



*Course Descriptions*

## DESCRIPTIONS OF COURSES

### Course Numbering System

Course numbers appearing in this catalog follow a few basic guidelines. Those numbered 1-1990 are primarily for freshmen, and those numbered 2000-2990 are primarily for sophomores. The number 2980 is reserved for Directed Study - individual student research under the sponsorship of an instructor. The number 2990 is reserved for Special Topics - courses for which there is a temporary demand or courses offered on an experimental basis.

### Directed Studies and Special Topics

The 2980 and 2990 course numbers are available for each discipline with the following common course descriptions:

**2980 Directed Study 0.5-3 credit hours**  
**8-45 Study Hours + 0 Lab Hours = 8-45 Classroom Hours**  
Directed Study is independent study within a subject area or at a subject level not available in regular catalog courses. Faculty assistance in planning and evaluation is required. No more than a total of twelve semester hours Directed Study and Special Topics may apply to an associate degree program. Directed Study may not be taken Pass/No-Pass. Prerequisite: Approval by the instructor, the division chairperson, and the Vice-President for Educational Services and Student Development. Offered on demand.

**2990 Special Topics 0.5-3 credit hours**  
**8-45 Study Hours + 0 Lab Hours = 8-45 Classroom Hours**  
A course, seminar, or workshop within a subject area or at a subject level not available in regular catalog courses. Consult current Schedule of Classes for course title. No more than a total of twelve semester hours of Special Topics and Directed Study may apply to an associate degree program. Offered on demand.

### Specially Arranged Courses (SAC)

The SAC is intended to give the student through independent study the same experiences and knowledge that he/she would receive in the regularly scheduled class.

#### Limitations and Conditions:

1. Students may not enroll in more than two SACs per semester.
2. Students will pay regular tuition and fees.
3. Students must submit a written request demonstrating the need for the SAC to the instructor and attach it to the SAC form.
4. Instructors have the right to refuse to offer a SAC.
5. Students must obtain approval by the instructor and the Vice-President for Educational Services and Student Development before registering for a SAC.
6. Students may not receive credit for more than four SAC courses.

### Semester Hours of Credit

Each semester credit hour of a regular academic course represents at least 15 classroom hours and from two to three times as much outside study. Each semester hour of a laboratory, internship, clinical experience or practicum represents a minimum of 30 to 60 contact hours, with additional outside study.

### Prerequisite Courses

When related courses are offered in a series, with each subsequent course building on knowledge and skills specifically covered in the previous course, students may be required to complete the series in order. In such cases, each course is a "prerequisite" for the following course; the students are not allowed to skip ahead without demonstrating that they have the ability to undertake advanced study.

Many courses list prerequisites or permission of instructor. It should be noted that a student is responsible for insuring his/her success in a course when a prerequisite is waived. It is not the responsibility of the instructor. Students should also check with transfer institutions concerning transferability of courses when a prerequisite was waived.

### Course Scheduling

Many courses are offered every semester on the three campuses. However, the college cannot guarantee that every course listed in the catalog will appear on all of the semester and summer session schedules.

### Course Descriptions

On the following pages are the descriptions in alphabetical order by prefix for credit courses offered by MPCCA. Each course is described by an alpha prefix and a number identification, followed by the course title, semester credit hours, classroom hours, lecture hours, and CLIP hours (clinical, laboratory, internship, practicum), if appropriate. The total credit hours allocated to each course include hours generated through any combination of lecture and/or CLIP hours in compliance with Nebraska statutes.

**ACCOUNTING**

**ACCT 1010 Payroll Accounting**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is designed to help small business managers and current or prospective payroll employees develop an understanding of the personnel and payroll records required by law and for the operation of an effective payroll accounting system. Topics covered include payroll operations, recording payroll accounting entries, preparation of payroll tax returns, and the use of computer accounting programs for payroll accounting. This course is designed for accounting personnel and may not be accepted for transfer.

**ACCT 1020 Accounting Fundamentals**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is designed for individuals with no accounting or bookkeeping experience. Topics covered include the accounting equation, debit and credit rules, trial balance and financial statements, double-entry accounting, general journal entries, worksheet preparation, adjusting and closing entries, cash management, payroll, and accounting for personal services. This course is not designed to be a transfer course for business majors.

**ACCT 1025 Bookkeeping for Business**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory course to provide students with a sound basic knowledge of accounting terms, concepts, and procedures. Includes the accounting cycle for a service business, accounting for cash and payroll, and the accounting cycle for a merchandising business. This course is not designed to be a transfer course for business majors.

**ACCT 1030 Introductory Accounting I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A course for more advanced work in the fields of accounting and business management, designed to furnish a knowledge of accounting principles and practice which will be of value to the businessperson, secretary, and professional accountant. Included are the theory and practice of double-entry accrual basis accounting, various journals, ledgers, financial statements, the complete accounting cycle, cash control, accruals, inventories, depreciation, payroll accounting, adjusting and closing the accounts, business papers, reports, and other accounting related topics.

**ACCT 1040 Introductory Accounting II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A continuation of ACCT 1030, which includes partnership and corporation accounting, manufacturing accounting, use of accounting data by management, analysis and interpretation of accounting statements and budgeting for business. *Prerequisite: ACCT 1030.*

**ACCT 2020 Income Tax Accounting for Individuals**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A beginning course in the preparation of federal tax returns

for individuals and an introduction to federal taxation laws. Topics include basic tax concepts and familiarization with frequently used tax forms. The course contains the information needed to prepare most individual income tax returns according to current laws.

**ACCT 2130 Intermediate Accounting I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Includes theoretical foundation of accounting; a review of the accounting model, income statement, retained earnings, the balance sheet, and statement of cash flows; in-depth study of the concepts of future and present values, cash control, short-term investments, receivables, inventories, liabilities, income taxes timing problems, property, plant, equipment depreciation and depletion. *Prerequisite: ACCT 1040.*

**ACCT 2160 Intermediate Accounting II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Problems relating to current and non-current liabilities, stockholders' equity, leases, and pension, and analytical problems under study by the accounting profession. *Prerequisite: ACCT 2130.*

**ACCT 2170 Introductory Cost Accounting**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Includes the nature of cost accounting concepts, classifications and statements; cost and control of materials, labor, and overhead; cost accumulation systems—job order and process; joint product and by-product costing; and standard costs. *Prerequisite: ACCT 1040.*

**AGRICULTURE**

**AGRI 1005 Introduction to Ag and Natural Resources**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey course that provides an overview of historical development of agriculture, its present status and future challenges. The course will also evaluate the relationship and importance of educational programs to agriculture. Educational and career opportunities and objectives will be studied.

**AGRI 1015 Animal Agriculture**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The uses of animals and animal products, the structure of the industry as well as trends and current issues related to production and consumption of animal products. (Replaces AGRI 1010.)

**AGRI 1030 Introduction to Plant Science**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will cover plant physiology and morphology and its relationship to growth, development and reproduction of crop and forage plants. Seed identification, is also included.

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**AGRI 1031 Introduction to Plant Science Lab**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

This course is a lab that is required to be taken concurrently with AGRI 1030 Introduction to Plant Science.

**AGRI 1100 Computer Technology in Agriculture**  
**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

An introductory level course designed to demonstrate the role of digital computer technology in assisting with problem solving to find cost-reduction systems for ag production and marketing. The student will be provided an opportunity to work with an interactive program library in problem-solving situations. *Note: This course may not transfer toward degree an/or program requirements at a four-year college. Contact transfer college for information.*

**AGRI 1410 Introduction to Ag-Economics**  
**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

The purpose of this introductory course is for students to develop a basic understanding and appreciation for the role of economics in agriculture at the (1) firm, (2) national, and (3) international levels. The main focus of this course will be directed at the firm level or the study of microeconomics. Students will learn to apply various economic principles and concepts relating to production agriculture, business management, consumer behavior, market price analysis and equilibrium, and public policy formation. An overview of the structure and scope of the U.S. food and fiber sector and its current trends/implications for the national economy will also be presented. Additional course topics will include rural development, natural resources, world food economics, international trade and policy, market structure and competition, and monetary/fiscal policies as time permits during the semester.

**AGRI 1540 Introduction to Soil Science**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduction to the study of soil science, including the development, physics, chemistry, biology, and classification of soils. Emphasis is placed on the role of soils in the growth of plants. *Prerequisite: high school chemistry or one semester of college chemistry, sophomore standing, or permission of instructor.* (Replaces AGRI 1530 for 4 credits.)

**AGRI 1541 Introduction to Soil Science Lab**  
**4 credit hours**

**30 Classroom Hours = 30 Lab Hours**

This is a lab course that is to be taken concurrently with AGRI 1540 Introduction to Soil Science.

**AGRI 1600 Livestock Evaluation and Selection**  
**1 credit hour**

**16 Classroom Hours = 16 Lecture Hours**

The principles of livestock selection by comparative evaluation of types, classes, grades and breeds of various economically important species of domesticated livestock.

**AGRI 1700 Intercollegiate Livestock Judging**  
**1 credit hour**

**45 Classroom Hours = 45 Lab Hours**

Participation at various intercollegiate livestock judging contests. *Prerequisite: AGRI 1600 or concurrent enrollment.*

**AGRI 1745 Agribusiness and Food Marketing**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is an introductory course in agribusiness and food products marketing offered for students interested in the marketing of ag commodities and food products in the agribusiness industry as it relates to the Food and Fiber Sector of the U. S. economy. This course will acquaint students with the workings of the U.S. food marketing system and enable them to examine how this system affects farm producers, middlemen (processors, wholesalers, retailers, and food services) and consumers. Students will gain an understanding how food products move through a food marketing channel to the final point of consumption (i.e. at home or away from home). The course will also illustrate how consumer demand, marketing, and information technology as well as political forces have shaped the agricultural food marketing industry over time. (Replaces AGRI 1740).

**AGRI 2040 Farm and Ranch Management**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The purpose of this course is to develop an understanding of the various business management decisions involved in the organization and operation of a farm or ranch firm for continuous profit and efficiency. Students will acquire knowledge and proficiency in applying the various economic principles and business management analysis concepts which aid a farm/ranch operator in the decision making process for a farm/ranch business operation. (Replaces AGRI 2030 for 4 credits.)

**AGRI 2041 Farm and Ranch Management Lab**  
**1 credit hour**

**30 Classroom Hours = 30 Lecture Hours**

This is a lab course that is to be taken concurrently with AGRI 2040 Farm and Ranch Management.

**AGRI 2100 Animal Products**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will provide knowledge of edible animal products with particular emphasis to meat products from livestock and poultry. Course material will include all aspects of the meat industry from slaughter to consumption. Methods of slaughter and fabrication, conversion of muscle to meat, processing techniques, preservation and storage and consumer related topics will be discussed and demonstrated.

**AGRI 2500 Animal Management**  
**3 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

Principles of managing animals in typical production systems. Emphasis is to provide the basics of managing beef, dairy, horses, poultry, sheep and swine through the life cycle for economic and efficient production.

**AGRI 2620 Introduction to Pest Management**  
**4 credit hours**

**90 Classroom Hours = 45 Lecture Hours + 45 Lab Hours**

This course will teach proper methods for pesticide application and safety, and preparation for commercial pesticide applicator certification and relevant pesticides,

their different forms, types, and modes of action. Identification of plant pests, including morphology and life cycles of selected insects, weeds and diseases of horticultural plants will be included. Pest control methods will include chemical, physical, mechanical, cultural, and biological techniques. Application of integrated pest management will be stressed.

**AGRI 2910 Agribusiness Internship**

**3 credit hours**

**400 Classroom Hours = 400 Internship Hours**

On-the-job training through a cooperative arrangement with business, and industrial organizations. Students work a minimum of 400 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. Emphasis is placed on the application of technical knowledge, communication skills, and relationships with others. This class is designed for the Associate of Applied Science Degree in Business or interested in transferring for a degree in Agribusiness at a larger institution. *Prerequisite: C average and 30 hours of program course work with at least 15 hours from MPCC. Application for an internship at least one semester before the internship is to begin.*

**AGRI 2920 Agriculture Education Internship**

**3 credit hours**

**400 Classroom Hours = 400 Internship Hours**

On-the-job training through a cooperative arrangement with business, and educational organizations. Students work a minimum of 400 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. Emphasis is placed on the application of technical knowledge, communication skills, and relationships with others. Students will also be required (part of the 400 hours) to observe two different agriculture based classes. This class is designed for students interested in transferring to a larger institution to pursue a degree in agriculture education. *Prerequisite: C average and 30 hours of program course work with at least 15 hours from MPCC. Application for an internship at least one semester before the internship is to begin.*

**AGRI 2930 Diversified Agriculture Internship**

**3 credit hours**

**400 Classroom Hours = 400 Internship Hours**

On-the-job training through a cooperative arrangement with business, and industrial organizations. Students work a minimum of 400 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. Emphasis is placed on the application of technical knowledge, communication skills, and relationships with others. This class is designed for the students interested in a career with production agriculture. *Prerequisite: C average and 30 hours of program course work with at least 15 hours from MPCC. Application for an internship at least one semester before the internship is to begin.*

**AGRI 2950 Vocational Career Tour**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Career exploration into various vocational areas relating to skills, management, labor, experience, and educational requirements pertaining to employment salary and advancements. This unit consists of a 3-4 day field trip in the Midwest. Students participating must be members of a vocational organization. *Note: This course may not transfer*

*toward degree and/or program requirements at a four-year college. Contact transfer college for information.*

**ARCHITECTURAL DRAFTING and CAD TECHNOLOGY**

**ARCH 1750 Computer Assisted Drafting Operation**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours** (AutoCad Release 14 Windows) Computer developed graphics.

**ARCH 1760 Computer Assisted Drafting Application**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours** (AutoCad Release 14 Windows) Advanced computer developed graphics. *Prerequisite: ARCH 1750 or equal experience.*

**ART**

**ARTS 1000 Art Structure**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An introduction to the language and manipulation of two and three-dimensional forms of art. Lecture and studio lab. For elementary education and non-art majors. Text and supplies required. Fee \$20.

**ARTS 1010 Drawing I**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

A fundamental study of drawing utilizing a variety of media and subject matter. Emphasis on composition and manipulation of design elements. Studio lab required. Fee \$15.

**ARTS 1020 Drawing II**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

A continuation of ARTS 1010 with emphasis on expressive applications. Studio lab required. *Prerequisite: ARTS 1010 or permission of instructor.*

**ARTS 1070 Design**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

Study of the application and manipulation of two-dimensional elements and principles of design. Emphasis on theory and practical applications of each element of design. Studio lab required. Fee \$10.

**ARTS 1210 Art Appreciation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An overview of the language, process, and history of the visual arts and artists of both past and contemporary society. For non-art majors.

**ARTS 1300 Ceramics I**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An introduction to the manipulation of clay, the evolution of form, application of glazes, and application of three-dimensional composition. *Prerequisite: ARTS 1070 or permission of instructor. Fee \$35.*

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### **ARTS 1310 Ceramics II**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

A continuation of ARTS 1300 with emphasis on improvement of technique and wider expression of individual creativity with clay. Studio lab required. *Prerequisite: ARTS 1300 or permission of instructor.* Fee \$35.

### **ARTS 1400 Fundamentals of Photography**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An introduction to the principles of photography. A lecture/demonstration course in learning to use the camera. Deals with the basic camera functions and darkroom techniques for black and white and color.

### **ARTS 1410 Introduction to Graphic Design**

**3 credit hours**

**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**

An introductory-level course in the art of visual communication and advertising. Studies will include production methods, compositional practices and creative development. Non- and computer-aided studio lab required. *Prerequisites: Basic computer skills are a must.* Fee \$15.

### **ARTS 1420 Digital Imaging**

**3 credit hours**

**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**

Students will learn the fundamentals of Adobe Photoshop image manipulation and put these skills to use in a variety of visual problem solving situations. These images will be formatted to be used in diverse applications. Basic computer skills a must. Fee \$15.

### **ARTS 1430 Typography**

**3 credit hours**

**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**

Students will become familiar with the history of typography as they learn the fundamental differences between fonts and the requirements for quality type reproduction. Students will apply this information as they create aesthetically pleasing typographical documents. *Prerequisite: Students must have a working knowledge of InDesign Illustrator or Photo Shop.* Fee \$15.

### **ARTS 1500 Sculpture I**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An introduction of sculpture including the physical qualities of materials: plaster, clay, wood, stone, metal, and combination by mixed media construction. Fee \$15.

### **ARTS 1600 Three Dimensional Design**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

Further study of the application and manipulation of the elements and principles of design with emphasis in three-dimensional studies. Studio lab required. *Prerequisite: ARTS 1070.* Fee \$15.

### **ARTS 1700 Watercolor I**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An introduction to the manipulation of watercolor and related media utilizing a variety of techniques and subject matter with

respect to compositional considerations. Studio lab required. *Prerequisite: ARTS 1010 and ARTS 1070 or permission of instructor.* Fee \$10.

### **ARTS 1710 Watercolor II**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

A continuation of ARTS 1700 with emphasis on improvement of technique and more expression of individual creativity. Studio lab required. *Prerequisite: ARTS 1700.* Fee \$10.

### **ARTS 2020 Life Drawing**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

The course deals partially with the human anatomy. Drawing from the human form (full figure and portrait) in various drawing media. *Prerequisite: ARTS 1010 or permission of instructor.*

### **ARTS 2100 Painting I**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An introduction to the application and manipulation of paint media in a variety of techniques and subject matter utilizing the elements and principles of design. Studio lab required. *Prerequisite: ARTS 1010 and 1070 or permission of instructor.* Fee \$10.

### **ARTS 2110 Painting II**

**3 credit hours**

**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**

A continuation of ARTS 2100 with emphasis on expressive applications. Studio lab required. *Prerequisite: ARTS 2100 or permission of instructor.* Fee \$10.

### **ARTS 2130 Painting on Location**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

An in-depth investigation into the mysteries of nature using various drawing and painting media. Field trips will be taken to various locations where students will be exposed to working directly from the natural environment. *Prerequisite: ARTS 1700, 2100, or permission of instructor.*

### **ARTS 2190 Acrylic Painting**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

Instruction in problems and principles of acrylic painting in both the water media and oil painting techniques. *Prerequisite: ARTS 1700, 2100 or permission of instructor.* Fee \$5.

### **ARTS 2200 Problems in Painting I**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

Individual problems in various painting media will be investigated. Technique, color, composition, and originality will be emphasized. The course may be taken for 3 semesters for a total credit of 9 hours. *Prerequisite: ARTS 1700, 2100, 2190, or permission of instructor.*

### **ARTS 2220 Problems in Painting II**

**3 credit hours**

**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**

Continuation of ARTS 2200. *Prerequisite: ARTS 2200.*

**ARTS 2230 Problems in Painting III**  
**3 credit hours**  
**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**  
 Continuation of ARTS 2220. *Prerequisite: ARTS 2220.*

**ARTS 2310 Art History Survey I**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A lecture course surveying art, i.e. painting, sculpture, and architecture from pre-historic to the Renaissance. Lectures and discussions focus on analysis of Artistic styles, the philosophical basis of form, and content the technical aspects involved in the creation of Art, and how Art relates to and reflects the society/period in which it is produced.

**ARTS 2320 Art History Survey II**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A lecture course surveying art, i.e. painting, sculpture, and architecture from 16<sup>th</sup> Century Baroque to present dealing primarily with the developments and movements in Art of Western Civilization. *Prerequisite: ARTS 2310 or permission of instructor.*

**ARTS 2400 Printmaking**  
**3 credit hours**  
**90 Classroom Hours = 30 Lecture Hours + 60 Lab Hours**  
 An introduction to fine art printmaking utilizing various techniques and subjects. Studies will include the understanding of visual concepts as related to print and a brief historical survey. Studio lab required. *Prerequisite: ARTS 1010 and 1070 or permission of instructor.*

**ARTS 2410 Illustration**  
**3 credit hours**  
**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**  
 Students will create digital illustrations as they learn the fundamentals of Illustrator and prepare documents for output in print and on the Web. Comparisons will be made between digital illustration and traditional illustration methods. *Prerequisite: ARTS 1010 and 1410 or permission of instructor. Basic computer skills are a must. Fee \$15.*

**ARTS 2420 Multimedia**  
**3 credit hours**  
**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**  
 Students will learn basic digital video editing skills with a variety of applications. They will learn to output these projects for use in presentations, on CD, DVD, and the Web. *Prerequisite: ARTS 1410 or permission of instructor. Basic computer skills are a must. Fee \$15.*

**ARTS 2430 Three-Dimensional Design and Animation**  
**3 credit hours**  
**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**  
 Students will create three-dimensional digital shapes and animate them with custom backgrounds, texture, and lighting as they develop skills in the use of 3D and animation software. *Prerequisites: ARTS 1410 or permission of Instructor. Basic computer skills are a must. Fee \$15.*

**ARTS 2450 Portfolio**  
**3 credit hours**  
**60 Classroom Hours = 45 Lecture Hours + 15 Lab Hours**  
 Students will be directed in the refining process of their

portfolio to help them prepare for employment after graduation. Included in the course will be the exhibition of student work for public display. This course should be taken the final semester of the student's study. Fee \$45.

**ASSOCIATE DEGREE NURSING**

**ADNR 1101 Nursing Concepts I**  
**5 credit hours**  
**80 Classroom Hours = 80 Lecture Hours**  
 Nursing process and basic skills, including the recipient of nursing care; assessment and concepts basic to meeting patient needs: safety, sleep, comfort, activity, oxygenation, hygiene, elimination, nutrition, self-actualization and knowledge. Fee \$25.

