Admission
This course is designed for paramedic students to practice their assessment skills in a hospital and EMS setting. It is needed for an entry level paramedic. The assessments can include but not limit to patients complaining of Chest Pain, DIB, Abdominal Pain, Syncope and Traumatic Injury.

EMT 256 6 C/30 CH
Paramedic Clinical Field Internship
Prerequisite: Program Admission
This Internship is designed for paramedic students to apply skills and knowledge from previous classes in an EMS setting to develop into an entry level paramedic.

EMERGY ROOM/  
MULTI-SKILLED HEALTH CARE TECHNOLOGY

ERT 210 6 C/90 CH
Emergency Room Technology
Prerequisite: Program Admission
This course provides the Basic EMT with the principles and techniques necessary to provide additional patient care within a hospital, urgent care, or primary health care environment.

ERT 215 6 C/135 CH
Emergency Room Tech. Clinical Experience
Prerequisite: Program Admission
This course is designed for the Emergency Room Technician student to practice the psychomotor skills in a hospital setting needed for entry level work. These skills may include but are not limited to EKG, phlebotomy, insertion of Foley catheters and sterile procedures.

ENGLISH (ENG)

PLEASE NOTE: ENG 100 is now ENG 111, ENG 101 is now ENG 112, ENG 102 is now ENG 113, ENG 108 is now ENG 114, ENG 109 is now ENG 115

ENG 111 3 C/45 CH
Introduction to Reading Skills
Prerequisite: Admission by referral only through assessment
This is the first course in reading development. It is designed to assist students in developing reading skills and becoming efficient and effective readers. The student concentrates on the major components of reading skills; visual and auditory discrimination, alphabet recognition, word attack, vocabulary and comprehension, the student will apply these skills.

ENG 112 3 C/45 CH
Career and Technical Reading I
Prerequisite: ENG 111
This is an intermediate course in reading, designed to assist students in developing college reading skills and
becoming efficient and effective readers. The student concentrates on the major categories of reading skills, comprehension, vocabulary and speed applying these skills in career and technical areas and resources.

ENG 113 3 C/45 CH  
Career and Technical Reading II  F, Sp, Sm  
**Prerequisite: ENG 112**  
This course focuses on the development of effective and efficient reading and study skills for college work. Emphasis is on the acquisition of study habits and skills such as test-taking, note taking, outlining, vocabulary, speed-reading and critical thinking and on the mastery of reading materials of all kinds used in various professional fields and disciplines.

ENG 114 3 C/45 CH  
Career and Technical Writing I  F, Sp, Sm  
**Prerequisite: ENG 114**  
This course is designed to assist students in basic writing skills. The student will learn to recognize and produce units of clear writing, beginning with simple, compound and complex sentences. Through the use of reading selections, the student learn to identify and formulate topic sentences and organize groups of sentences into a larger unit of meaning, the paragraph. At the same time, attention is given to the mechanics of sentence formation, grammar, spelling and vocabulary.

ENG 115 3 C/45 CH  
Career and Technical Writing II  F, Sp, Sm  
**Prerequisite: ENG 114**  
This course is designed to assist students in developing writing skills. The student learns to recognize and produce units of written communication. It focuses on the paragraph as the basis for larger units of expression. Beginning with the paragraph, the student progresses to the short essay (three paragraphs) by the end of the semester. Grammar, diction and organization are stressed.

ENG 119 3 C/45 CH  
English I  F, Sp, Sm  
**Prerequisite: ENG 119**  
This course will provide opportunities for students to work with a variety of forms that will lead to the mastery of effective organization, topic development and appropriate styles, including the development of processes of thoughtful, and analytical reading skills. Written work is required weekly.

ENG 120 3 C/45 CH  
English II  F, Sp, Sm  
**Prerequisite: ENG 119**  
This course provides continued practice for clear expository writing. It is designed for the development of analytical expression and critical literary judgment, and serves as an introduction to research procedures.

ENG 134 3 C/45 CH  
Technical Communications  F, Sp, Sm  
**Prerequisite: ENG 119**  
This course focuses on the identification of the basic elements of written communication in technical fields and the production of communications appropriate to the technical field. Oral communication is also promoted.

ENG 190 3 C/45 CH  
Introductory Journalism  
**Prerequisite: ENG 119**  
This is the study of news gathering and the writing of simple news stories and features.

ENG 192 3 C/45 CH  
Advanced Journalism  
**Prerequisite: ENG 190**  
This course is the continued study in news writing with emphasis on special story types - economic news, movies, drama reviews and editorials.

ENG 212 3 C/45 CH  
Women in Literature  
**Prerequisite: ENG 114**  
This course focuses on the woman's roles as it is portrayed in plays, poetry and novels through the last century and the emergence of the female author as an important literary force.

ENG 228 3 C/45 CH  
Introduction to Folklore and Mythology  
**Prerequisite: ENG 120**  
This course is a general survey of myths and folklore as the primary literature of different cultures.

ENG 231 3 C/45 CH  
Introduction to Poetry  
**Prerequisite: ENG 120**  
This course is a study of poetic structures and poets, both traditional and modern.
ENG 232  
**Introduction to the Novel**  
Prerequisite: ENG 120  
This course is an analysis of the novels structure, determination and evaluation of theme and technique and the writing of critical essays.

ENG 233  
**Introduction to Drama**  
Prerequisite: ENG 120  
This course is a study of plays from the ancient Greek period to the present.

ENG 234  
**English Bible as Literature**  
Prerequisite: ENG 120  
This course is an examination of the literary aspects of the Bible and study of a number of its literary forms and devices.

ENG 240  
**Introduction to Shakespeare**  
Prerequisite: ENG 120  
This course is an introduction to Shakespeare, his plays, comedies, tragedies and histories.

ENG 250  
**American Literature, 1800 to Present**  
Prerequisite: ENG 120  
This course is a survey of major American writers in relation to their social and cultural environment. Writers will be chosen not only on their own literary merits, but also as representative of important periods, attitudes and styles.

ENG 252  
**English Literature Across the Centuries**  
Prerequisite: ENG 120  
This course is a survey of major British writers from the middle ages to the twentieth century. They are selected both on their own literary merits and because they represent the attitudes and values of their historical periods.

ENG 260  
**Introduction to African-American Literature**  
This course focuses on the historical and thematic overview of the African-American writer from 1760-1899. Particular attention shall be given to the early slave narrative using formal analytical techniques, thus introducing students to the various modes of critical and literary thought. Emphasis shall be placed upon some literary styles and forms including folklore, spirituals, gospel and historical tradition.

ENG 261  
**African-American Literature in the Twentieth Century**  
Prerequisite: ENG 120  
This course is a survey of all directions and phases of African-American writing from 1900 to the present. Particular attention is given to the writers of the Harlem Renaissance, major African-American novelists and contemporary poets. Such literary styles as the essay, short story, the novel and dialectic writing are explored. Masters of these literary styles, such as Chesnutt, Baraka, Locke, Hughes, Walker, Wright, Brooks, Ellison, Hayden and Angelou are studied.

ENG 266  
**African-Caribbean Literature**  
Prerequisite: ENG 120  
This course is a study of African-Caribbean literature, encompassing the West Indian Island and adjacent countries of South American - Guyana, Suriname, French Guiana and Belize in Central American. Emphasis will be on the diverse linguistic and cultural influences on the prose and poetry of Caribbean literatures. Study will also be on the writing of expatriates of the Caribbean.

ENG 270  
**Professional and Technical Report Writing**  
Prerequisite: ENG 119  
This course is designed for the advanced student in pre-professional or transfer programs; the designing and presentation of various forms of communications, both written and oral, as solutions to technical problems. The primary focus is report writing. The case approach is used, allowing students to actively engage in problem-solving situations.

ENG 275  
**Advanced Expository Writing**  
Prerequisite: ENG 120  
An advanced course in expository writing which will build on the rhetorical and analytical strategies taught...
in ENG 119 and 120. The class will focus primarily on writing an effective argument.

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<tr>
<td>ENG 280</td>
<td>3</td>
<td>Creative Writing</td>
<td>ENG 120</td>
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Practice in writing in a variety of literary forms, as well as the analyzing of literary models and responding critically to the work of other students.

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<tr>
<td>ENG 285</td>
<td>3</td>
<td>Children's Literature</td>
<td>ENG 120</td>
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A survey of children's literature, acquaintance with quality books for children and criteria for evaluating them.

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<tr>
<td>ENG 290</td>
<td>3</td>
<td>Spanish-American Literature</td>
<td>ENG 119</td>
</tr>
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</table>

This course will examine major 20th century Spanish-American writers and their works. These writers, living in the United States, will be referenced with other Latin-American writers (outside the United States) to show the cultural and historical links among them.

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<tr>
<td>ENG 292</td>
<td>3</td>
<td>Latino Literature: The Past Decade</td>
<td>ENG 119</td>
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</table>

Survey of nationally renowned and emerging Latino writers, musicians, and screen writers, covering cultural, racial, and gender identity, political activism, sexual orientation and spirituality.

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<tr>
<td>ENT 100</td>
<td>3</td>
<td>Introduction to Entrepreneurship</td>
<td>ENG 120</td>
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This course is designed to introduce students to the entrepreneurial process from conception to birth of a new venture. The students will examine elements in the entrepreneurial process- personal, sociological, and environmental- that give birth to a new enterprise.

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<tr>
<td>ENT 210</td>
<td>3</td>
<td>Human Resource Management for Small Businesses</td>
<td>F, Sp, Sm</td>
</tr>
</tbody>
</table>

In an ever-changing world, entrepreneurs must adapt and flex, push and explore. This course surveys and analyzes contemporary techniques for managing a strategically oriented human resource function in a small business setting. Topics include staffing, rewarding, developing, and maintaining organizations, jobs and people.

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<tr>
<td>ENT 205</td>
<td>3</td>
<td>Operations Management for Small Businesses</td>
<td>F, Sp, Sm</td>
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Production and Operations Management is important to the overall strategy and competitiveness of a small business owner. This course focuses on specific tools used to manage and enhance a firm’s operations and production, such as facility layout, product design, aggregate planning, inventory management, and forecasting.

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<th>Credits</th>
<th>Description</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>ENT 210</td>
<td>3</td>
<td>Human Resource Management for Small Businesses</td>
<td>F, Sp, Sm</td>
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In an ever-changing world, entrepreneurs must adapt and flex, push and explore. This course surveys and analyzes contemporary techniques for managing a strategically oriented human resource function in a small business setting. Topics include staffing, rewarding, developing, and maintaining organizations, jobs and people.

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<tr>
<td>EHS 100</td>
<td>3</td>
<td>Environmental Laws and Regulations</td>
<td>F</td>
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The primary emphasis of this course is on the OSHA regulations pertaining to worker protection from exposure to occupational hazards. Discussion topics will include: EPA regulations relating to air, water and soil contamination. DOT regulations relating to safe packaging, storage and transportation procedures. Students will concentrate on researching, interpreting and applying regulations for workers who handle and transport hazardous materials. Students will identify and interpret, from case studies, applicable regulations and recommends compliance strategies.

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<tr>
<td>EHS 130</td>
<td>3</td>
<td>Characteristics of Hazardous Materials</td>
<td>CHM 105</td>
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This course is designed to teach the hazards of each class of hazardous materials. Some of the classes of hazardous materials are: hydrocarbons, flammable and combustible liquids, compressed gases, flammable solids, cryogenic gases, oxidizing agents, plastics,
corrosives, organic peroxides, explosives, radioactivity, water and air reactive materials. The course will also present information needed for the first responder to be able to recognize and manage the hazardous materials incident.

EHS 210  3 C/45 CH  
Safety and Contingency Planning/Incident Management  
This course is designed to teach students how to develop an emergency response contingency plan for a facility or community. Emergency response components of HAZWOPER (Hazardous Waste Operations and Emergency Response). Through case studies, students will analyze and apply the theory of Incident Command System (ICS) from discovering a hazardous substance release to decontamination and termination procedures.

EHS 270  3 C/45 CH  
Sampling Procedures  
In this course emphasis is placed on the methodology of sampling, analyzing and interpreting the results of the analysis of hazardous materials. The course will include industrial hygiene monitoring, pH testing and moisture content, selecting analytical service laboratories, and an introduction to chemical methods of analysis including spectroscopy and chromatography.

EHS 280  3 C/45 CH  
Hazardous Materials Health Effects/Applied Toxicology  
Prerequisite: BIO 155  
This course is a review of the research done in determining the systematic health effect of exposures to chemicals. Determination of risk factors, routes of entry, control measures, and acute and chronic effects are discussed.

EHS 292  2 C/30 CH  
Industrial Chemical Spill response (Practicum)  
This course includes a 24-Hour hands-on experience regarding the characterization and cleanup of industrial spills. Meets OSHA HAZWOPER requirements.

EHS 294  3 C/45 CH  
Hazardous Waste Site Worker  
This course includes a 40-Hour hands-on experience regarding the characterization of working in a hazardous material workplace.

EXTENDED LEARNING OPPORTUNITIES IN NURSING (XNR)

XNR 310  3 C/90 CH  
Administration of Medications  
Prerequisite: NUR 102   
This course is designed to strengthen skills in medication administration, knowledge of drug calculation. It is open to all enrolled nursing students. It is required of all students who do not pass the math pretest in Nursing. (meets six hours per week.)

XNR 314  3 C/45 CH  
Clinical Nursing  
Prerequisite: NUR 102  
This course is designed to meet the individual needs of the nursing student who has had foundations in nursing.

XNR 320  3 C/45 CH  
Comp. Anatomy & Phy  
Prerequisite: BIO 240 and BIO 250  
This course emphasizes compensatory mechanisms of the body, integration of biological principles and concepts of physical health.

FACILITY MAINTENANCE PROGRAM (FM)

FM 101  3 C/45 CH  
Basic Facility Maintenance  
This course covers the fundamentals of work orders, work descriptions, engineering and architectural print reading, the mechanical and electrical nature of the work, location and identification of the problem, tools and material requirements to schedule work.
FM 102  3 C/45 CH
Plumbing & Pipe Fitting  F, Sp
This course covers mechanical blueprint reading, pipes and valves construction, valve operation, repair and maintenance, BOCA mechanical codes for plumbing and pipe fitting methods of pipe connection, uses of sewer augers, size and cutting of piping materials, reading pressure gauges to determine fluid pressure, copper pipe letter codes to determine pipe thickness, repair, maintenance and operation of back flow preventors. Also, basic function of plumbing sanitation, furring, piping, vents, traps, potable, hot water supply drain, waste and sewer, etc. will be covered.

FM 103  3 C/45 CH
Carpentry  F, Sp
This course covers carpentry terms, usage of carpentry equipment, basic construction materials, fractional arithmetic, wood jointing and fastening methods, types and sizes of fasteners, types of hinges, backing and latching devices, door sizes review, maintenance and installation. Also door code identification, counter tips and their standard heights, repair, repair maintenance and installation of counters, construction, repair and maintenance will be covered.

FM 104  3 C/45 CH
General Maintenance  F
This course covers preventive maintenance of mechanical equipment such as air compressors, pumps, hydraulic systems, troubleshooting of a wide variety of hospital/nursing home/hotel/office building equipment, gas and arc welding methods and procedures, alignment of flexible couplers for electric motors, packing glands, cut and installing glass panes. Use of various types of paint products and painting of walls, ceilings, floor coverings, use of hand and power tools in accordance with OSHA requirements, replacement of V-belts and alignment of pulleys and sheaves, selection and application of lubrication to machines and the adjustment of speed (RPM) of pulleys operated equipment and machines will be covered.

FM 105  3 C/45 CH
Grounds Maintenance  Sp
This course covers the maintenance of lawns and gardens, the mowing of lawns and grassy trees, the selection and use of proper fertilizers, irrigation of grounds, maintaining lawn and garden equipment, installing irrigation systems, building and install fencing. Also the removal of snow and ice, plowing below snow, scraping ice, spreading chemical/ice melters, clearing storm drains. The cleaning of outside areas: removing litter, sweeping/vacuuming entrances, cleaning outside of the building, the repair & installation of outside signs and the setup of seasonal displays/decorations will be covered.

FM 106  3 C/45 CH
Safety and Support Services  Sp
This course covers gas and welding safety, safe operation of hand and power tools, lock-out tag-out procedures, use and handle sharp containers, ladder safety, lifting techniques, inspection controls and blood borne pathogen safety. Also, national, OSHA, MIOSHA requirements pertaining to facility maintenance will be covered.

FM 299  3 C/45 CH
Facility Maintenance Co-op
This course provides fieldwork experience.

FIRE PROTECTION TECHNOLOGY (FPT)

FPT 110  8 C/120 CH
Fire Fighter I
Prerequisite: Program Admission
Corequisite: FPT 110 and FPT 115
This course is designed to provide a student with the knowledge necessary for entry level positions on fire departments. Topics include fire fighter safety, personal protection equipment, hose operations, ladders, fire prevention, and others. Students who complete all course requirements will be eligible to take the State of Michigan Fire Fighter Training Council (MFFTC) written and practical examinations leading to certification as a Fire Fighter I. This course must be taken in conjunction with FPT 115.

FPT 115  4 C/75 CH
Fire Fighter I Lab
Prerequisite: Program Admission
This course is designed to provide student with the psycho motor skill necessary for entry level positions
in the fire department. Skills include hose operations, ladders, personal protective equipment, and others. Students who complete all course requirements will be eligible to take the State of Michigan Fire Fighter Training Council (MFFTC) written and practical examinations leading to certification as a Fire Fighter I. This course must be taken in conjunction with FPT 110.

FPT 120
Fire Fighter II
Prerequisite: MFTTC Fire Fighter I Certification
Corequisite: FPT 120 and FPT 125
This course is designed to provide student with the additional knowledge necessary for entry level positions on fire departments. This course builds on the knowledge acquired in FPT 110. Topics include vehicle extrication and hazardous materials operations. Students who complete all the requirements will be eligible to take the State of Michigan Fire Fighter Training Council (MFFTC) Fire Fighter II written and practical examinations leading to certification as a Fire Fighter II. This course must be taken in conjunction with FPT 120.

FPT 125
Fire Fighter II Lab
Prerequisite: MFTTC Fire Fighter I Certification
This course is designed to provide student with the additional knowledge necessary for entry level positions in the fire department. This course builds on the knowledge acquired in FPT 115. Skills include vehicle extrication and hazardous materials operations. Students who complete all the requirements will be eligible to take for the State of Michigan Fire Fighters Training Council (MFTTC) written and practical examinations leading to certification as a Fire Fighter II. This course must be taken in conjunction with FPT 125.

FPT 210
Fire Service Management I
Prerequisite: MFTTC Fire Fighter II Certification and three years experience on an organized fire department.
This program is designed to prepare fire fighters for advancement in the fire service. It is based on the Michigan Fire Fighters Training Council (MFTTC) Company Officer Prerequisite curriculum. Topics include Educational Methodology, Incident Safety, Incident Management and Strategy and Tactics. Students meeting all course requirements are eligible to continue on to the MFFTC Company Officer Course.

FPT 220
Fire Service Management II
Prerequisite: FPT 210
This program is designed to prepare fire fighters for advancement in the fire service. It is based on the Michigan Fire Fighters Training Council (MFTTC) Company Officer curriculum. Topics build on those from Fire Service Management I. This program meets National Fire Protection Association (NFPA Standard 1021, Fire Officer Professional Qualifications. Student meeting all course requirements are eligible to take the MFFTC examination for certification.

FPT 230
Fire Service Management III
Prerequisite: FPT 220
This program is designed to prepare fire fighters for advancement in the fire service. It is based on the Michigan Fire Fighters Training Council (MFTTC) Leadership and Health and Safety curriculum. Topics include problem solving, ways to identify and assess the needs of the Company Officer’s subordinates, methods for running meetings effectively, decision-making skills for the Company Officer, ethics, use and abuse of power at the Company Officer level, delegation to subordinates, assess personal leadership styles through situational leadership, discipline subordinates, and applies coaching/motivational techniques for the Company Officer.