**ADNR 1121 Clinical I**  
**3 credit hours**  
**144 Classroom Hours = 144 Clinical/Lab Hours**  
 Clinical experience to provide basic nursing care in acute and long term care facilities.

**ADNR 1130 Issues & Trends in Nursing I**  
**1 credit hour**  
**16 Classroom Hours = 16 Lecture Hours**  
 Historical perspectives of nursing, legal issues, nursing roles and the influence of society, nursing responsibilities and patient rights, use of the nursing process, and effective communication.

**ADNR 1201 Nursing Concepts II**  
**5 credit hours**  
**80 Classroom Hours = 80 Lecture Hours**  
 Providing skilled nursing care to meet basic human needs of the hospitalized adult with common, recurring medical/surgical problems. Included are nursing diagnosis, establishing goals and priority setting. Fee \$15.

**ADNR 1221 Clinical II**  
**4 credit hours**  
**192 Classroom Hours = 192 Clinical Hours**  
 Clinical experience to provide nursing care in acute and long-term care facilities and the community.

**ADNR 1230 Paramedic to RN Bridge – Theory**  
**5 credit hours**  
**60 Classroom = 60 Lecture Hours**  
 Designed for the Paramedic seeking advanced placement in the ADN program. Includes nursing process and basic skills, including man as the recipient of nursing care; assessment, and concepts basic to meeting patient needs: safety, sleep comfort, activity, oxygenation, hygiene, elimination, nutrition, self-actualization and acknowledgment. Provides skilled nursing care interventions to meet basic needs of the hospitalized adult with common, recurring medical/surgical problems. Nursing diagnosis, establishing goals and priority setting are emphasized. *Prerequisites: BIOS 2250 and CHEM 1050.*

**ADNR 1240 Paramedic to RN Bridge - Clinical**  
**4 credit hours**  
**180 Classroom Hours = 180 Clinical Hours**  
 This course introduces the student to the concepts basic to nursing. Biopsychosociospiritual man as the recipient of nursing care is emphasized. The nursing process is

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developed, emphasizing assessment, technical nursing skills, and methods of intervening in patients' adaptation process in health/illness states, establishing goals, and priority setting. Knowledge gained from biological sciences will be integrated into providing holistic care to patients with common health problems. *Prerequisites: BIOS 2250 and CHEM 1050.*

### **ADNR 1505      Nursing Concepts III**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Nursing care for elderly patient, including changes associated with the aging process and common health problems of the elderly. Fee \$15.

### **ADNR 1525      Clinical III**

**1 credit hour**

**45 Classroom Hours = 45 Clinical Hours**

Clinical experiences will be primarily in the extended care facility.

### **ADNR 1550      LPN/ADN Bridge**

**3 credit hours**

**85 Classroom Hours = 35 Lecture Hours + 50 Clinical Hours**

Designed for the LPNs seeking advanced placement in the ADN program. Philosophy of associate degree nursing, nursing process, roles and function of healthcare providers, feelings related to role change, and clinical skill testing.

### **ADNR 2290      Nursing Concepts IV**

**5 credit hours**

**80 Classroom Hours = 80 Lecture Hours**

Emphasis is placed on meeting the basic needs of the family throughout the childbearing and rearing cycle. Nursing experiences are provided in labor and delivery, normal newborn nursery, post partum, pediatrics and the adolescent psychiatric unit. This course focuses on meeting physical and emotional needs of patients throughout the life cycle who have common, recurring health problems and are in a secondary setting. The nursing process will be utilized to facilitate adaptation during illness. Knowledge gained from biological, social, and behavioral sciences will be integrated into the course content. Fee \$45.

### **ADNR 2330      Clinical IV**

**4 credit hours**

**180 Classroom Hours Clinical**

Clinical experience to provide nursing care to maternal, child, and mental health patients.

### **ADNR 2400      Nursing Concepts V**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

This course is designed to apply the nursing process to patients with more complex health care problems. Emphasis is on physical and emotional needs common to patients throughout the life cycle. Concurrent clinical experience provides the opportunity to assess needs, formulate a nursing diagnosis, and to plan, provide and evaluate patient care. Therapeutic communication skills will be enhanced. Knowledge from biological, social and behavioral sciences will be integrated into the course content. Fee \$65.

### **ADNR 2420      Clinical V**

**5 credit hours**

**240 Classroom Hours Clinical**

Clinical experience to provide complex nursing care in acute care facilities and in the community.

### **ADNR 2430      Issues and Trends in Nursing II**

**1 credit hour**

**16 Classroom Hours = 16 Lecture Hours**

This course is designed to provide information and stimulate analytical thinking regarding current topics relevant to the nursing profession. Concepts related to legal issues, professional development and ethical dilemmas are explored. Employment skills, stress management and therapeutic communication are emphasized.

## **AUTOBODY TECHNOLOGY**

### **AUTB 1005      Safety**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Specific safety practices that apply to the auto body shop.

### **AUTB 1090      Auto Body Painting**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Practical experience in preparation, using painting equipment, applying and mixing paint, sanding and masking. Instruction in using both high pressure and high volume/low pressure paint guns in down draft paint booths, including maintenance of paint equipment. Fee \$30.

### **AUTB 1110      Basic Metal Working**

**5 credit hours**

**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**

Shop safety and practical experience in metal repair, straightening, filing, finishing and panel alignment, including fiberglass repair. Fee \$30.

### **AUTB 1130      Auto Body Hydraulics**

**3 credit hours**

**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**

Pushing and pulling operations on body and supporting sections with power tools and equipment. Safety procedures and use of hydraulic jack to align body panels.

### **AUTB 1150      Auto Body Welding**

**3 credit hours**

**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**

Oxyacetylene, Arc, TIG and MIG welding for auto body frame and chassis repair. Safety, warpage control and cutting procedures. Fee \$20.

### **AUTB 1210      Advanced Metal Working**

**5 credit hours**

**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**

Auto body repair of frames, chassis, body interior and exterior, including glass, trim and upholstery removal and installation. *Prerequisite: AUTB 1110 or permission of instructor.* Fee \$20.

### **AUTB 1220      Advanced Auto Body Painting**

**5 credit hours**

**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**

Emphasis on paint application and matching conventionally and with computers, including feather edging using single stage and base coat/clear coat, spot repairs, blending techniques and power buffing. *Prerequisite: AUTB 1090 or permission of instructor.* Fee \$30.

**AUTB 1230 Automotive Electrical**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 Electrical system fundamentals, batteries, charging systems, horns, lights and practical problems with the electrical system.

**AUTB 1240 Job Estimating**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
 Practice in writing estimates, repair methods and procedures, and business practices used in the auto body industry.

**AUTB 1250 Auto Air Conditioning**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 Repair, charging and testing of auto air conditioning units. Fee \$30.

**AUTB 1510 Frame Repair and Alignment**  
**6 credit hours**  
**180 Classroom Hours = 45 Lecture Hours + 135 Lab Hours**  
 Safety and function of equipment. Proper procedures for repairing structural damage to both unitized and full frame vehicles.

**AUTB 1520 Wheel Alignment**  
**3 credit hours**  
**90 Classroom Hours = 22 Lecture Hours + 68 Lab Hours**  
 Basic front-end alignment, principles and functions of steering components.

**AUTB 1530 Auto Body Mechanics**  
**3 credit hours**  
**90 Classroom Hours = 22 Lecture Hours + 68 Lab Hours**  
 Replacement of collision damaged drive train and mechanical components.

**AUTB 1710 Auto Body Repair**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Auto body mechanics, safety, small dent removal, basic metal straightening and damage analysis. Fee \$60.

**AUTB 1720 Auto Body Repair, Advanced**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Dent removal, plastic filling, sanding, sheet metal repair and replacement of glass. Fee \$60.

**AUTB 1730 Auto Body Component Repairs**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Auto body, MIG, gas and plastic welding, and rust and plastic repair. Fee \$60.

**AUTB 1740 Auto Body Major Component Repair**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Collision repair, including replacement of fenders, doors and quarter panels, and alignment of body parts. Fee \$60.

**AUTB 1750 Auto Body Painting and Refinishing**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Paint application and safety, panel painting, color sanding, spray gun adjustment and primer techniques. Fee \$60.

**AUTB 1760 Auto Body Painting, Advanced**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Advanced painting in relation to color matching, complete paint jobs, sanding and polishing. Fee \$60.

**AUTB 1770 Auto Body Interior Repair**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Headliner installation and replacement of trim panel, dash pad and vinyl roof. Fee \$60.

**AUTB 1780 Auto Body Interior Repair, Advanced**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Advanced interior trim repair, concentrating on headliner and vinyl roof installation. Fee \$60.

**AUTOMOTIVE TECHNOLOGY**

**AUTO 1105 Gasoline Engine Design and Fundamentals**  
**3 credit hours**  
**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**  
 Design and construction. Engine components, cooling, lubrication and ignition systems, engine classification and parts identification. *Prerequisite: TRAN 1005 Safety.* Fee \$30.

**AUTO 1120 Automotive Engine Repair**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
 Engine overhaul, disassembly, service of cylinder head valve train, valves, crankshaft, main bearing, connecting rods and bearings, camshaft, timing gear, engine block, cylinder and rings. *Prerequisites: AUTO 1105 or permission of instructor.* Fee \$50.

**AUTO 1140 Applied Automotive Welding**  
**2 credit hours**  
**48 Classroom Hours = 24 Lecture Hours + 24 Lab Hours**  
 Gas welding, cutting, arc, and mig in the transportation field. *Prerequisite: TRAN 1005.*

**AUTO 1200 Automotive Suspension System**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 Manual and power steering, service procedures and operation wheel balancing on and off the automobile. Fee \$20.

**AUTO 1215 Automotive Brake Systems**  
**4 credit hours**  
**150 Classroom Hours = 15 Lecture Hours + 135 Lab Hours**  
 Brake theory and system service, maintenance, operation and testing, including antilock brake systems. Fee \$20.

## COURSE DESCRIPTIONS

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### **AUTO 1265      Body Controls**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Theory and repair of automotive accessory systems.  
*Prerequisites:* AUTO 1750 and TRAN 1005. Fee \$20.

### **AUTO 1500      Automotive Parts Management**

**0.50 credit hour**

**23 Classroom Hours = 23 Lab Hours**

This course will prepare the student for a possible career in the automotive parts sales field.

### **AUTO 1710      Auto Mechanics**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Shop procedure and automotive engine design and operation in relation to repair and reconditioning.

### **AUTO 1720      Auto Mechanic Maintenance**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Engines, electrical, electronic and hydraulic systems; and proper maintenance practices.

### **AUTO 1725      Automotive Preventive Maintenance and Minor Repair**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

This course is designed for students to learn fundamental maintenance and repair of an automobile accomplished with a basic set of hand tools. Fee \$20.

### **AUTO 1730      Auto Engine Rebuild**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Practical hands-on instruction regarding principles of engine rebuilding, explain and demonstrate the use of boring bars, cylinder head rebuilding, and use of measuring devices to measure cylinder bores and other engine specifications needed to rebuild an engine.

### **AUTO 1735      Automotive Mechanical Customizing and Performance**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

This class is designed to instruct the student in engine performance enhancement and restoration. Fee \$25.

### **AUTO 1740      Auto Fuel Systems and Carburetion**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Fuel systems and carburetion in relation to service and maintenance. Fee \$20.

### **AUTO 1750      Auto Electrical Systems Diagnosis and Repair**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

The electrical diagnosis of charging, starting and wiring systems of the automobile. Will work with wiring diagrams, show how to test battery, alternator, starters, and wiring shorts using volt-ohm meters and test lights. Learn how to rebuild alternators and starters and make wire repairs.  
*Prerequisites:* TRAN 1130 or permission of instructor. Fee \$20.

**120**

### **AUTO 1755      Wheel Alignment**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Wheel alignment maintenance and repair. Fee \$20.

### **AUTO 1770      Transmissions-Standard and Automatic**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Principles, service and repair of standard and automatic transmissions. Fee \$20.

### **AUTO 1790      Auto Computerized Tune-up**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Explain the workings of the computerized engine control system, using volt-ohm meters, retrieve trouble codes, pinpoint problems. Use of simple testers that are more readily available to the general mechanic, and demonstration of the hand-held scanners and the big scopes. Fee \$20.

### **AUTO 2200      Automotive Service Management**

**0.50 credit hour**

**23 Classroom Hours = 23 Lab Hours**

This course will prepare students for a career in the Automotive Service Advisory field. Automotive Service Management.

### **AUTO 2300      Adv. Electronics and Computers**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Preparation for diagnosing electrical problems and digital multimeter use. Electrical circuits, series, parallel, series parallel circuits, troubleshooting; checking resistance, load and capacities; operation of computerized electrical systems, (ECM) Electronic Control Modules and microprocessors.  
*Prerequisites:* AUTO 1750 and TRAN 1130 or permission of instructor. Fee \$25.

### **AUTO 2315      Automotive Drive Lines**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Clutch systems design, diagnosis and repair; rear axle systems design, diagnosis and repair; front wheel drive axle systems design, diagnosis and repair; drive shaft design, diagnosis and repair. Fee \$25.

### **AUTO 2330      Automotive Fuel Systems**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Maintenance and repair of electronic fuel systems, including electronic, port, multi-port and sequential fuel injection systems. *Prerequisites:* AUTO 1750, TRAN 1130, and AUTO 2300 or permission of instructor. Fee \$25.

### **AUTO 2340      Engine Performance and Drivability**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Procedures, problems and diagnosis, including primary and second-ary scope patterns, ignition systems, charging and starting systems, emission control designs and air pump maintenance and repair. *Prerequisites:* AUTO 1750 and AUTO 2300 or permission of instructor. Fee \$25.

**AUTO 2400 Standard Transmissions and Transfer Cases**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Manual transmission, transaxle, and transfer case design, operation, maintenance, and repair. *Prerequisites: AUTO 1750 and TRAN 1130.* Fee \$25.

**AUTO 2415 Automatic Transmissions**

**4 credit hours**

**160 Classroom Hours = 16 Lecture Hours + 144 Lab Hours**

Automatic transmission design, operation and disassembly; fluid couplings, torque converters, clutches, band materials, servos, valve bodies, pressure and power flow. *Prerequisite: AUTO 2300 or permission of instructor.* Fee \$35.

**AUTO 2430 Air Conditioning and Climate Control**

**4 credit hours**

**150 Classroom Hours = 15 Lecture Hours + 135 Lab Hours**

Repair and troubleshooting of air conditioning and climate control systems. *Prerequisite: TRAN 1005.* Fee \$40.

**AUTO 2460 Preparing for ASE Certification**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This class will prepare students to take ASE certification exams. It will cover ASE (Automotive Service Excellence) history, types of questions, certification areas, and reasons for becoming a certified technician.

**AVIATION**

**AVIA 1020 Introduction to Flight**

**1 credit hour**

**16 Classroom Hours = 16 Lecture Hours**

A short introduction to the realm of flight intended to familiarize the student with the actual flight operation of an aircraft. Involves approximately 10-15 hours of flight instruction. Course is completed when the student takes his/her first solo flight.

**AVIA 1210 Basic Ground Training**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

Guides those interested in earning either a pilot's certificate or ground instructor certificate through all of the necessary subject areas. Successful completion prepares the student for the federal written exam.

**AVIA 2010 Intermediate Flight**

**2 credit hours**

**32 Classroom Hours = 32 Lecture Hours**

Approximately 40 hours of flight training which completes the application requirements for a Private Pilot's Certificate issued by the Federal Aviation Administration. The course is completed when the student successfully completes the oral examination and check ride with the FAA examiner. *Prerequisite: AVIA 1020 or equivalent training.*

**AVIA 2310 Advanced Ground Training**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

Intended for those interested in gaining more than a basic knowledge of flight. Continues into advanced systems, instrument flight, and complex aircraft operation. Completion

qualifies the student for the instrument flight written examinations. *Prerequisite: AVIA 1210 or permission of instructor.*

**AVIA 2350 Advanced Flight**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

Thirty to forty hours of flight instruction required to qualify for the practical portion of the instrument rating. *Prerequisite: AVIA 2310 or current enrollment.*

**BIOLOGY**

**BIOS 0880 Science Survival Skills**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A course to provide students with basic knowledge to succeed in the science classroom and laboratory situation. Topics include science study skills, the use of the microscope, metric system of measurements, and various aspects of the scientific method. *This course does not satisfy the general education requirement for the associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college.*

**BIOS 1001 Introduction to Biology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Biology for non-biology majors. It is a general study of the basic concepts of biology, including the human body and the environment. The emphasis is on the characteristics of plant and animal life, human body systems, health, genetics, and the interaction of organisms in their environment. The course is designed to increase a student's awareness and appreciation of biology and to help a student make knowledgeable decisions about his or her health and environment. Video lessons, textbook and study guide assignments, and tests have been carefully designed to help a student achieve the course objectives. This is a non-lab class. Site License Fee \$45.

**BIOS 1002 Survey of Biotechnology**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Introduction to the biotechnology industry which includes careers in biotechnology, plant biotechnology, agriculture biotechnology, and biotechnology in medicine. Designed for science majors.

**BIOS 1010 General Biology**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Examination of fundamental principles of plant and animal biology, including cell biology, genetics, development, structure and function, diversity, and ecology. Designed for non-biology and bioscience majors. *Prerequisite: High school biology and chemistry strongly recommended.* Fee \$15.

**BIOS 1011 General Biology Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for General Biology.

## COURSE DESCRIPTIONS

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### **BIOS 1090      General Botany**

**4 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

A basic study of plants and plant-like organisms, including topics such as anatomy, physiology, growth, reproduction, morphology, taxonomy, genetics, and evolution. Leads to an understanding of economic importance and relationships to the environment. *Prerequisite: BIOS 1010 or equivalent or permission of instructor.* Fee \$30.

### **BIOS 1091      General Botany Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for General Botany.

### **BIOS 1100      Basic Anatomy and Physiology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A basic study of the human body systems and their respective functions. Designed for medical office students and those students that need a beginning course in the subject. Non-lab course. Will substitute for LPNR 1190 Structure and Function.

### **BIOS 1110      Microbiology**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory study of the morphology, physiology, growth, and reproduction of microorganisms, with emphasis on bacteria. *Prerequisite: BIOS 1010 and CHEM 1050 or 1090 or one year of high school chemistry within the last three years, or permission of instructor.* Fee \$30.

### **BIOS 1111      Microbiology Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Microbiology.

### **BIOS 1120      Introduction to Zoology**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey of the animal kingdom with emphasis on broad zoological principles. The evolution, distribution, ecology and current importance of major animal groups and animal-like organisms will be studied. *Prerequisite: BIOS 1010 or equivalent or permission of instructor.* Fee \$30.

### **BIOS 1121      Introduction to Zoology Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Introduction to Zoology.

### **BIOS 1140      Human Anatomy**

**4 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

The structure and function of the tissues, organs, and organ systems of the human body with emphasis on the anatomy of the skeletal, integumentary, muscular, nervous, digestive, circulatory, excretory, and reproductive systems. Laboratory includes dissection of the cat, with applications to the human body (human skeletons, preserved organs, and models.) *Prerequisites: BIOS 1010 or equivalent or a strong background in high school biology strongly recommended or permission of instructor.* Fee \$30.

### **BIOS 1200      Ecology/Environment**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory analysis of the fundamental principles of environmental science - including natural resources, the scientific method, pressures on the global environment and concepts of sustainability and sustainable development.

### **BIOS 1210      Ecology/Environment w/Lab**

**4 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

An introductory analysis of the fundamental principles of environmental science - including natural resources, the scientific method, pressures on the global environment and concepts of sustainability and sustainable development. This course includes a lab portion.

### **BIOS 1400      Introduction to Nutrition**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Principles of nutritional science with regard to the functions of various nutrients in the human body and the special nutrient requirements of individuals based on age, sex, occupation, and condition of health. Recommended for pre-nursing, physical education, and family and consumer science emphases.

### **BIOS 1600      Current Issues in Biology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Principles of nutritional science with regard to the functions of various nutrients in the human body and the special nutrient requirements of individuals based on age, sex, occupation, and condition of health. Recommended for pre-nursing, physical education, and family and consumer science emphases.

### **BIOS 2120      Genetics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory analysis of the fundamental principles of heredity including Mendelian inheritance, mutations, and applied genetics. Non-lab course.

### **BIOS 2130      Human Physiology**

**4 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

A comprehensive survey of the basic functional systems of the human body. Designed primarily for pre-nursing, medical lab technology, and allied health majors. *Prerequisites: Current or prior registration in CHEM 1050, 1090, or equivalent, and BIOS 1010 or BIOS 1140, or a strong background in high school biology or permission of instructor.* Fee \$15.

### **BIOS 2140      Genetics**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory analysis of the fundamental principles of heredity including Mendelian inheritance, mutations, and applied genetics. This is a lab required course.

### **BIOS 2141      Genetics Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for BIOS 2140 Genetics.

**BIOS 2250 Human Anatomy and Physiology I**  
**4 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A study of the anatomical and physiological processes of the systems comprising the human body. Subject matter includes the structure and function of cells and tissues of the human body. Emphasis will be placed on the skeletal, muscular and nervous systems. *Prerequisites: BIOS 1010 or equivalent or a strong background in high school biology strongly recommended or permission of instructor.* Fee \$30.

**BIOS 2251 Human Anatomy and Physiology I Lab**  
**0 credit hours**  
**30 Classroom Hours = 30 Lab Hours**  
 Lab for Human Anatomy and Physiology I

**BIOS 2260 Human Anatomy and Physiology II**  
**4 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A continued study of the physiological processes of the human body; areas emphasized will be the endocrine, cardiovascular, lymphatic, respiratory, digestive, excretory and reproductive systems. *Prerequisite: BIOS 2250 or permission of instructor.* Fee \$15.