FPT 240
Fire Service Management IV
Prerequisite: FPT 230
This course builds on the previous Fire Service Management courses, offering an in-depth look at various topics. Topics considered budget management, marketing for the fire service, public relations, labor relations, and risk management. This course is designed for upwardly mobile individuals who seek to move into the upper ranks within the fire service.

FPT 250
Fire Service Management V
Prerequisite: FPT 240
This course continues the process of developing upwardly mobile individuals within the fire service.
Topics in this course offer in-depth work in the following areas: labor issues, labor law, diversity, dealing with NFPA standards, complying with OSHA regulations, and dealing with regulatory agencies. The course is designed to prepare those individuals to be fire chief.

FPT 255 3 C/45 CH
Fire Inspection Principles and Practice
The course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationships of fire prevention with built in fire protection systems, fire investigation, and fire and life safety education. It is designed to enhance the student’s knowledge of fire prevention and its purpose within fire service organizations.

FPT 260 3 C/45 CH
Industrial and Commercial Fire Protection
Prerequisite: FPT 255
This course considers the intricacies and differences between residential and commercial/industrial fire fighting. Students will discuss the strategies and tactics for a successful operation at larger structures, and the unique challenges for these types of operations. Topics include offensive and defensive operations, accountability, emergency escape techniques, and aerial operations.

FPT 265 4 C/60 CH
Search and Rescue Operations I
Prerequisite: FPT 120
This course will prepare the student to plan and respond to various technical rescue incidents. This includes development of an action plan, Scene safety considerations, trench collapse and rescue, confined space rescue, and building collapse. The student will take into account patient considerations including extrication of victims and patient packaging. Shoring of collapsed structures is discussed in length.

FPT 270 3 C/45 CH
Search and Rescue Operations II
Prerequisite: FPT 265
Course is meant to build on FPT 265 Search and Rescue Operations I. Topics include: types of Rescue Companies, qualifications for rescuers, specialized equipment, low angle rescue, high angle rescue, water rescue, and elevator rescue. This is not a hands-on class, but is meant to give the student an in-depth perspective of theory and knowledge in the subject area.

FPT 275 3 C/45 CH
Hazardous Materials in Fire Service Operations
Prerequisite: FPT 120
This theory based class enhances knowledge in hazardous materials for the hazardous materials responder. The student will look in-depth at topics such as the physical and chemical properties of hazardous materials, USDOT regulation for hazardous materials, emergency response to hazmat incidents, potential hazards at these incidents, and hazmat prevention techniques.

FPT 280 3 C/45 CH
Current Concepts in Fire Service
Prerequisite: FPT 120
The student will review current issues affecting the fire and emergency service as well as their own organizations. Each week the student will research and report on current and pertinent topics within the fire service and their affect on their organization. The student will use many resources in doing research including fire department policy and procedure, Federal and State legislation and regulation, books, magazines, and the Internet.

FPT 285 3 C/45 CH
Fire Officer Internship
Prerequisite: FPT 220
This course has two tracks that can be followed. The first allows the student to work within their own department. Students will submit and carry out a project for use within the department. The project must be of value to the department. A written report on the final outcome of the project must be submitted, or, an internship with a fire department of the student’s choice or a department of choice by the college. This track will be to enhance the student’s
abilities and skills as an officer. The student would work with various individuals in the host department, and keep a log of their activities.

FOODSERVICE SYSTEMS MANAGEMENT (FSM)

FSM 101 1 C
Foodservice Systems  F, Sp
Management Orientation
Career opportunities are explored and students are encouraged to define career goals. Other topics include developing a portfolio, reviewing research in professional journals, self-assessment, time management; problem solving skills and study skills are also emphasized.

FSM 105 3 C
Principles of Foodservice Systems  F, Sp
This course begins with the history of foodservice. An overview of the different segments of the market is presented including current trends in the foodservice industry. The central theme is a systems approach to understanding foodservice with emphasis on the components of foodservice systems, styles of foodservice, human and physical resources, and the menu as a management tool. Equipment layout and design and computerized menu development are also introduced.

Field trips and seminars emphasize observation of the various types of foodservice systems, equipment, layout and design. Students must attend five seminars in one of the option areas. This is a Manage First certificate course that meets the criteria of the Educational Foundation of the National Restaurant Association.

• Option 1 Schools – seminar topics to include school foodservice history, current legislation, styles of foodservice systems, funding, support organizations, career opportunities, requirements for credentialing by The American School Foodservice Association.
• Option 2 Institutional – seminar topics to include history of the various types of institutions, laws and regulations, styles of foodservice systems, support organizations and career opportunities.

• Option 3 Hospitality - seminar topics include identification of different segments of the market, current trends, styles of foodservice, support organizations and career opportunities.

FSM 115 2 C
Food Safety and Sanitation  F, Sp, Sm
Current concepts in food protection are presented. The course provides updated information and methodologies necessary for the assessment, planning implementation, and evaluation of sanitation in today’s foodservice operations. This course also covers application of factors basic to FDA standards, quality control, Train-the-Trainer techniques, Michigan Law and an in-depth coverage of the principles of Hazard Analysis Critical Control Point System. Students completing this Manage First course are eligible to take the NRA Educational Foundation and State of Michigan certification examinations.

FSM 130 2 C
Menu Planning and Nutrition  Sp
This introductory course teaches the skills and concepts necessary to plan menus for various customers in for-profit and not-for-profit markets. Techniques presented encourage students to take a systems approach to menu planning. Balancing nutrition with taste and presentation is emphasized. Students review current USDA guidelines.

Menu planning practice skills require meeting the nutrition requirements of pre-school, school age, adolescent and adult consumers. This course also includes a summary of the essential nutrients and their functions in the body. Students complete computerized menu projects as they learn the concepts. Students are required to attend 2 seminars.

• Option 1 Schools – seminar topics to include the federal Child Nutrition Program guidelines, Offer vs. Serve foodservice, and innovative use of commodities.
• Option 2 Institutional – seminar topics to include modified diets, Healthy American guidelines, American Heart Association guidelines, and American Cancer Society guidelines.
• Option 3 Hospitality - seminar topics include menu styles, menu service, and other topics.
FSM 140 2 C  
Principles of Food Preparation  F, Sp 
Corequisite: FSM 140L  
Food preparation topics include: scientific principles of food preparation, with emphasis on the physical and chemical changes involved, cultural and economic aspects of food consumption, evaluation of product quality, basic concepts and techniques of volume food preparation, basic principles of food production, distribution, and service.

Food safety and sanitation is stressed. This Manage First course meets the criteria of the Educational Foundation of the National Restaurant Association. Laboratory required.

FSM 140L 1 C  
Principles of Food Preparation Laboratory  F, Sp 
Corequisite: FSM 140  
Lab fee $25.00  
Principles of Food Preparation Laboratory offers each student the opportunity to explore the chemical and biological properties of foods as a result of changes in temperature, cooking preparation, medium and time, as well as other factors. The observations and participation in experiments are coordinated with principles taught in FSM 140. An emphasis is placed on problem identification and problem solving from the perspective of the foodservice manager. Lab meets three hours weekly.

FSM 145 3 C  
Quantity Food Production  F, Sp 
This course requires observation and demonstration of identified skills. The emphasis is on the menu as a control measure and recipes as tools for food preparation and distribution. Students will learn the application of the principles of food preparation, identification of the criteria used for quality assurance, expected yield, and proper technique.

Quantity Food Production includes volume food preparation techniques for egg cookery, vegetables, salads, starches, sauces, meats and basic baking. Students are required to utilize computer programs designed for food production activities. This Manage First course meets the criteria of the Educational Foundation of the National Restaurant Association.

FSM 146 4 C  
Quantity Food Production: Practicum I  F, Sp 
Students are assigned to an appropriate (consistent with their career goals) area site for (15) practicum days. This course requires observation and demonstration of identified skills. The emphasis is on the menu as a control measure and recipes as tools for food preparation and distribution. Students will practice the application of the principles of food preparation, identification of the criteria used for quality assurance, expected yield, and proper technique. Volume food preparation includes egg cookery, vegetables, salads, starches, sauces, meats and basic baking. Students are required to utilize computer programs designed for food production activities. Four 1-hour seminars per semester scheduled at the Northwest Campus.

- Option 1 Schools – Targeted position functions include cooks, bakers, dishwashers, transportation, and service. Task and behaviors appropriate to each position will be observed, demonstrated and practiced. Practicum will be located in an area school district.
- Option 2 Institutional – Students are introduced to the functions required of each food production unit in the foodservices department. This practicum may be located at hospitals, nursing homes, corrections facility or extended care facility.
- Option 3 Hospitality -- Students are introduced to the functions required of each position in the “back of the house” production and “front of the house” customer service area. Task and behaviors appropriate to each position will be observed, demonstrated and practiced. This practicum will be arranged at a hotel, restaurant, or other for profit establishment.

FSM 220 3 C  
Food & Beverage Cost Control  Sp 
Prerequisite: Math 112 or equivalent  
This course reviews the development of cost control measures for each subsystem of the foodservice operation. Students examine foodservice situations requiring math skills. There is a focus on food and labor cost to include: sales, budget, costing recipes, pricing, equipment, utilities, overhead and profit. Students will use required industry foodservice forms.
for data collection. This Manage First course meets the criteria of the Educational Foundation of the National Restaurant Association.

**FSM 230**

**Purchasing for Foodservice Systems**

*3 C*

*F*

*Prerequisite: FSM 145*

Topics of discussion include: fundamentals of food and equipment purchasing, food storage, inventory, cost controls, development of specifications, budget analysis, data processing, receiving, storage, issuing and inventory control. The purchasing subsystem is viewed as one component of the foodservice system with the menu as the central focus. A strong emphasis is placed on quality, quantity and cost control. Field trips to vendors, food brokers, and facilities that engage in institutional feeding are mandatory. Students are required to utilize the computer programs designed for purchasing activities. This is a Manage First Certificate course that meets the criteria for NRA Education Foundation certification.

**FSM 235**

**Foodservice Practicum II**

*4 C*

*F*

*Prerequisite: FSM 220 and FSM 230*

Students are assigned to the same practicum site as in FSM 146 for (15) Practicum days. Course requires observation, practice and demonstration of identified skills. The emphasis is on development of supervisory skills in food procurement and cost control. Students will apply the principles taught in FSM 230, Purchasing for Foodservice Systems and FSM 220, Food and Beverage Cost Control. Students will spend time becoming competent in the skills needed in each of the procurement subsystems. Students are required to utilize computer programs designed for food procurement activities. Four 1-hour seminars per semester scheduled at the Northwest Campus.

- **Option 1 School --** Emphasis on formal bids, contracts, prime vendors, commodities, tracking and reimbursement forms required, inventory.
- **Option 2 Institutional --** Emphasis on cost controls, purchasing groups, specifications for special dietary items, budgetary restrictions, and costing out in a non-profit setting.
- **Option 3 Hospitality --** Emphasis on specifications, identification of resources, forecasting in a for profit setting.

**FSM 240**

**Computer Applications in Foodservice Lab**

*3 C/75 CH*

In this course students will become familiar with the use of computers in the foodservice industry. This hands-on lab course develops skills in the use of compute software programs for menu planning, equipment layout and facility design, cashing, ordering, inventory, personnel and payroll record keeping, policy and procedure manuals, HAACP, budgets, costing and other functions. Five hours lab time required weekly.

**FSM 250**

**Management of Foodservice Systems**

*3 C*

*Sp*

*Prerequisite: FSM 230*

*Corequisite: FSM 255*

Students learn management theories and styles and the application of these concepts to foodservice systems. Human resources as a component subsystem is stressed, as well as, assessment, planning, implementing and evaluating foodservice systems. Other topics covered include problem identification, problem solving, continuous quality improvement, and employee management concepts. Course includes a study of federal and state regulations that apply to foodservice. This Manage First course meets the criteria of the Educational Foundation of the National Restaurant Association.

**FSM 255**

**Management of Foodservice Systems: Practicum**

*4 C*

*Sp*

*Prerequisite: FSM 145 and FSM 235*

*Corequisite: FSM 250*

Students are assigned to the same practicum site as in FSM 146 and FSM 235. The Practicum focus is on development of management skills, techniques and competency. Students are assigned to a facility in the Metro Detroit area. This practicum requires thirty (30) on site days. During this time students will observe and practice management techniques in scheduling, quality assurance, employee training, purchasing, menu planning, cost control, and other areas. Students will be expected to perform the observed functions in an acceptable professional manner.

- **Option 1 School --** Application of management skills in a school foodservice facility.
- **Option 2 Institutional --** Application of management skills in a non-profit institutional setting.
• Option 3 Hospitality -- Application of management skills in a for-profit hospitality establishment.

FORENSIC PHOTOGRAPHY (VDP)

VDP 110 3 C/45 CH
Introduction to Digital Photography
This is a first term course that focuses on teaching students how to operate 35mm digital cameras. Students will learn how to properly use camera controls, capture and expose of digital images. Students should own or have the use of a 35mm digital camera (with manual & automatic controls).

VDP 115 3 C/45 CH
Digital Photo Imaging I
This course introduces photography student majors to computer based digital image processing. Through the use of digital production equipment (cameras, scanners, printer, and photo imaging software) students learn how to process images in a digital (computer base) processing environment.

VDP 120 3 C/45 CH
Forensic Photography
This course expands on lessons in beginning Digital Photography, with special emphasis on the application of photography to criminal and civil investigations, including the preparation of courtroom presentation. Emphasis is placed on aspects of design, composition, perception and content students will gain a scientific understanding of how to make informed choices in black-and-white and color digital photography.

VDP 210 3 C/45 CH
Studio Photography
This course introduces the use of artificial lighting to create photographic illustrations in a controlled environment. Lighting techniques are demonstrated and applied in a series of photographic exercises with tabletop still life and portraiture. Both “hot lights” and electronic flash are used to achieve total control of composition, color, contrast and reflection. Emphasis is placed on the technical mastery of complex equipment, coupled with an aesthetic understanding of the physical principles of light.

VDP 235 3 C/45 CH
Photojournalism
This basic course in photojournalism and introduction to documentary photography will focus on creating photographs for newspapers. We will cover the history and ethics of contemporary photojournalism and documentary photography. Students will work on weekly assignments, small picture packages and one long-term project.

VDP 255 3 C/45 CH
Forensic Photography Capstone Portfolio Project
This is a special course designed by the student and guided by the instructor to start the development of a capstone - portfolio project. Students will develop a project that reflects what they have learned in the program. Group approach and class critiques will be important elements of the production of the capstone – portfolio.

FRENCH (FRE)

FRE 101 4 C/60 CH
Elementary French I F, Sp, Sm
This course is designed for beginning students and aimed at developing the four skills of understanding, speaking, reading and writing French. Emphasis is on grammatical constructions, vocabulary, basic idioms and phonetics. Special emphasis will be on the development of conversational French.

FRE 102 4 C/60 CH
Elementary French II F, Sp, Sm
Prerequisite: FRE 101
Continued emphasis will be on the four basic skills, fundamental grammatical construction and vocabulary. Expanded emphasis is on French conversation and idiomatic constructions.

FRE 201 4 C/60 CH
Intermediate French I
Prerequisite: FRE 102
This course is an expansion of essential principle of grammatical idiomatic usage through oral and written exercise, emphasis is on French conversation, and continued development on reading French.
FRE 202
Intermediate French II
Prerequisite: FRE 201
The focus of this course is on reading French on an advanced level and a continued emphasis on idiomatic usage in both speaking and writing French.

GEOGRAPHY (GEO)

GEO 202
World Regional Geography
F, Sp, Sm
This course is a study of the spatial relationships between human societies, cultures and natural resources in the various regions of the world. Through lectures, geographic films and field experiences, the course examines the cultural and physical landscape to illustrate how they relate to and interact with each other as part of a total region.

GEOLOGY (GEL)

GEL 202
Earth Science for Elementary School Teachers (Formerly ED 202)
Prerequisite: ED 111
Lab fee: $20.00
Lecture and laboratory course dealing with earth science concepts and strategies for teaching these concepts in elementary schools.

Current State of Michigan earth science teaching objectives and associated learning activities will be emphasized. In addition, students will develop an earth science lesson and teach it to children in an elementary (K-8) school.

GEL 210
Physical Geology Lecture
F, Sp, Sm
Geology is the scientific study of the Earth. Physical geology is concerned with earth materials, changes in the interior and surface of the earth, and the dynamic forces that cause those changes. The course is organized beginning with a focus on earth materials, minerals, igneous rocks and volcanoes, processes of weathering, sediments and sedimentary rocks, soils, and metamorphic rocks.

Internal earth processes are emphasized, covering the processes of mountain building, structural geology and maps, plate tectonics, earthquakes, and the earth's interior and the sea floor. The final focus is on surface processes including streams and groundwater, glaciers, deserts, wind and shoreline processes. (meets six hours per week, four hours lecture, two hours laboratory).

GERMAN LANGUAGE (GRM)

GRM 101
Introduction to German
This course is designed to provide the learner with a solid background in the four language skills: speaking, understanding, reading and writing. Learners will be introduced to grammar structures and vocabulary. They will develop reading and listening skills and be introduced to diverse aspects of German life and culture.

GERONTOLOGY/AGING SERVICES (GER)

GER 110
Introduction to the Study of Aging
This is an introduction to the major issues in the field of gerontology with emphasis on the normal process of aging. Topics include physiology, psychology, economics, political issues, demography, sociology, education and community programs.

GER 115
Programs/Services to the Aged
Prerequisite: GER 110 and ENG 119
This course provides a comprehensive view of the national, state and local structures, both public and private which provide services for the aging population. Included is an examination of the major legislative programs, agencies and regulations affecting the elderly.
GER 120
Health and Physical Processes of Aging
Prerequisite: GER 110, GER 115, ENG 119, PSY 101, program admittance or dept. approval
Physiological changes which are normal to the aging process and to the health and well-being of the elderly are studied by examining issues unique to aging, including sensory abilities, exercise, nutrition and drug use and misuse. Present patterns of health, illness and disease behavior, as well as rates of utilization of health and medical facilities and services will be investigated. Longevity and the quality of life are considered with an emphasis on preventive care, health maintenance and alternatives to institutionalization.

GER 125
Mental Health and the Aging
F, Sp, Sm
Prerequisite: GER 110, GER 115, ENG 119, PSY 101, program admittance or dept. approval
This course focuses on the mentally healthy older adult from a social-psychological perspective. It investigates the changing nature of social roles, emotional and social consequences of multiple losses, redefinition of needs in relationship to family and friends as well as the topic of retirement and the use of time.

GER 130
Counseling and Communication Skills with Older Adults
F, Sp
Prerequisite: GER 110, GER 115, ENG 119, PSY 101, program admittance or dept. approval
This course is an introduction to basic counseling skills for service providers who work with older adults. Basic communication and counseling skills are presented and practiced, including special considerations in dealing with older adults. Topics include empathy, death and dying, loss, grief and depression.

GER 140
Legal Issues of Aging
F, Sp
Prerequisite: GER 110, GER 115, ENG 119, PSY 101, program admittance or dept. approval
Major legally defined rights of older adults are considered. Information to provide service professionals and older persons more efficient access to legal services. The court system and probate, estate planning, taxes, guardianship and age discrimination are among the topics discussed.

GER 155
Seminar for Gerontology
F, Sp
Prerequisite: Satisfactory completion of required GER courses Corequisite: GER 156
This course integrates classroom material with on-the-job learning experience in community settings coupled with concurrent classes and individual assignments. Emphasis is on upon skills development.