**BIOS 2261 Human Anatomy and Physiology II Lab**  
**0 credit hours**  
**30 Classroom Hours = 30 Lab Hours**  
 Lab for Human Anatomy and Physiology II.

**BIOS 2300 Introduction to Biotechnology I**  
**4 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 Examination of fundamental principles of biotechnology including biotechnology developments past and present, cellular organization, measurements and solution preparation, DNA structure and function, sources of DNA, Polymerase Chain Reaction and Gel Electrophoresis. Designed for science majors.

**BIOS 2301 Introduction to Biotechnology I Lab**  
**0 credit hours**  
**30 Classroom Hours = 30 Lab Hours**  
 Lab for Introduction to Biotechnology I.

**BIOS 2310 Introduction to Biotechnology II**  
**4 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 Examination of fundamental principles of biotechnology including biotechnology developments past and present, advanced protein studies, and producing recombinant DNA. Designed for science majors.

**BIOS 2311 Introduction to Biotechnology II Lab**  
**0 credit hours**  
**30 Classroom Hours = 30 Lab Hours**  
 Lab for Introduction to Biotechnology II

**BUILDING CONSTRUCTION TECHNOLOGY**

**BLDC 1005 Safety**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
 Specific safety practices that apply to the building construction trade.

**BLDC 1110 Framing Construction**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
 Construction of a project using the latest building practices and procedures, including footings, floor framing, wall framing, roof framing and truss installation, roofing, insulation and siding. Fee \$15.

**BLDC 1120 Exterior Finish**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
 Exterior project finish including window and door installation, soffit and fascia, sheathing, insulation, ventilation, siding and roofing.

**BLDC 1130 Construction Drafting and Sketching**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
 Drawing and designing a floor plan with emphasis on measurements, room size, utility placement, door and window arrangement and building specifications.

**BLDC 1140 Construction Blueprint Reading**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
 Blueprint reading in the construction field, including lines, symbols, abbreviations, schedules and building specifications for the purpose of building layout and estimating.

**BLDC 1150 Construction Materials and Practices**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
 Construction building materials and principles used in their application and installation techniques.

**BLDC 1210 Interior Wall and Cabinetry**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
 Installation and finishing of drywall, plastering, painting and paneling. Construction of built-ins and special cabinetry. Fee \$10.

**BLDC 1220 Interior Trim and Finish**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
 Production, finish and installation of interior jambs, trim, doors, built-ins and cabinetry, plastic laminate, floor and wall covering.

**BLDC 1230 Construction Codes and Standards**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
 Construction methods based upon government codes that ensure utility, durability and compliance with safety and health requirements.

**BLDC 1260 Computer Spreadsheet and Estimating**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
 Residential blueprints, material take-off forms for formulas and estimating quantities and introduction to computer spreadsheets for estimating, job costing and cost controls.

## COURSE DESCRIPTIONS

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**BLDC 1510 Concrete, Masonry and Commercial Construction**  
**6 credit hours**  
**180 Classroom Hours = 45 Lecture Hours + 135 Lab Hours**  
Hand and power tools, building materials, site preparation, concrete forming, flat concrete finishing, brick and block laying, and floor and wall construction.

**BLDC 1530 Supporting Trades**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
Electrical, plumbing and HVAC in buildings.

**BLDC 1550 Construction Welding**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
Arc and gas welding and cutting in steel structures and metal buildings.

**BLDC 1710 Carpentry Techniques and Power Tools**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Framing, sheathing, siding and shingling and use of power tools.

**BLDC 1720 Cabinetmaking**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Cabinet construction, materials, techniques and use of power tools. Fee \$30.

**BLDC 1730 Finish Carpentry**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Finish techniques and materials for trim work, door installation and moldings.

**BLDC 1760 Concrete and Forming**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Estimating, layout, forming, placing and finishing concrete.

**BLDC 1770 Brick and Block Masonry**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Block and brick laying techniques, mortar mixers, estimating and materials.

**BLDC 2110 Framing Construction II**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
Advanced section on framing techniques, layouts, and supervisory responsibilities. Must have completed 1st year.

**BLDC 2120 Framing Construction II**  
**5 credit hours**  
**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**  
Advanced section on roofing and sealing the exterior, estimating, and supervisory responsibilities. Must have completed 1st year.

**BLDC 2170 Plumbing**  
**1 credit hour**  
**47 Classroom Hours = 2 Lecture Hours + 45 Lab Hours**  
An introduction to the basics of plumbing.

**BLDC 2220 Cabinetry and Millwork**  
**4 credit hours**  
**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**  
Installation and finishing construction of built-ins and special cabinetry.

**BLDC 2500 Cooperative Internship**  
**8 credit hours**  
**480 Classroom Hours = 480 Internship Hours**  
Hands on experience working as an employee with a local construction business and coordinated by Mid-Plains' Building Construction Department.

**BLDC 2710 Carpentry Power Tools and Techniques, Advanced**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Extensive building framing, components and truss construction.

**BLDC 2720 Cabinetmaking, Advanced**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Constructing custom cabinets, casework, furniture and special projects. Fee \$30.

**BLDC 2740 Cabinet and Furniture Making**  
**2 credit hours**  
**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**  
Cabinet and furniture history, design principles, materials, hardware, decoration, joinery, finishes and special construction.

### BUSINESS

**BSAD 1000 Leadership and Team Development**  
**1.5 credit hours**  
**24 Classroom Hours = 24 Lecture Hours**  
Applies leadership practices common to successful leaders through team building activities. This class is designed for the Associate of Applied Science Degree in Business.

**BSAD 1010 Personal and Professional Development**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
Special emphasis on relating image and social awareness to job success. Covers on-the-job situations of problem-solving, time management, goal setting, business etiquette, listening skills, work groups, and the relationship between productivity and job attitude. A major emphasis will be placed on developing productive work ethics. This class is designed for the Associate of Applied Science Degree in Business.

**BSAD 1020 Introduction to Business**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
A survey of the field of business management, including the interpretation of problems of business operations. Items covered include marketing, entrepreneurship, business ownership, finance, personnel, production, organization, and relationships to the external environment.

**BSAD 1030 Business and Professional Speaking**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The basic objective of this course is to provide students with a variety of communication experiences that might be encountered in the business world. These experiences are intended to help students achieve maximum effectiveness in their day-to-day relations with people at work. Classroom presentations are required. This class is designed for the Associate of Applied Science Degree in Business, Information Technology, Business Office Technology, and Graphic Design.

**BSAD 1090 The Job Application Process**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Instruction designed to provide all students with the tools and skills to design an effective job search campaign. Topics will include but are not limited to methods of finding a job, resume preparation, developing customized application letters, interviewing techniques, and preparing follow-up communications. The student will utilize word processing skills.

**BSAD 1100 Personal Finance**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A practical approach to managing one's personal finances that includes financial record keeping and personal federal income tax, major consumer purchases and financing, investment fundamentals, and other financial topics of interest. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

**BSAD 2010 Principles of Selling**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to salesmanship. Covers the sales process and techniques effectively employed in selling. Includes sales demonstrations, including demonstrations by students.

**BSAD 2020 Leadership Development**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course helps to prepare students to assume increasingly responsible leadership roles in their personal, professional and academic lives and their applicability to leaders of the past and present, but also includes substantial hands-on, experiential learning opportunities. Readings are from the PTK Leadership Training Manual, and the course is taught by PTK/Kellogg Foundation Certified Leadership Instructors.

**BSAD 2100 Organizational Behavior**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides an understanding of the complex interrelationships of people in formal organizations that affect the achievement of organizational goals. Course topics include organizational culture, structure and design; team dynamics; motivation; leadership; conflict management; power, influence and organizational politics; communications; decision-making; and change implementation.

**BSAD 2210 Supervisory Management**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Comprehensive cases will be used to examine the functions of management that supervisors must perform. Productivity and quality measurements are analyzed. In addition, communication, ethics, and organizational policies are explored. This class is designed for the Associate of Applied Science Degree in Business.

**BSAD 2250 Business Communications**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduction to the basic styles of communication in the business world with an emphasis on written communications. Focus will be on the written product—specifically routine letters, bad-news letters, goodwill messages, persuasive letters, basic types of business reports, employment communications and an introduction to telecommunications. Correct usage of the language is emphasized. This course is a Writing Intensive course. *Prerequisite: Appropriate score on placement test or permission of instructor.*

**BSAD 2310 Principles of Management**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Study of management principles and the functions of management. Emphasis on management organization, planning, communication, control, leadership, motivation, and executive development. *Note: Sophomore standing or permission of instructor.*

**BSAD 2330 Entrepreneurship**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to explore the fundamental planning necessary to effectively start and operate a small business through a written business plan. This class is designed for the Associate of Applied Science Degree in Business. *Prerequisites: BSAD 2210, 2340, ACCT 1025 or ACCT 1030 and/or currently enrolled or permission of Instructor.*

**BSAD 2340 Introduction to Marketing**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course explores strategic planning, marketing management philosophies, consumer markets, consumer buyer behaviors, advertising, sales promotions and public relations. A formalized marketing plan is written and presented in this class. This class is designed for the Associate of Applied Science Degree in Business.

**BSAD 2350 Advertising**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A course designed to apply advertising functions within the broader context of business and marketing. *Prerequisite: BSAD 2340.*

## COURSE DESCRIPTIONS

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### **BSAD 2370 E-Marketing**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course applies the techniques of using electronic marketing in the workplace. Strategies for businesses that may initiate or reassess the overall effectiveness and value of digital elements will be emphasized. The course will specifically focus on integrating E-marketing tools, including e-mail lists and databases, into total marketing efforts along with organizational goals and functions. Ethical and societal implications of e-commerce on the marketplace, customer base, and employee will be included. *Prerequisite: BSAD 2340.*

### **BSAD 2410 Principles of Marketing**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Examines marketing's role in society and within the firm. Includes units on the marketing concept, environments, segmentation, strategic planning, the marketing mix (product, distribution, promotion, price) strategies, international marketing, and nonprofit organization marketing. *Note: Sophomore standing or permission of instructor.*

### **BSAD 2440 Gender Issues in Management**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

An individualized program of study that will enable women to consider or prepare for a management position in today's business world. Units on leadership, woman's role in a "man's world," human relations, human behavior, communication, and management of time.

### **BSAD 2510 Business Computer Systems**

**4 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

This course explores the integration of technology into the business environment through the application of basic computer concepts and terminology. The course addresses basic competencies and application of computer skills in basic file management, word processing, spreadsheets, database and presentation software using the Office Suite. **NOTE:** Not open to students who have previously completed OFFT 2150.

### **BSAD 2710 Business Law I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of the law on contracts, employment, insurance, property, and sales. Emphasis is placed upon the application of the Uniform Commercial Code.

### **BSAD 2720 Business Law II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of the law covering partnerships, corporations, real property, commercial transactions, negotiable instruments, government regulation of businesses, and related topics.

### **BSAD 2730 Pre-Internship Business Seminar**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Prepares the students for the internship experience by addressing specific job descriptions, job qualifications, and employer expectations. Students will receive information

about their responsibilities for the internship. In addition, students will be required to attend a specified number of business seminars or training sessions; e.g., new government regulations, labor laws and taxes, changing market forces, and economic development incentives. This class is designed for the Associate of Applied Science Degree in Business. *Prerequisite: C average and 30 hours of program course work with at least 15 hours from MPCC. Concurrent enrollment with BSAD 2740 and 2750 or permission of instructor.*

### **BSAD 2740 Business Internship**

**4 credit hours**

**240 Classroom Hours = 240 Internship Hours**

On-the-job training through a cooperative arrangement with business, and industrial organizations. Students work a minimum of 240 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. Emphasis is placed on the application of technical knowledge, communication skills, and relationships with others. This class is designed for the Associate of Applied Science Degree in Business. *Prerequisite: C average and 30 hours of program course work with at least 15 hours from MPCC. Concurrent enrollment with BSAD 2730 and 2750 or permission of instructor.*

### **BSAD 2750 Post-Internship Business Seminar**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Students will exchange perceptions and expectations of the work environment. Job application and interviewing skills will be reviewed and revised. This class is designed for the Associate of Applied Science Degree in Business. *Prerequisite: Concurrent enrollment in BSAD 2730, BSAD 2740, or permission of instructor.*

### **BSAD 2900 Project Management**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Project management is the discipline of defining and managing the vision, tasks, and resources required to complete a project. This course provides an introduction to the project management process, resource management (time, money, and people), quality control, communications, and risk.

### **BSAD 2950 Vocational Career Tour**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Career exploration into various vocational areas relating to skills, management, labor, experience, and educational requirements pertaining to employment salary and advancements. This unit consists of a 3-4 day field trip to metro/rural regions in the Midwest. Students participating must be members of a vocational organization. *Note: This course may not transfer toward degree and/or program requirements at a four-year college. Contact transfer college for information.*

**BUSINESS TECHNOLOGY**  
*(Formerly Office Technology)*

**OFFT 1030 Computer Keyboarding**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Instruction designed to teach microcomputer keyboarding using computer-assisted instruction. The contents cover the alphanumeric keyboard, the ten-key numeric keypad and selected microcomputer special function keys. Not intended for business technology majors. *Note: This course may not transfer toward degree and/or program requirements at a four-year college. Contact transfer college for information.* Fee \$5.

**OFFT 1050 Keyboarding Speed Building**  
**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

This course is designed for individuals who already know the keyboard but wish to improve their typing speed and accuracy for personal or business use. Emphasis is only on speed and accuracy improvement.

**OFFT 1070 Business English**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Preparation for written communication is vital to communicate effectively in today's workplace. This course emphasizes the basic English grammar, spelling, punctuation, correct word usage, sentence structure, and paragraph construction as it applies to effective written communication in business.

**OFFT 1130 Computer Keyboarding**  
**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

Basic touch keyboarding instruction in skills needed to input information into computer terminals swiftly and efficiently.

**OFFT 1150 Input Keyboard Technology I**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduction to touch keyboarding using the alphabetic and figure symbol keys on a standard computer keyboard. Students will prepare basic documents such as business letters, memos, tables, and basic reports formatting and be introduced to a popular word processing software application. Fee \$10.

**OFFT 1160 Input Keyboard Technology II**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Reinforce keyboarding techniques and develop speed and accuracy skills needed for effective office employment. Instruction includes hands-on use of various input devices. Extensive preparation of business documents includes the following: business letters, mail merges, memos, tables, reports, forms, and other business related documents. *Prerequisite: Typing speed of 25-30 words per minute.* Fee \$10.

**OFFT 1310 MOS Certification: Word I**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed to prepare the student for the entry-level MOS (Microsoft Office Specialist) Word exam. Upon

completion of the course, the student will have covered objectives for the MOS Word exam. Partial preparation for MOS Certification. Fee \$5.

**OFFT 1320 MOS Certification: MS Excel I**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed to prepare the student for the entry-level MOS (Microsoft Office Specialist) Excel exam. Upon completion of the course, the student will have covered objectives for the MOS Excel exam. Partial preparation for MOS Certification. Fee \$5.

**OFFT 1330 MOS Certification: Access**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed to prepare the student for the entry-level MOS (Microsoft Office Specialist) Access exam. Upon completion of the course, the student will have covered objectives for the MOS Access exam. Partial preparation for MOS Certification. Fee \$5.

**OFFT 2050 Records Management**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of the record life cycle from creation to disposition. Emphasis is placed on applying the alphabetic filing rules and application to the basic filing systems—alphabetic, numeric, geographic and subject filing. Creation, storage, checkout procedures, retention, transfer and disposition of records. Microfilm, electronic storage and computerized storage and retrieval of records (database). Fee \$10.

**OFFT 2080 Business Mathematics and Calculators**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Basic math concepts applicable in business situations such as invoicing, discounts, pricing, payroll, basic banking procedures, interest, and practical business applications. Individualized and group instruction in the use and operation of the most commonly used electronic calculators. *Prerequisite: Passing score on numeric skills test or permission of instructor.* Fee \$10.

**OFFT 2150 Integrated Information Processing**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduces students to integrating MS Office Word, Excel, and Access computer applications. Students get experience in developing, creating, and integrating computer software programs to create workplace projects. **NOTE:** Computer and/or keyboarding skills necessary. Not open to students who have previously completed BSAD 2510.

**OFFT 2170 MS Office Integration**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This is an advanced computer applications integrated course. Focus will be on how to effectively use the various office suite applications and integrate them to meet project demands of today's electronic workplace. *Prerequisite: OFFT 1160 or OFFT 2150 or BSAD 2510 or permission of instructor.* Fee \$10.

## COURSE DESCRIPTIONS

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### **OFFT 2270      Transcription/Voice Activation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Focus is given to utilizing the current technology tools in today's workplace to effectively transcribe and produce documents. Transcription techniques and skills – spelling, punctuation, proofreading and editing – are stressed. Students will learn how to operate a popular voice activation software—Dragon NaturallySpeaking. *Prerequisites: OFFT 1160, typing speed of 50 words per minute, or permission of instructor.* Fee \$10.

### **OFFT 2310      MOS Certification: MS Word II**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed to prepare the student for the advanced-level MOS (Microsoft Office Specialist) Word Expert exam. Upon completion of the course, the student will have covered objectives for the MOS Expert Word exam. Partial preparation for MOS Certification. Fee \$5.

### **OFFT 2320      MOS Certification: MS Excel II**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed to prepare the student for the advanced-level MOS (Microsoft Office Specialist) Excel Expert exam. Upon completion of the course, the student will have covered objectives for the Expert Excel exam. Partial preparation for MOS Certification. Fee \$5.

### **OFFT 2350      Administrative Procedures and Management**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Focus is given to meeting the challenges in today's workplace – the digital age. Current issues in the workplace are addressed. Some of the topics include workplace etiquette, business ethics, effective communication techniques, leadership and management, e-business, digital tools, conferences, and future trends. *Prerequisite: OFFT 1160.*

### **OFFT 2440      Legal Terminology/Transcription**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to give students the knowledge and understanding of over 900 terms commonly used in the legal profession. The student will learn to define the terms and use them in legal context. Pronunciation guides are provided for each word, and the correct pronunciation is reinforced by taped dictation.

### **OFFT 2450      Legal Office Procedures I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course introduces students to the legal workplace environment. Focus is given to the types of tasks that students will encounter in the law office setting. In this class emphasis is given to the legal environment, law office management, real estate and business organizations, and probate. Legal terms and forms for non-court documents pertaining to the areas of real estate, contracts, corporations, wills, and probate will be covered.

### **OFFT 2460      Legal Office Procedures II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Continuation of OFFT 2450. Court procedures and court documents are stressed. In this class emphasis is given to the legal system, litigation process, substantive law, and legal research. The class begins with an overview of the structure of the court system. A study of and practice in preparing frequently used court documents and litigation documents such as motions, complaints, stipulations, answers, judgments, notices of appeal, and briefs will be covered. *Prerequisite: OFFT 2450.*

### **OFFT 2500      Medical Terminology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to equip the student with a usable vocabulary unique to the medical profession field. The student will be able to define and use terms relating to structure of the human body, the skeletal system, muscular system, cardiovascular system, lymphatic and immune systems, respiratory system, digestive system, urinary system, nervous system, the eyes and ears, integumentary system, endocrine system, reproductive systems, diagnostic and imaging procedures, and general medical terminology.

### **OFFT 2520      Introduction to Coding**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A course designed to provide instruction in completing and submitting medical insurance forms. Students will learn to abstract information from patient records, identify and correct charge entries, use up-to-date insurance coding, and acquire knowledge and skill in the completion of filing of insurance claim forms. *Prerequisite: OFFT 2500 or permission of instructor.*

### **OFFT 2530      Medical Transcription I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to develop proficiency in the use of medical reference texts as well as to develop proficiency in the art of medical transcription. Students will transcribe a number of medical reports and other medical documents covering various procedures and body systems. *Prerequisites: OFFT 2500 and OFFT 1160 or equivalent or permission of instructor.*

### **OFFT 2540      Medical Transcription II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The course provides individualized instruction to develop advanced proficiency in the field of medical transcription. Students will be expected to use the various medical reference materials to aid the transcription process. Students will do advanced work on medical reports and other medical-related documents all using a variety of dictators and covering numerous procedures and body systems. *Prerequisites: OFFT 2500 and OFFT 2530.*

### **OFFT 2550      Computerized Medical Office Procedures**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Designed to give the student experience similar to what could be expected in various medical-related offices. Medical

records, financial records, insurance, scheduling, and telephone use are included. Students will learn to use the computer and medical office software to perform most of these functions. NOTE: Keyboarding ability and basic computer knowledge are necessary. *Prerequisite: OFFT 2500 or permission of instructor.*

**OFFT 2700 Business Technology Internship Seminar**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Prepares students for internship experience by addressing specific job descriptions, job qualifications, and employer expectations. Students will exchange perceptions and expectations of the work environment. This class is designed for the Associate of Applied Science in Business Technology. Must be taken concurrently with OFFT 2710, 2720, or 2730. *Prerequisites: Concurrent enrollment in a Business Technology Internship, permission of a Business Technology Internship supervisor and permission of advisor.*

**OFFT 2710 Business Technology Internship**  
**1 credit hour**

**60 Classroom Hours = 60 Internship Hours**

On-the-job training through a cooperative arrangement with business, service, not-for-profit, legal and medical organizations. This class is designed for the Associate of Applied Science in Business Technology. Concurrent enrollment in OFFT 2700 is required. *Prerequisite: Completion of at least 30 credit hours toward an AAS in Business Technology Degree, current enrollment in the Business Technology Internship Seminar, permission of the appropriate Business Technology Internship supervisor, and permission of advisor.*

**OFFT 2720 Business Technology Internship**  
**2 credit hours**

**120 Classroom Hours = 120 Internship Hours**

On-the-job training through a cooperative arrangement with business, service, not-for-profit, legal and medical organizations. This class is designed for the Associate of Applied Science in Business Technology. Concurrent enrollment in OFFT 2700 is required. *Prerequisite: Completion of at least 30 credit hours toward an AAS in Business Technology Degree, current enrollment in the Business Technology Internship Seminar, permission of the appropriate Business Technology Internship supervisor, and permission of advisor.*

**OFFT 2730 Business Technology Internship**  
**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

On-the-job training through a cooperative arrangement with business, service, not-for-profit, legal and medical organizations. This class is designed for the Associate of Applied Science in Business Technology. Concurrent enrollment in OFFT 2700 is required. *Prerequisite: Completion of at least 30 credit hours toward an AAS in Business Technology Degree, current enrollment in the Business Technology Internship Seminar, permission of the appropriate Business Technology Internship supervisor, and permission of advisor.*

**CAREER PLANNING**

**CAPC 1710 Career Planning**  
**1 credit hour**

**18 Classroom Hours = 18 Lecture Hours**

This class assists the student in examining the components of career planning. Planning skills and self-assessment instruments will help identify tentative career options. Decision-making strategies, resume writing, interviewing skills, and job search techniques will be reviewed.

**CAPC 1720 Career Assessment/Planning II**  
**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This class will assist the student in examining, identifying, and acknowledging their personal skills, aptitudes, and abilities they possess and will help them identify career options. Students will be given various assessments to include interest, aptitude and ability indications to help them with career decisions. Students will also develop decision-making strategies, design a resume, practice interviewing skills, and identify job search techniques.

**CHEMISTRY**

**CHEM 1000 Chemistry Recitation**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed for students who have a weak or limited mathematics or science background. The recitation class will reinforce the objectives presented during the lecture portion of the course with additional individualized and group instruction.

**CHEM 1050 Survey of Chemistry I**  
**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is for non-science major students to study basic chemistry principles, methods and techniques. Study of electronic configurations of atoms, characteristic properties of groups of elements, periodic table, the naming of chemical compounds, chemical reactions, the calculations in chemical reactions and gas laws. *Prerequisites: Two years of high school algebra or one year of high school algebra and MATH 1010, or permission of instructor.*

**CHEM 1051 Survey of Chemistry I Lab**  
**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Survey of Chemistry I.

**CHEM 1060 Survey of Chemistry II**  
**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Continuation of CHEM 1050 with an introduction to organic chemistry and nuclear chemistry. Study of radioactivity, nuclear decay, nuclear fission and fusion, functional groups, the structure, isomer, nomenclature, properties of organic compounds and the basic reactions in organic chemistry. *Prerequisite: CHEM 1050 or permission of instructor.*

**CHEM 1061 Survey of Chemistry II Lab**  
**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Survey of Chemistry II.

## COURSE DESCRIPTIONS

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### **CHEM 1090      General Chemistry I**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The first semester of a comprehensive year course in chemistry that includes the principles and theories of modern chemistry. This course is designed for students who need a good theoretical background in chemistry, and it is the prerequisite for advanced chemistry courses. *Prerequisites: Two years of high school algebra, one year of high school chemistry or permission of instructor.* Fee \$15.

### **CHEM 1091      General Chemistry I Lab**

**0 credit hours**

**45 Classroom Hours = 45 Lab Hours**

Lab for General Chemistry I.

### **CHEM 1100      General Chemistry II**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The second semester of the comprehensive year course in chemistry. *Prerequisite: CHEM 1090 or permission of instructor.* Fee \$15.

### **CHEM 1101      General Chemistry II Lab**

**0 credit hours**

**45 Classroom Hours = 45 Lab Hours**

Lab for General Chemistry II.

### **CHEM 2410      Organic Chemistry I**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The chemistry of carbon compounds dealing with alkanes, alkenes, alkynes, aromatics, and cyclics. A study of reaction types, reaction mechanisms, and stereochemistry. *Prerequisite: CHEM 1090 or 1100 or equivalent.* Fee \$15.

### **CHEM 2411      Organic Chemistry I Lab**

**0 credit hours**

**45 Classroom Hours = 45 Lab Hours**

Lab for Organic Chemistry I.

### **CHEM 2420      Organic Chemistry II**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A continuation of CHEM 2410, including reactions and preparations of alcohols, phenols, ethers, aldehydes, ketones, carboxylic acids, and amines. Includes spectroscopic identification of organic compounds and the study of other selected topics. *Prerequisite: CHEM 2410 or equivalent.* Fee \$15.

### **CHEM 2421      Organic Chemistry II Lab**

**0 credit hours**

**45 Classroom Hours = 45 Lab Hours**

Lab for Organic Chemistry II.

## COMPUTER SCIENCE

### **CSCE 1290      Digital Photos**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course will cover the most basic tools and techniques of editing digital pictures.

### **CSCE 1502      Beginning Computer**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course is designed for individuals who have little or no computer experience. Topics include computer terminology, hardware components, software, and windows operating environment. Individuals will identify parts of the computer; use Windows operating environment to create individual folders and to move/copy files and to modify the desktop; and use a software application program to create, format, print, and save a variety of word processing documents.

### **CSCE 1504      Beginning Computer II**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course is designed to follow Beginning Computer I. Students should have minimal experience working with computers or have taken Beginning Computer I. The class will take a brief look at Windows, Word, Excel and the Internet.

### **CSCE 1511      Show Me PC I**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is designed for the non-traditional student who has NO previous experience with the computer. Instruction will include basic computer terminology, Windows features, mouse and keyboard operations, basic word processing and spreadsheets and use of a database Wizards and templates. *NOTE: This course may not transfer toward degree and/or program requirements at a four-year college.* Contact transfer college for information. Fee \$5.

### **CSCE 1512      Show Me PC II**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is designed for the non-traditional student who has had a basic introduction to computers. Course content will continue from CSCE 1511 and will cover the topics more in depth. An Internet unit will be covered. *Prerequisite: CSCE 1511 or permission of instructor.*

### **CSCE 1544      Introduction to Windows**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

The course provides an introduction to the Windows operating environment. Topics include using notepad and its Date/Time function; designing a four-level tree file structure; using Find, Graphics and Wordpad; creating shortcuts; and copying and pasting within a document. Fee \$5.

### **CSCE 1562      QuickBooks**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course provides a hands-on introduction to the features of QuickBooks. Students will practice using the basic features of the software.

### **CSCE 1563      QuickBooks**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

An introduction to the basic features of QuickBooks through hands-on practice. Students will enter and track various types of business information as well as explore how QuickBooks can save time and help organize business finances. Fee \$5.

**CSCE 1565 QuickBooks**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course provides an introduction to QuickBooks Pro. Topics include creating a chart of accounts, recording transactions with customers and vendors, recording payroll, using time tracking, estimates and progress billing, and preparing financial statements. Fee \$5.

**CSCE 1566 QuickBooks**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides an introduction to QuickBooks Pro. Topics include creating a chart of accounts, recording transactions with customers and vendors, recording payrolls, using time tracking, estimates and progress billing, preparing financial statements, and other supporting reports.

**CSCE 1581 Quicken**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Simplified accounting applications for personal and business use. Fee \$5.

**CSCE 1603 Word Processing on Microcomputers**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed as an introduction to word processing on computers. Students will learn how to create, save, revise, and print documents. Topics will include formatting and enhancing documents, creating tables, and preparing mail merge documents. Fee \$5.

**CSCE 1604 Introduction to Microsoft Word**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

This is an introduction to basic features of the Microsoft Word software program. Focus will be given to utilizing graphics, templates, report styles, tables, columns, language references, merging and WordArt. This course is an elective for students in the Business Technology program who lack computer skills, for persons needing a computer elective in another program, or for personal use. *Prerequisite: Basic computer knowledge or permission of instructor.* Fee \$5.

**CSCE 1605 Microsoft Word for Windows**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is designed to teach the student the basics of the Microsoft Word program. In addition to creating, saving, revising, and printing documents, students will perform basic formatting and editing functions, work with tables, graphics, mail merge documents, sorting, styles, columns and Wizards. Students will learn to create folders and organize documents. Fee \$5.

**CSCE 1624 Introduction to Corel WordPerfect**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

This course is designed as an introduction to the basic features of Corel WordPerfect Program with Windows. Formatting, editing features, printing, merging, tables, columns, TextArt, language references, page numbering, and handling files will be covered. This course is an elective for students in the Business Technology program who lack

computer skills, for persons needing a computer elective in another program, or for personal use. *Prerequisite: Basic computer knowledge, keyboarding ability, or permission of instructor.* Fee \$5.

**CSCE 1642 Excel Basic**

**0.5 credit hour**

**8 Classroom Hours = 8 Lecture Hours**

This course will focus on Excel basic functions and features. Students will learn to create, save, edit, and print worksheets. Topics include creating worksheets, moving and copying data, entering and editing formulas, formatting text and numbers, and printing worksheets.

**CSCE 1643 Spreadsheets on Microcomputers**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is designed as an introduction to spreadsheets. Students will learn to create, save, edit and print worksheets. Topics will include formulas and functions, formatting, charting, and grouping. Fee \$5.

**CSCE 1644 Spreadsheets on Microcomputers**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

This course is designed to provide the fundamental skills and concepts of using spreadsheet software in a hands-on environment. Students will benefit from the step-by-step approach that is emphasized in the course. Fee \$5.

**CSCE 1645 Microsoft Excel for Windows**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is designed to teach the student the basics of the Microsoft Excel program. In addition to creating, saving, revising, and printing documents, students will perform basic formatting and editing functions, work with formulas and functions, multiple worksheets, charts, database lists, and graphics. Students will learn to create folders and organize documents. Fee \$5.

**CSCE 1663 Database on Microcomputers**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This hands-on course provides the skills needed to define, create, maintain a database, extract and report vital information in a variety of ways. The key is building and retrieving information from typical business databases. In addition, students learn to modify the structure of an existing database and perform operations on related databases. Fee \$5.

**CSCE 1664 Use of Database on Microcomputers**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

This course is designed to provide the fundamental skills and concepts of using database software in a hands-on environment. Students will benefit from the step-by step approach that is emphasized in the course. Fee \$5.

**CSCE 1665 Microsoft Access for Windows**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Course designed to introduce the student to a widely used database program. Instruction will move from the basic to advanced features of Access for Windows.

## COURSE DESCRIPTIONS

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### **CSCE 1682 Using Internet**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course provides an introduction to the use of the Internet. Topics include searching the World Wide Web, exploring search engines, and exchanging e-mail.

### **CSCE 1683 Introduction to Internet**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course is a study of Internet and the use of web browsers to access the World Wide Web. Topics include the use of e-mail, Usenet News, newsgroups, FTP, gopher, and search engines. *Note: This course may not transfer toward degree and/or program requirements at a four-year college. Contact transfer college for information.*

### **CSCE 1685 Using Internet**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course is a continuation of CSCE 1682. *Prerequisite: CSCE 1682.*

### **CSCE 1691 Front Page**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course provides an introduction to Microsoft FrontPage. Topics include designing and creating a web page; creating effective images; and using graphics, tables, frames, animated GIFs, Java applets and input forms.

### **CSCE 1692 Web Page Design**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course covers the steps for writing HTML files, creating web pages, and uploading them to the Internet.

### **CSCE 1693 Introduction to HTML-Web Pages**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

An introduction to creating web pages for the Internet using hypertext language (HTML). *Note: This course is not designed to transfer to a four-year college. Fee \$5.*

### **CSCE 1711 Microsoft Office**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Microsoft Office is a comprehensive survey of the four major applications in the Microsoft Office Suite: Word, Excel, Access, and PowerPoint.

### **CSCE 1721 Microsoft Works (PC)**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Microcomputer operation and software applications for word processing, spreadsheets, and databases.

### **CSCE 1722 Microsoft Works (PC)**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Advanced microcomputer software operations for spreadsheets, databases, and integrated applications.

### **CSCE 1723 Microsoft Works (MAC)**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Microcomputer operation and software applications for word processing, spreadsheets, and databases.

### **CSCE 1724 Microsoft Works (MAC)**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Advanced microcomputer software operations for spreadsheets, databases, and integrated applications.

### **CSCE 1727 ClarisWorks Computer Applications**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

MacIntosh microcomputer operation and software applications for word processing, spreadsheets and databases.

### **CSCE 1728 ClarisWorks Computer Applications**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

MacIntosh microcomputer operation and software applications for word processing, spreadsheets and databases. Includes integration of word processing, spreadsheets, and databases.

### **CSCE 1744 Advanced Windows**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

Continuation of CSCE 1544. DOS applications, sharing data, features of multimedia, basic telecommunications concepts, networks, and general troubleshooting techniques. This course uses an object-based user interface. *Prerequisites: CSCE 1544 or permission of instructor. Fee \$5.*

### **CSCE 1752 MS Office PowerPoint**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Fundamental skills to use presentation software.

### **CSCE 1753 MS Office-PowerPoint**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course provides an overview of fundamental skills necessary to effectively use Microsoft PowerPoint. Microsoft PowerPoint is a presentation application from which not only overhead type slides can be developed but also computer driven presentations. Fee \$5.

### **CSCE 1754 MS Office - PowerPoint**

**1.5 credit hours**

**23 Classroom Hours = 23 Lecture Hours**

An introduction to a complete presentation graphics program to produce professional-looking presentations. Students will become acquainted with the proper way to build a presentation through a series of projects. Fee \$5.

### **CSCE 2020 Computers in Society**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An elementary description of the components and principles of digital computers. Background and implications of information processing, computer influences on society, and uses of computers. Hands-on computer applications

and minimal programming applications, use of appropriate language to reinforce concepts of problem solving and critical thinking. Fee \$10.

**CSCE 2510 Desktop Publishing/PhotoShop  
2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Students will be introduced to PhotoShop software to learn how to produce high-quality digital images. A large number of editing tools and special effect capabilities will be used to manipulate scanned images, slides, and original artwork.

**CSCE 2570 Desktop Publishing  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course teaches desktop publishing techniques. Students will learn to efficiently use design software such as Adobe Photoshop and Adobe PageMaker/InDesign to create sophisticated, real-world projects. Emphasis will be given to planning, designing, and utilizing the software tools and techniques to develop camera-ready professional documents for today's workplace such as flyers, business cards, brochures, newsletters, and other advertising promotional materials. Fee \$10.

**CSCE 2670 Design Technologies  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This is an advanced course using a variety of popular desktop publishing, multi-media, web and photo editing software packages. This course will provide an in-depth study of layout, design, photo imaging, animation, and hypermedia to create professional documents that will meet the challenging needs of businesses today. Focus will be given to integrating various software components to create dynamic presentation materials for the workplace and e-business environments. *Prerequisite: CSCE 2570 Desktop Publishing.*

**CRIMINAL JUSTICE**

**CRIM 1010 Introduction to Criminal Justice  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Provides an overview of the history, development, and philosophies of crime control within a democratic society. Examines the criminal justice system with emphasis on the police, the prosecution and defense, the courts, and the correctional agencies.

**CRIM 1020 Introduction to Corrections  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Outlines corrections in a systematic process showing the evolving changes within institutional and community based corrections. Topics include, but are not limited to, the history of corrections, the influence of social thought and philosophy on the development of corrections, the rights of the incarcerated inmate, and the duties of the correctional officer.

**CRIM 1030 Courts and the Judicial Process  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Survey of the United States judicial system. Topics include, but are not limited to, legal and constitutional concepts,

institutions, and process. Coverage includes adult and civil courts.

**CRIM 1140 Reporting Techniques for Criminal Justice  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Students will learn to observe and document the behavior of crime victims, witnesses and suspects. Students will also learn to accurately describe and record conditions and activities of crime scenes for courtroom presentations. In accordance with the legal guidelines of confidentiality, each student will maintain a log of classroom and field experiences.

**CRIM 2030 Police and Society  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Examines the role of the police in relationship to law enforcement and American society. Topics include, but are not limited to, the role and function of police, the nature of police organizations and police work, and the patterns of police-community relations.

**CRIM 2050 Community Based Corrections  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A course designed to introduce the correctional process as it is applied in a community setting. The course is designed specifically to focus on probation, parole, and other community based strategies for dealing with the offender. *Prerequisite: CRIM 1020 or permission of instructor.*

**CRIM 2090 Juvenile Justice  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Examines the origins, philosophy, and objectives of the juvenile justice system. Topics include, but are not limited to, causation of crime (i.e. race/gender, socioeconomic relevance, victimization), the juvenile court system, the law enforcement approach, corrections and prevention.

**CRIM 2150 Contemporary Issues in Criminal Justice  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will expose students to current social issues impacting the Criminal Justice field and its professionals, victims, and defendants. Possible topics include racism, sexism, homophobia, poverty, hate crimes, capital punishment, addiction, ethic, gangs, child abuse, terrorism, sexual assault, domestic violence, suicide, mental illness, pornography, prostitution, and other timely topics.

**CRIM 2180 Criminal Justice Organization and Management  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Covers contemporary concepts and principles of organization and management as they relate to the administration of criminal justice agencies.

**CRIM 2200 Criminal Law  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Outlines the purpose and function of criminal law. Topics include, but are not limited to, the rights and duties of citizens and police in relation to local, state, and federal law (i.e.

## COURSE DESCRIPTIONS

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arrest, search and seizure, confessions); the development, application and enforcement of laws; constitutional issues; and sentencing.

### **CRIM 2210      Criminology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Examines crime and criminology from a broad social perspective. Emphasizes the nature and causes of crimes, investigation and prosecution, and treatment and prevention.

### **CRIM 2260      Criminal Investigation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduces criminal investigation procedures. Reviews the historical development and investigative processes related to law enforcement functions. Topics include, but are not limited to, the proper collection, organization and preservation of evidence using basic investigative tools; examining the primary sources of information; analyzing the importance of writing skills; and reviewing the constitutional (legal) limitations of the investigation.

### **CRIM 2310      Rules of Evidence**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Emphasizes the concept of evidence and the rules governing its admissibility. Includes theoretical and pragmatic consideration of constitutional requirements affecting evidence and procedure.

### **CRIM 2400      Nebraska Jail Management Training Certification**

**5.5 credit hours**

**83 Classroom Hours = 83 Lecture Hours**

The Initial Jail Training course consists of those blocks of instruction which have been identified as critical or necessary for all jail officers in Nebraska. Instruction ranges from classroom instruction to actual physical skills development.

### **CRIM 2940      NE Law Enforcement Training Center Educational Internship**

**6 credit hours**

**360 Classroom Hours = 360 Internship Hours**

Provides instruction in basic law enforcement techniques at the Nebraska Law Enforcement Training Center. Instruction includes, but is not limited to, courtroom performance, traffic enforcement, civil process, techniques of arrest, firearms training, and criminal investigation applications.

### **CRIM 2950      Criminal Justice Internship**

**1 credit hour**

**60 Classroom Hours = 60 Internship Hours**

Internship with an organized correction, law enforcement, or other criminal justice agency. *Prerequisite: nine (9) credit hours of criminal justice classes or permission of instructor. Arrange with instructor.*

### **CRIM 2960      Criminal Justice Internship**

**2 credit hours**

**120 Classroom Hours = 120 Internship Hours**

Internship with an organized correction, law enforcement, or other criminal justice agency. *Prerequisite: nine (9) credit hours of criminal justice classes or permission of instructor. Arrange with instructor.*

### **CRIM 2970      Criminal Justice Internship**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

Internship with an organized correction, law enforcement, or other criminal justice agency. *Prerequisite: nine (9) credit hours of criminal justice classes or permission of instructor. Arrange with instructor.*

## **CUSTODIAL AND MAINTENANCE TRAINING**

### **CUST 1710      Professional Cleaning I**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

An overview of the professional custodian; standard time for task completion; development of quality/cleaning standards; specialty cleaning and safe handling of cleaning chemicals; floor finishes/coatings; and care and use of tools and equipment. Fee \$10

### **CUST 1720      Workplace Communication**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Skills needed to successfully communicate with co-workers and supervisors will be explored. Students will learn how to plan, prepare and deliver an effective written or oral presentation. Electronic communication methods will also be explored.

### **CUST 1730      Electricity**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Instruction in basic electricity, including how electricity works and how to make minor repairs that will be helpful on the job as well as the home. Fee \$10.

### **CUST 1740      Plumbing**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Identify various components of a plumbing system; read gauges and meters; demonstrate valves; describe hot and cold water systems; and demonstrate routine maintenance and repairs on plumbing systems. Fee \$10.

### **CUST 1770      Basic Computer Applications**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Starts with the "ON" switch and continues through creating, saving, printing documents, and will include word processing, spreadsheets and Internet.

### **CUST 1780      Building Maintenance/ Preventive Maintenance**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Recognize the need for overall regular maintenance, identify routine problems and solutions, describe maintenance of windows, and describe installation/maintenance of doors and hardware.

### **CUST 1810      Professional Cleaning II**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Effective cleaning techniques to increase the indoor air quality (IAQ) and prevent sick building syndrome (SBS). Areas covered: ceiling and light units, walls and baseboards,

furniture, chalkboards, rooms and offices, restrooms, windows, brick walls (interior and exterior), floors (vinyl, concrete, terrazzo, marble, brick, quarry and ceramic tile).

**CUST 1830 Grounds Care Management**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Identification of various types of grasses, trees and shrubs; proper care of plants, including pruning, fertilizing and irrigation; and recognition of pesticides/herbicides and the safety precautions needed when using chemicals.

**CUST 2710 Professional Cleaning III**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Introduces methods/procedures, chemicals and equipment used to maintain carpeted floors.