GER 156
Gerontology Field Placement I
F, Sp
Prerequisite: Satisfactory completion of required GER courses Corequisite: GER 155
This course focuses on observation and participation in structured learning roles and activities in community agencies in the field of aging. Students are supervised by an approved field work instructor with regular consultation and review with the college instructor.

HEALTH (HEA)

HEA 220
Computer Applications in Health
F, Sp, Sm
Prerequisite: BIO 250 and BIO 295 and ENG 120 and NUR 101
The focus of this course is to introduce health occupation students to basic computer applications. Content includes basic utilization of computers and its relation to health care and various hospital departments.

HEALTH SCIENCE (HSC)

HSC 100
Medical Measurements and Mathematics
F, Sp
Prerequisite: BIO 250 and BIO 295 and ENG 120 and NUR 101
This course provides students with the necessary medical mathematics for calculating various drug administration.

HSC 200
Lifespan Development
F, Sp
Prerequisite: BIO 250 and BIO 295 and ENG 120 and NUR 101
This course reviews human development throughout the life span (infants, children, adolescents, adults, and older adults) with emphasis on the cognitive, psychosocial, sensorimotor, and multicultural components. It includes age appropriate roles and life tasks.
HEATING, VENTILATION AND AIR CONDITIONING (HVA)

HVA 101 4 C/75 CH  
Basic Refrigeration I  
Lab fee  
Corequisite: HVA 102  
This course covers theories, application and principles of refrigeration and air cooling, basic cycles, systems, components, refrigeration accessories. The course also includes refrigeration code regulations, safe designs, construction, installation, alteration, inspection, testing and licensing of refrigeration systems.

HVA 102 2 C/45 CH  
Hermetic Systems  
Lab fee  
Corequisite: HVA 101  
This course covers application, installation and servicing hermetic systems, including domestic refrigerators, freezers room coolers, water coolers and humidifiers.

HVA 103 2 C/45 CH  
Commercial Refrigeration  
Lab fee  
Prerequisite: HVA 101, HVA 102  
Corequisite: HVA 108  
This course covers application, installation and servicing of commercial-industrial refrigeration, including operating and testing of low, medium and high temperature systems.

HVA 104 4 C/75 CH  
Air Conditioning I  
Lab fee  
Prerequisite: HVA 101, HVA 102  
Corequisite: HVA 105  
This course covers load calculation, basic psychometrics, system design, air handling, selection of equipment and controls, installation and servicing of residential and commercial systems.

HVA 105 4 C/75 CH  
Air Conditioning II  
Lab fee  
Prerequisite: HVA 101, HVA 102  
Corequisite: HVA 104  
This course covers advanced design, application installation and servicing of commercial and field-assembled packaged air conditioning units, including testing, starting balancing and troubleshooting.

HVA 106 4 C/60 CH  
Basic Heating  
Lab fee  
Corequisite: HVA 107  
This course covers fundamentals of heating including comfort standards, heat loss calculation, electric control wiring, servicing components and study of various types of systems. The course also includes local and national codes governing safe design, construction, installation, alteration, and service and testing.

HVA 107 2 C/45 CH  
Heating Controls  
Lab fee  
Corequisite: HVA 106  
This course will cover heating controls, how they operate, how they are wired. Included in this course are schematic diagrams, pictorial diagrams and control operation.

HVA 108 4 C/75 CH  
Refrigeration Controls  
Lab fee  
Prerequisite: HVA 101, HVA 102, HVA 103  
This course will cover refrigeration controls, how they operate, how they are wired and their uses. Included in this course are schematics diagrams, pictorial diagrams and control operation.

HVA 110 4 C/75 CH  
Force Air & Hydronic Heating  
Lab fee  
Prerequisite: HVA 106, HVA 107  
This course covers advanced system design and layout, including sizing and installation of air handling systems on selected blue prints.

C = Credits   CH = Contact Hours   HL = Hours Lecture   HLB = Hours Lab   F = Fall   Sp = Spring   Sm = Summer
HVA 111
3 C/60 CH  
Applied Electricity in  
Air Conditioning and Heating  
F, Sp  
Lab fee  
Prerequisite: HVA 101, HVA 102, or HVA 106 and/or HVA 107  
In this course the student will learn the fundamentals of electricity as applied to air conditioning, heating and refrigeration covering such topics as: basic electricity, electrical symbols, circuits, electric meters, alternating current, single phase motors, testing, motor protection and troubleshooting.

HVA 112  
2 C/30 CH  
Refrigerant Recovery, Recycling and Reclamation I  
Sp  
Lab fee  
Prerequisite: HVA 101, HVA 102 or HVA 103  
In this course emphasis is placed on dehydration, refrigerant, charging, recovery, recycling and reclamation procedures, as well as techniques using a state-of-the-art multiuse recovery/recycling machine. This course provides training required for refrigeration technicians for the EPA approved certification.

HVA 113  
2 C/30 CH  
Refrigeration Code and Regulations  
Sm  
Lab fee  
Prerequisite: HVA 101, HVA 102, HVA 103  
This course provides the student with the refrigeration safety code of the American Standard Association as approved by the American Society of Heating, Refrigerating and Air conditioning Engineers. The topics considered are scope and purpose, derivation, refrigerant, classification, system required for various establishments, installation requirements, piping, valves, fitting and related parts and safety devices.

HVA 114  
2 C/30 CH  
Heating Code and Regulations  
F  
Lab fee  
Prerequisite: HVA 106  
This course provides the student with the heating safety code based on the BOCA, Basic National Mechanical Code, ANSI Z2231.1, National Fuel Gas code-NFPA54 adopted by all municipalities of the USA. These codes offer general criteria for the installation and operation of gas piping and gas equipment on consumers’ premises. It is included to promote public safety by providing guidelines for the safer and more satisfactory utilization of gas.

HVA 201  
3 C/45 CH  
Introduction to  
Boiler Plant Maintenance  
Sp  
Lab fee  
Prerequisite: HVA 201  
This course covers water and steam, steam cycles, blow down, characteristics of steam and type of steam piping and systems. Also low pressure boilers and boiler room accessories, safety devices, their function and testing, fire tubes, boiler plant auxiliaries, pumps injectors, regulators, feed-water, heaters, valves, traps, separators, water treatment principles, scale prevention, reaction under temperature and pressure, boiler circulation, feeds and construction, impaired testing, operation of boiler and boiler efficiency improvement techniques will be covered.

HVA 202  
3 C/45 CH  
Steam I  
F  
Lab fee  
Prerequisite: HVA 201  
This course covers fundamentals of heat, steam and other vapors, gases and vapor cycles of fuels and combustion, steam power plants, heat engines, building heating, systems and instruments. This course and other 200 level HVA courses prepare students for boiler operation and licensing.

HVA 203  
3 C/45 CH  
Steam II  
Sp  
Lab fee  
Prerequisite: HVA 202  
This course covers definitions, safety regulations, and codes, fire tube boilers, water tube boilers, heating, surface and boiler horse power, boiler materials and construction, safety alarms and valves, fusible plugs, feed and blow off accessories, fuel gas analysis, water treatment, repairs and inspection.

HVA 204  
3 C/45 CH  
Boiler Room Accessories  
Sp  
Lab fee  
Prerequisite HVA 201  
This course covers boilers, foundations and supports, safety devices, water walls, water columns, headers drum materials, laying up of boilers, heat absorption rates of various water surfaces, pumps, injectors
regulators, turbines, air pre-heaters, collectors and traps, separators, drafts, automatic control equipment and operation.

HVA 206 3 C/45 CH  
Refrigeration Operators  Sp  
Exam Preparation  Lab fee  
This course covers fundamentals of refrigeration, compressors and their types, capacity controls, starting, stopping and operation, valves shapes, booster pumps, pump out and dual suction compressors, lubrication systems and lubricants, shaft seals and cylinder cooling, type of evaporators, cooling towers and spray ponds, accumulators and separators, samples of multiple choice questions, systems diagrams. Sequence of operations and calculation problems will be covered.

HEAVY EQUIPMENT MAINTENANCE (HEM)

HEM 101 5 C/75 CH  
Diesel Engine I  Lab fee  
This course covers various aspects of general engine diagnosis, cylinder head and valve train diagnosis and repair, engine block diagnosis and repair, and engine brakes. Performance task within this course will be according the most current ASE standards.

HEM 102 5 C/75 CH  
Diesel Engine II  Lab fee  
Prerequisite: HEM 101  
This course covers various aspects of lubrication systems, cooling system, air induction and exhaust system, fuel supply system, mechanical fuel injection and engine brakes.

HEM 111 6 C/90 CH  
Suspension and Steering  Lab fee  
This course covers various aspects of steering systems, steering column, steering units, steering linkage, suspension systems, wheel alignment, tires and frames.

HEM 112 7 C/105 CH  
Brakes  Lab fee  
The primary concentration of this course is on basics and hands-on of components that make up the chassis of over-the-road trucks and trailers. It will also cover the operation, troubleshooting and repair of a variety of construction equipment. Components used in the lab are representative of the major manufacturers’ current technologies.

HEM 116 3 C/45 CH  
Vehicle (Mobile) Hydraulics  Lab fee  
Prerequisite: HEM 100  
This course covers the basic fundamentals and principles of Hydraulics from construction, operation and application, to how they apply to Heavy Maintenance and troubleshooting of the various systems is also covered.

HEM 121 5 C/75 CH  
Electrical/Electronic System I  Lab fee  
This course covers various aspects of general electrical systems and battery diagnosis and repair.

HEM 122 5 C/75 CH  
Electrical/Electronic System II  Lab fee  
Prerequisite: HEM 121  
This course covers various aspects of starting, charging and lighting systems diagnosis and repair.

HEM 123 7 C/105 CH  
Preventive Maintenance  Lab fee  
This course is designed to cover various aspects of preventive maintenance on medium and heavy duty diesel trucks.

HEM 124 7 C/105 CH  
Drive Train  Lab fee  
Prerequisite: Program Admission  
This course covers various aspects of clutch, transmission, drive shaft, universal joint, drive axle diagnosis and repair.
HEM 125                                             6 C/90 CH
Heating, Ventilation & Air Conditioning
Lab fee
Prerequisite: Program Approval
This course covers various aspects of HVAC systems, A/C system and components, heating and engine cooling systems, operating systems, related controls and air/vacuum mechanical system diagnosis, service and repair.

HEM 200                                             5 C/75 CH
Diesel Engine III
Lab fee
Prerequisite: Program Admission
This course covers various aspects of fuel system diagnosis and repair, electronic fuel management system diagnosis and repair.

HEM 202                                             5 C/75 CH
Electrical/Electronic System III
Lab fee
Prerequisite: HEM 122
This course covers various aspects of gauges, warning device, and related electrical systems diagnosis and repair.

HEM 210                                             2 C/60 CH
Diesel Engine Fieldwork Experience
Lab fee
Prerequisite: HEM 200
This course provides diesel engine fieldwork experience for students.

HEM 211                                             2 C/60 CH
Suspension and Steering Fieldwork Experience
Lab fee
Prerequisite: HEM 111
This course provides suspension and steering fieldwork experience for students.

HEM 212                                             2 C/60 CH
Brakes Fieldwork Experience
Lab fee
This course provides brake fieldwork experience for students.

HEM 222                                             2 C/60 CH
Electrical/Electronic System Fieldwork Experience
Lab fee
Prerequisite: HEM 122
This course provides electrical/electronic fieldwork experience for students.

HEM 223                                             2 C/60 CH
Preventive Maintenance: Fieldwork
Lab fee
Prerequisite: HEM 123
This course provides preventive maintenance fieldwork experience for students.

HEM 224                                             2 C/30 CH
Drive Train Fieldwork Experience
Lab fee
Prerequisite: HEM 124
This course provides drive train fieldwork experience for students.

HEM 225                                             2 C/60 CH
Preventative Maintenance: Fieldwork
Lab fee
Prerequisite: HEM 125
This course provides heating, ventilation and air conditioning fieldwork experience for students.

HISTORY (HIS)

HIS 151                                             3 C/45 CH
World Civilization I                                 F, Sp, Sm
Pre-History – 1500 CE
This course is a Global History studying the development of civilizations from the end of the Pleistocene Epoch through the European Renaissance. The course focuses upon the political, economic, and cultural development and achievements of, and the connections and networking between, various civilizations and societies of the world.

HIS 152                                             3 C/45 CH
World Civilization II                                F, Sp, Sm
1500 CE - Present
This course is a Global History surveying major civilizations of the world in the post-European Renaissance period featuring the development of
politics, economics, science, and culture. Emphasis is placed on the increasing interdependence of all Earth's societies.

HIS 220  3 C/45 CH  
History of Michigan  F, Sp  
This course covers the historical development of Michigan from the period of the French exploration to the present. The major political, social and economic developments of the state. Emphasis on southeastern Michigan, especially the metropolitan Detroit area.

HIS 230  3 C/45 CH  
Patterns of American Life:  F, Sm  
A Cultural History of 17th to 19th Century America  
This course traces the growth of American society from colonial days through the nineteenth century. Visits to local museums such as Henry Ford Museum, Greenfield Village, Heritage House, Detroit Historical Museum and the Dossin Great Lakes Museum will be the focal points in an audio, visual and tactile experience. Students will learn blacksmithing, candle making and other crafts.

HIS 249  3 C/45 CH  
U.S. History I 1607 - 1865  F, Sp, Sm  
This course covers the political, social and economic development of the United States from colonization through the Civil War. Emphasis is placed on colonial America, the Revolutionary War, the Constitution, the slavery question and the Civil War.

HIS 250  3 C/45 CH  
History of the United States II  F, Sp, Sm  
1865 to Present  
This course covers the rise of the United States as an industrial leader and world power. Emphasis on the transition from slavery to freedom, the growth of big business, the Great Depression, postwar America and America’s wars.

HIS 255  3 C/45 CH  
History of American Labor  Sm  
This course covers the growth of organized labor from early craft unions, through the struggles of the industrial revolution, to the present multi-organizational federations. Analysis of current problems, organizational forms and activities of organized labor.

HIS 261  3 C/45 CH  
African-American History I  F, Sp, Sm  
This course is an American history course that focuses on the role the African-American has played in American history up to 1865. A survey of the African background, the Colonial period and the African-American experience from the American Revolution to the Civil War. This course provides students with a general background on the development of the American nation and the significant role played by African-Americans prior to the Civil War.

HIS 262  3 C/45 CH  
African-American History II  F, Sp, Sm  
This course is an American history course from 1865 to the present. The course focuses upon the African-American during the Reconstruction period and the thoughts and actions of African-Americans during the Twentieth Century as expressed through various leaders and organizations. This course provides students with a general background on the development of the American nation and the significant role played by African Americans from the period of the Civil War to the present.

HOTEL MANAGEMENT (HTM)

HTM 105  3 C/45 CH  
Introduction to Hotel & Restaurant Management  
The focus of this course is on analysis and understanding of the interdependent nature of major departments within a hotel operation. Emphasis will be placed on food and beverage, front office and rooms division, sales, human resources and facility management.

HTM 106  3 C/45 CH  
Hotel & Restaurant Management  
This course is designed to provide students with an in-depth study of Hotel and Restaurant Management. Special attention will be paid to supervision, procurement, computer systems, and the international hotel and restaurant management market.
HTM 200                                                   3 C/45 CH
Hotel and Restaurant Operations
The focus of this course is on analysis and understanding of food, beverage service and controls for hotel dining rooms, restaurants, banquets, and cafeterias. Emphasis will be placed on food and beverage management, menu planning, personnel, merchandising, operational reports, and equipment. The course will also cover operational regulations pertaining to safety, health, taxes, and licenses. The course will teach students how to successfully manage food and beverage operations found in lodging properties including coffee shops, gourmet dining rooms, room service, banquets, Lounges, and entertainment/show rooms.

HTM 210                                                   3 C/45 CH
Customer Service Management
This course will introduce you to the rewarding careers available in the hotel front desk management. Hotel general managers are required to meet the challenges of day to day operations while practicing solid future planning. This course will present the technological advantages today's hotel manager have at their disposal and the challenges of hiring, training, scheduling and empowering workers to achieve top quality results. This course is specifically designed to train students to enter front desk in an assistant or supervisory role. The hotel's front desk is the control center for the property and workers at the supervisory level, and above must be well trained and motivated in order to achieve business objectives of a high yield, high occupancy rate, and above all top quality service.

HTM 225                                                   3 C/45 CH
Special Events and Catering Management
The focus of this course will be on management and operations of conventions, meetings, banquets, trade shows, and exhibition for both profit and non profit organizations. Emphasizes on programs, planning, budgeting, contracts, marketing, facility selection, and exhibit and convention planning. Special emphases will be put on catering sales and management.

HTM 299                                                   3 C/45 CH
Hotel Management Praticum
This course provides a forum where students can acquire entry level knowledge and skills in the hospitality industry while in a performance setting. Students apply the knowledge and skills acquired at WCCCD in an appropriate hospitality establishment approved by the instructor.

HUMANITIES (HUM)

HUM 101                                               3 C/45 CH
Intro to the Visual Arts  F, Sp, Sm
This course covers how painting, sculpture and crafts, film and architecture affect our lives? This question is examined in relation to the individual and society with emphasis on HOW to look at a work of art. The course is designed for people who make up audiences and for the student who would like to be a more creative person and a better informed consumer.

HUM 102                                              3 C/45 CH
Intro to the Performing Arts   F, Sp, Sm
This course covers the importance of music, dance, poetry and drama in contemporary life. This question is examined in relation to the individual and society with emphasis on HOW to listen to the music and the words. The course is designed for people who make up audiences and for the student who would like to be a more creative person and a better informed consumer.

HUM 103                                              3 C/45 CH
The Art of Humanities  F, Sp
This course uses a thematic approach in examining philosophy, literature, drama, art and music.

HUM 126                                                    3 C/45 CH
Foundations of African-American Art
This course covers a survey of African American visual arts and artists from 1900 to the present. Particular emphasis will be given to the artists of the Harlem Renaissance. Major artists such as Tanner, Heyden, Lawrence, VanDerZee, Polk, Bearden, Catlett, White, and Hunt will be studied. The influence of traditional African art on contemporary African American Art will also be explored.
HUM 141  3 C/45 CH
Introduction to the Theater  F, Sp, Sm
This course covers the study of the fundamental principles and techniques of the theater. Students will write, analyze, and create theatre on their own, and participate in a class performance.

HUM 211  3 C/45 CH
Music Appreciation  F
This is an intensive study of music with emphasis on perception and style. Musical composition and performance styles are emphasized with examples of listening that range from early symphonies to contemporary jazz.

HUM 212  3 C/45 CH
Music History  Sp
This is a study of the historical development of music.

HUM 221  3 C/45 CH
Art Appreciation  F, Sp, Sm
Consumerism and aesthetics are stressed in this intensive study of visual arts. The course includes theories of color, design and current views on the educational value of children's art and recommendations for collecting art for home and office.

HUM 222  3 C/45 CH
Art History  Sp
A chronological survey, the course focuses on the subjects, stories and symbols of visual art. Diverse cultures and styles are studied with examples that include Biblical scenes, African legends and contemporary American trends.

HUM 231  3 C/45 CH
Introduction to Film  F, Sp, Sm
This course covers a general approach to film, offering a comprehensive view of motion pictures as a communications medium, an industry, and an art form. Includes historical highlights, aesthetic approaches and criticism and fundamentals of production. Students will view films.

HUM 232  3 C/45 CH
Film History  F, Sp
This course covers a historical approach to motion pictures from the early experimenters and pioneers. It includes the major trends in U.S. and world film production, the relation of film to society and film as communications medium and art form.

HUMAN SERVICES (HUS)

HUS 105  3 C/45 CH
Group Expression  F, Sp, Sm
for Self Growth I
The focus of this course is student development of self-perception, self-understanding and self-growth through group interactions with other students in interpersonal competence acquisition groups. Students will examine their personal values, beliefs, motivations and goals.

All students pursuing certificates and degrees in Child Care Training, Corrections, Law Enforcement Administration, Mental Health Worker, Pre-Social Work, Registered Social Work Technician, and Substance Abuse Counseling are required to complete this course.

HUS 110  3 C/45 CH
Introduction to Human Services  F, Sp, Sm
This course covers an introduction to history, resources, services and professional disciplines in the human services field.

HUS 120  3 C/45 CH
Group & Social Process I  F, Sp
Prerequisite: HUS 105
In this course the student will learn systematically to analyze group effectiveness with focus upon group dynamics; group leadership; decision making in groups; group goals; and communication within groups.

HUS 135  3 C/45 CH
Professionalism in Human Services  F, Sp, Sm
Prerequisite: HUS 105
This course covers professional ethics, values, behaviors and communication skills are addressed. This course prepares the student for a field-site situation through community placement, and fulfillment of the student's field-site role in a professional and responsible manner. Instructor and students locate and finalize individual student community placement arrangements.

By the end of the semester, students know the field site where they will work. CCT students will be assisted in identifying their CCT 103, CCT 104, CCT 105 and CCT 106 practicum sites. CCT students' placement will not be finalized.
HUS 206  3 C/45 CH  Recreational and Creative Activities  F, Sp  
This course covers music, games, crafts and field trips as practical methods for teaching children, youth and adults to express themselves and communicate ideas effectively. The importance of creative expression in the healthy growth and development of the consumer of the service is emphasized. Class substitution only with permission for RL 110.

HUS 220  3 C/45 CH  Group and Social Process II  Sp, Sm  
Prerequisite: HUS 120 or Dept approval  
This course is a continuation of HUS 120. This course covers conflicts of interest, the use of power, cohesion and norms, problem solving, discussion and growth groups.

HUS 235  3 C/45 CH  Life Styles of Aging  F, Sp, Sm  
Prerequisite: PSY 101, HUS 105 and HUS 110  
This course focuses on the satisfactions and disappointments of growing old in contemporary America, including problems of aging, coping mechanisms of the older person and society's efforts to assist older adults.

HUS 246  3 C/45 CH  Independent Study: Human Services  
Prerequisite: One PSY course, one ENG course, one MEH, CCT, GER, LEA, COR or SAC techniques course  
In this course students explore questions of special interest through research under the direction of a faculty advisor. Basic research methodology is introduced; written reports are required. It's a substitute for an unavailable required course in the last semester when graduation requirements are not met.

INDUSTRIAL COMPUTER GRAPHICS TECHNOLOGY (CAD)

CAD 101  4 C/60 CH  Fundamentals of Computer Aided Drafting  F, Sp, Sm  
This is an introductory computer aided drawing and design course. As an elementary course, it will provide the student with an overview of drawings produced with the use of the computer. Students will explore software capability by generating various configurations and develop operational skills to include among others: input of graphic commands, editing, filing, imaging, rotating and copying, plotting and printing for drawings. Auto CAD software will be used in this class.

CAD 102  4 C/60 CH  Advanced Computer Aided Drafting  F, Sp, Sm  Lab fee  
Prerequisite: CAD 101  
An advanced computer aided drafting course that focuses on developing those competencies necessary to produce exacting and precise detail 3-D engineering drawings. The course included three-dimensional data base manipulation and is enhanced with menu creation and advanced editing. Auto CAD software will be used in this class.

CAD 110  4 C/60 CH  Intro to Unigraphics CAD/CAM  F, Sp, Sm  Lab fee  
Prerequisite: DRT 102 or MAT121  
An introduction to two-dimensional drawing using the Unigraphics modeler. Other topics include UNIX operating system and Visual User Environment (VUE); File Management; Two-dimensional drawing, construction, and editing; view manipulation; layout; and a brief introduction to three-dimensional principles and concepts.

CAD 121  4 C/90 CH  Tool and Fixture Detailing  F  
Lab fee  
Prerequisite: CAD 102 or CAD 222  
Study of the systems used in preparing detail drawings of assemblies. Includes detailing of blocks, pins, turned details, elements and castings

CAD 200  4 C/60 CH  UG Free Form Modeling  Sp  
Lab fee  
Prerequisite: CAD 102, CAD 222  
Definition of complex surfaces and their intersections. Includes cylinder, convolutes and double curved surfaces of all types.
CAD 203
CAD Applications
4 C/60 CH
Lab fee
Prerequisite: CAD 222
This NX class introduces the student to the use of reference features and expressions to create and constrain sketch geometry in NX.

CAD 211
Die Design and Panel Tipping
4 C/90 CH
Lab fee
Prerequisite: CAD 102 or CAD 222
Die design methods used for cutting dies. Use of standard components for dies employing standard die sets, punches, retainers, springs, and stripper bolts.

CAD 222
Unigraphics Solids Modeling
4 C/60 CH
Lab fee
Prerequisite: CAD 110
An introduction to the fundamental three dimensional models in Unigraphics. Other Topics include Boolean Operations; solid and surface base modeling; create and edit features; analyze, move and hybrid models.

CAD 224
UG/Assembly/Components/Drafting
4 C/60 CH
Lab fee
Prerequisite: CAD 222
Provides students with fundamentals of three dimensional drafting, geometric dimension and tolerances; and an introduction to organization of several different part files which share common data and components, subassemblies and assemblies.

CAD 226
Advanced Unigraphics Solid Modeling
4 C/60 CH
Lab fee
Prerequisite: CAD 222
An advanced Unigraphics solid modeling course that provides students with the ability to model complex free-form surface parts applied to the automotive industry for component engine and sheet metal design.

INDUSTRIAL CONTROL TECHNOLOGY (IEC)

IEC 202
Introduction to Robotics
3 C/60 CH
Lab fee
This course is an introduction to the field of robotics technology. It will provide the student with a historical overview of the use and development of robotics. It will also include a discussion of the different types of robots (e.g., point-to-point, continuous path, electric, hydraulic, pneumatic, etc.) and introduction to robotics programming.

IEC 203
Electrical Machinery and Controls
3 C/60 CH
Lab fee
Prerequisite: EE 111
Principles involved in the function of DC and AC motors and generators and their connection, operation and load characteristics. Study of different types of speed controls and starters, characteristics of single phase motors and polyphase machines including synchronous and induction motors, transformer characteristics such as losses, efficiencies, paralleling transformers and transformer testing are included.

IEC 207
Hydraulics and Pneumatics
3 C/45 CH
Lab fee
Prerequisite: EE 111
Survey of basic industrial hydraulics and pneumatics, including hydraulic laws and principles, necessary calculations, ANSI symbols, drawing of complete schematic diagrams of circuits studied, controls and motors used in hydraulic and pneumatic systems, measuring devices and complete hydraulic and pneumatic systems. Lab coat is required.

IEC 208
Programmable Logic Controllers
3 C/60 CH
Lab fee
Prerequisite: EE 111, CT 203
Programmable controller hardware, relay ladder diagram and logic programming, timers and
counters, arithmetic function, process control and data acquisition, data communication, computer numerical control computer controlled machines and programmable 134 controllers installation and troubleshooting systems will be covered. Allen-Bradley PLC-5 family programmable controllers will be used in the lab.

**JAPANESE (JPN)**

**JPN 101**  
**Elementary Japanese I**  
F, Sp, Sm  
This course is an introduction to Japanese language and development of Japanese culture and its characteristics. This course is recommended for educators and others who require or desire an intensive overview of the language.

**JPN 102**  
**Elementary Japanese II**  
*Prerequisite: JPN 101*  
This course is a continuation of JPN 101 and is designed to provide basic knowledge of Japanese language for practical communication. It is designed to develop skills in reading, writing, speaking and listening. It also provides information about everyday life and culture in Japan. Students learn more advanced sentence structures and expressions.

**LABOR STUDIES (LS)**

**LS 204**  
**Occupational Safety and Health**  
F, Sm  
This course is a survey of the health and legal considerations affecting the work environment, includes historical backgrounds, safety standards, health standards, resources in hazard recognition, inspection procedures, complaint procedures, and relevant legislation, law and judicial decisions. It also covers OSHA and MIOSHA regulations, compliance and enforcement, joint labor-management efforts, and health and safety committees.

**LANGUAGE ARTS (LA)**

**LA 100**  
**Language Arts**  
This is a reading course offered to students who score between 0 to 4 grade level equivalency on a standardized reading assessment. Intensive reading skill development through an individualized, mastery learning delivery system which permits students to begin at their personal level and progress at their own pace.

**LAW ENFORCEMENT ADMINISTRATION (LEA)**

**LEA 201**  
**Intro to Law Enforcement**  
*Prerequisite: CJS 100*  
This course is an introduction to law enforcement and its modern societal role in examining the constitutional restrictions, organizational structure and terminology.

**LEA 210**  
**Highway and Traffic Control**  
*Prerequisite: CJS 100 and LEA 201*  
This course covers the basic law enforcement practices and responsibilities for safe and efficient movement of vehicle and pedestrians; relations with planning, engineering and judicial agencies.

**LEA 225**  
**Law Enforce Admin: Seminar I**  
*Prerequisite: LEA 210*  
This course is an overview of law enforcement administration and its relationship to theory and practical application. Classroom materials and personal life experiences concerning all areas of administration in law enforcement are discussed.

**LEA 226**  
**Law Enforcement Administration: Practicum**  
*Prerequisite: LEA 210*  
This course is a supervised work experience in a law enforcement setting with emphasis on the
COURSE DESCRIPTIONS

LEA 230  
Fundamentals of Criminal Investigation  
Prerequisite: CJS 100 and LEA 201  
This course is an introduction to basic procedures in criminal investigation, including techniques of surveillance, crime scene search, collection, the preservation of evidence, sources of information including interviews and interrogation.

LEA 231  
Criminal Law and Justice I  
Prerequisite: LEA 230  
This course covers historical development and philosophical concepts of criminal law, including legal principles, identification and organization of the courts, identification of crime, intent and the provided penalties.

LEA 232  
Criminal Law and Justice II  
Prerequisite: LEA 231  
This course is a continuation of LEA 231 which includes the laws of arrest, search and seizure, the rights of the accused, duties of police officers, laws of evidence and criminal trials, survey and examinations of the roles of the police officer, the judge, jury, defense counsel and prosecution in the judicial process.

LEA 235  
Race Relations for Law Enforcement  
Prerequisite: CJS 100, LEA 201  
This course covers racial and cultural tensions as they relate to law enforcement. Techniques which consist of case histories, psychological confrontations, attitude changes, economic oppression, education deprivation and social injustices.

LEA 250  
Social Problems in Law Enforcement  
Prerequisite: CJS 100 and LEA 201  
This course covers the role of today's police officer in a multicultural society. It includes examination of the problems and causes of tension in social interactions and techniques in alleviating them.

LEA 253  
Law Enforcement Administration: Sem. II  
Prerequisite: LEA 225, LEA 226  
This is a topical seminar on current law enforcement issues for second year students.

LIBRARY TECHNOLOGY (LBT)

LBT 100  
Introduction to Libraries and Service  
This course is designed to give the students a firm overview of the various types of libraries and issues in the field. This will be reinforced with training on the profession's commitment to providing high quality service. Development of the service mentality and understanding of patrons needs are critical for quality work. Core abilities will include defining types of patron's and how to meet their needs, competency in prevalent issues in libraries which include federal and local legislation, as well as, ethics, censorship, etc. Course will include tours and guest speakers.

LBT 105  
Library Technical Services and Acquisitions  
This course is designed to give the students firm skills in Technical Services. Exercises in cataloging, acquisitions, preservation, and system maintenance. Strong development of the responsibility of preparing materials for ease of access. Coverage of the impact of technology on this aspect will be predominant. Thorough understanding of description and ability to analyze information will be the emphasis.

LBT 200  
Evaluating Information Sources  
This course is designed to give the students hard analysis skills for the evaluating the quality of information. Time will be taken to explore all forms of information media and establish standards and guidelines for determining the authority, currency and overall quality of resources. Core abilities will include defining types of information (for example...
COURSE DESCRIPTIONS

scholarly, commercial, nameplate, etc.) and how each meets an informational need. Course will include tours and guest speakers.

LBT 210  3 C/45 CH
Library Technology  F, Sp
This course is designed to give the students practical skills in basic library technology. Time will be taken to explore all forms of library technology of the past, present and future. Overview of common software and hardware issues included. Core abilities will include defining technology needs for institutions and balancing that with maintenance, training and obsolescence costs. Course will include tours and guest speakers.

LBT 215  3 C/45 CH
Introduction to Media Management and Service  F
This course is designed to give the students core skills for the complex management of media in libraries. Time will be taken to explore all of media in the past, present and future. Core abilities will include asserting preferred formats based on usability and longevity as well as budget. An understanding of preservation, storage, cataloging and presentation of media will be developed. Overview of the future trends of media management will also be covered. Course will include tours and guest speakers.

LBT 220  
Library Internship  Prerequisites: ENG 110, BUS 225 and LBT 100
This course is designed to apply theory learned in the classroom and provide job experience. It will also allow the students to see first-hand the library’s role in community and their role in the profession. Several seminar discussions will be included to analyze their position with the assistance of their instructor. The student will evaluate this experience and have the opportunity to offer their insight.

LOGISTICS MANAGEMENT (LOG)

LOG 101  3 C/45 CH
Introduction to Logistics  F, Sp, Sm
Prerequisite: Program Admission
This course provides general knowledge of current management practices in logistics management. A study of the basic concepts in product distribution including distribution planning and terminology, transportation methods, traffic management, location strategies, inventory control and warehousing.

LOG 102  3 C/45 CH
Purchasing  F, Sp
Prerequisite: LOG 101
This course provides a general knowledge of purchasing for today’s supply chains. The student will be introduced to cross-functional teaming, purchasing and supply performance, supplier integration into new product development, supplier development, strategic cost management and total ownership cost (TOC) and many other topics.

LOG 103  3 C/45 CH
Introduction to Supply Chain Management  F, Sp
Prerequisite: LOG 101
This course is designed to provide a general knowledge of Supply Chain Management (SCM) and the associated functions necessary for delivery of goods and services to customers. This course will focus on what employees and managers must do to ensure an effective Supply chain exists in their organizations. Topics include: introduction to SCM, E-Commerce, materials management, information technology, measuring SCT performance, purchasing and distribution and research and case studies.

LOG 104  3 C/45 CH
Materials Management  F, Sp, Sm
Prerequisite: LOG 101
This course will introduce students to materials management by learning the planning production process, master scheduling, material requirement and forecasting material demands and inventory levels. This course is designed to build on the student’s knowledge of supply chains and how effective material management improves supply chain performance.
LOG 105  
Inventory and Warehouse Management  
3 C/45 CH  
Sp, Sm  
Prerequisite: LOG 101  
This course emphasizes the relationships of inventory and warehouse management to customer service and profitability of the wholesale distributor. The course will focus on the role of computerized systems and resulting information for effective management of inventory and the warehouse under various conditions.

LOG 110  
Transportation and Distribution  
3 C/45 CH  
F, Sp, Sm  
Prerequisite: LOG 101  
Transportation and Distribution course examines the structure and importance of the commercial transportation industry in the logistics sector of business. The course includes discussions of regulations, economics, characteristics, and development in major transportation modes.

LOG 200  
International Logistics  
3 C/45 CH  
Sp, Sm  
Prerequisite: LOG 101, 103  
The International Logistics course is a study of global logistics with an emphasis on looking at the whole world as one potential market. The course will include an analysis of the global supply chain and current issues such as import/export regulations.

LONG TERM CARE TECHNOLOGY (LTC)

LTC 110  
Introduction to Health Facility Management  
3 C/45 CH  
This course will explore government funding methods, medical and professional staff, environmental challenges, issues of the quality of care, patient safety and daily management concerns, the legal, political and ethical issues facing health care managers will be discussed in the context of a rapidly changing industry.

LTC 112  
Community/Public Health Laws I  
3 C/45 CH  
The course will explore state administration, administrative management of facilities, patient care, physician services, nursing services, and infection control.

LTC 113  
Community/Public Health Laws II  
3 C/45 CH  
This course will explore foodservices, pharmaceutical services, other services, records keeping and management, building and grounds maintenance and upkeep, emergency procedures and plan implementation.

LTC 114  
Medicaid Regulations  
3 C/45 CH  
This course will explore Medicaid regulations, contractual obligations, reporting requirements, admission and discharge, patient financial status requirements, trust fund reporting requirements, annual cost reporting, and billing procedures.

LTC 115  
Michigan Public Health Code  
3 C/45 CH  
Prerequisites: LTC 110, 112, 113  
This course will explore Michigan Public Health Codes, definitions, rules of confidentiality, rules for licensure, medical treatment of pain, non-emergency health care, and the administrative rules of Michigan Board.

LTC 116  
State Fire and Safety Laws  
3 C/45 CH  
Prerequisites: LTC 114, LTC 115, LTC 116  
This course will explore Michigan fire safety laws, fire inspection, building and fire, and safety codes.

LTC 117  
Michigan Labor Laws and Management Laws  
3 C/45 CH  
Prerequisites: LTC 114, LTC 115, LTC 116  
This course covers Michigan Labor Law and Management Laws, unemployment insurance, worker's compensation, and labor relations.