**CUST 2720 Boilers**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Safe and efficient operation of heating systems. Learn to open and close a boiler for inspection, make minor repairs, keep operating records, and understand water treatment on steam and hot water heating systems.

**CUST 2740 Gas, Electric Heat and Controls**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Principles of gas and electric heat, including heat pumps, and heating system efficiency and controls.

**CUST 2750 Safety/Fire Prevention**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Knowledge of fire extinguisher and usage; prevention, proper storage and labeling; electrical outlets; testing procedures and record keeping; alarm systems.

**CUST 2760 Supervision/Management**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Effective supervision techniques, leadership roles, decision making responsibilities, effective communication, and quality management concepts.

**CUST 2770 Budget/Purchasing for Custodial/Maintenance**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

An introduction to purchasing of supplies, chemicals, and equipment for a custodial department. Overview of how to budget, how the budget works, preparation of a bid sheet, and testing of products.

**CUST 2780 Air Conditioning**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

The latest techniques in preventive and corrective maintenance on air conditioning systems.

**CUST 2820 Self-Esteem/Human Relations**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Through the use of activities, students will be shown how a

pleasing personality and a respect for human values can lead to job satisfaction and increased productivity.

**CUST 2830 Painting**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Chemical properties of paint, how paint is manufactured, what determines the quality of paint, water based paints, alkyds and epoxies, exterior painting, interior painting, troubleshooting, lead, tools, spray equipment, estimating, color computers and setting up a maintenance program.

**CUST 2860 Hazardous Material Management**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

Describe where hazardous materials are found, understand employer and employee responsibilities, learn your right to know, understand material safety data sheets, identify common hazardous materials used daily.

**CUST 2870 Facility Security**

**0.5 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

How to develop a plan for establishing a secure facility. The importance of locked doors, visitor procedures and identifying potentially dangerous situations. Responding to an emergency: notifying police and emergency response individuals, vacating the building and selecting a secure area for all occupants.

**DENTAL ASSISTING**

**DENT 1110 Dental Assisting Concepts**

**5 credit hours**

**165 Classroom Hours = 60 Lecture Hours + 105 Lab Hours**

Orientation to dentistry: terminology, history, career opportunities, job duties, relationship to other health occupations, interpersonal communications and ethical considerations. Instrument identification, uses and maintenance of dental equipment, safety and infection control protocols, principles of four-handed dentistry are utilized for basic examination and restorative procedures. Placement of matrix bands is taught to pre-clinical level. Fee \$40.

**DENT 1120 Dental Materials**

**3 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Structure and properties of dentistry materials and use of dental laboratory equipment to manipulate them. Included are dental stones, impression materials, and different types of restorative materials. Fee \$25.

**DENT 1130 Dental Science**

**4 credit hours**

**105 Classroom Hours = 90 Lecture Hours + 15 Lab Hours**

Microbiology, embryology, histology, morphology, anatomy of the head and neck. Emphasis is on tooth structure and function and anatomy of the head and neck.

**DENT 1140 Structure and Function**

**2 credit hours**

**40 Classroom Hours = 40 Lecture Hours**

Overview of human body structures and functions and coordination of general health to dental health.

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### **DENT 1220 Dental Assisting Clinical Practice I**

**2 credit hours**

**96 Classroom Hours = 96 hours practicum**

Students will be assigned to area dental offices chair-side applications for general restorative procedures.

### **DENT 1230 Prevention and Nutrition**

**3 credit hours**

**75 Classroom Hours = 30 Lecture Hours + 15 Clinical Hours + 30 Lab Hours**

Nutrition, dietary counseling, correlation between diet and dental health with emphasis on preventive dentistry. Basic pathology and coronal polishing are included in this course. Fee \$15.

### **DENT 1250 Dental Radiology**

**4 credit hours**

**115 Classroom Hours = 45 Lecture Hours + 70 Lab Hours**

Theory and techniques of exposing, processing and care of dental X-ray film; dangers and protective measures to guard against excess radiation. This course certifies students to take dental radiographs in the State of Nebraska. Fee \$50.

### **DENT 1260 Dental Assisting Procedures**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Dental specialty procedures and office management skills are studied. Fee \$40.

### **DENT 1270 Pharmacology and Medical Emergencies**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Deals with drugs used in dental offices, including acquisition, care and storage, legal considerations and proper administration. Students are prepared to deal with possible medical emergencies that may occur in the dental setting.

### **DENT 1510 Dental Assisting Seminar**

**1 credit hour**

**16 Classroom Hours = 16 Lecture Hours**

Seminars addressing job seeking skills, material updates and interpersonal communications.

### **DENT 1520 Dental Assisting Clinical Practice II**

**5 credit hours**

**225 Classroom Hours = 225 Hours practicum**

Students will be assigned to area dental offices for procedures including advanced chair side applications, orthodontics, endodontics, periodontics and prosthodontics.

## **DIESEL TECHNOLOGY**

### **DSLT 1100 Heavy Duty Engine Design and Fundamentals**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Engine identification and design and function of major components, diesel engine classification and parts identification. Fee \$15.

### **DSLT 1120 Heavy Duty Engine Systems Reconditioning**

**5 credit hours**

**165 Classroom Hours = 30 Lecture Hours + 135 Lab Hours**

Shop procedures, tool selection and use. Major and minor

engine overhaul and component reconditioning. *Prerequisites: TRAN 1005 and DSLT 1100 or permission of instructor. Fee \$20.*

### **DSLT 1140 Adv. Heavy Duty Electrical Systems**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Diagnose and recondition AC and DC circuits in starting and charging electrical systems on heavy-duty vehicles. *Prerequisite: TRAN 1130 or permission of instructor. Fee \$5.*

### **DSLT 1170 Equipment Maintenance**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Drill sizes, tap and dies, files, pipe and brass fitting, and shop equipment maintenance. *Prerequisite: TRAN 1005 Safety.*

### **DSLT 1190 Preventive Maintenance**

**3 credit hours**

**75 Classroom Hours = 30 Lecture Hours + 45 Lab Hours**

Introduces the student to correct procedures and practices of vehicle preventative maintenance and inspections.

### **DSLT 1200 Powertrain Repair**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Design function and repairing transmissions, axle assemblies, clutches and drivelines. Fee \$15.

### **DSLT 1215 Mechanical Hydraulic Systems**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Hydraulics applied to design and function, troubleshooting and repair. Fee \$15.

### **DSLT 1250 Applied Welding for Prime Movers**

**2 credit hours**

**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**

Soldering, brazing, gas welding, and cutting torches in the transportation and prime mover. *Prerequisite: TRAN 1005.*

### **DSLT 1270 Hydraulic and Anti-lock Brakes**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Theory and application of hydraulic and anti-lock brake systems as used in medium and heavy-duty trucks. Fee \$10.

### **DSLT 1300 EMD Engines**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

This course emphasizes the basic mechanical functions of EMD locomotives, proper inspection and repair procedures, and introduction to EMD turbochargers. *Prerequisite: TRAN 1005 completed or taken concurrently with program classes or by permission of instructor.*

### **DSLT 1310 GE Engines**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

This course emphasizes the basic mechanical functions of GE locomotives, proper inspection and repair procedures, and introduction to GE turbochargers. *Prerequisite: TRAN 1005 completed or taken concurrently with program classes or by permission of instructor.*

**DSLTL 1320 Air Brakes and Trucks**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 This course emphasizes the operation of locomotive air brakes and related systems as well as how to maintain and test these systems. *Prerequisite: TRAN 1005 completed or taken concurrently with program classes or by permission of instructor.*

**DSLTL 1710 Diesel Mechanics**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Shop procedures and diesel engine design and operation in relation to repair and reconditioning.

**DSLTL 1720 Diesel Mechanics Maintenance**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Engines and electrical and hydraulic systems and proper maintenance practices.

**DSLTL 1730 Diesel Hydraulics**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Hydraulic components, troubleshooting and repair.

**DSLTL 1740 Transmissions and Drivelines**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Clutches, drivelines, transmissions and differentials, troubleshooting and repair.

**DSLTL 1770 Diesel Troubleshooting and Tune-up**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 All makes of diesel engine operation, troubleshooting, repair and tune-up.

**DSLTL 1780 Diesel Overhaul and Tune-Up, Cummins**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Cummins diesel engine operation, troubleshooting, repair and tune-up.

**DSLTL 1790 Diesel Overhaul and Tune-Up, Detroit**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Detroit diesel engine operation, troubleshooting, repair and tune-up.

**DSLTL 2300 Fuel Systems**  
**4 credit hours**  
**150 Classroom Hours = 15 Lecture Hours + 135 Lab Hours**  
 Diesel fuel filters, supply pumps, fuel characteristics and storage, combustion analysis and effect on combustion chamber design. *Prerequisite: Sophomore standing.* Fee \$15.

**DSLTL 2318 Fuel Systems Overhaul**  
**4 credit hours**  
**150 Classroom Hours = 15 Lecture Hours + 135 Lab Hours**  
 Theory of operation, repair and calibration of Roosa Master, C.A.V., United Technologies, Bosch, and Simms. Repair and calibration of injection nozzles and injectors; installation and troubleshooting. *Prerequisite: Sophomore standing.* Fee \$15.

**DSLTL 2350 Heavy Duty Suspensions**  
**3 credit hours**  
**75 Classroom Hours = 30 Lecture Hours + 45 Lab Hours**  
 Repair and maintenance of heavy-duty suspension systems. Fee \$10.

**DSLTL 2400 Engine Testing**  
**4 credit hours**  
**150 Classroom Hours = 15 Lecture Hours + 135 Lab Hours**  
 Overhaul procedure of major components and subcomponents; run in and troubleshooting procedure for Detroit, Caterpillar and Cummins diesel engines and foreign made engines. *Prerequisite: Sophomore standing or permission of instructor.* Fee \$15.

**DSLTL 2415 Engine Overhaul**  
**4 credit hours**  
**150 Classroom Hours = 15 Lecture Hours + 135 Lab Hours**  
 Engine removal and disassembly; service of cylinder head, valve train, valves, crankshaft, main bearing, flywheel, camshaft, timing gear, engine block, cylinders, rings and connecting rods. *Prerequisite: Sophomore standing or permission of instructor.* Fee \$15.

**DSLTL 2440 Electronic Fuel Controls**  
**3 credit hours**  
**75 Classroom Hours = 30 Lecture Hours + 45 Lab Hours**  
 Operational theory, troubleshooting and programming using hand held diagnostic and laptop computers. *Prerequisite: DSLTL 2300 and DLST 2318.* Fee \$5.

**DSLTL 2470 Air and Engine Brakes**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 Theory, operation and repair of braking systems used in agriculture, trucks and heavy equipment. Fee \$5.

**ECONOMICS**

**ECON 1000 Contemporary Economic Issues**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 This course is designed to help students acquire an understanding of the U.S. economy. *(Not open to students who have previously completed ECON 2110 or ECON 2120.)*

**ECON 2110 Principles of Economics-Macro**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 An introductory study of the use of scarce resources relative to virtually unlimited national desires that includes capitalism; demand, supply and the free market allocation mechanism; the public sector in relation to national income accounting, monetary, and fiscal policy and the Federal Reserve; Classical and Keynesian theories, and other related topics. *Prerequisite: Sophomore standing.*

**ECON 2120 Principles of Economics-Micro**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 An introductory study of behavior by consumers and businesses that includes the resource market, costs of production, market structures, international trade, and related issues. *Prerequisite: ECON 2110 or permission of instructor.*

## COURSE DESCRIPTIONS

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### EDUCATION

#### **EDUC 1010 College Success**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The College Success course is designed to increase student success in college by assisting the students in obtaining skills necessary to reach their educational objectives. Some of the topics in this course include managing time, taking notes, communicating, taking tests, asking questions, using resources, and improving health.

#### **EDUC 1160 Early Language and Literacy**

**2 credit hours**

**36 Classroom Hours = 36 Lecture Hours**

This course will focus on the development of literacy and language skills from birth to age eight. The student will plan and prepare developmentally appropriate language and literacy activities. *Prerequisite: EDUC 1310.*

#### **EDUC 1310 Foundations of Modern Education**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours + 15 Practicum Hours**

A study of education in the United States viewed in terms of history, philosophy, finance, and administration. Educational functions and activities at the local, state, and national levels are examined. Finally, the role of the teacher is explored, beginning with preschool and continuing on through elementary, secondary, and college levels. This course includes a field experience. *Prerequisites: ENGL 1010 and PSYC 1810.*

#### **EDUC 1500 International Education Exchange**

**1 credit hour**

**45 Classroom Hours = 45 Practicum Hours**

This course will provide an international education exchange experience with a college in another country. The exchange will include curriculum activities in a certain discipline as well as cultural experiences unique to the country being visited.

#### **EDUC 1900 Field Experience: Human Services**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

The student will be assigned to a human services agency that works with youth and families. *Must be taken concurrently with EDUC 2890. This is for UNK transfer students.*

#### **EDUC 2030 Adolescent Literature**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The history and development of books for adolescents. This course will investigate the concept of adolescence and the literature often prescribed or selected. Wide reading practice with emphasis on setting up criteria for evaluating a wide range of literature for adolescents. Recommended for elementary education majors.

#### **EDUC 2240 Audio Visual and Computer Techniques**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The focus of this class is the development of instructional media in a variety of modes to meet the needs of K-12 students. Traditional media as well as multimedia computer materials will be explored and developed. The selection of

appropriate media for specific classroom needs will be emphasized. *Prerequisites: EDUC 1310 and PSYC 2310 or permission of instructor.* Fee \$5.

#### **EDUC 2300 Introduction to the Exceptional Learner**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This introductory course is a study of the characteristics of students with disabilities or exceptionalities. Emphasis is on the psychosocial implications, identification differences, learning characteristics and manifest behaviors. The effects of educational practices and attitudes, and nature of and forces for social change will be explored. This course will include 10 hours of observation in a special education classroom. *Prerequisites: EDUC 1310 and PSYC 2310 or permission of instructor.*

#### **EDUC 2350 Children's Literature**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The history and development of children's books. Survey of authors and illustrators. Wide reading practice with emphasis on setting up criteria for evaluating a wide range of literature for children according to a child's needs. Recommended for elementary education majors.

#### **EDUC 2890 Developmental Psychology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of physiological and psychological implications of childhood development from conception through adolescence and old age. Major emphasis is on perception, learning, peer and parent relationships, child rearing practices, and implications of school environment during development. *Must be taken concurrently with EDUC 1900. Prerequisite: PSYC 1810.*

#### **EDUC 2910 Pre-Student Teaching Field Experience**

**1 credit hour**

**50 Classroom Hours = 50 Practicum Hours**

Directed field experience in an **elementary regular classroom**. The cooperating school system retains the right to accept or deny student participation in this program.

#### **EDUC 2920 Pre-Student Teaching Field Experience**

**1 credit hour**

**50 Classroom Hours = 50 Practicum Hours**

Directed field experience in a **secondary regular classroom**. The cooperating school system retains the right to accept or deny student participation in this program.

#### **EDUC 2930 Pre-Student Teaching Field Experience**

**1 credit hour**

**50 Classroom Hours = 50 Practicum Hours**

Directed field experience in an **elementary special education classroom**. The cooperating school system retains the right to accept or deny student participation in this program.

#### **EDUC 2940 Pre-Student Teaching Field Experience**

**1 credit hour**

**50 Classroom Hours = 50 Practicum Hours**

Directed field experience in a **secondary special education classroom**. The cooperating school system retains the right to accept or deny student participation in this program.

**ELECTRICAL TECHNOLOGY**

**ELTR 1005 Safety**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
 Deals with specifics on hazards in the workplace for electricians.

**ELTR 1110 Direct Current Fundamentals**  
**3 credit hours**  
**85 Classroom Hours = 30 Lecture Hours + 55 Lab Hours**  
 Course of study includes scientific notation, metric prefixes, concept of electrical charges, characteristics of direct current voltage and current, define resistance, introduces the basic electric circuit, Ohm's law, power, series circuits. *Prerequisite:* ELTR 1150. Fee \$10.

**ELTR 1120 Direct Current, Advanced**  
**3 credit hours**  
**85 Classroom Hours = 30 Lecture Hours + 55 Lab Hours**  
 Continuation of ELTR 1110 Direct Current Fundamentals. Commences with analyzing DC parallel circuits, series-parallel circuits, voltage dividers, and magnetism. *Prerequisite:* ELTR 1110 and 1150.

**ELTR 1135 Alternating Current Fundamentals**  
**3 credit hours**  
**120 Classroom Hours = 50 Lecture Hours + 70 Lab Hours**  
 Introduction to alternating current and comparison to direct current, AC voltage, cycle and alternation, frequency, mechanical and electrical degrees, and wave forms are the foundation of this course. (Replaces ELTR 1130 – 4 credits.) *Prerequisite:* ELTR 1110, 1120, and 1150.

**ELTR 1150 Applied Math**  
**2 credit hours**  
**50 Classroom Hours = 50 Lecture Hours**  
 Mathematics required for understanding electrical circuits, including basic algebra, word problems, power ratios and vectors.

**ELTR 1210 Alternating Current, Advanced**  
**4 credit hours**  
**110 Classroom Hours = 50 Lecture Hours + 60 Lab Hours**  
 Continuation of ELTR 1135 Alternating Current Fundamentals. This course covers inductors, capacitors and the use of these electrical devices in the various AC circuits. Transformers and three-phase systems are also covered. *Prerequisite:* ELTR 1110, 1120, 1135, and 1150. Fee \$10.

**ELTR 1220 Electric Motor Controls**  
**4 credit hours**  
**115 Classroom Hours = 37 Lecture Hours + 78 Lab Hours**  
 Lockout/tagout rules are examined, draw and interpret line diagrams and wiring diagrams, identify and connect manual control devices, and automatic control devices. Recognize and apply logic used in control circuits, and using numerical cross-reference systems when drawing ladder diagrams. *Prerequisite:* ELTR 1110, 1120, 1135, 1150, and 1210. Fee \$20.

**ELTR 1230 Electric Motor Controls, Advanced**  
**4 credit hours**  
**115 Classroom Hours = 37 Lecture Hours + 78 Lab Hours**  
 Use of 2-wire and 3-wire control wiring, pneumatic, solid state and synchronous timers are covered. Reversing circuits analyzed, circuits containing photoelectric and proximity controls and different types of reduced voltage starting. *Prerequisite:* ELTR 1110, 1120, 1135, 1150, 1210, and 1220.

**ELTR 1250 Construction Wiring**  
**8 credit hours**  
**485 Classroom Hours = 185 Lecture Hours + 300 Lab Hours**  
 Branch circuiting requirements, conduit bending, voltage drop, fire alarm devices, lighting, blueprint reading, transformers and connections, motor circuit calculations, grounding, conduit fill, conductor derating, service entrance equipment and calculations, fuses, short circuit calculation and National Electrical Code for commercial buildings, dwelling occupancies, and some industrial installations. (Replaces ELTR 1170 and ELTR 1260.) *Prerequisite:* ELTR 1110, 1120, 1135, 1150, and 1210. Fee \$50.

**ELTR 1510 Programmable Logic Controls**  
**4 credit hours**  
**140 Classroom Hours = 56 Lecture Hours + 84 Lab Hours**  
 Programmable (computerized) control systems, using logic control converted from hardwire ladder diagrams and wiring schematics. *Prerequisite:* ELTR 1110, 1120, 1135, 1150, 1210, 1220, and 1230.

**ELTR 1540 Electronics For Industrial Electricians**  
**4 credit hours**  
**140 Classroom Hours = 51 Lecture Hours + 89 Lab Hours**  
 A practical course in industrial electronics based on the student having an understanding of the basic fundamentals common to electricity and electronics. Provide knowledge and application of electronic components and circuitry for electricians. *Prerequisite:* ELTR 1110, 1120, 1135, 1150, and 1210.

**ELTR 1550 Variable Frequency Drives**  
**4 credit hours**  
**140 Classroom Hours = 56 Lecture Hours + 84 Lab Hours**  
 Variable Speed Drives (Electronic Drives, Frequency Drives) is a course that has been developed to provide a basic understanding of the product, and how to apply the product. This course is intended to help guide the student through frequency drive selection and applications. *Prerequisites:* ELTR 1110, 1120, 1135, 1210, 1220, and 1230.

**ELTR 1820 National Electrical Code Study**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 All electrical work is governed by the National Electrical Code and enforced by the authority having jurisdiction (City, County, State, Federal). Interpreting the code is very important. A misinterpretation may lead to expensive changes in construction materials or methods, with the cost being charged against the electrical contractor.

## COURSE DESCRIPTIONS

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### **ELTR 1830 National Electrical Code Study, Advanced**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

The advanced study takes up with Article 250 and covers the more difficult articles, with the same purpose as described for course number ELTR 1820.

### **ELTR 1850 Fire Alarm Codes Seminar**

**0.75 credit hour**

**12 Classroom Hours = 12 Lecture Hours**

An introductory course for individuals with little or no background in fire alarm engineering and installation. The course will cover applicable NEC, NFPA, and other basic fire alarm codes. Although this course will include an intensive study of current applicable codes, it will also involve class participation worksheets and hands on projects. This course is designed to provide twelve continuing education hours required by the State of Nebraska Electrical Division. *Prerequisites: Fire alarm installers license/Journeyman license/contractor's license.*

## **ELECTRONICSTECHNOLOGY**

### **ELNS 1050 DC Electronics**

**4 credit hours**

**136 Classroom Hours – 68 Lecture Hours + 68 Lab Hours**

Concepts of alternating current electronics as they apply to voltage, impedance, magnetism, Ohm's Law, and electrical measurements to circuits with an alternating voltage source. The effects of signal frequency on capacitive and inductive reactance and the effects of reactance on various circuit configurations. Fee \$25.