LTC 118  
Health Facility Fieldwork and Seminar  
6 C/90 CH  
Prerequisites: LTC 114, LTC 115, LTC 116  
The course is a supervised practical learning experience in which students work in the field in a Long Term Care Facility under the direction of certified professional staff. Students will meet with their instructor on a weekly basis for a seminar.
### MACHINE TOOL TECHNOLOGY (MHT)

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
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<tbody>
<tr>
<td>MHT 260</td>
<td>4</td>
<td>60</td>
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<tr>
<td>Machine Shop I</td>
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<td>F</td>
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<td>Lab fee</td>
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<tr>
<td>Prerequisite: MAN 110</td>
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<td>This is the study and use of the basic machine tools such as shapers, mills, drill presses, lathes and surface grinders. Projects will be given to emphasize setup, operations and manufacturing processes.</td>
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<tr>
<td>MHT 270</td>
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<tr>
<td>Machine Shop II</td>
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<td>Lab fee</td>
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<td>Prerequisite: MHT 260</td>
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<td>This is the further study of machine shop procedures and practices to increase machining skills.</td>
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### MANAGEMENT (MGT)

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<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>MGT 205</td>
<td>3</td>
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<tr>
<td>Management Principles</td>
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<td>F</td>
<td>Sp, Sm</td>
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<tr>
<td>Prerequisite: BUS 150</td>
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<td>A presentation of the basic organizational concepts in light of the general framework of planning, organizing, coordinating and controlling. Case studies will be used to explain the relationship of the functional areas of an organization to the company's overall objective.</td>
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### MANUFACTURING TECHNOLOGY (MAN)

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Fall</th>
<th>Spring</th>
<th>Sm</th>
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</thead>
<tbody>
<tr>
<td>MAN 100</td>
<td>3</td>
<td>45</td>
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<tr>
<td>Shop Equipment and Tools</td>
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<td>Lab fee</td>
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<td>An introduction to precision measuring tools used in tooling and manufacturing processes. In the shop, emphasis is placed on exercises and projects that embody the process and operation of using hand tools, layout tools, and machine tools, such as hack saw, belt and disc sanders, drill press, engine lathe, vertical mill machines and surface grinders. Classroom emphasis is placed on related information that is essential to the set up and operation of machine tools, and to perform basic processes and operations in the shop.</td>
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<td>MAN 110</td>
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<tr>
<td>Manufacturing Processes I</td>
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<td>F</td>
<td>Sp, Sm</td>
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<td>Lab fee</td>
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<tr>
<td>Prerequisite: MAN 100</td>
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<td>A theoretical and practical introduction to conventional precision machine tools, including drill presses, engine and turret lathes, shape milling and grinding machines. Emphasis will be given on turning, threading, drilling, honing, shaping, and broaching.</td>
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<tr>
<td>MAN 120</td>
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<tr>
<td>Survey of Material Science</td>
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<td>Lab fee</td>
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<tr>
<td>Prerequisite: MAN 100</td>
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<td>This is a study of the atomic structure, bonding, crystallization, and physical and mechanical properties of metals. The classification and selection of materials as well as heat-treating and hardness testing will be examined.</td>
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### MARKETING (MKT)

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Fall</th>
<th>Spring</th>
<th>Sm</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT 200</td>
<td>3</td>
<td>45</td>
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<tr>
<td>Principles of Marketing</td>
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<td>Sp, Sm</td>
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<td>Prerequisite: BUS 150</td>
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<td>A basic course with direct application to marketing functions and policies. Course includes consumer and industrial marketing concepts, service marketing, standardization and grading, pricing and government regulations.</td>
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## MATHEMATICS (MAT)

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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Prerequisites</th>
<th>Description</th>
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</thead>
</table>
| MAT 100      | 3       | C/45 CH       |               | Basic Mathematics
This course covers solving problems with arithmetic. Building skills in using whole numbers, fractions, decimals. No calculators will be used for this class. |
| MAT 105      | 3       | C/45 CH       |               | Pre Algebra
This course is an introduction to variables in building mathematical and problem solving skills. Strong emphasis will be placed on operations with signed numbers. |
| MAT 110      | 3       | C/45 CH       | MAT 100 or MAT 105 | Business Mathematics
This course covers solving problems relating to bank and sales records, percentages in business, financial charges and statements, payrolls and taxes, insurance, bonds, stocks and annuities. |
| MAT 112      | 3       | C/45 CH       | MAT 100 or MAT 105 | Elementary Algebra
This course covers topics which include solving first and second degree equations, operations on polynomials, operations on rational expressions, word problems, graphing and solving linear equations and systems of linear equations and inequalities. |
| MAT 113      | 3       | C/45 CH       | MAT 112        | Intermediate Algebra
The emphasis of this course is on extending introductory concepts. New concepts presented are absolute value equations and inequalities, rational exponents, complex numbers, quadratic equations and inequalities, the slope of a line, conic sections, functions and logarithms. |
| MAT 121      | 3       | C/45 CH       | MAT 100 or MAT 105 | Technical Mathematics I
This course covers application of arithmetic and basic algebra in technical problems, applying rules in arithmetic (whole numbers, fractions, decimals, percentage) to solve technical problems. |
| MAT 122      | 3       | C/45 CH       |               | Technical Mathematics II
Prerequisite: MAT 121 or placement test
This course is a continuation of MAT 121, using algebra to solve technical problems through the applications of equations, exponents and graphing methods in industrial work. |
| MAT 128      | 3       | C/45 CH       | MAT 112        | Math for Elementary Teachers I
Prerequisite: MAT 112
The course provides the future elementary school teacher with a perspective for understanding mathematics taught in the elementary school. Topics include the study of problem solving techniques, fundamental concepts and structure of number systems, sets, enumeration systems, integers, number theory and rational numbers. |
| MAT 129      | 3       | C/45 CH       | MAT 128        | Math for Elementary Teacher II
Prerequisite: MAT 128
This course is a continuation of MAT 128 which provides the future elementary teacher with background for understanding mathematics taught in the elementary school. Topics include probability, statistics, geometry, motion geometry, coordinate geometry and concept of measurement. |
| MAT 131      | 3       | C/45 CH       |               | Descriptive Statistics
Prerequisite: MAT 113 or placement test
This course is a basic course for students in business administration, education, psychology, and/or economics. It is a preparation for inferential statistics, providing a definition of statistics, measurements, working out distributions, frequency polygons, measuring central tendency and variability and finding correlation and regression. |
| MAT 155      | 4       | C/60 CH       |               | College Algebra
Prerequisite: MAT 113, or by placement
This course includes the solution of linear, quadratic and fractional equations and inequalities, lines, parabolas and circles are studied. The concept of function is presented and polynomial, rational, inverse, exponential and logarithmic functions are studied and graphed. The use of graphing technology or a computer algebra system is required. |
MAT 156                                                    4 C/60 CH
Trigonometry                                          F, Sp, Sm
Prerequisite: MAT 155 or by placement
In this course the translation of functions is reviewed. New topics include the study and graphing of trigonometric functions, inverse trigonometric functions, right triangle trigonometry, trigonometric identities and equations, the Laws of Sines and Cosines with applications, and Polar Coordinates are introduced.

MAT 171                                               4 C/60 CH
Analytic Geometry & Calculus I            F, Sp, Sm
Prerequisite: MAT 156 or by placement
In this course the functions and their graphs are reviewed. The concepts presented include limits, derivatives, differentiation of algebraic and trigonometric functions, applications of the derivative, definite and indefinite integrals.

MAT 172                                                   4 C/60 CH
Analytic Geometry & Calculus II         F, Sp, Sm
Prerequisite: MAT 171
This course covers the study of integration techniques, applications and integrals, limits and indeterminate forms, improper integrals and an introduction to parametric and polar coordinates. The use of graphing technology or a computer algebra system is required.

MAT 271                                                 4 C/60 CH
Analytic Geometry & Calculus III               F, Sp
Prerequisite: MAT 172
In this course the concepts presented include plane curves, polar coordinates, vectors, surfaces, vector-valued functions, partial differentiation and multiple integration with applications. The study of vector calculus includes line and surface integrals with applications.

MAT 272                                                     4 C/60 CH
Linear Algebra                                                      F
Prerequisite: MAT 271
This course covers core materials, vectors, spaces, linear transformations and matrices, systems of linear equations, determinants and digitalization.

MAT 273                                                   4 C/60 CH
Differential Equations                                       Sp
Prerequisite: MAT 272
This course covers the following topics: the study of first order equations, higher order equations, linear systems of differential equations, power series solutions, and the Laplace transform. The use of a computer algebra system is required.

MEDICAL ADMINISTRATIVE OFFICE ASSISTANT: MEDICAL BILLING CONCENTRATION (MBS)

MBS 108                                                3 C/45 CH
Medical Coding                                       F, Sp, Sm
Lab fee
Prerequisite: ALH 110- Medical terminology
This course is designed to give students an overview of the medical insurance industry, and teach basic CPT and ICD-9 coding as used in medical insurance billing. It is part of the preparation for entry-level jobs in a doctor's office or other medical facility.

MBS 112                                                    3 C/45 CH
Medical Billing                                        F, Sp, Sm
Lab fee
Prerequisite: MBS 108 Medical Coding
This course is designed to give students the information and skills necessary to file and collect health insurance claims and use related software. Skills to manage the financial functions of a physician's office are included such as Front Office Management, Filing CMS 1500 and CMS 1450 forms, and patient record keeping. Information is also provided on starting a medical billing business from home.

MBS 122                                                3 C/45 CH
Advanced Coding ICD9
Prerequisite: MBS 108 and MBS 112
This course is designed for the student with prior billing and coding training or experience. Students will gain advanced knowledge and skill in coding more complex cases through a review of major body systems and solving real life problems. Compliance and reimbursement issues are included.
COURSE DESCRIPTIONS

C = Credits     CH = Contact Hours     HL = Hours Lecture     HLB = Hours Lab
F = Fall      Sp = Spring     Sm = Summer

MBS 124                                               3 C/45 CH
Advanced Coding CPT
Prerequisite: MBS 108 and MBS 112
This course is designed to give students advanced knowledge and skill in coding for medical insurance claims, and improved collection techniques to ensure successful claims. It is organized according to the sections in the CPT book and answers frequently asked questions from real life situations.

MBS 126                                              4 C/60 CH
Practicum Experience
Practicum experience is 200 hours in a medical office setting receiving hands on experience in areas of medical billing which may include but not limited to claim processing and follow-up, both professional and facility billing guidelines, collections, patient accounting and financial reports.

MENTAL HEALTH WORK (MEH)

MEH 110                                               3 C/45 CH
Individual & Group Tech I                  F, Sp, Sm
Prerequisite: HUS 105, HUS 110, PSY 101
This course explores the role and function of the mental health worker in therapeutic interaction with individuals. An emphasis is placed on knowledge, skills, insights and attitudes essential in promoting emotional health among adults.

MEH 140                                               3 C/45 CH
Mental Health Legal Information                F, Sp
Prerequisite: HUS 105, HUS 110
This course focuses on legal information useful in intervention strategies for consumers of human services.

MEH 144                                             4 C/60 CH
Field Work I: Agency Placement                  F, Sp
Prerequisite: MEH 110, SAC 203, HUS 135, HUS 105, HUS 110
This course provides observations and participation in structured learning roles and activities in a community agency, supervised by an agency fieldwork instructor with regular consultation and review with a college instructor.

MEH 210                                               3 C/45 CH
Individual & Group Tech II                      Sp, Sm
Prerequisite: MEH 110
This course is a continuation of MEH 110 and it focuses on the mental health worker's purposeful use of self in interaction with clients and client groups. Introduction to non-clinical strategies and roles such as advocacy, use of community resources and social action.

MEH 226                                           4 C/180 CH
Field Work II: Agency Placement                 F, Sp
Prerequisite: MEH 144
This course is a continuation of MEH 144 with emphasis on skills development and preparation for gainful employment.

MEH 240                                              3 C/45 CH
Psychopathology & Behavior I                Sp
Prerequisite: MEH 110
This course is a study and review of psychopathology with emphasis upon the etiology, symptomatology, treatment and prognosis of mental disorders.

MINISTERIAL STUDIES (MS)

MS 110                                                      3 C/45 CH
The Bible as a Historical Document            F, Sp
This course will provide a comprehensive overview of the Bible. It will examine both the Old Testament and the New Testament and its message to the world today. It will examine the Bible and its writing along with the world's history embedded in it.

MS 120                                                      3 C/45 CH
The History and Sociological Impact of the Black Church in America
This course is designed to examine the emergence of the Black Church from slavery to now and as a distinctive cultural phenomenon.

MS 150                                                     3 C/45 CH
The Blended Family and the Church
This course examines and identifies major family perspectives, traditions, rituals and familial customs within America's diverse community of faith. Its purpose is to enhance the student's ability to recognize the uniqueness of the blended family and subsequently give guidance to blended families in our contemporary society.
MS 155                                          3 C/45 CH
Law and Respect/ Religion and Diversity

MS 160                                          3 C/45 CH
The Black Woman and Religion

MUSIC (MUS)

MUS 100                                          3 C/45 CH
Introduction to the Fundamentals of Music
This course is an introduction to the vocabulary of music, basic terms, notation and appreciation. No credit for music majors.

MUS 101                                          3 C/45 CH
Fundamentals of Music I
F, Sp, Sm
This course is a basic class in the discipline of music, musical elements, theory, notation, scale formation, terminology and ear training.

MUS 102                                          3 C/45 CH
Fundamental of Music II
Prerequisite: MUS 101
This course is a continuation of MUS 101 with increased emphasis on ear training.

MUS 110                                          3 C/45 CH
Class Piano I
F, Sp, Sm
This course is a study of the fundamentals of piano, including keyboard techniques.

MUS 111                                          3 C/45 CH
Class Piano II
Prerequisite: MUS 110
This course is a continuation study of the fundamentals of piano, including keyboard techniques.

MUS 121                                          3 C/45 CH
History of Jazz I
Sp
This course provides an introduction to the history of jazz theory, technique, innovators and contributors.

MUS 132                                          1 C/45 CH
College Choir A, B, C, D
F, Sp, Sm
In this course students will perform a variety of literature for chorus and vocal ensemble, including music for concert, church (gospel and hymns), glee club, madrigal and other materials for smaller vocal groups. (One credit per semester, up to a maximum of four credits.

MUSLIM WORLD STUDIES (MWS)

MWS 101                                          3 C/45 CH
Muslim World Ideologies and Culture
This course covers Islamic precepts, values and concepts as a way of life for the Muslim individual, family, society and world order.

MWS 102                                          3 C/45 CH
Muslim World Civilization
This course covers aspects of Muslim world civilization, including art, music, philosophy, literature, science and architecture.

MWS 103                                          3 C/45 CH
Muslim World Historical Survey
This course covers the history of the Muslim world from the rise of Islam to the present. Emphasis is placed on events which have a bearing on the contemporary Muslim world.

MWS 106                                          3 C/45 CH
Muslim World International Relations
This course covers the dynamics of Muslim world international relations, emphasizing their effects on the interests and security of the super powers.

MWS 107                                          3 C/45 CH
Muslim World Contemporary Issues
This course covers the problems and issues facing the contemporary Muslim world, stressing their relevance to United States welfare.

MWS 112                                          3 C/45 CH
Muhammad, Life of the Prophet
This course is designed to provide an understanding of the Prophet Muhammad's life and career; to see that the history and development of Islam is a complex and multi-faceted process and the subsequent development and spread of Arab-Muslim civilization as it relates to the Prophet Muhammad's life. The course also emphasizes analysis about the life and times of the Prophet Muhammad and revelations contained in the Koran.

MWS 114                                          3 C/45 CH
Islam in America
This course surveys the history of Islam in America from the earliest years of the African slave population,
the antebellum period through the successive waves of immigration from the Muslim world, post 1965 and the aftermath of September 11, 2001. It will include the study of historical and ideological developments of various Islam movements and Muslim groups. Finally, it will study relations between Muslims and non-Muslims and the prospects for the future of Islam in America.

NUMERICAL CONTROL (NC)

**NC 111** 3 C/45 CH
**Numerical Control Concepts**  F, Sp, Sm
Lab fee
An introduction to the basic concepts of computer numerical control (CNC). A study of machine tools, controllers, programming languages, and a variety of aspects of CNC. This course is designed to broaden the students’ background in numerical control.

**NC 222** 3 C/45 CH
**CNC Machining and Programming I**  F, Sp
Lab fee
Prerequisite: NC 111
Introduction to programming using industry standard numerical control mills and lathe machine. The student will learn a variety of programming techniques and verification methods to produce parts.

**NC 230** 3 C/45 CH
**CNC Machining Center**  F, Sp
Operation and Graphics I
Lab fee
Prerequisite: NC 111
Programming, setup and operations of vertical machining centers. This is a study of 21/2 dimensional CAM graphics as an interface between design and manufacturing from part drawings to finished product. Diverse programming techniques of semi-automatic, MDI and teach mode will be taught. Tooling considerations include offsets, identification, and tool libraries as an integral part of the course work. The student will gain more experience by producing parts from these programs.

**NC 234** 3 C/45 CH
**CNC Programming and Machining II**  Sp
Lab fee
Prerequisite: NC 222
This course will allow students to create programs for CNC programs through the use of codes and dialog programs. A diverse variety of programming techniques such as canned cycles are edited, simulated and verified prior to the machine operations.

**NC 235** 3 C/45 CH
**CNC Machining Center**  Sp
Operation and Graphics II
Lab fee
Prerequisite: NC 230 or NC 231
This course uses 3D graphics programming to produce a variety of mold parts. Surfaces are extruded, revolved, lofted and swept into a variety of shapes. Programs are modified for tool path, tooling, speed and feeds. The students gain further experience by manufacturing programming parts.

**NC 240** 3 C/45 CH
**CNC Turning Center**  Sm
Operation and Graphics II
Lab fee
Prerequisite: NC 230 or NC 235
Computer rendering of solids are designed and modified to produce a wide range of models. These solid models are made from a variety of primitives using Boolean operations and other modifying techniques. Tool paths for solids are then simulated to produce a finished product.

NURSING (NUR)

**NUR 110** 2 C/30 CH
**Nursing Foundations – Lecture**  F, Sp
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, Admission to the Nursing Program
This course establishes the metaparadigm concepts: person, health, environment, nursing. In Level I,
first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 111 2 C/90 CH
Nursing Foundations – Lab
Prerequisites: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, Admission to the Nursing Program
The focus of this course is for the student to acquire the necessary nursing skills for progression to clinical sites in subsequent courses. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 112 2 C/30 CH
Medical Surgical Nursing I – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, NUR 110, NUR 111, NUR 118
This course focuses on the nursing care of the perioperative client, and the client with sensory alterations of vision and hearing. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 113 2 C/90 CH
Medical Surgical Nursing I – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, HSC 100, NUR 110, NUR 111, NUR 118, PSY 101
This course focuses on the nursing care of the perioperative client, and the client with sensory alterations of vision and hearing. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver. New nursing skills that the student will master in the nursing lab in this course are IV’s and IV piggybacks, blood transfusion, and oral suctioning.

NUR 114 1.5 C/22.5 CH
Obstetric Nursing – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, NUR 110, NUR 111, NUR 112, NUR 113, NUR 118
This course focuses on the nursing care of the obstetric client, newborn and family unit. This course is organized according to the metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 115 1.5 C/67.5 CH
Obstetric Nursing – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, NUR 110, NUR 111, NUR 112, NUR 113, NUR 118
This course focuses on the nursing care of the obstetric client, newborn and family unit. This course is organized according to the metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver. New nursing skills that the student will master in the nursing lab in this course are specific to the care of the obstetric client and newborn.

NUR 116 2 C/30 CH
Medical Surgical Nursing II – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, NUR 110, NUR 111, NUR 112, NUR 113, NUR 118
This course focuses on the nursing care of the client with alterations in respiratory, cardiac or cardiovascular status. This course is organized according to the metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 117 2 C/90 CH
Medical Surgical Nursing II – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, HSC 100, NUR 110, NUR 111, NUR 112, NUR 113, NUR 118
This course focuses on the nursing care of the client with alterations in respiratory, cardiac or cardiovascular status. This course is organized according to the metaparadigm concepts: person, health, environment, nursing. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver. New nursing skills that the student will master in the nursing lab are tracheostomy care and endotracheal suctioning, central line dressing changes, and setting up chest tubes.
COURSE DESCRIPTIONS

NUR 118  1 C/30 CH
Physical Assessment
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101
Admission to the Nursing Program
This course focuses on Nursing knowledge and skills necessary to conduct a physical assessment on a healthy adult. Some common deviations from normal will be included. The level of skill to be attained is comparable to the admission nursing assessment in an acute care setting. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 119  2 C/30 CH
Pharmacology
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, NUR 110, NUR 111, NUR 112, NUR 113, NUR 118
This course focuses on medication groups and medication administration safety factors. In Level I, first year of the Nursing program, emphasis is on the nursing student as a caregiver.

NUR 210  1.5 C/22.5 CH
Psychiatric Nursing – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119
This course focuses on nursing care of clients with psychiatric disorders. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

NUR 211  1.5 C/67.5 CH
Psychiatric Nursing – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119
This course focuses on nursing care of clients with psychiatric disorders. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse. New nursing skills that the student will master in the nursing lab are ostomy care and peritoneal dialysis.

NUR 212  2 C/30 CH
Medical Surgical Nursing III – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, PSY 101, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119
This course focuses on the nursing care of clients with endocrine, renal, immune and gastrointestinal disorders. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

NUR 213  2 C/90 CH
Medical Surgical Nursing III – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119
This course focuses on the nursing care of clients with endocrine, renal, immune and gastrointestinal disorders. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse. New nursing skills that the student will master in the nursing lab are ostomy care and peritoneal dialysis.

NUR 214  1.5 C/22.5 CH
Pediatric Nursing – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, HSC 200, SOC 100, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 210, NUR 211, NUR 212, NUR 213, NUR 218
This course focuses on nursing care of the pediatric client. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

NUR 215  1.5 C/ 67.5 CH
Pediatric Nursing – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 295, PSY 101, HSC 100, DT 130, HSC 200
This course focuses on nursing care of the pediatric client. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.
SOC 100, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119, NUR 210, NUR 211, NUR 212, NUR 213, NUR 218

This course focuses on nursing care of the pediatric client. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse. New nursing skills that the student will master in the nursing lab in this course are specific to the care of the pediatric client. New nursing skills that the student will master in the nursing lab in this course are specific to the care of pediatric clients.

NUR 216
Medical Surgical Nursing IV – Lecture
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 252, BIO 295, PSY 101, HSC 100, HSC 200, DT 130, SOC 100, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119, NUR 210, NUR 211, NUR 212, NUR 213, NUR 218

This course focuses on nursing care of clients with neurologic, musculoskeletal, hematologic, and oncologic disorders. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

NUR 217
Medical Surgical Nursing IV – Clinical
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 252, BIO 295, PSY 101, HSC 100, HSC 200, DT 130, SOC 100, NUR 110, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119, NUR 210, NUR 211, NUR 212, NUR 213, NUR 218

This course focuses on nursing care of clients with neurologic, musculoskeletal, hematologic, and oncologic disorders. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse. New nursing skills that the student will master in the nursing lab are traction and adaptive equipment.

NUR 218
Nursing Issues
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 252, BIO 295, PSY 101, HSC 100, HSC 200, SOC 100, DT 130, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119, NUR 210, NUR 211, NUR 212, NUR 213

This course focuses on issues within the environment of care, as well as professional nursing issues. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

NUR 219
Nursing Transitions
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 252, BIO 295, PSY 101, HSC 100, HSC 200, SOC 100, DT 130, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119, NUR 210, NUR 211, NUR 212, NUR 213

This course focuses on issues within the environment of care, as well as professional nursing issues. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

NURSING ASSISTANT (NHS)

NHS 100
Nursing Assistant
Prerequisite: ENG 119, BIO 240, BIO 250, BIO 252, BIO 295, PSY 101, HSC 100, HSC 200, SOC 100, DT 130, NUR 111, NUR 112, NUR 113, NUR 114, NUR 115, NUR 116, NUR 117, NUR 118, NUR 119, NUR 210, NUR 211, NUR 212, NUR 213

This course focuses on issues within the environment of care, as well as professional nursing issues. This course is organized according to metaparadigm concepts: person, health, environment, nursing. In Level II, second year of the Nursing program, emphasis is on the nursing student evolving into the role of the professional nurse.

This program is a State of Michigan approved nursing assistant program.
OCCUPATIONAL THERAPY TECHNOLOGY (OTA)

OTA 100 3 C/45 CH
Fundamentals of Occupational Therapy
This course is a study of the history, philosophy and functions of occupational therapy. Instructional themes include the meaning of occupation, the history of occupational therapy as a health profession, current professional structure, and the settings and methods that occupational therapy uses that contribute to the health care team.

OTA 110 3 C/45 CH
Terminology and Professional Communication
This course is an introduction to terminology as used in the occupational therapy field. The course uses a systems approach to provide a basis for understanding common psychiatric and medical terminology. Word roots, prefixes and suffixes are used as a basis for building medical terms, and applications of medical and psychiatric terms are used in medical records notes and case studies to increase understanding. The course also includes grammar and writing skills applied to writing in healthcare environments.

OTA 112 3 C/45 CH
Kinesiology For OTA
Prerequisite: BIO 240
This course is a basic course in kinesiology applied to the practice of occupational therapy. The course covers the relatedness of the skeletal and muscular systems to movement of the human body in daily functions. With knowledge of movement, levers, and other related mechanical principles, daily functions are analyzed and described. OTA 112 is an integrated lecture/lab course.

OTA 114 3 C/45 CH
Human Development
This course reviews human development throughout a human’s life span - infants, children, adolescents, adults, and older adults - with emphases on the cognitive, psychosocial, sensory-motor, and multicultural components. Other themes include age appropriate roles and life-tasks.

OTA 120 4 C/60 CH
Activity Skills
This course focuses on activity analysis from multicultural, psychomotor, and theoretical perspectives. The course covers occupations and activities that children and adults engage in, with emphasis on analysis, teaching, and developing techniques and skills.

OTA 140 3 C/45 CH
Mental and Medical Conditions
This course discusses conditions/diseases commonly referred to occupational therapy in physical and psychosocial dysfunction settings, including etiology, incidence, pathology and residual effects. The course also includes the roles of team members, problem identification, and goal setting for occupational therapy intervention.

OTA 160 3 C/45 CH
Assistive Technology
This course studies the therapeutic adaptation of the environment and/or client functioning through the application of simple to complex technologies. Resources used include textbooks, computers, the Internet, and field trips to gain knowledge of what is state of the art.

OTA 220 3 C/45 CH
Therapeutic Media I
Prerequisite: OTA 140
This course prepares a student in selected media such as ADL tasks, cognitive tasks, group techniques, therapeutic use of self, and sensory-motor activities used in occupational therapy to alleviate dysfunction in psychosocial performance components.

OTA 222 3 C/45 CH
Level I A Fieldwork
Prerequisite: OTA 140
Classroom preparation and 56 hours of Level I fieldwork, which includes but is not limited to clinical observation and participation in an assigned treatment setting. Students will apply related course content in mental health which may include developmental disabilities. Fieldwork is individually assigned.

C = Credits  CH = Contact Hours  HL = Hours Lecture  HLB = Hours Lab
F = Fall    Sp = Spring    Sm = Summer
OTA 240
Therapeutic Media II
Prerequisite: OTA 112, OTA 140
This course prepares a student in selected media such as orthotics, adaptive equipment, ADL techniques and neuromuscular techniques used in occupational therapy to alleviate dysfunction in physical performance components. Consideration is given to the holistic view of the client.

OTA 245
Level I B Fieldwork
Prerequisite: OTA 140
Classroom preparation and 64 hours of Level I fieldwork, which includes but is not limited to clinical observation and participation in an assigned treatment setting. Students will apply related course content in physical dysfunction which may include pediatric settings. Fieldwork is individually assigned.

OTA 260
Therapeutic Media III
Prerequisites: OTA 220, OTA 240
This course identifies environmental, cultural, social and financial and client factors that influence the delivery of occupational therapy services in home and community settings, to individuals and populations. It also discusses public policy, cultural diversity, death and dying, adaptation, and common and disabling conditions that occur in later adulthood through the senescent years.

OTA 265
Pediatric OT
Prerequisite: OTA 240
This course will focus on the role of the COTA in pediatric settings as well as Occupational Therapy’s function in the field of pediatrics. Disabling conditions from this age group which are commonly referred to O.T. will be described. Students will develop their knowledge base in childhood conditions and their skills relative to selection of appropriate equipment and activities for this population.

OTA 280
OTA Seminar
Prerequisite: OTA 220, OTA 240
This course reviews management of occupational therapy services: OTR/COTA collaboration: interviewing: time management: communication: credentialing: research: professional standards and ethics; student supervision; marketing of OT services.

OTA 285
Fieldwork Level II A
Prerequisite: Successful completion of all program courses below OTA 285
This is an eight week full-time fieldwork experience. Students will apply the knowledge and skills acquired in the classroom to therapy settings in the community. Students are individually assigned to fieldwork sites, and are required to attend scheduled Saturday seminars.

OTA 295
Fieldwork Level II B
Prerequisite: Successful completion of all program courses below OTA 295
This is an eight week full-time fieldwork experience. Students will apply the knowledge and skills acquired in the classroom to therapy settings in the community. Students are individually assigned to fieldwork sites, and are required to attend scheduled Saturday seminars.

OFFICE INFORMATION SYSTEMS (OIS)
(Formerly: Business Information Technology)

OIS 100
Keyboarding
Prerequisite: F, Sp, Sm
This course is designed to enable the student to learn basic keyboarding and computer literacy skills on microcomputers, using a word processing software package. This course will enable the student to keyboard a variety of data when using a computer. A minimum of three hours of lab per week and a lab fee required.
OIS 101  3 C/45 CH  Keyboarding Fundamentals
Recommended: OIS 100
The student will master the microcomputer keyboard using the touch method. The student will type horizontal/vertical documents, memos, tables, postal cards, personal letters, business letters and manuscripts. The student will type from printed script and rough draft copies. When this course is completed, the student will type a minimum of 30 words per minute on straight-copy material with no more than five errors on a five-minute timing. A minimum of three hours of lab per week and a lab fee required.

OIS 102  3 C/45 CH  Intermediate Keyboarding
Prerequisite: OIS 101
The student will continue to develop higher levels of typing speed and accuracy while producing business letters in a variety of styles, common business forms, more complex tabulation problems, formal and informal manuscripts and other common business typing problems. The student will type a minimum of 40 words per minute with no more than four errors on a five-minute timing. A minimum of three hours of lab per week and a lab fee required.

OIS 227  3 C/45 CH  Desktop Publishing I
Recommended: OIS 102
This course provides a BASICS step-by-step introduction to Adobe PageMaker 7 software. Everything from creating a publication and working with styles and graphics to working with tables and templates is covered. (Course is 85-90% hands-on).

OIS 228  3 C/45 CH  Desktop Publishing II
Prerequisite: OIS 227
A hands-on class using the Adobe PageMaker page layout package with emphasis on the design aspect of Desktop Publishing. A balanced layout; graphics; importing text; the use of paper color, type, size and styles; framing techniques; grids; kerning and leading; etc. to maximize eye appeal and readability will be continuously stressed as several multi-page documents will be created for actual publication or use. Emphasis will be placed on layout and design of the page for the best advertising, marketing, user appeal. Final projects will also be presented for artistic public display and judging.

OIS 251  3 C/45 CH  Microsoft Word Specialist
Prerequisites: BUS 225  Recommended: OIS 102
This course is designed for those students interested in using a full-featured word processing computer program to create a professional looking documents and modifying them easily. Also this course is designed to assist the students preparing to take the Microsoft Office Specialist (MOS) certification for expert level.

OIS 252  3 C/45 CH  Microsoft Excel Specialist
Prerequisites: BUS 225  Recommended: OIS 102
This course is designed for those students interested in using a full-featured excel spreadsheet to organize data, complete calculations, make decisions, graph data, develop professional looking reports, publish organized data on the Web and access real-time data from Web sites. Also this course is designed to assist the students preparing to take the Microsoft Office Specialist (MOS) Excel certification for expert level.

OIS 253  3 C/45 CH  Microsoft PowerPoint Specialist
Prerequisites: BUS 225  Recommended: OIS 102
This course is designed for those students interested in improve their skills to create, present, and collaborate on computer presentations. This class is using Microsoft PowerPoint software, as a visual communication tool, to create remarkable presentations with enhanced multimedia capabilities. Also this course is designed to assist the students preparing to take the Microsoft Office Specialist (MOS) PowerPoint certification for expert level. MOS PowerPoint certification recognizes individuals who have achieve a certain level of mastery with Microsoft PowerPoint product.

OIS 254  3 C/45 CH  Microsoft Access Specialist
Prerequisites: BUS 225  Recommended: OIS 102
This course is designed for those students who want to improve their skills to create or make use of a robust database solution. This class uses Microsoft Access software, as a powerful database management system, that allows you to organize, access, and share information in databases in a very easy way. Also this course is designed to assist the students preparing to take the Microsoft Office Specialist (MOS) Access certification for standard level. MOS Access certification recognizes individuals who have achieve a certain level of mastery with Microsoft Access product.
OIS 280 3 C/45 CH
Office Administration and Professional Development
The student will develop a personal plan of action leading to completion of short and long range goals, apply principles leading to success, enhance interpersonal relationship skills and analyze the corporate structure and its mechanisms. Emphasis will be on developing positive work attitudes, time management, interpersonal style, professional growth and stress management.

PARALEGAL TECHNOLOGY (PLT)

PLT 105 3 C/45 CH
Legal Interviews & Investigations
Prerequisite: Program Admission
This course reviews interviewing techniques and investigation methods from the perspective of the legal assistant. It covers fact gathering from both public and private sources and reporting of data in a form suitable for law office use.

PLT 120 3 C/45 CH
Legal Research Writing I
Prerequisite: Program Admission
Co-Prerequisites: PLT 105, PLT 135
This course is an introduction to the American legal system, legal research and writing skills. Students are introduced to printed and online resources available through the law library and the Internet.

PLT 135 3 C/45 CH
Professional Responsibility/Legal Ethics
Prerequisite: Program Admission
This course examines the various issues of professional responsibility and legal ethics that a paralegal encounters. The course will assist the student in developing an awareness and understanding of the professional codes of ethics that govern the legal profession and impact those codes have on the daily responsibilities of the paralegal. Topics covered include client interviews and form preparation, as well as substantive and procedural aspects of the process from the paralegal’s perspective.

PLT 140 3 C/45 CH
Business Organization and Corporation Law I
Prerequisite: Program Admission
This course is a survey of the various types of business organizations operating in the United States. The course will assist the student in developing an awareness and understanding of the fundamental legal issues arising from the selection, formation, and implementation of a business entity. Topics covered include an overview of sole proprietorships, partnerships, and other unincorporated entities as well as various types of corporations.

PLT 150 3 C/45 CH
Legal Composition and Research II
Prerequisite: Program Admission
This course is a continuation of Legal Research and Writing I. Students will participate in supervised library based research projects, including a mock legal problem, preparation of a legal memorandum, reports, and draft pleadings.

PLT 160 3 C/45 CH
General Practice Survey
Prerequisite: Program Admission
This course is an introduction to common areas of legal practice undertaken by sole practitioners and small firms. Students will examine civil and criminal litigation, as well as transactional matters.

PLT 170 3 C/45 CH
Probate Law & Practice
Prerequisite: Program Admission
This course is an introduction to probate law and procedure with an emphasis on adult and minor guardianships, conservatorships, decedent’s estates and involuntary commitments. Students will also acquire knowledge in probate jurisdictional issues.

PLT 180 3 C/45 CH
Civil Litigation Practice & Procedure
Prerequisite: Program Admission
This course covers the necessary preparation required to assist attorneys in the pre-trial, trial, and an appeal process. Substantive legal areas discussed include tort and contract matters.
PLT 200 3 C/45 CH
Survey of Property Law
Prerequisite: Program Admission
This course is an introduction to the law of personal property and real property. Topics covered include: title to personal property, gifts, estates in land, future interests, mortgages and landlord/tenant matters.

PLT 210 3 C/45 CH
Administrative Law and Procedures
Prerequisite: Program Admission
The course reviews applicable evidence and procedural requirements for workers compensation and social security laws, civil rights and EEOC.

PLT 220 3 C/45 CH
Criminal Law Practice & Procedures
Prerequisite: Program Admission
This course covers the study of substantive criminal law, classifications of crimes and principles of criminal liability.

PLT 230 3 C/45 CH
Family Law
Prerequisite: Program Admission
This course introduces the student to child custody issues, divorce matters, and domestic relations. Related issues include the role of the police department, social services, the Probate Code and Friend of the Court issues. Students will gain a working knowledge of Michigan family law.

PLT 245 3 C/45 CH
Debtor Relief & Creditor Rights
Prerequisite: Program Admission
The course will assist the students in developing an awareness and understanding of the fundamental legal issues regarding creditor rights, debtor relief and responsibility and trustee activities. Topics covered include client interviews and form preparation, as well as substantive and procedural aspects of the process from the paralegal’s perspective. Creditor Rights and Debtor Relief explores the process of consumer and commercial bankruptcy will be examined.

PLT 255 3 C/45 CH
Credentialing Exam Preparation
Prerequisite: Program Admission
This course is a comprehensive review of the subjects covered on the Certified Legal Assistant (CLA) examination. Topics include: communication, ethics, American legal system, as well as several substantive areas of law.

PLT 260 3 C/45 CH
Immigration Law
Prerequisite: Program Admission
This is a course dealing with the rights and responsibilities of aliens and issues involved in representing them before the INS and in the courts. Emphasis on federal immigration law and policy.

PLT 265 3 C/45 CH
Paralegal Practicum
Prerequisite: Program Admission
This is an academic internship opportunity for students to gain practical legal experience in a structured professional environment. Students meet periodically with the course instructor for orientation and evaluation.

PERFORMING ARTS-THEATRE (THEA)

THEA 151 3 C/45 CH
Introduction to Acting  F, Sp
Prerequisite: HUM 141
This course introduces students to the basic principles and techniques of acting. Emphasis will be placed on body movement, projection into the mind of the character, voice and diction, and breathing. Students will also study script interpretation.

THEA 152 3 C/45 CH
Stagecraft and Lighting  Sm
Prerequisite: HUM 141
This course is a study of the theoretical and practical aspects of stage design and lighting. The course covers the principles of designing the scene, studying equipment for scenes and lighting design, as well as the process of complementing the scene with the play.
PHARMACY TECHNOLOGY (PHT)

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<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Lecture</th>
<th>Lab</th>
<th>Prerequisite</th>
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<td>Program Admission</td>
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<td></td>
<td></td>
<td>Program Admission</td>
<td>PHT 110 &amp; PHT 120</td>
</tr>
<tr>
<td>Pharmaceutical Calc &amp; Drug Prep</td>
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<tr>
<td>PHT 155</td>
<td>7</td>
<td>240</td>
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<td>Program Admission</td>
<td>PHT 130 &amp; PHT 210</td>
</tr>
<tr>
<td>Pharmacy Technology Practicum</td>
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<tr>
<td>PHT 210</td>
<td>5</td>
<td>80</td>
<td></td>
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<td>Program Admission</td>
<td>PHT 130 &amp; PHT 155</td>
</tr>
<tr>
<td>Pharmacy Computer System</td>
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</tbody>
</table>

PHILOSOPHY (PHL)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Lecture</th>
<th>Lab</th>
<th>Prerequisite</th>
<th>Corequisite</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHL 101</td>
<td>3</td>
<td>45</td>
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<td>Program Admission</td>
<td></td>
</tr>
<tr>
<td>Comparative Religions I</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>PHL 102</td>
<td>3</td>
<td>45</td>
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<td></td>
<td>Program Admission</td>
<td></td>
</tr>
<tr>
<td>Comparative Religions II</td>
<td></td>
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</tbody>
</table>
PHL 201 3 C/45 CH  
Introduction to Philosophy  
F, Sp, Sm  
This course cover basic problems in philosophy. Readings encompass ethics, politics, science and metaphysics to give students experience in critical thinking to promote objectivity.

PHL 211 3 C/45 CH  
Introduction to Logic  
F, Sp, Sm  
This is a course designed to impact principles of clear and consistent thinking through the techniques of logic to avoid fallacies and eliminate ambiguous ideas.

PHL 221 3 C/45 CH  
Ethics  
F, Sp, Sm  
This course is a survey of ethical theories which have characterized human beings, with practical applications to current problems in human values.

PHLEBOTOMY (PLB)

PLB 100 3 C/36 CH  
Introduction to Phlebotomy  
Study basic phlebotomy concepts such as skin punctures, venipunctures, arterial punctures, and bleeding times. Master specimen collection, preservation of specimens from various sources, and specimen processing. Incorporate a personal concept of professionalism (thirty six CH required for the imbedded lab).

PLB 105 3 C/128 CH  
Phlebotomy Practicum  
Build on previously learned skills while continuing to master specimen collection and the preservation of specimens from various sources. Solidify skills in specimen processing while incorporating a personal concept of professionalism (sixteen CH for eight weeks).

PLB 201 3 C/36 CH  
Pediatric Phlebotomy  
Become familiar with various pediatric blood collection procedures and equipment. Use hands-on, simulated classroom exercises and observe practices in a clinical setting (thirty six CH required for the imbedded lab).

PHYSICS (PHY)

PHY 101 4 C/90 CH  
Physics for Elementary School Teachers  
Lab fee  
Lecture and laboratory course dealing with physics concepts and strategies for teaching these concepts in elementary [K-8] schools. Current State of Michigan physics teaching objectives and associated learning activities will be emphasized. Using such community resources as the Detroit Science Center, playgrounds, and amusement parks to teach physics will be emphasized. In addition, opportunities are provided for WCCCD students to teach physics to a small group of children (under teacher supervision) in local elementary schools.