### **ELNS 1100 DC Electronics**

**5 credit hours**

**170 Classroom Hours = 85 Lecture Hours + 85 Lab Hours**

Applications associated with current, voltage, resistance, magnetism, Ohm's Law, electrical measurements, series, parallel and series/parallel circuits. Use of test equipment such as voltmeters, ammeters, and oscilloscopes for measuring and troubleshooting. Fee \$25.

### **ELNS 1180 AC Electronics**

**4 credit hours**

**136 Classroom Hours = 68 Lecture Hours + 68 Lab Hours**

Concepts of alternating current electronics as they apply to voltage, impedance, magnetism, Ohm's Law, and electrical measurements to circuits with an alternating voltage source. The effects of signal frequency on capacitive and inductive reactance and the effects of reactance on various circuit configurations. *Prerequisite: ELNS 1050.* Fee \$15.

### **ELNS 1300 Solid State Devices**

**4 credit hours**

**127 Classroom Hours = 42 Lecture Hours + 85 Lab Hours**

Analyze, fabricate, and understand the properties of semiconductor circuits to include but not limited to diodes and transistors. Test equipment will be used for verification of operation. Fee \$30.

### **ELNS 1400 Analog Circuits**

**3 credit hours**

**85 Classroom Hours = 43 Lecture Hours + 42 Lab Hours**

Analyze, fabricate and understand multistage amplifiers, linear and switching power supplies. Fee \$15.

### **ELNS 1500 Digital**

**4 credit hours**

**128 Classroom Hours = 43 Lecture Hours + 85 Lab Hours**

Analyze and fabricate digital circuits to include number systems, logic gates, flip-flops, registers, counters, and timing circuits. Test equipment will be used for verification of operation. Fee \$10.

### **ELNS 2810 Electronic Experiential Learning**

**3 credit hours**

**60 Classroom Hours = 40 Lecture Hours + 20 Lab Hours**

3,000 hours of work experience in electronics at the apprenticeship level or greater.

## **ENGINEERING**

### **ENGR 1010 Introduction to Engineering Design**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is a one-semester multidisciplinary freshman design course that will introduce students to the engineering problem solving process in the context of several disciplines and develop teamwork and communication skills.

### **ENGR 1020 Programming and Problem Solving**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is a one semester, three-credit hour, computer programming course that teaches structured programming and problem solving using computers. The course will consist of a sequence of programming assignments that require students to write computer programs to solve engineering problems. Each problem will come from a different engineering discipline.

### **ENGR 2010 Introduction to Circuits and Electronics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This is a one semester, three credit hour course in the basic analysis of passive and electronic circuits. This course will be based on existing UNL courses ELEC 211 (Electrical Engineering for Non-Majors) and ELEC 215 (Circuits I). This course will be accepted by almost all of the UNL College of Engineering degree programs. *Prerequisites: MATH 1450 and MATH 1550. PHYS 1410 and PHYS 1420 are strongly suggested.*

### **ENGR 2020 Engineering Statics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The action of forces on engineering structures and machines. Force systems, static equilibrium of frames and machines, centroids, friction, moment of inertia. *Prerequisite: MATH 1550 and PHYS 1410.*

## **ENGLISH**

### **ENGL 0880 Punctuation**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Individualized instruction designed to review and refresh the basic punctuation rules in business correspondence.

**ENGL 0890 Spelling**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A course designed to help students who misspell words for a variety of reasons to improve their spelling.

**ENGL 0980 Language Skills**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This developmental course is designed to improve basic English skills. Emphasis is placed on spelling, basic grammar, and sentence development. *Note: This course does not satisfy the general education requirement for an associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college. Prerequisite: Placement exam.*

**ENGL 0990 College Prep Writing**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Language skills is a review of grammar and sentence writing skills including usage of words, parts of speech, parts of a sentence, agreement of subject and verb, punctuation of sentences, vocabulary development, and paragraph development. This course strengthens English proficiency before attempting college composition. *Note: This course does not satisfy the general education requirement for an associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college.*

**ENGL 1000 How to Write a Research Paper**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Designed for students (1) with little or no research background, (2) with a need to refresh their research skills, or (3) who are considering taking a writing intensive class(es). This course is a shortened version of ENGL 1030 Research Writing. Content will range from subject selection to final draft. Special attention will be given to proper documentation procedure.

**ENGL 1010 Expository Writing I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Expository Writing I is designed to develop writing skills. Students write short papers and essays based upon their personal experience and/or assigned papers. The course emphasizes the clear written expression of ideas and the importance of organization, word choice, logic, and sentence construction. The process of planning, writing, revising, researching, documenting, and editing essays for a particular audience is also emphasized. *Prerequisites: Minimum score on placement exam or satisfactory completion of ENGL 0990 and READ 0920. Keyboarding skills or current enrollment in OFFT 1130/1150 or permission of instructor.*

**ENGL 1020 Expository Writing II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course introduces students to the major genres and conventions associated with literature. It may include fiction, poetry, drama, and memoir. By employing critical reading/thinking skills and analytical and creative writing skills, students will understand literature more fully. The course exposes students to a range of authors representing a variety of cultural and ethnic backgrounds. The expository

essay will be emphasized as the mode of written discourse. *Prerequisite: ENGL 1010.*

**ENGL 1030 Research Writing**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to research is examined and applied in the basic research paper. *Prerequisite: ENGL 1010 or permission of instructor. Note: Offered as a class or independent study.*

**ENGL 1040 Basic Technical Communications**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Designed for students in vocational-technical programs in which an emphasis on job-related writing is desired. Course content will range from structure and development of the paragraph to identifying, selecting, planning, and writing a variety of clear, well-organized, thorough reports. *Prerequisite: Minimum score on placement exam or satisfactory completion of ENGL 0990 and READ 0920.*

**ENGL 1050 Technical Writing**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A composition course which involves the study and writing of technical reports. *Prerequisite: ENGL 1010 or permission of instructor.*

**ENGL 1410 Study Skills Lab I**

**1 credit hour**

**24 Classroom Hours = 24 Lecture Hours**

A course designed to help the student in the areas of word attack, note taking, listening, problem solving, and time scheduling. Students will be encouraged to work on areas of need on an individual basis.

**ENGL 1420 Study Skills Lab II**

**1 credit hour**

**24 Classroom Hours = 24 Lecture Hours**

A course designed to help the student in the areas of developmental reading, techniques of testing, concentration, and memory improvement. Students will be encouraged to work individually on areas of need.

**ENGL 1430 Study Skills Lab III**

**1 credit hour**

**24 Classroom Hours = 24 Lecture Hours**

A course designed to help the student in the areas of developmental reading, vocabulary, spelling, and language experience. Students will be encouraged to work on individual needs.

**ENGL 1440 Study Skills Lab IV**

**1 credit hour**

**24 Classroom Hours = 24 Lecture Hours**

A course designed to help the student in the areas of specialized reading skills such as critical thinking, main ideas, organization, study-type reading, and skimming and scanning activities. Students will be encouraged to work on individual needs.

## COURSE DESCRIPTIONS

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### **ENGL 1460      Listening and Note Taking**

**0.5 credit hour**

**12 Classroom Hours = 8 Lecture Hours + 4 Lab Hours**

Designed to help entering freshman improve their ability to listen and take notes from a lecture. Each student will spend 12 hours in individual instruction during one-half of the semester.

### **ENGL 1470      Speed Reading**

**1 credit hour**

**16 Classroom Hours = 16 Lectures Hours**

The speed-reading course provides practical techniques to improve reading rate and comprehension for a higher level of success in college and at work. *Prerequisites: Placement test or READ 0920 or permission of instructor.*

### **ENGL 1480      Speed Reading**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

A self-help course designed for those who have a desire to increase their reading speed while at the same time maintaining or improving reading comprehension. Pre-testing determines the student's reading level at the beginning of the semester, and he/she then proceeds independently toward a personalized goal. The course will consist of lab three days a week for one semester under the supervision of a lab instructor.

### **ENGL 1520      Creative Writing**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to the composition of creative pieces in both prose and poetic forms. Fiction elements including description, characterization, dialogue, plot construction/theme, and a variety of poetic forms, including strict rhyme and scansion, blank verse and free verse will comprise the writing assignments. This course is not applicable to the six-hour English composition credit requirement. *Prerequisite: ENGL 1010 or permission of instructor.*

### **ENGL 2010      Genre Survey: Short Story and Novel**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Elements and theories of fiction. Study of selected short stories and novels. Emphasis on critical discussion and writing. *Prerequisite: ENGL 1010.*

### **ENGL 2030      Genre Survey: Poetry**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Elements and theories of poetry. Study of selected poems stressing the development of a method of analysis and criticism. Emphasis on critical discussion and writing. *Prerequisite: ENGL 1010.*

### **ENGL 2040      Genre Survey: Drama**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Chronological approach to the study of drama with emphasis on the conceptual and formal evaluation of the genre. Representative plays from each period are studied stressing development of a method of critical analysis, critical listening and reading skills, interpretive reading, and critical discussion and writing. *Prerequisite: ENGL 1010.*

### **ENGL 2050      The Novel**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to selected English, American, and Continental novels. Includes traditional and contemporary novels. *Prerequisite: ENGL 1010 or permission of instructor.*

### **ENGL 2060      20<sup>th</sup> Century Fiction**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of 20<sup>th</sup> century fiction in English, including both the novel and short story. Emphasis is on influential works of recognized modern literacy figures. *Prerequisite: ENGL 1010 or permission of instructor.*

### **ENGL 2110      Nebraska Writers**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Study of selected Nebraska writers from the perspectives of how they perceived and what they contributed to the American temper. Selected works of these authors will be studied from structural, thematic, and stylistic points of view. This course does not fulfill the humanities-literature requirement for the Associate of Arts degree.

### **ENGL 2300      Shakespeare**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A critical study of selected works of Shakespeare. *Prerequisite: ENGL 1010.*

### **ENGL 2460      American Literature Post 1865**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This survey of American authors of the 19<sup>th</sup> and 20<sup>th</sup> centuries will introduce students to some of the important writers and literary, artistic, and cultural movements in the United States of this time. The students will develop the ability to read, appreciate, understand and critically assess a variety of literary works from different historical periods, from different ethnic communities and in different genres. *Prerequisite: ENGL 1010 or permission of the instructor.*

### **ENGL 2510      Science Fiction – Supernatural Literature**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of science fiction and supernatural stories and novels emphasizing themes and techniques common to these literary forms. *Prerequisite: ENGL 1010 or permission of instructor.*

### **ENGL 2520      Literature of Nature**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Begins with an examination of the rural dream in America and proceeds to examples of long and short fiction concerned with life in the outdoors. *Prerequisite: ENGL 1010 or permission of instructor.*

### **ENGL 2550      Short Fiction**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to the short story. Includes various types of American, English, and Continental short fiction. Emphasis on theme and form. *Prerequisite: ENGL 1010 or permission of instructor.*

**ENTREPRENEURSHIP**

**ENTR 1050 Introduction to Entrepreneurship  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The student will evaluate the business skills and commitment necessary to successfully operate an entrepreneurial venture and review the challenges and rewards of entrepreneurship. The student will understand the role of entrepreneurial businesses in the United States and the impact on our national and global economy

**ENTR 2040 Entrepreneurship Feasibility Study  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Students will assess the viability of a new venture business idea to determine if the concept is feasible for business start up and long term growth based on strengths and skills, personal, professional and financial goals. The student will identify and analyze through basic research the present climate for their business idea by completing an industry, target market and competitive analysis. The student will assess the financial needs for startup as well as their own skills, strengths and talents to launch a successful business idea.

**ENTR 2050 Marketing for the Entrepreneur  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

In the course, the student will gain insights essential for marketing their entrepreneurial venture utilizing innovative and financially responsible marketing strategies. Students will develop an understanding of traditional and non-traditional entrepreneurial marketing strategies. Prepare marketing strategies with associated tactics to launch and sustain an entrepreneurial venture.

**ENTR 2060 Entrepreneurship Legal Issues  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The student will explore legal issues related to business entities including sole proprietorship, general partnerships, limited partnerships, and corporations. Students will review contract law, articles of incorporations and the filing process, employment law (including FEPA, ADA, FMLA), personnel policies and procedures, the hiring process, job descriptions, disciplinary actions, and business insurance.

**ENTR 2070 Entrepreneurship Financial Topics  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This is a comprehensive course covering financial situations for business. Financial topics will include employee benefits, retirement planning, budgeting, creation of financial statements, and learning how to work with an accounting professional. Other topics will include income tax, sales and use tax, payroll tax, and unemployment tax.

**ENTR 2090 Entrepreneurship Business Plan  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The student will evaluate a business concept and write a sound business plan. Students will assess the strengths and weaknesses of a business concept; collect, analyze and organize market research data into a marketing plan; and

prepare the financial projections for their business concept. Students will be able to identify and evaluate various resources available for funding small businesses.

**FAMILY AND CONSUMER SCIENCES**

**FACS 1040 Introduction to Family and Consumer Sciences**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A study of careers in Family and Consumer Sciences, scope, progress and trends in Family and Consumer Sciences.

**FACS 1050 Expressive Arts  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course focuses on the selection, construction, and use of materials, activities and experiences that encourage the young child's creativity and aesthetic appreciation through the visual arts, music, body movement, and dramatic play. Curriculum is designed for 3-8 year olds.

**FACS 1060 Healthy Lifestyles  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will enable students to apply principles of healthy living including nutrition, exercise, stress reduction, arranging and maintaining a safe environment to their personal and professional life. Special emphasis placed on supporting families as they incorporate goals of healthy living into their daily activities.

**FACS 1070 Observation, Assessment and Guidance  
3 credit hours**

**55 Classroom Hours = 40 Lecture Hours + 15 Lab Hours**

This course is designed to develop an understanding of common behaviors, recognize positive guidance approaches and develop skills in using appropriate methods of guidance when building relationships. The course includes field experience in early childhood and other settings where students will demonstrate the ability to observe, document, and evaluate guidance techniques and overall developmental characteristics that aid in curriculum development.

**FACS 1110 Infant Toddler Development  
3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course focuses on typical / atypical development of children in the prenatal period of development through 36 months. Planning curriculum in the domains of physical growth and motor skills, cognition and language, and social / emotional development are examined.

**FACS 1120 Child Development  
4 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

This course focuses on typical/atypical development of the child ages 3-12 years in the domains of physical growth and motor skills, cognition and language, and social/emotional development. Observation and participation in laboratory experiences for two hours per week is required. Students must be cleared through appropriate background checks and be physically able to participate in experiences with young children.

## COURSE DESCRIPTIONS

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**FACS 1150 Introduction to Early Childhood Education**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An overview of early childhood education, history, trends and the philosophies of various programs, diversity, inclusion, licensing standards, current legislation, professionalism, and advocacy are examined.

**FACS 1200 Consumer Problems**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Study of the economic problems and responsibility of consumers. Guides for developing conscious-wise buying habits for individual or household.

**FACS 1210 Design Essentials**

**3 credit hours**

**60 Classroom Hours = 30 Lecture Hours + 30 Lab Hours**

Development of appreciation of aesthetically pleasing line, space, shape, color, form, and texture; judgment in the use of things pertaining to everyday living. Selecting, evaluating, and arranging many forms of art expression.

**FACS 1221 Infant Toddler Practicum**

**3 credit hours**

**105 Classroom Hours = 15 Lecture Hours + 90 Practicum Hours**

This course is designed to provide an understanding of the developmental stages of children six weeks through 36 months-of-age by participating in hands-on learning experiences in selected child care settings. Students will develop an awareness of appropriate adult/child interaction while developing positive employee skills. Basic skills in planning and implementing a daily routine and curriculum activities for infants and toddlers are also presented. Students are required to complete a minimum of 90 clock hours of practical work experience in addition to attendance and participation at seminar sessions. A passing grade of "C" or better is required for ECED majors. Students must pass appropriate background checks and be physically able to interact with young children. *Prerequisite: Permission of Instructor.*

**FACS 1230 Clothing and Human Behavior**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Analysis of social, cultural, aesthetic and economic influences on clothing and human behavior.

**FACS 1320 Clothing Construction**

**3 credit hours**

**80 Classroom Hours = 16 Lecture Hours + 64 Lab Hours**

A study of the principles of apparel design and evaluation. A problem solving approach to apparel design through basic garment construction, fit and flat pattern techniques.

**FACS 1340 Introduction to Fashion Merchandising**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An overview of fashion innovation concepts, fashion analysis, prediction techniques and job and career opportunities available in the many markets of the fashion merchandising industry.

**FACS 1350 Fashion Show Production I**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Study of fashion show production including promotion, set design, public relations, and management techniques combine with experience in producing an actual show. *Note: This course may not transfer toward degree and/or program requirements at a four-year college. Contact transfer college for information.*

**FACS 1410 Food Preparation**

**3 credit hours**

**75 Classroom Hours = 30 Lecture Hours + 45 Lab Hours**

Fundamental and scientific principles of food preparation with emphasis on composition, quality control, and nutritive contributions. Includes cultural, social, and economic issues related to food selection. Fee \$15.

**FACS 1520 Preschool/School Age Practicum**

**3 credit hours**

**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**

This course is designed to provide an understanding of the developmental stages of children from three to eight years of age by participating in hands-on learning experiences in selected child care settings. Students will develop an awareness of appropriate adult/child interaction while developing positive employee skills. Basic skills in planning and implementing a daily routine and curriculum activities for children from 3-8 years of age are also presented. Students are required to complete a minimum of 90 clock hours of practical work experience. Attendance at discussion sessions is required. Students must also participate in weekly seminar discussions and lectures. A grade of "C" or better is required for all ECED majors. Students must be cleared through appropriate background checks and be physically able to participate in experiences with young children. *Prerequisite: Permission of Instructor.*

**FACS 1600 Human Development**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A developmental life cycle approach to the study of the individual from conception to old age including death. Each stage of life is studied from the perspective of how individual development is fostered within the family system.

**FACS 1620 First Connections**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

First Connections is a web based course designed to make exemplary technology-based training opportunities available to early childhood care and education personnel working with infants and toddlers, including those with special needs, primarily in home-based child care. Course content includes safety, creating healthy learning environments, all aspects of infant and toddler development, behavior guidance and professionalism. *Note: This course may not transfer to a four-year college.*

**FACS 1630 Workshop in Atypical Development**

**1 credit hour**

**24 Classroom Hours = 12 Lecture Hours + 12 Lab Hours**

Students will become aware of atypical development of exceptional individuals and the role of a professional educator in meeting the needs of ALL children within an inclusive

classroom environment. *Prerequisite: Concurrent enrollment in FACS 1600.*

**FACS 1940 Career Exploration I**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Career exploration into various fields of family and consumer sciences. Emphasis is placed on gaining knowledge of management practices; locating the skills, education, and experience necessary for employment; and experiencing a distinct community culture. This course consists of a 3-4 day field trip to metro-rural regions in the Midwest. Students participating must be members of the Nebraska Association of Family and Consumer Sciences. *NOTE: This course may not transfer toward degree and/or program requirements at a four-year institution.*

**FACS 2060 Early Childhood Education Curriculum Planning**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course prepares students to plan a developmentally appropriate curriculum and environments for children ages 3-8 years of age. Topics include writing goals and objectives, lesson plans, daily schedules, working with parents, and inclusionary practices.

**FACS 2120 Textiles**

**3 credit hours**

**64 Classroom Hours = 30 Lecture Hours + 30 Lab Hours**

Investigation of fibers, yarns, fabric construction, and fabric finishes necessary for consumer selection.

**FACS 2300 Visual Merchandising**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Fundamentals of planning promotional activities and store design in the current retail environment. Design principles will be discussed in relationship to in-store and window displaying, signage, and general merchandising within a context of a store image, salesmanship, and promotion.

**FACS 2360 Administration of Early Childhood Programs**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides students with the opportunity to examine and interpret standards pertaining to the establishment and operation of centers for young children. It covers the various types of child care and early education settings, roles and responsibilities of administrator. Issues related to licensing, early learning guidelines, accreditation and ensuring quality are covered in addition to; site selection, policy formation, administrative forms, staffing needs, fiscal management, equipment selection, program evaluation, staff development, parent involvement, and administrative styles and techniques.