PHY 115 4 C/90 CH  
Fundamentals of Physics  
Lab fee  
This course covers fundamental principles, theories and problems of physics, and should be taken by students who have not had a course in high school physics, those with an inadequate background for PHY 235 and by those students whose curriculum requires four credit hours of physics. (Meets for six hours - four hours lecture, two hours lab)

PHY 235 4 C/60 CH  
General Physics I  
Lab fee  
Prerequisite: PHY 115  
This non-calculus based physics course and it is designed partially to fulfill the physics requirement in pre-medicine, pre-dentistry, pharmacy, electronics, teaching and law. The sequence PHY 235 and PHY 245 is not intended for engineering students. (Meets for six hours - four hours lecture, two hours lab)

PHY 245 4 C/90 CH  
General Physics II  
Lab fee  
Prerequisite: PHY 235  
This course is a continuation of PHY 235. Topics include electricity, magnetism, light and atomic physics. (Meets for six hours - four hours lecture, two hours lab)
**COURSE DESCRIPTIONS**

**PHY 265**

**Physics for Scientists & Engineers I**

- **Lab fee**
- **Prerequisite:** MAT 171
- This course is a general calculus based course designed to meet the requirements of engineering students and scientists. Topics include, mechanics, wave motion and thermodynamics. (Meets for six hours - four hours lecture, two hours lab)

**PHY 275**

**Physics for Scientists and Engineers II**

- **Lab fee**
- **Prerequisite:** PHY 265, MAT 172 or concurrent enrollment in MAT 172
- This course is a continuation of PHY 265. Topics include electricity, magnetism, physical and geometrical optics and elementary quantum mechanics. (Meets for six hours - four hours lecture, two hours lab)

**PHYSICAL SCIENCE (PSC)**

**PSC 110**

**Physical Science-Physics, Chemistry and Geology**

- A course for non-science majors covering topics in chemistry, physics and environmental science to develop an understanding of how science, technology and society influence each other, and how to use this knowledge in every day decision-making.

**POLITICAL SCIENCE (PS)**

**PS 101**

**American Government**

- **Prerequisite:** PS 101
- This course is an examination of America’s democracy, its principles, processes and political institutions. Emphasis is placed on the functioning of the national government and the making of public policy.

**PS 104**

**Introduction to Political Science**

- **Prerequisite:** PS 101
- This is an introduction to Political Science and it describes the nature of political science, explains the ways in which political scientists study politics and offers introductory treatment of all major topics normally thought of as constituting political science. This course emphasizes a comparative approach to political systems and institutions. The U.S. role as an actor in a global setting will be emphasized.

**PS 160**

**International Politics**

- **Prerequisite:** PS 101
- This course covers the dynamics of the basic factors motivating the behavior of nations and an analysis of the major areas of global political concern.

**PS 235**

**State and Local Government**

- **Prerequisite:** PS 101
- This course is a survey of state and local government, including structure, institutions and processes. The course stresses intergovernmental relations.

**PS 275**

**Public Administration Internship**

- **Prerequisite:** PS 101
- A course designed to give students the opportunity to experience the activities of an agency or institution related to government and public administration. Internships are available in a U.S. representative’s office, political party offices assisting a candidate for public office, a nonpartisan community office, or an interest group office.

**PRINT TECHNOLOGY (PRN)**

**PRN 101**

**Introduction to Print Technology**

- Projects provide opportunities to apply their skill and to understand image concept and design, image assembly, film conversion, platemaking, duplicator, presswork and bindery operations.
## PROJECT MANAGEMENT (PRM)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRM 101</td>
<td>Introduction to Project Management</td>
<td>3</td>
<td>45</td>
<td>F, Sp, Sm</td>
</tr>
<tr>
<td>PRM 105</td>
<td>Project Management Tools</td>
<td>3</td>
<td>45</td>
<td>F, Sp, Sm</td>
</tr>
<tr>
<td>PRM 210</td>
<td>Intermediate Project Management</td>
<td>3</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>PRM 220</td>
<td>Advanced Project Management</td>
<td>3</td>
<td>45</td>
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</tr>
</tbody>
</table>

### Introduction to Project Management
An overview of the key concepts of project management including the history, practices and methods common to project management will be covered. Students will learn the basics of project management using Project Management Institutes™ approach. This course satisfies the education requirement for project management professional certification. It is not a PMP test preparation course.

### Project Management Tools
An overview of project management tools will be provided. Students will learn Microsoft Project to develop project schedules, assign resources, and learn the features and functions of the software including enterprise (web) functionality.

### Intermediate Project Management
This course will provide in depth coverage of the 9 knowledge areas of project management and integration with other project management models and business practice. The role of the project/program manager will be explored in relation to day to day management of a project.

### Advanced Project Management
Students will be able to develop a clear project management schedule including communication plan, issue and risk management plan, resource management using project management principles and methods.

## PSYCHOLOGY (PSY)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Sessions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 101</td>
<td>Introductory Psychology</td>
<td>3</td>
<td>45</td>
<td>F, Sp, Sm</td>
</tr>
<tr>
<td>PSY 202</td>
<td>Human Sexuality</td>
<td>3</td>
<td>45</td>
<td>F, Sp, Sm</td>
</tr>
<tr>
<td>PSY 220</td>
<td>Child Growth and Development</td>
<td>3</td>
<td>45</td>
<td>F, Sp, Sm</td>
</tr>
<tr>
<td>PSY 225</td>
<td>Child Growth and Development Practicum</td>
<td>5</td>
<td>75</td>
<td>F, Sp</td>
</tr>
<tr>
<td>PSY 230</td>
<td>Psychology of Adjustment</td>
<td>3</td>
<td>45</td>
<td>F, Sp, Sm</td>
</tr>
</tbody>
</table>

### Introductory Psychology
This course is an introduction to the study of human behavior and mental processes, concepts, theories and principals of scientific psychology.

### Human Sexuality
Prerequisite: PSY 101
This course focuses on the physiological, psychological, personal and interpersonal aspects of human sexual behavior. It examines changing sex roles and patterns, personal beliefs and value systems.

### Child Growth and Development
Prerequisite: PSY 101
This course covers the developmental sequence from conception to adolescence, with specific emphasis on the normal child. Examines psychological, social and biological factors that influence the developing child.

### Child Growth and Development Practicum
Prerequisite: PSY 101
This practicum will include supervised experiences working with children (this course also includes lecture material from PSY 220). Child care centers, day care nurseries, psychology clinics for children and Children's Hospital are the various settings where students will have opportunities to utilize practical methodology as well as develop new techniques in child growth and development training. Students will not receive credit for both PSY 220 and 225.

### Psychology of Adjustment
Prerequisite: PSY 101
This course covers the evaluation of human effectiveness, psychopathology, the healthy personality and systematic research on problems of adjustment. Students will not receive credit for both PSY 230 and 235.
PSY 235 5 C/75 CH
Psych of Adjustment Practicum  F, Sp
Prerequisite: PSY 101
This practicum includes supervised experiences working directly with youth and adults in settings such as group homes, learning disabilities centers and day care centers.

PSY 250 3 C/45 CH
Psychology of Personality  F, Sp
Prerequisite: PSY 101
This course covers major personality theories and other personality assessments. It explores various aspects of personality development and change.

PSY 260 3 C/45 CH
Social Psychology  F, Sp
Prerequisite: PSY 101
This course is an introduction to social psychology. It includes social influence processes, group dynamics, attitude formation, interpersonal attraction, intimacy, aggression and discrimination.

PSY 265 3 C/45 CH
Intimate Relationships  F, Sp
Prerequisite: PSY 101
This course covers the impact of intimate relationships on our emotional and social well being. It examines ways intimate relationships are formed, maintained and end. Gender is a central organizing construct.

PSY 270 3 C/45 CH
Psychology of Infant and Toddler Development  F, Sp
Prerequisite: PSY 101
Examines research and theories concerning developmental processes in infants and toddlers.

PSY 279 3 C/45 CH
Transpersonal Psychology with Practicum  Sm
Prerequisite: six hours of Psychology, ENG 120 and consent of instructor
In a seminar setting, students study the branch of wisdom and science that concerns itself with psychological and well being. Inquiry will be expand to include Africa and a worldview. The practicum will include a supervised two week trip to Africa or another country.

PSY 299 3 C/45 CH
Psychology Seminar  Sm
Prerequisite: PSY 101
Students will explore special topics in psychology in a seminar setting. Topics will vary each year. The course is designed for students who wish to participate in advanced study of theories, concepts and research in a particular topic.

RECREATIONAL LEADERSHIP (RL)

RL 110 3 C/45 CH
Recreational Leadership Techniques  F, Sp, Sm
Prerequisite: PSY 101
This course covers the theories, principles and practice of planning, organizing and conducting effective recreational programs for various groups, with emphasis on group involvement.

SOCIAL WORK (SW)

SW 101 5 C/105 CH
Introduction to FLD Practice of SW/Practicum  F, Sp
Prerequisite: HUS 105, SOC 100, and MAT 113
Students will explore the history of social work, employment, qualifications and opportunities, employment tasks and methods of working with a diverse population. Three shadowing practica are included in this course to expand the students knowledge of various employment opportunities.

SW 102 3 C/45 CH
Exploring Human Behavior in the Environment  Sm
Prerequisite: SW 101
This course introduces students to the notion that individuals are a function of their interaction with the bio-psycho-social contexts. Students will explore theory and knowledge of human psychosocial development, behavior, and functioning, from infancy through death within a framework of culture, ethnicity, social class, race, gender, and sexual orientation. The interplay between and among micro, mezzo, and macro systems of individuals, groups, families, and communities as they influence human growth and
development will be explored. Special emphasis on understanding the impact of poverty, oppression, discrimination, exploitation, and violence.

**SW 103**  
**Substance Abuse Service and Policy**  
*Prerequisite: SW 101, SW 102*  
This course examines drug and alcohol abuse, its effects on social functioning with a special emphasis on vulnerable population groups, and the nature and effectiveness of substance abuse services. Students will also investigate case studies and recent literature, compare and contrast service using social work principles and examine the roles of agency personnel (paraprofessional/professional). The legislative response to substance use and abuse will also be addressed.

**SW 104**  
**Introduction to Child Welfare**  
*Prerequisite: SW 101 and SW 102*  
This course is designed as an introductory level exploration of child welfare issues of neglect and abuse. Students will review historical problems experienced by children and examines violence against and maltreatment and welfare laws and programs. Focus on special practice problems in public child welfare, protective services, assessment of at risk children, in home family centered practice and implementation of the Child Welfare Act. Students will be introduced to various levels of prevention and policy formulation.

**SW 105**  
**SW Field Instruction I**  
*Prerequisite: SW 101, SW 102 and SW 120*  
The field education is an integral part of the Registered Social Work Technician Program. It will provide opportunities for students to acquire knowledge and skills needed for the competent practice in human service settings. Students will have an opportunity through practice and experience to apply concepts, theories and principles learned in the classroom. 180 Contact Hours in field placement

**SW 106**  
**SW Field Instruction II**  
*Prerequisite: SW 101, SW 130 and SW 105*  
This is a continuation of Field Instruction I, students will expand the knowledge acquired in SW 105 The courses of instruction that students receive in this area are essential to the acquisition of the knowledge and skills needed for the competent practice in human service settings. 185 Contact Hours in field placement

**SW 130**  
**Customer Service, Documentation and Interviewing for the Social Work Technician**  
*Prerequisite: SW 101 and SW 102*  
This course must be completed before field placement. Students will demonstrate effective use of telephone communication by preparing for telephone calls, developing listening skills, practicing protocols and background environment. Students will learn basic casework skills and strategies for interviewing clients in various situations.

**SOCIOLOGY (SOC)**

**SOC 100**  
**Introduction to Sociology**  
*F, Sp, Sm*  
In this course students will examine basic sociological concepts such as theories of social organization research, methods of research, culture, society and social groups, the socialization process, social class and social mobility, race and ethnic relations. Social institutions such as education, family, religion and government will also be discussed.

**SOC 103**  
**Social Problems**  
*Prerequisite: SOC 100*  
This course is a study of current social issues including crime, poverty, domestic abuse, drug addiction, environment, urbanization, racism, sexism, family issues and unemployment. This course provides an overview of the origins, existing policies and proposed solutions to social problems. Course content includes both theory and practice.
<table>
<thead>
<tr>
<th>Course</th>
<th>Credits/Hours</th>
<th>Semester(s)</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 104</td>
<td>3/45 CH</td>
<td>F, Sp, Sm</td>
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<tr>
<td>American Studies</td>
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<td>This course follows an established model of critical inquiry based on an inter-disciplinary study of American culture and national identity. Through a wide range of approaches, students will explore how the American experience and identity are produced by language, representations and the construction of cultural discourse. This course provides a critical understanding of how social identities of race, class, gender and nationalism function to define the evolving state of the American condition.</td>
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<tr>
<td>SOC 120</td>
<td>3/45 CH</td>
<td>F, Sp, Sm</td>
<td>SOC 100</td>
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<tr>
<td>Death and Dying</td>
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<td>This course is a survey and analysis of concepts, theories and contemporary issues related to death and dying. Among the areas to be studied are bereavement, grief, suicide and funeral service practices.</td>
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<tr>
<td>SOC 144</td>
<td>4/60 CH</td>
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<tr>
<td>Field Work I: Community Placement and Seminar</td>
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<tr>
<td>SOC 225</td>
<td>3/45 CH</td>
<td>F, Sp</td>
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<tr>
<td>Sociology of Work</td>
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<td>This course students will examine the study of work in American society. There will be an analysis of the structure of the American workforce, the impact of technology, automation, alienation, job enrichment, problems and changing patterns in the workforce with a focus on pressures associated with constant societal changes.</td>
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<tr>
<td>SOC 226</td>
<td>4/60 CH</td>
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<tr>
<td>Field Work II: Community Placement and Seminar</td>
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<tr>
<td>SOC 230</td>
<td>3/45 CH</td>
<td>F, Sp, Sm</td>
<td>One course in ANT or SOC, Early Childhood students do not need a Prerequisite</td>
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<tr>
<td>Ethnic Minorities</td>
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<td>This course covers the contributions of ethnic minorities which give our society a unique cultural diversity. Local ethnic differences and problems and multiethnic cooperation is viewed through sociological, anthropological, historical perspectives.</td>
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<tr>
<td>SOC 245</td>
<td>3/45 CH</td>
<td>F, Sp, Sm</td>
<td>SOC 100</td>
</tr>
<tr>
<td>Marriage and Family</td>
<td></td>
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<td>In this course the family is studied cross culturally with emphasis on the contemporary American Family. Topics include gender role socialization, mate selection, alternatives to marriage, the multi-ethnic family and intergenerational issues.</td>
</tr>
<tr>
<td>SOC 250</td>
<td>3/45 CH</td>
<td>F</td>
<td>SOC 100</td>
</tr>
<tr>
<td>Juvenile Delinquency</td>
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<td>In this course students will examine the problem of juvenile delinquency as it exists in the United States. An analysis of the various forms of delinquency will be highlighted. There will be an overview of the societal implications of juvenile delinquency ranging from the individual, the family and the community. Juvenile delinquency will be evaluated from a macro perspective by examining the role of schools, court systems, and legal implications with an overview of prevention initiatives and rehabilitation programs.</td>
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**SPANISH (SPA)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits/Hours</th>
<th>Semester(s)</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPA 101</td>
<td>4/60 CH</td>
<td>F, Sp, Sm</td>
<td></td>
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<tr>
<td>Elementary Spanish I</td>
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<td>This course covers grammatical constructions, vocabulary, basic idioms, basic phonetics and oral drill.</td>
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<tr>
<td>SPA 102</td>
<td>4/60 CH</td>
<td>F, Sp, Sm</td>
<td>SPA 101</td>
</tr>
<tr>
<td>Elementary Spanish II</td>
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<td>This course covers completion of fundamental constructions, vocabulary, emphasis on spoken language. Further training in reading, writing, Spanish conversation and the use of idiomatic constructions.</td>
</tr>
<tr>
<td>SPA 201</td>
<td>4/60 CH</td>
<td>F, Sp</td>
<td>SPA 102</td>
</tr>
<tr>
<td>Intermediate Spanish I</td>
<td></td>
<td></td>
<td>This course covers review of essential grammatical principals. Further development of reading skills and idiomatic usage.</td>
</tr>
</tbody>
</table>

C = Credits     CH = Contact Hours     HL = Hours Lecture     HLB = Hours Lab
F = Fall     Sp = Spring     Sm = Summer
SPA 202  Intermediate Spanish II  4 C/60 CH  Sp, Sm
Prerequisite: SPA 201
Reading on more advanced levels. Continued emphasis on writing and spoken Spanish.

SPH 201  Advanced Public Speaking  3 C/45 CH  F
Prerequisite: SPH 101
This covers an advanced study, preparation and delivery of informative and persuasive speeches.

SPEECH (SPH)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Term(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPH 100</td>
<td>3 C/45 CH</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Interpersonal Communication</td>
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<tr>
<td>In this course there will be the study of the application of the basic skills necessary for interpersonal communication with emphasis on group discussion.</td>
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</thead>
<tbody>
<tr>
<td>SPH 101</td>
<td>3 C/45 CH</td>
<td>F, Sp, Sm</td>
<td>F, Sp, Sm</td>
</tr>
<tr>
<td>Fundamentals of Speech</td>
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<tr>
<td>In this course there will be the study and application of basic principles underlying effective oral communication with emphasis on public speaking.</td>
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<table>
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<tr>
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<th>Contact Hours</th>
<th>Term(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPH 105</td>
<td>3 C/45 CH</td>
<td>F, Sp</td>
<td>F, Sp</td>
</tr>
<tr>
<td>Improving the Speaking Voice</td>
<td></td>
<td></td>
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<tr>
<td>Prerequisite: SPH 101</td>
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<tr>
<td>This course covers the study of the underlying principles and actions pertinent to the development of appropriate vocal and articulatory skills: breath control, voice production, vocal resonance and inflection.</td>
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<th>Contact Hours</th>
<th>Term(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPH 111</td>
<td>3 C/45 CH</td>
<td>F, Sp</td>
<td>F, Sp</td>
</tr>
<tr>
<td>Interpretative Reading</td>
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<tr>
<td>This course covers the selection, preparation and oral delivery of literary material: prose, poetry and drama.</td>
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<table>
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<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Term(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPH 131</td>
<td>3 C/45 CH</td>
<td>F, Sp</td>
<td>F, Sp</td>
</tr>
<tr>
<td>Introduction to Radio, TV &amp; Mass Communication</td>
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<tr>
<td>This course is the study of growth and development of radio, television and other forms of mass communication.</td>
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<tbody>
<tr>
<td>SPH 161</td>
<td>3 C/45 CH</td>
<td>F, Sp</td>
<td>F, Sp</td>
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<tr>
<td>Play Production</td>
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<td>This course covers the theory and practical application of theatrical arts as related to college level play productions. Elements will include acting, directing, staging and analysis of the play. At least one major production will be staged with students applying accumulated knowledge in managerial aspects of play production necessary for its success.</td>
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SURGICAL FIRST ASSISTANT (SFA)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Term(s)</th>
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</thead>
<tbody>
<tr>
<td>SFA 200</td>
<td>3 C/45 CH</td>
<td>F</td>
<td>F</td>
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<tr>
<td>Fundamentals of Surgical First Assisting-Lecture</td>
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<tr>
<td>Prerequisite: Admission to Surgical First Assistant Program</td>
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<tr>
<td>This course is designed for Certified Surgical Technologists who intend to develop their competencies in the fundamentals of the theory and practice of a First Surgical Assistant. The course teaches the responsibilities of a First Surgical Assistant on how to use peri-operative monitoring equipment, conduct diagnostic tests, and execute surgical procedures.</td>
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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Term(s)</th>
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</thead>
<tbody>
<tr>
<td>SFA 210</td>
<td>3 C/45 CH</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Advance Surgical Pharmacology - Lecture</td>
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<tr>
<td>Prerequisite: Admission to the Surgical First Assistant Program</td>
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<tr>
<td>This course is a continuation of Surgical Pharmacology (SUR 140) and teaches what medications the surgical first assistant will most frequently use in surgical and anesthetic procedures.</td>
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</table>

The course will examine anesthesia as a complex and specialized area of pharmacology. Another focus will be on local and general anesthetics, neuromuscular blocking agents, analgesics, antibiotics, drugs that affect blood coagulation, and drugs used to manage circulatory disorders. Safe handling of anti-neoplastic drugs will also be taught.