**FACS 2400 Family and Consumer Sciences Internship**

**1 credit hour**

**60 Classroom Hours = 60 Internship Hours**

The student enrolled in this course receives work experience in approved training stations, supervised by the college coordinator and the employer. The student is compensated

for his/her services. The occupational areas include fashion merchandising, food services, interior design, and other related FACS occupations. *Prerequisite: Enrollment in a Family and Consumer Sciences program, current enrollment in the Related Studies Seminar, and permission of instructor.*

**FACS 2450 Family and Consumer Sciences Internship**  
**2 credit hours**

**120 Classroom Hours = 120 Internship Hours**

The student enrolled in this course receives work experience in approved training stations, supervised by the college coordinator and the employer. The student is compensated for his/her services. The occupational areas include fashion merchandising, food services, interior design, and other related FACS occupations. *Prerequisite: Enrollment in a Family and Consumer Sciences program, current enrollment in the Related Studies Seminar, and permission of instructor.*

**FACS 2500 Family and Consumer Sciences Internship**  
**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

The student enrolled in this course receives work experience in approved training stations, supervised by the college coordinator and the employer. The student may be compensated for his/her services. The occupational areas include fashion merchandising, food services, interior design, human services and other related FACS occupations. *Prerequisite: Enrollment in a Family and Consumer Sciences program, current enrollment in the Related Studies Seminar, and permission of instructor.*

**FACS 2510 Related Studies Seminar**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Instruction in techniques and training related to students' occupational experiences. *Prerequisite: Enrollment in the Family and Consumer Sciences Internship.*

**FACS 2900 Nanny Training**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Study of resources, agencies, and skills needed for employment as a nanny. *Note: This course may not transfer toward degree and/or program requirements at a four-year college. Contact transfer college for information.*

**FACS 2940 Career Exploration II**  
**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Career exploration into various fields of family and consumer sciences. Emphasis is placed on gaining knowledge of management practices; locating the skills, education and experience necessary for employment; and experiencing a distinct community culture. This course consists of a 3-4 day field trip to metro-rural regions in the Midwest. Students participating must be members of the Nebraska Association of Family and Consumer Sciences. *Note: This course may not transfer toward degree and/or program requirements at a four-year institution.*

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### **FACS 2960 Early Childhood Education Student Teaching**

**4 credit hours**

**150 Classroom Hours = 15 Lecture Hours + 135 Practicum Hours**

This course is designed to give students increasing responsibility for program planning, implementation and evaluation in an early childhood program. In addition to leading activities for children students focus on parent involvement, staff interaction and problem solving. Students will explore three different programs and age groups of children throughout the semester as well as prepare job search materials for their future. In order to take Child Care Student Teaching students must have completed the entire early childhood education core of classes, or have permission of instructor. A grade of "C" or better is required for all ECED majors. Students must be cleared through appropriate background checks and be physically able to participate in experiences with young children. Success completion of this course involves the preparation and presentation of a professional portfolio.

### **FIRE SERVICE TRAINING**

#### **FRST 1110 Introduction to Firemanship**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The course is designed to acquaint the new fire fighter with the fire department and all the basics of firemanship. The student will learn the equipment, skills, and terminology used in every phase of the job as a firefighter. Fee \$5.

#### **FRST 1120 Fire Service Science**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

A course including fundamentals in basic science and chemistry as applied to fire service including flammability ranges of various construction materials and manufactured products. Fee \$5.

#### **FRST 1215 Mechanical System for Building/Blueprint Reading**

**4 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

The firefighter will study the latest developments in building materials and design, as well as those materials and structures presently in use, as to their behavior to abnormal heat and pressure. The student will also express their observation of building structures and fixtures on paper, drawn to scale, using standardized symbols. Fee \$5.

#### **FRST 1220 Fundamentals of Fire Prevention**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

This course deals with fire department organization, inspection, public cooperation, images, recognition of fire hazards, and development and implementation of a systematic and deliberate inspection program, and the survey of local, state, and national codes pertaining to fire prevention and related technology. Fee \$5.

#### **FRST 1310 Fire Protection Hydraulics**

**4 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

Students are instructed in basic hydraulic laws and formulas

applied to fire service. Enables student to apply calculations to water supply problems and relate this information to practical field applications. Fee \$5.

#### **FRST 1320 Essentials of Electricity**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course will enable the firefighter to better understand the requirements of electric power construction. Students will apply their understanding of electricity to determine potential hazards and methods for dealing with such circumstances. Fee \$5.

#### **FRST 1410 Hazardous Materials Awareness/Survival**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

This course covers the properties of flammable, explosive and toxic hazardous materials. Recommended standards for safe processing, storage, handling and labeling of hazardous materials. Dealing with emergencies involving hazardous materials. Fee \$5.

#### **FRST 1420 Fire Protection Systems**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

This is a study of fire extinguishing systems used in industrial and home settings. The student will learn about the proper system needed to provide maximum protection based on the occupancy involved. Fee \$5.

#### **FRST 1510 Fire Fighter I**

**4 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

This course contains the information and skills needed to perform basic fire fighting functions on the fire ground. Upon completion, students are eligible to take the Nebraska State Fire Fighter I Certification Test. Fee \$5.

#### **FRST 1520 Fire Fighting Tactics**

**2 credit hours**

**32 Classroom Hours = 32 Lecture Hours**

This course instructs the student on the strategy and tactics of controlling structural fires and wildland or cropland fires. It is comprised of the decision-making process in determining the strategy that dictates tactics. Fee \$5.

#### **FRST 1610 Fire Investigation**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

An introduction to arson and incendiary fires, legal aspects of arson and methods of setting incendiary fires. Also included is an analysis of the causes of fire, techniques for recognizing and preserving evidence, and means for interviewing and detaining witnesses. Procedures utilized in handling juveniles, court procedures and the giving of court testimony are also covered. Fee \$5.

#### **FRST 1620 Fire Science Computers**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course provides an introduction to the Windows and the CAD fire Zone operating environment. This course is designed to meet the needs of fire personnel. The students will learn tools that allow the user to be acquainted in the

operations of Windows and to easily create accurate professional looking pre-fire diagrams perfectly to scale.

**FRST 1630 Firefighter Physical Fitness and Conditioning**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours and 16 Lab Hours**

This course will provide information and techniques for developing and maintaining a physical fitness program to enhance the firefighter's ability to provide firefighting related functions including: methods of exercise related to building strength and conditioning, aerobic conditioning, and proper nutrition.

**FRENCH**

**FREN 1010 French I**

**5 credit hours**

**80 Classroom Hours = 80 Lecture Hours**

An introduction to the grammatical and conversational study of French.

**FREN 1020 French II**

**5 credit hours**

**80 Classroom Hours = 80 Lecture Hours**

Continuation of FREN 1010. More intense concentration on verbs and conversation. Prerequisite: FREN 1010 or one year of high school French.

**FREN 2010 French III**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Review of grammar, conversation and reading of French literature. Emphasis is given to the practical use of spoken and heard language. Prerequisite: FREN 1020 or two years of high school French.

**FREN 2020 French IV**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A continuation of FREN 2010. Emphasis is given to composition, reading, and conversation. Prerequisite: FREN 2010.

**GEOGRAPHY**

**GEOG 1010 Physical Geology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Students will learn the fundamental processes that shape the earth. Topic areas include minerals, rocks, and ores; the surface features and internal character of the earth; and the forces that are constantly changing it. This is a non-lab course.

**GEOG 1040 World Regional Geography**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A global summary of geographic processes at the regional level. The physical, economic, political and cultural variations underlying patterns of human settlement are emphasized.

**GEOG 1050 Physical Geography**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to the forces, events, materials, and organisms that contribute to our physical environment. Includes topics dealing with weather, earth materials, climate, weathering, landforms, ecosystems and environmental regions. Note: Applicable to the physical sciences requirements at most institutions. Laboratory required. Fee \$15.

**GEOG 1051 Physical Geography Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Physical Geography.

**GEOG 1400 Cultural Geography**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of the role of place in human settlement and other patterns of social activity. Considers variations in human life around the world.

**GEOG 2050 Environmental Conservation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An examination of basic environmental problems and some possible solutions through good conservation practices. Topics (including soils, energy, population, water, forests, range lands, and wildlife) will be prefaced by a thorough study of ecological principles. Outside readings and brief written assignments are required.

**HEALTH**

**HLTH 1010 Medical Terminology**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

An independent programmed study of the basic Greek and Latin roots of medical and scientific terms. Combines word formations through root, prefix, and suffix with identification of terms related to medicine or allied health areas.

**HLTH 1050 CPR Instructor**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This class is the Certification class for the American Heart BLS CPR instructor. This course is designed to instruct on the methods used to teach AHA CPR and First Aid.

**HLTH 1110 CPR Rescuer**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

This course is intended to provide the student with training in Adult, Infant, and Child CPR as an individual and a two person team. Included is the AED, pocket mask and the bag valve mask. This class fulfills the CPR requirement for other health related trainings. Fee \$15 (book and certification card).

**HLTH 1130 Standard First Aid/Adult CPR**

**0.50 credit hour**

**7.5 Classroom Hours = 7.5 Lecture Hours**

A study and application of the principles and techniques in the administration of First Aid and Basic Life Support. The

## COURSE DESCRIPTIONS

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class utilizes lecture and discussion format, including demonstration and practical sessions. CPR certification and an award from Mid-Plains Community College Area for eight hours of First Aid and CPR training.

### **HLTH 1310 American Heart First Aid Plus**

**0.50 credit hour**

**8 Classroom Hours = 8 Lecture Hours**

This course is intended to provide the student with the general principles of first aid, medical emergencies, and injury emergencies along with Heartsaver CPR, AED, and Environmental emergencies (Plus). Topics are limited to the emergencies a first aid rescuer is most likely to encounter at the worksite. Fee \$15.

### **HLTH 1410 First Responder**

**2 credit hours**

**40 Classroom Hours = 25 Lecture Hours + 15 Lab Hours**

Instruction in the emergency care of a patient until the ambulance arrives. Developed by the Department of Transportation. Primarily designed for law enforcement officers and others who may be the first at the scene of an accident. Fee \$5.

### **HLTH 1450 First Responder Refresher**

**1 credit hour**

**20 Classroom Hours = 20 Lecture Hours**

A Department of Transportation 20-clock-hour classroom review of first responder emergency medical care procedures and skills. Prerequisites: HLTH 1410 and a current AHA BLS Provider card or its equivalent.

### **HLTH 1500 Community First Aid and Safety**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

American Red Cross Community First Aid and Safety. American Red Cross certificate may be earned.

### **HLTH 1510 EMT — Basic**

**8 credit hours**

**150 Classroom Hours = 90 Lecture Hours + 60 Lab Hours**

Instruction in the management and transportation of emergency medical and trauma patients. The class includes lectures, practical skills and possible in-hospital training. Upon successful completion the student will receive a MPCC grade. To receive State of Nebraska certification, the student will have to successfully pass the National Registry test and apply to the State of Nebraska. *Prerequisite: American Heart Association Basic Life Support or its equivalent.* Fee \$10.

### **HLTH 1550 EMT — Refresher**

**2 credit hours**

**35 Classroom Hours = 25 Lecture Hours + 10 Lab Hours**

A Department of Transportation 35-clock-hour classroom review of emergency medical care procedures. Fee \$10.

### **HLTH 1560 EMT - Automatic Defibrillator**

**0.50 credit hour**

**10 Classroom Hours = 7 Lecture Hours + 3 Lab Hours**

Instruction on automatic or semiautomatic defibrillators is designed to provide EMTs with background knowledge necessary to identify the indications for and significance of rapid defibrillation. The course makes it possible for EMTs to add defibrillation to their scope of skills with a minimal amount of additional training. Fee \$10.

### **HLTH 1580 EMT — AM (Adv Airway Management)**

**0.50 credit hour**

**12 Classroom Hours = 12 Lecture Hours**

This course provides instruction on basic airway anatomy and physiology as well as instruction on specific airway adjuncts. This eight hour EMT-AM course is designed to teach non-visualized intubation.

### **HLTH 1610 Pre-hospital Emergency Care for Nurses**

**2 credit hours**

**40 Classroom Hours = 30 Lecture Hours + 10 Lab Hours**

The goal of the training is to ensure individual competency in each student by the successful completion of each objective.

### **HLTH 1640 Intravenous Therapy**

**2 credit hours**

**48 Classroom Hours = 36 Lecture Hours + 12 Clinical Hours**

This course provides instruction in Preparatory, Respiratory System, Circulatory System, Pharmacology, and correct techniques of peripheral venipuncture for IV therapy.

### **HLTH 2170 A.C.L.S.**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A 16-clock-hour course for American Heart Association Certification in Advanced Cardiac Life Support. This course is designed for medical, nursing, paramedic, or allied health personnel whose daily occupation demands proficiency in the knowledge and skills of A.C.L.S. and who are authorized by state law to perform some or all of these functions. Other individuals may audit the class at the discretion of the course director. *Prerequisite: Current certification in CPR.*

### **HLTH 2300 Health Education**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A look at new concepts and trends as related to personal and community health. Topics to be covered include such things as fitness and nutrition, weight control, disease, human sexuality, aging, death, mental health and the role of drugs in our society.

### **HLTH 2550 EMT – Paramedic Refresher**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

A Department of transportation 48 clock-hour classroom review for recertification of the EMT-Paramedic. *Prerequisite: HLTH 2710.*

### **HLTH 2610 EMT - Intermediate**

**15 credit hours**

**260 Classroom Hours = 200 Lecture Hours + 60 Lab Hours**

This is a course designed for ambulance personnel who have completed the basic EMT-B course. Students will be trained in the advanced skills of assessment and treatment based upon current U.S. Department of Transportation curriculum and scope of practice for an Advanced EMT-Intermediate. *Prerequisite: HLTH 1510.* Fee \$10.

**HLTH 2620 EMT - Intermediate – Clinical and Field  
5 credit hours**

**215 Classroom Hours = 215 Clinical Hours**

This course is designed to fulfill the clinical and field hours required by the Department of Transportation for completion of HLTH 2610.

**HLTH 2710 EMT - Paramedic**

**15 credit hours**

**260 = Classroom Hours = 200 Lecture Hours + 60 Lab Hours**

This course is designed to fulfill the clinical and field hours required by the DOT for completion of the DOT EMT - Paramedic. *Prerequisite: HLTH 2610.*

**HLTH 2720 EMT Paramedic Clinical and Field**

**5 credit hours**

**215 Classroom Hours = 215 Clinical Hours**

This a course designed for ambulance personnel who have completed the DOT I-99 EMT-Intermediate course. Students will be trained in the advanced skills of assessment and treatment based upon current U.S. Department of Transportation curriculum and scope of practice for an Advanced EMT-Paramedics. *Prerequisites: HLTH2610 and HLTH 2710.*

**HLTH 2740 EMS Instructor Trainer**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to teach the methods needed to effectively instruct others in emergency medical services courses. *Prerequisite: State of Nebraska EMS Provider License.*

**HLTH 2950 Medication Techniques**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A study of medication administration, drug actions and interactions, side effects and adverse reactions with the emphasis on psychotropic drugs as required for all persons handling medication in custodial foster homes, boarding homes for the aged, mental health centers, and centers for the developmentally handicapped. *Prerequisite: Current employment in a human services organization.*

**HEATING, VENTILATION, and AIR CONDITIONING  
TECHNOLOGY**

**HVAC 1005 Safety**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Specific safety practices that apply to the HVAC shop.

**HVAC 1310 Electrical Theory**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will cover Atomic theory, Ohm's Law, Watt's Law, wiring diagrams and symbols, use of electric meters, types of electric motors, controls, and troubleshooting.

**HVAC 1320 Electrical Applications Lab**

**1 credit hour**

**45 Classroom Hours = 45 Lab Hours**

This course will cover Atomic theory, Ohm's Law, Watt's Law, wiring diagrams and symbols, use of electric meters, types

of electric motors, controls, and troubleshooting in a lab application. *Prerequisite: HVAC 1310.*

**HVAC 1330 Sheetmetal Installation**

**3 credit hours**

**75 Classroom Hours = 30 Lecture Hours + 45 Lab Hours**

The student will be introduced to tools and materials used in sheetmetal work, as well as the procedures used in making heating and cooling ducts and the installation of actual projects.

**HVAC 1340 Furnace Fundamentals**

**4 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

A study of gas and electric furnaces. Students will study and understand applications of installations and repair. *Prerequisites: HVAC 1310 and 1320.*

**HVAC 1350 Furnace Fundamentals Lab**

**3 credit hours**

**135 Classroom Hours = 135 Lab Hours**

A study of gas and electric furnaces. Students will study and understand applications of installations and repair in a lab application. *Prerequisites: HVAC 1320 and 1340.*

**HVAC 1410 A/C Cycle Theory**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will cover basic A/C principles, refrigerants, and the refrigeration cycle. *Prerequisite: HVAC 1320.*

**HVAC 1425 A/C Cycle Lab**

**2 credit hour**

**90 Classroom Hours = 90 Lab Hours**

This course includes working with actual models of window air conditioners and mock-up trainers while applying shop tools and techniques.

**HVAC 1435 A/C Controls Theory**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will cover residential and commercial A/C wiring diagrams, schematics and electrical control devices including troubleshooting and repair. *Prerequisite: HVAC 1310.*

**HVAC 1440 A/C Controls Lab**

**1 credit hour**

**45 Classroom Hours = 45 Lab Hours**

This course will cover residential and commercial A/C wiring diagrams, schematics and electrical control devices including troubleshooting and repair. *Prerequisite: HVAC 1310.*

**HVAC 1445 A/C Applications Refrigerant/Reclaim**

**4 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

The student will study design and do maintenance, troubleshooting, repair, and fine tuning of residential and commercial air conditioning. *Prerequisite: HVAC 1310 and 1435.*

## COURSE DESCRIPTIONS

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### **HVAC 1460 A/C Applications Lab**

**1 credit hour**

**45 Classroom Hours = 45 Lab Hours**

The student will study design and do maintenance, troubleshooting, repair, and fine tuning of residential and commercial air conditioning. *Prerequisite: HVAC 1435.*

### **HVAC 1475 Heat Pumps Theory**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of heat pumps and electrical sequence of heat pumps. *Prerequisites: HVAC 1310 and 1410.*

### **HVAC 1480 Heat Pumps Lab**

**1 credit hour**

**45 Classroom Hours = 45 Lab Hours**

A study of heat pumps. Students will have applications of tracing, troubleshooting, and repair. *Prerequisites: HVAC 1310 and 1410.*

### **HVAC 1483 HVAC Internship**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

On-the-job training through a cooperative arrangement with HVAC businesses. Students work a minimum of 180 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. *Prerequisite: The student must have completed both fall and spring semesters in the HVAC program.*

### **HVAC 1484 HVAC Basic Internship**

**4 credit hours**

**240 Classroom Hours = 240 Internship Hours**

On-the-job training through a cooperative arrangement with HVAC businesses. Students work a minimum of 240 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. *Prerequisite: The student must have completed both fall and spring semesters in the HVAC program.*

### **HVAC 1485 HVAC Basic Internship**

**5 credit hour**

**300 Classroom Hours = 300 Internship Hours**

On-the-job training through a cooperative arrangement with HVAC businesses. Students work a minimum of 300 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. *Prerequisite: The student must have completed both fall and spring semesters in the HVAC program.*

### **HVAC 1490 HVAC Internship**

**8 credit hours**

**480 Classroom Hours = 480 Internship Hours**

On-the-job training through a cooperative arrangement with HVAC businesses. Students work a minimum of 480 hours under the direction of a sponsoring manager or supervisor to apply classroom knowledge and training. *Prerequisite: The student must have completed both fall and spring semesters in the HVAC program.*

### **HVAC 1500 Commercial Refrigeration Electrical Mechanical**

**6 credit hours**

**90 Classroom Hours = 90 Lecture Hours**

This course helps to prepare the student to install, service

and repair some light commercial refrigeration systems as ice machines, reach-in coolers and freezers, walk-in coolers and freezers. This course helps to prepare the student to install, service and repair some light commercial refrigeration systems as ice machines, reach-in coolers and freezers, walk-in coolers and freezers. *Prerequisites: HVAC 1410, HVAC 1425, HVAC 1435, and HVAC 1440.*

### **HVAC 1510 Commercial Refrigeration Electrical Mechanical Lab**

**2 credit hours**

**90 Classroom Hours = 90 Lab Hours**

Students will advance through several practical lab competencies designed to develop hands-on skills needed when working on light commercial refrigeration equipment. *Prerequisites: HVAC 1410 and HVAC 1435.*

### **HVAC 1710 Refrigeration and Air Conditioning**

**2 credit hours**

**45 Classroom Hours = 22 Lecture Hours + 23 Lab Hours**

Refrigeration cycle, component principles, repair applications and shop projects. Heating and cooling unit installation and service. Fee \$10.

## HISTORY

### **HIST 1000 Western Civilization I to 1715**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will explore the essential ideas, themes, and issues that have shaped the development of Western civilization from prehistoric times to the advent of modern European notions of absolutism and constitutionalism. The course will include ancient civilization, the emergence of European Christendom, feudalism, manorialism, urbanization, medieval kingdoms, Renaissance and Reformation thought, religious conflict, the scientific revolution, and expansion beyond Europe.

### **HIST 1010 Western Civilization II Since 1715**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will analyze the impact of social, economic, political, cultural, and intellectual changes upon Europe from the close of Louis XIV's reign until the contemporary period. The course will include the Enlightenment, capitalism, industrialization, the French Revolution, liberalism, democracy, nationalism, imperialism, socialism, the Russian Revolution, fascism, World War I, the Great Depression, World War II, the Cold War era, and the Revolutions of 1989.

### **HIST 1050 World History I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will explore the essential ideas, themes, and issues that have shaped the development of world civilizations from prehistoric times to the advent of European expansion during the beginning of the 16th century. The course will include a review of civilizations in the Middle East, Asia, Africa, the Americas, and Europe.

**HIST 1060 World History II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will analyze the impact of social, economic, political, cultural, and intellectual changes in the context of world civilizations from the beginning of the 16<sup>th</sup> century until the contemporary period. Specific historical trends within the Middle Eastern, Asian, African, European, and Western Hemispheric context from the 16<sup>th</sup> century until the present will be studied.

**HIST 2010 American History I to 1877**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey of American history from the pre-colonial era through the period of the Reconstruction. Emphasis will be placed upon the political, economic, cultural, social, religious, and institutional development of the nation. The course will include colonial development, the American Revolution, constitutional evolution and the establishment of a new republic, Jacksonian democracy, the market revolution and reform movements, slavery, westward expansion, the War with Mexico, sectionalism, the Civil War, and social problems in the growth of the American nation.