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<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Contact Hours</th>
<th>Term(s)</th>
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</thead>
<tbody>
<tr>
<td>SFA 220</td>
<td>3 C/45 CH</td>
<td>F</td>
<td>F</td>
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<tr>
<td>Surgical Management of Patients – Lecture</td>
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<tr>
<td>Prerequisite: BIO 252, SFA 200, SFA 210</td>
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<tr>
<td>This is an introductory course on the theory and practice of caring for the surgical patient by the surgical first assistant during the pre-operative, intra-operative, and post-operative phases of a surgery.</td>
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</tbody>
</table>
The student will also learn the role of the first assistant during the pathological and physiological processes and when the first assistant must apply intervention techniques.

SFA 230  
Surgical First Assistant Techniques – Lab  
Prerequisite: BIO 252, SFA 200, SFA 210  
SFA 230 is intended for certified surgical technologists, OR nurses, and certified surgical first assistants so that they can develop their competencies in the fundamentals of the surgical skills and surgical techniques of a first surgical assistant.

The course focuses on the surgical first assistant’s moral and legal responsibility for performing manipulative clinical procedures, whether for diagnosis, monitoring, or treatment, and includes the theoretical knowledge and practical techniques necessary to assist the surgeon before, during, and after surgery in the use of equipment, hemostasis, instruments, material and suturing.

SFA 235  
Clinical Preceptorship – Clinical  
Prerequisite: BIO 252, SFA 200, SFA 210, SFA 220, SFA 230, SFA 253  
This course is a clinical practice of basic surgical skills for surgical first assistant students. A student enrolled in the course is assignment to a qualified preceptor – a surgeon who provides direct supervision and guidance during each rotation. Each student in the course is required to complete a specified number of cases - 115 to 125 cases (approximately 300 hours) with 100 percent skill competency.

SFA 253  
Surgical Anatomy  
Lecture and Lab  
Prerequisite: BIO 252, SFA 200, SFA 210  
SFA 253 is an introductory course that systematically investigating the structure and organization of the human body. This course has been specifically prepared for the surgical first assistant certificate program.

SURGICAL TECHNOLOGY (SUR)

SUR 100  
Orientation to Surgical Technology - Lecture  
This is an introductory course to the career world of surgical technology and peri-operative environment. The role and responsibilities of the circulating and scrub technologists, as well as other surgical team members, are explored.

Also studied are work strategies for success as a surgical technologist including managing pressure, time management, and achieving personal excellence.

SUR 101  
Central Service Technician - Lecture  
Prerequisite: Admission to Central Service Tech Program  
This course provides the fundamentals of central processing supply, processing, and distribution (CSD). Instruction and practice is given in aseptic technique, patient centered practices and theories, customer service, and overall policies and practices of central service supply departments. Students who complete this program are eligible to take the American Society for Healthcare Central Service Personnel (ASHCSP) National Certifying Examination.

SUR 102  
Central Service Lab and Clinical  
Prerequisite: SUR 100, SUR 101  
In this course, students will be taught and tests on the following skills required for certification of a central service technicians: cleaning; decontamination; processing (inspection, assembling, and packaging) and sterilization of reusable patient care central services supplies and equipment; and distribution of these supplies and equipment to the units that require them. Students will be in the laboratory setting for the first four weeks of the course. In the final 11 weeks of the course, students will be placed at a clinical site working eight hours a day, two days a week. Students are responsible for their own transportation to the clinical sites.
SUR 110
Surgical Technology Principles – Lecture
Prerequisite: Admission to the Surgical Technology Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110
This course provides the fundamentals of surgical concepts and techniques. The course covers methods of sterilization, disinfection, surgical instrumentation, equipment, supplies, wound closure and management, and preparation of the patient for surgical intervention. The perioperative care of the patient is emphasized.

SUR 120
Surgical Specialties & Techniques I – Lecture
Prerequisite: Admission to the Surgical Technology Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110
This course is designed to focus on the perioperative care of the surgical patients during endoscopic, general, obstetric and gynecologic, genitourinary, ophthalmic, orthopedic, ENT, and peripheral vascular procedures. Students will become familiar with the diagnostic, procedural considerations, operative procedures and instrumentation for the specialties. Concentration will also be given to OR principles related to physics, surgical robotics, and electricity.

SUR 125
Surgical Technology Clinical I – Lab
Prerequisite: Admission to the Surgical Technology Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110
This course gives an introduction to the activities and procedures performed by the scrub and circulating surgical technologists. Students are guided in activities that will assist them in performing as a member of the surgical team. Patient care, selection of the proper items, practice, and maintaining aseptic technique are emphasized. Students will practice techniques in lab sessions. The last five weeks, tour of various facilities is required. Students are responsible for their own transportation.

SUR 130
Surgical Specialties & Techniques II – Lecture
Prerequisite: Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110, SUR 110, SUR 120, SUR 125
A continuation of surgical specialties and techniques, this course is designed to focus on the perioperative care of surgical patients during cardiac, endoscopic, geriatric, oral, pediatric, plastic and reconstruction, thoracic and neurosurgery specialties. Students will become familiar with the diagnostic, procedural considerations, operative procedures, and instrumentation for the specialties.

SUR 140
Surgical Pharmacology Lecture
Prerequisite: Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110, SUR 110, SUR 120, SUR 125
This course gives an introduction to medications used in the operating room. It emphasizes classification, administration, forms, methods, interactions, and desired effects of peri-operative medications. Surgical technologists' legal responsibilities are also covered.

SUR 145
Surgical Technology Clinical II – Clinical
Prerequisite: Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110, SUR 110, SUR 120, SUR 125
This supervised clinical course is a continuation of SUR 125. Students perform in the role of scrub person, second assistant, and assistant to the circulating person on various surgical procedures. This clinical meets two days per week, and students are responsible for their own transportation to their assigned clinic.

SUR 155
Surgical Technology Clinical III – Clinical
Prerequisite: Program, ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110, SUR 110, SUR 120, SUR 125, SUR 130, SUR 140, SUR 145
Further develops clinical skills of students to anticipate the surgeon's needs during the schemes of various surgical procedures. Students practice their role
responsibilities as a scrubs person, second assistant, and assistant to the circulating person on various surgical procedures. The clinical assignment meets three days a week. Students are responsible for their own transportation to their clinical assignments.

SUR 160  
Surgical Seminar and Certification Preparatory – Lecture
Prerequisite: ENG 119, ENG 120, BIO 240, BIO 250, BIO 295, PSY 101, ALH 110, SUR 110, SUR 120, SUR 125, SUR 130, SUR 140, SUR 145
This course includes student presentations and discussions as well as an overview of Surgical Technology in preparation for the National Certifying Examination. It also uses techniques and exercises in successful writing standardize test.

Students will take the practice LCC-ST CST Self-Assessment Exam during the fourth week of class.

TEACHER EDUCATION (ED)

ED 110  
Introduction to Education I
Prerequisite: Admission to Teacher Education Program
This course provides a foundation for teaching in public and private elementary schools (K-8). Topics and issues are addressed which provide understandings of school organization and role of schools in society; duties, responsibilities, and expectations of teachers; working with parents and community members; fiscal considerations; and of diversity/equity issues.

ED 111  
Introduction to Education II
Prerequisite: ED 110
This course is a continuation of ED 110. The major focus is on school curricula and instruction (teaching methods). Student participation in four school-based assignments (field experiences) forms an integral part of the course. Opportunities are also provided for students to gain understandings of Michigan performance objectives/benchmarks and local resources to enhance learning in elementary school [K-8] settings.

ED 202  
Earth Science for the Elementary Teacher and Practicum
Prerequisite: ED 110
This is a lecture and practicum course dealing with earth science concepts and teaching methodology. Nationally used elementary science curricula will acquaint the student with techniques of teaching basic earth science concepts. Emphasis is on the pedagogical approaches widely used in elementary classrooms.

ED 204  
Science for Teachers/Biology
Prerequisite: ED 110
This course will examine the important biological concepts, especially relating to the interrelationships of organisms with in their environments. The investigative approach and methodology involved in teaching science will be emphasized. This is the concluding course in the elementary science sequence.

TELECOMMUNICATIONS (TCM)

TCM 200  
Intro to Telecommunications
Prerequisite: EE 101 or CIS 112
History of voice data communications, basic services/systems, regulatory agencies and laws, opportunities and overview of technical tasks. Also, introduction to networking concepts, installation of networking software and their maintenance will be covered. Various types of networks will be implemented in the lab. Emphasis on mastering technical terminology.

TCM 202  
Fiber Optics Communications
Prerequisite: EE 111 or TCM 200
This course covers the properties and practical applications of fiber optics in telecommunication circuits. Fiber cables, fabrication techniques, modulation schemes, system design, installation and testing and introduction to laser will be covered.
TCM 203
Communications I
3 C/60 CH
F
Lab fee
Prerequisite: EE 111
A study of the fundamental concepts of communications systems and techniques. Topics covered include amplitude, frequency, phase and pulse modulation concepts, two way systems, basic TV systems and noise and information theory. Introduction to the circuitry of the A-M and F-M superheterodyne receiver, with emphasis on amplifier coupling, AM and FM detectors and similarities and differences between the AM and FM systems.

TCM 206
Basic Switching and Signaling Techniques
4 C/75 CH
F
Lab fee
Prerequisite: TCM 200 and EE 111
This course include types and function of modern telephone switching techniques, computer and peripherals systems, network design and trucking signaling, protocols and formats, loop and ground signaling.

TCM 211
Communications II
3 C/60 CH
Sp
Lab fee
Prerequisite: TCM 203
Study of digital communication principles including digital transmission and digital radio. Wave guides and satellites communications, PCM, DPCM, ASK, PSK will be covered.

TRAVEL AND TOURISM (TRVL)

TRVL 100
Travel Industry Operations
3 C/45 CH
F, Sp, Sm
Lab fee
In this course students will gain a working knowledge of the reference materials used in the travel industry as well as industry terminology and overall travel industry operations.

TRVL 140
Airline Computer Reservation I
3 C/45 CH
F, Sp, Sm
The first of a 3-course sequence utilizing the world scan reservation system. Hands-on application in the travel computer lab gives students the skills required for creating airline computer reservations as well as airfare and fare rules.

TRVL 200
Sales and Marketing for Travel and Tourism
3 C/45 CH
Lab fee
This course develops an understanding of marketing strategies by identifying client needs, product, price, and promotion. It develops professional sales skills, customer service skills as well as examines and develops advertising pieces.

TRVL 250
Airline Computer Reservation II
3 C/45 CH
Lab fee
This second of a three course series utilizing the Worldspan system which progresses to in-depth fare research and application, as well as fare rules, and hotel/car reservations for domestic and international travel.

TRVL 265
Fundamentals of Business Travel
3 C/45 CH
Lab fee
In this course students will learn how to manage the many issues surrounding business/corporate travel. Special requests, international reservations, fare rulings and routings, currency exchange, internet research, and frequent flyer program management for business/corporate travelers, as well as the customs, cultures, protocol in international travel and emphasized. In addition, extended use of the Worldspan computer reservation system is utilized.
VETERINARY TECHNOLOGY
(VTP)

VTP 103  2 C/30 CH
Laboratory Animal Medicine – Lecture
This course is an initial learning experience which stresses medical terminology, basic humane animal handling, animal husbandry and supportive care with emphasis on common laboratory animal species.

VTP 104  2 C/60 CH
Laboratory Animal Medicine – Lab
Laboratory for VTP 103.

VTP 105  2 C/30 CH
Small Animal Technology I: Lecture
Prerequisite: VTP 103, VTP 104
Corequisite: VTP 106
This course is a study of the physiology and anatomy of the dog and cat and introduces the general principles of pharmacology and calculations of drug dosages. It prepares the student to perform the basic skills necessary for working in a small animal hospital.

VTP 106  2 C/60 CH
Small Animal Technology I: Lab
Prerequisite: VTP 103, VTP 104
Corequisite: VTP 105
Laboratory for VTP 105.

VTP 107  3 C/45 CH
Small Animal Disease
Prerequisite: VTP 103 and VTP 104
This course covers the study of common small animal diseases.

VTP 108  2 C/30 CH
Veterinary Clinical Pathology
Prerequisite: VTP 103 and VTP 104
This course covers the performance of clinical pathology procedures used to aid veterinarians in the diagnosis and treatment of disease.

VTP 123  4 C/105 CH
Veterinary Tech Practicum I
Prerequisite: Program Approval
This practicum is for students enrolled in the VTP and involves hands-on experience with practical skills utilized in a biomedical setting.

VTP 201  2 C/30 CH
Small Animal Technology II: Lecture
Prerequisite: VTP 105 and VTP 106
This course discusses specialized small animal techniques with emphasis on anesthesiology, surgical assisting and diagnostic imaging.

VTP 202  2 C/90 CH
Small Animal Technology II: Lab
Prerequisite: VTP 105 and VTP 106
Laboratory for VTP 201.

VTP 209  2 C/30 CH
Large Animal Medicine: Lecture
Prerequisite: VTP 201, VTP 202
Corequisite: VTP 210
This course is an overview of large animal anatomy and physiology, handling, nursing care, husbandry, pharmacology, clinical pathology, surgery, and diagnostic imaging.

VTP 210  2 C/150 CH
Large Animal Medicine: Lab
Prerequisite: VTP 201, VTP 202
Corequisite: VTP 209
Laboratory sessions include handling restraint and techniques associated with horses, cattle, sheep, goats and swine. Sessions are held at various large animal facilities.

VTP 211  3 C/45 CH
Regulatory Veterinary Medicine
Prerequisite: VTP 201, VTP 202
Corequisite: VTP 212
This is an interactive course which discusses conditions that determine the fitness of animal products for human consumption and zoonotic implications.
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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
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<tbody>
<tr>
<td>VTP 212</td>
<td>3</td>
<td>45</td>
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<tr>
<td>Issues in Veterinary Technology</td>
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<tr>
<td>Prerequisite: VTP 201, VTP 202</td>
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<tr>
<td>Corequisite: VTP 211</td>
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<td>This seminar course is presented by various specialists in the veterinary field.</td>
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<td>VTP 233</td>
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<td>120</td>
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<tr>
<td>Veterinary Tech Practicum II</td>
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<tr>
<td>Prerequisite: VTP 123</td>
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<tr>
<td>Corequisite: VTP 202</td>
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<tr>
<td>This practicum is for students enrolled in the VTP involving mastery of clinical pathology techniques used in veterinary medicine.</td>
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<td>VTP 243</td>
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<td>30</td>
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<tr>
<td>Veterinary Tech Practicum III</td>
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<tr>
<td>Prerequisite: VTP 233</td>
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<tr>
<td>This practicum in a veterinary hospital and/or biomedical setting is for the mastery of advanced technical skills. Must have the director's approval of site required.</td>
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<td>XVT 300</td>
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<td>15</td>
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<td>VT Practicum IV (Optional)</td>
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<td>This is an optional practicum for a limited number of students involving zoo animal medicine (Special selection process by the Detroit Zoo).</td>
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**VIDEO GAME DESIGN & ANIMATION (VGD)**

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<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Contact Hours</th>
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</thead>
<tbody>
<tr>
<td>VGD 268</td>
<td>3</td>
<td>45</td>
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<tr>
<td>Computer Games Foundations</td>
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<tr>
<td>This course is designed as a first course for computer Game Design and Development Concentrations which will introduce the vocabulary and concepts of game development. This course is a very comprehensive overview electronic game development process and underlines the historical context, content creation strategies, and future trends in the industry. The student will learn how games are produced, tested and released. The game industry is the fastest growing segment of the entertainment market and an excellent field for career advancement.</td>
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<tr>
<td>VGD 269</td>
<td>4</td>
<td>60</td>
</tr>
<tr>
<td>Introduction to 3D Graphic and Animation</td>
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<tr>
<td>Prerequisites: CIS 110, CIS 266</td>
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<td>Students will learn fundamental and beginner knowledge that is essential for further exploration of 3D graphics. Also they will learn methods and techniques involved with the designing and construction of 3D related objects that are suited for games, movies, and or TV broadcast. After completing this course, students will have a basic knowledge set of a high-end, industrial strength 3D graphics package.</td>
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<td>Students should be able to begin developing their own 3D content using the tools and techniques and their own creativity. This course will cover topics such as 3D concepts and terminology, 3D modeling techniques, UV mapping, texturing, lighting, rendering, animation and rigging.</td>
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<tr>
<td>VGD 270</td>
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<tr>
<td>3D Character Development and Animation</td>
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<tr>
<td>Prerequisites: CIS 110, VGD 269</td>
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<td>Students will become familiar with a variety of three-dimensional digital character animation techniques and applications. The student will learn the basic principles of character animation and development and they will work with meshes to effect different action, such as walking, running or manipulating other meshes. Then they will produce a final short 3D digital character animation of their own design.</td>
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**Course Descriptions**

C = Credits   CH = Contact Hours   HL = Hours Lecture   HLB = Hours Lab
F = Fall   Sp = Spring   Sm = Summer
VGD 271 4 C/60 CH  
Introduction to 3D Design  
Prerequisite: CIS, VGD 270  
This class is an introduction to 3D modeling.

VGD 272 4 C/60 CH  
Texturing Fundamentals  
Prerequisite: CIS, VGD 269  
This class teaches how to create an emotional atmosphere that will make the photorealistic and fantasy designs look realistic. This course will cover topics such as materials, shaders, light and surfaces, more complex materials, the use of image maps and procedural maps, mapping and unwrapping, image editing and rendering.

VGD 999 2 C/30 CH  
Video Game Project  
Students will develop a Computer Game concept, turn it into a design, implement the programming and art required and produce it on the committed schedule. Go/no go milestones and final “publisher” acceptance reviews will mimic the Industry. The students will have a deliverable for their portfolio that can be used for employment purposes.

WELDING (WLT)  

WLT 101 4 C/75 CH  
Welding and Fabrication I  
Lab fee  
F, Sp, Sm  
This course covers the use of oxyacetylene and shielded metal arc welding equipment to perform various welding operations. It includes the use of filler rods for oxyacetylene. Brazing and silver soldering are included.

WLT 102 4 C/75 CH  
Welding and Fabrication II  
Lab fee  
Prerequisite: WLT 101  
F, Sp  
This course provides advanced instruction in shielded metal arc welding, including related theories, codes and standards. The emphasis is on out of position welded joints and procedures for cutting and beveling.

WLT 103 4 C/75 CH  
Welding and Fabrication III  
Lab fee  
Prerequisite: WLT 102  
Sp  
This course covers instruction in tungsten-inert-gas, shielded metal arc welding with manually operated torch on various metals, including technical theory directly related to TIG welding.

WLT 208 4 C/60 CH  
Pipe Welding  
Lab fee  
Prerequisite: WLT 103  
Sp  
This course covers the advanced processes utilized in the modern industry. Pipe joint welding in accordance with American Welding Society codes and specifications, including processed metallic inert gas, tungsten inert gas, shielded metal arc and soldering.

WLT 210 4 C/75 CH  
Certificate Welding Practices  
Lab fee  
Prerequisite: WLT 208  
Sp  
This course covers advanced theory and hands-on application of skills necessary to pass American Welding Society procedures. Practice and theory in shielded metal arc, tungsten inert, metallic inert gas welding in piping, tubing and plate in common alloy metals.