**HIST 2020 American History II Since 1877**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey of American history since the Reconstruction that includes a social, cultural, political, intellectual, and economic analysis of the following major issues: industrialized corporate capitalism and its struggle with labor, Gilded Age politics, Populism, the continued settlement of the frontier West and its resistance, immigration, imperialism and the Spanish-American War, Progressivism, World War I and the paradoxes of the interwar period, the Great Depression, the New Deal, World War II, post-war prosperity, cultural disillusionment and the civil rights movement, the conflicts in Korea and Vietnam, the Reagan Revolution, and America as the dominant contemporary world power.

**HIST 2130 Nebraska and the West**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey of Nebraska history as it relates to the development of the Great Plains and the American West that includes social, cultural, political, intellectual, economic, and geographical themes.

**INFORMATION TECHNOLOGY**

**INFO 1000 Introduction to Information Technology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides an overview of information technology. Concepts to be covered include: history of data processing, computer hardware, computer software, problem-solving techniques, business use of computers, social aspects, and careers. Fee \$10.

**INFO 1010 Microcomputer Applications**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides an interactive study of microcomputer-based productivity tools. Concepts and fundamental skills

in the applications of word processing, spreadsheet, database, and Internet search tools will be covered. NOTE: Keyboarding skills or permission of instructor. Fee \$10.

**INFO 1020 Operating Systems I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is an introduction to basic administration tasks using command line for Windows operating systems. Students will work with each of these operating systems in both a standalone and a networking environment. Fee \$10.

**INFO 1030 Database Concepts and Design**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is an introduction to database development and design. In this course, the basics of database design and manipulation will be covered. Topics include relationships, database normalization, integrity constraints, DBMS software and functions, and database administrative functions. *Prerequisites: INFO 1010 or permission of instructor.* Fee \$10.

**INFO 1050 Networking Essentials**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed for individuals and information systems professionals interested in learning about networking technologies. Topics include terminology, network design, networking media, network interface cards, networking models, communications and protocols, network architectures, operating systems, networking environments, administration and support, and enterprise and distributed networks. Fee \$10.

**INFO 1060 LINUX I**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

This course will provide an introduction to LINUX including history, functions and commands. The course will also include installation and configuration, file systems, shell scripting, editors, utilities, and applications.

**INFO 1070 Introduction to Computer Science**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is intended for the serious computer science or computer systems student. An introduction to various aspects of the body of knowledge known as computer science. Topics include concepts of computer hardware and software, CPU concepts, program development and applications, ethics and career opportunities in computer science and computer information systems including an introduction to structured programming using an appropriate state-of-the-art structured language. (Replaces CSCE 1791 Introduction to Computer Science.) *Prerequisites: CSCE 1543 or 1544, MATH 1150 or permission of instructor.* Fee \$5.

**INFO 1100 Computer Game Design and Programming**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Alice is a modern programming environment designed to be a student's first exposure to programming. Alice is an

## COURSE DESCRIPTIONS

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engaging and fun way to teach fundamental programming concepts. Alice's extensive gallery of 3D objects provides inspiration for students to learn programming through storytelling and video game creation. Fee \$10.

### **INFO 1110 FORTRAN Programming**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introductions to computers, algorithms and programming; basic programming and program structure; representation of data, elements of the FORTRAN language; and computer solutions of several numerical and nonnumerical problems using FORTRAN. (Replaces CSCE 1804 FORTRAN Programming.) *Prerequisite: MATH 1150 or its equivalent or permission of instructor.*

### **INFO 1120 Database Programming**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will allow students to develop the skills needed to write application programs using a database language. The course covers linear programming, interactive programming, screen display programming, and SQL programming. Emphasis is placed on developing all files from the dot prompt (rather than Assist mode) that are required to implement and execute any of the aforementioned program types. Database programming requires an understanding of concepts that cannot be gathered by selecting options from a menu. It requires the creation of logic structures and the use of variables, loops, and conditionals. This course will emphasize how programs can utilize the basic building blocks provided by a database language to build specific application programs. (Replaces CSCE 2320 Data Programming.) *Prerequisites: INFO 1160 or INFO 1170 or INFO 1410 or INFO 1450 or INFO 1070.*

### **INFO 1140 Structured Query Language**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course offers an introduction to structured query language. This course is designed to give the student the skills needed to access and manipulate data in a relational database management system. Basic through advanced level SQL commands will be covered. The student explores various DBMS SQL environments. (Replaces INFO 1130.) Fee \$5.

### **INFO 1150 COBOL Programming**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Structured programming and data processing in a commercial environment. Introduction to the study of the COBOL programming language with business applications. (Replaces CSCE 1801 Structured COBOL Programming.) *Prerequisite: MATH 1150 or permission of instructor.*

### **INFO 1160 C++ Programming**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is intended for the serious computer science or computer information systems student. The student will be introduced to fundamentals of the C++ language, simple C++ data structures, algorithmic analysis, and C++ functions. (Replaces CSCE 1803 C++ Programming.) *Prerequisites: MATH 1150 or its equivalent or permission of instructor.*

### **INFO 1170 Visual Basic Programming**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduction to the standards and conventions of programming the graphical user interface (GUI). Emphasis on proper design, placement and coding of the graphical features of the interface. Similarities to and differences from traditional programming languages will be explored. Visual Basic utilized to develop programs that demonstrate GUI design, the use of simple and array variables, database access, animation, sequential and random file access. (Replaces CSCE 1805 Programming in Visual Basic.) *Prerequisite: MATH 1150 or permission of instructor.* Fee \$10.

### **INFO 1200 Fundamentals of Computer Hardware**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Students will be introduced to the physical components of microcomputers, including system components, bus architectures, ports, connectors, and cables. They will examine some of the safety issues and procedures pertinent to working with computers. Physical components, including expansion boards, storage systems, and peripheral devices, which can be used with PCs, will be examined. Portable computing and networking will be explored. Fee \$10.

### **INFO 1220 PC Troubleshooting/Repair**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to provide the participants with a solid foundation and practice in maintaining, troubleshooting and upgrading computer systems. Topics to be covered include: procedures and techniques for disassembling and inspecting systems; basics of circuitry networking and connectivity, common error messages and what they mean; installing, troubleshooting and servicing major system components from hard drives to CPUs; maximizing system performance – RAM to registry tweaking; hands-on workshop in “tearing down” and rebuilding systems. *Prerequisite: INFO 1200.* Fee \$10.

### **INFO 1260 Customer Support/Help Desk**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course includes valuable information and everyday solutions for addressing the attitudes, behaviors, and relationships between customers and the support team. Fee \$10.

### **INFO 1310 Introduction to Multimedia**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is an introduction to the major facets of multimedia design, development, and implementation. Topics include capture, manipulation, and use of various media types.

### **INFO 1400 Systems Analysis and Design I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides an in-depth study of the systems development life cycle, including system concepts and terms; need identification, feasibility determination and requirements assessment; goals, tools, and strategies for system and information analysis; interviewing techniques,

and specific requirements for a computer system.  
*Prerequisite: INFO 1030. Fee \$10.*

**INFO 1410      JAVA Programming**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course assumes no prior programming experience from the student. This course teaches object-oriented programming and students will learn how to develop true object-oriented programs. *Prerequisite: MATH 1150 or permission of instructor. Fee \$10.*

**INFO 1450      JavaScript**  
**3 credit hours**

**45 Classroom Hours – 45 Lecture Hours**

JavaScript is an easy-to-use programming language that can be embedded in the header of web pages. It can enhance the dynamics and interactive features of a page by allowing users to perform calculations, check forms, write interactive games, and special effects, customize graphics selections, create security passwords and more. This course will present the fundamentals of JavaScript. Students will learn how to write functions, use data from text boxes, create IF-THEN conditionals, program loops, and generally make their web page “smarter.”

**INFO 1500      Web Development Tools I**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to give students the necessary skills to design, create and enhance a Web site using current Web development tools. Through the use of realistic scenarios, students acquire the ability to develop, plan, and implement a Web site. INFO 1696 is recommended but not required as a prerequisite to the course. (Software use: Flash).

**INFO 1520      Web Development Tools II**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to help students learn to enhance a Web site using a variety of authoring tools, scripts and commands. Topics include creating Web pages using advanced tools and techniques such as advanced tables and CSS, modifying client- and server-side scripts, using forms to collect information, accessing a database, understanding Active Server Pages, and publishing a Web site. *Prerequisite: INFO 1500.*

**INFO 1540      Internet Business Strategies**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to provide students with the knowledge and skills necessary to manage and promote the development of a business Web site from inception to evaluation. By implementing realistic business scenarios, students have the opportunity to create a business plan, develop a marketing strategy and implement a promotional campaign. *Prerequisite: INFO 1500.*

**INFO 1620      Network Administration I**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides support professionals with desktop operating system skills necessary to use the desktop interface and tools necessary for implementing and administrating an industrial strength workstation in a small or large network. Partial preparation for Microsoft certification exam 70-210. *Prerequisite: INFO 1050. Fee \$10.*

**INFO 1695      Web Page Design I**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is for the beginning web page designer. Students will learn to use hypertext markup language (HTML) to design web pages. Topics include text formatting, linking, lists, images, tables, frames, styles, cascading style sheets, forms and frames. Web site/page design elements and Web publishing/maintenance principles will be presented. Fee \$5.

**INFO 1696      Web Design II**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Current state of the art software will be used to explore the dynamics of web page design. Topics including dynamic HTML, rich media such as Flash elements, animation, digital movies, sound, templates, and an introduction to database functionality will be explored. Web site/page design elements and Web publishing/maintenance principles will be reinforced. INFO 1695 is recommended but not required as a prerequisite to this course. (Software used: Dreamweaver). Fee \$5.

**INFO 2020      Operating Systems II**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides the student with a survey and comparison of all major operating systems. Students will install and learn to use current Windows operating systems. Students will learn about the special concerns of Windows on a network, on the Internet, and on notebook computers. They will be introduced to Linux and the Mac OS. This course provides preparation for CompTIA's A+ Operating System exam 220-302. *Prerequisite: INFO 1020 or permission of instructor. Fee \$10.*

**INFO 2060      LINUX II**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A review of the LINUX system including basic commands, file name substitution, I/O redirection, and pipes. The course also includes an in-depth scripting of the shell and program commands and functions. *Prerequisite: INFO 1060.*

**INFO 2120      Software Analysis**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Overview of techniques for evaluating and selecting microcomputer software. Techniques for comparison and evaluation of commercial applications packages. *Prerequisite: INFO 1010. Fee \$10.*

## COURSE DESCRIPTIONS

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**INFO 2150      Advanced COBOL Programming**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
Study of advanced structured COBOL programming techniques and applications with respect to table handling, sub-programs, sequential files, direct files, and indirect sequential files. (Replaces CSCE 2801 Advanced COBOL Programming.) *Prerequisite: INFO 1150 or permission of instructor.*

**INFO 2160      Advanced C++ Programming**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course is intended for the serious computer science or computer information systems student. It is a continuation of the INFO 1160. The fundamental concepts of C++ Object Oriented Programming (OOP) will be the primary focus of the course. (Replaces CSCE 2803 Advanced C++ Programming.) *Prerequisite: INFO 1160 or permission of instructor.*

**INFO 2170      Advanced Visual Basic Programming**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
After a brief review of language constructs and intrinsic controls, the course addresses four functional areas: an analysis of ActiveX Data Objects (ADO) and ADO controls; Visual Basic add-in controls including the Windows Common Controls; MDI programming; and accessing the windows API, developing HTML help systems, and program deployment. A large portion of the course is devoted to object-oriented programming in the context of Visual Basic. (Replaces CSCE 2805 Advanced Visual Basic Programming.) *Prerequisite: INFO 1170.* Fee \$10.

**INFO 2200      Basic Electronics for PC Maintenance**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course presents the basic principles of DC and AC electronics and an introduction to solid state electronics for microcomputer technology students. Electronic test equipment will be demonstrated and students will practice troubleshooting simple circuits. *Prerequisite: INFO 1200.* Fee \$10.

**INFO 2300      Advanced Word Processing/Word**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course provides the basic word processing user with more advanced techniques. Advanced formatting, mail merge, long and multiple documents, graphics, on-screen forms, macros, templates, and styles are among topics covered. Integration of word processing, spreadsheets, and database will be covered. Critical thinking and decision making skills will be emphasized. NOTE: Introductory word processing skills are required. *Prerequisite: Permission of Instructor.* Fee \$10.

**INFO 2320      Advanced Spreadsheets**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course focuses on advanced commands, including using functions and creating macros. The student will learn to integrate spreadsheets with other Windows programs and the World Wide Web. NOTE: Introductory spreadsheet skills are required. *Prerequisite: Permission of Instructor.* Fee \$10.

**INFO 2340      Advanced Database**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
Students will create an advanced database application utilizing real world business problems. The student will gain an in-depth understanding of the underlying data structure, as well as creating multiple tables. NOTE: Introductory database skills are required. *Prerequisite: Permission of Instructor.* Fee \$10.

**INFO 2390      Business Simulations**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
An advanced course requiring the student to combine their knowledge and technical skills in a specialty area using word processing, spreadsheets, database and/or other appropriate computer software and hardware. The student is presented with the various facts and data necessary to perform the tasks.

**INFO 2400      Systems Analysis and Design II**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
Projects to apply programming languages and systems study in the creation of a total application. Includes logical and physical design, quality assurance, and system construction and testing. *Prerequisite: INFO 1400.*

**INFO 2410      Advanced JAVA Programming**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course focuses on advanced commands, including reusable classes and packages, GUI objects and event-driven programming. *Prerequisite: INFO 1410.*

**INFO 2500      CapStone Project**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
Students consolidate knowledge and skills gained in coursework in the capstone experience. Course is designed to further strengthen the knowledge and skills gained in coursework in his/her specific Information Technology emphasis area. Students demonstrate a capability for independent work and experience communicating such work to others, both at a professional and layman's level via a project based experience. *Prerequisite: permission of instructor.*

**INFO 2600      Network Administration II**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course provides the core foundation for supporting a server operating system. It provides support professionals with server administration skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot the current Windows server operating system. It provides students with the knowledge and skills necessary to perform post-installation and day-to-day administration tasks in a network. Partial preparation for Microsoft's current server certification exam. *Prerequisite: INFO 1620.* Fee \$10.

**INFO 2630      Security +**  
**3 credit hours**  
**48 Classroom Hours = 48 Lecture Hours**  
This course provides an in-depth coverage of all the current risks and threats to an organization's data along with a

structured way of addressing the safeguarding of critical electronic assets. The theoretical and historical background necessary to understand various types of risks as well as hands on, practical techniques for working in the security field will be provided. Partial preparation for Comp TIA's Security + exam.

**INFO 2650 Supporting Network Users**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides support professionals with the knowledge and skills necessary to troubleshoot basic problems end users will face while running a desktop operating system in an Active Directory network environment. This course also addresses troubleshooting basic problems related to configuring and maintaining applications that run on a desktop operating systems such as Microsoft Office, Outlook Express, Internet Explorer and other applications.

**INFO 2700 Administering Directory Services**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course prepares students to have the ability to install, configure, and troubleshoot Windows Active Directory™ components, DNS for Active Directory and Active Directory security solutions. In addition, students will gain the skills required to manage, monitor, and optimize the desktop environment by using Group Policy. Partial preparation for Microsoft certification exam 70-217. *Prerequisites: INFO 1620 and INFO 2600.*

**INFO 2900 Internship**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

The internship program provides students with the opportunity to apply their knowledge, learn new techniques, and get on-the-job training at an approved work site. *Prerequisite: Permission of instructor.* Fee \$10.

**INSTITUTIONAL FOODSERVICE**

**INFS 1810 Nutritional Therapy**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

In this unit students will cover normal nutrition, nutrients, digestion and absorption, nutritional needs across the life cycle, food customs, dietary guidelines and nutrition deficiency and excess. Therapeutic nutrition addresses diseases and dietary modifications. Long term care, Minimum Data Sets, and the care planning process are covered.

**INFS 1820 Managed Food Services**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This unit addresses food and equipment, purchasing, food production, and the operation of a food service department.

**INFS 1830 Sanitation and Safety**

**1 credit hour**

**16 Classroom Hours = 14 Lecture Hours + 2 Lab Hours**

Sanitation in the food industry. Microbiology, sanitary food handling and storage, personal health and hygiene, housekeeping, pest control, HACCP food safety program and safety procedures.

**INFS 1840 Human Resources Management**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This unit covers aspects of human relations, interdepartmental relations with food service, state and federal regulations, and develops skills needed to operate a food service department.

**JOURNALISM**

**JOUR 1000 Mass Media in America**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A general survey of the mass media. The nature, processes, effects, personnel and structure of mass entertainment and information media.

**JOUR 1080 Newswriting I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to newswriting with emphasis on adhering to newspaper style and writing for publication. Through written work, students will learn the fundamentals of producing copy on meetings, speeches, interviews, spot news, and feature material.

**JOUR 1090 Newswriting II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Continuation of JOUR 1080 with emphasis on covering beat areas such as police and courts, sports, education, and local government. *Prerequisite: JOUR 1080 or permission of instructor.*

**JOUR 1100 Internship in Mass Media I**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

Supervised field experience with newspaper, TV or radio station, or other cooperative agency in a media-related field. Evaluation and review required with the sponsoring faculty member. *Prerequisites: JOUR 1000 and JOUR 1080 or permission of instructor.*

**JOUR 1110 Internship in Mass Media II**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

Continuation of JOUR 1100. Supervised field experience with newspaper, TV or radio station, or other cooperative agency in a media-related field. Evaluation and review required with the sponsoring faculty member. *Prerequisite: JOUR 1100 or permission of instructor.*

**JOUR 1200 Applied Journalism I**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Students may receive one credit hour per semester as a member of a newspaper, television staff, or other media-related organization. *Prerequisite: JOUR 1080 or JOUR 1090 or permission of instructor.*

**JOUR 1210 Applied Journalism II**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

A continuation of JOUR 1200.

## COURSE DESCRIPTIONS

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**JOUR 2200 Applied Journalism III**  
**1 credit hour**  
**30 Classroom Hours = 30 Lab Hours**  
A continuation of JOUR 1210.

**JOUR 2210 Applied Journalism IV**  
**1 credit hour**  
**30 Classroom Hours = 30 Lab Hours**  
A continuation of JOUR 2200.

### LIBRARY TECHNICAL ASSISTANT

**LIBR 2200 Introduction to Library Collection Management**

**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course will provide students with an understanding of principles and best practices in collection management, including gathering and analyzing data relevant to the community served, creating and evaluating collection management policies, collection assessment, material acquisition, and materials preservation. *Prerequisite: LIBR 1010 Introduction to Library and Information Services offered at Metro Community College.*

### LICENSED PRACTICAL NURSING

**LPNR 0990 Pharmacology Review**  
**1 credit hour**  
**16 Classroom Hours = 16 Lecture Hours**  
Basic information in the major areas of pharmacology including general principles, pharmacokinetics and drug interactions. Categories of drugs and their usage, actions and side effects in relation to nursing implications.

**LPNR 1151 Clinical Practice I**  
**4 credit hours**  
**192 Classroom Hours = 192 Clinical Hours**  
Guided learning activities in a clinical facility in planning care and implementing nursing interventions for patients with commonly occurring health problems which have predictable outcomes.

**LPNR 1220 Nursing II**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
Common disease conditions and nursing interventions based on the nursing process. Fee \$15.

**LPNR 1251 Clinical Practice II**  
**4 credit hours**  
**192 Classroom = 192 Clinical/Lab Hours**  
Clinical experience covers nursing care in acute and long-term care facilities and the community.

**LPNR 1271 Family Health Nursing**  
**3 credit hours**  
**45 Classroom = 45 Lecture Hours**  
This course studies normal pregnancy and common complications in labor, delivery and postpartum, fundamental concepts of growth and development from birth through adolescence, and common medical-surgical conditions pertinent to pediatrics. *Prerequisites: ADNR 1101, ADNR 1130, BIOS 1100, LPNR 1151, and PHAR 1500.*

**LPNR 1290 Care of the Older Adult**  
**2 credit hours**  
**32 Classroom Hours = 32 Lecture Hours**  
The biopsychosociospiritual and developmental changes associated with the aging process and the use of the nursing process in assessing and managing the care of older adults.

**LPNR 1520 Nursing III**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
Common disease conditions and nursing interventions for more complex disorders. Fee \$45.

**LPNR 1550 Clinical Practice III**  
**3 credit hours**  
**135 Classroom Hours Clinical**  
Clinical experience in the hospital and nursing home designed to assist students in development of nursing skills for entry level competencies relevant to the practical nurse.

**LPNR 1580 Personal and Vocational Relationships**  
**1 credit hour**  
**16 Classroom Hours = 16 Lecture Hours**  
Career opportunities, ethical and legal nursing implications, and various nursing organizations.

**LPNR 1590 Mental Health Concepts**  
**1 credit hour**  
**16 Classroom Hours = 16 Lecture Hours**  
Common psychiatric conditions and nursing interventions. Therapeutic communication techniques.

**LPNR 2120 IV Certification Preparation**  
**4 credit hours**  
**70 Classroom Hours = 55 Lecture Hours + 15 Lab Hours**  
Optional post graduate course to prepare LPNs to perform expanded duties to IV therapy as allowed by state law. Upon completion, LPNs are eligible to be certified after successful completion of the certifying examination. *Prerequisites: Pharmacology / drug calculations exam, one letter of reference, and hold current LPN license.* Fee \$15.

### LOGISTICS/MATERIALS MANAGEMENT

**WARE 1100 Introduction to Logistics**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course will provide a broad overview of logistics management. The role of logistics management and supply-chain management will be explored. Topics discussed in this course will include transportation management, inventory management, warehousing, supply management and international logistics. Customer service, logistics systems analysis and control will also be addressed.

**WARE 1200 Global Logistics**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
This course will provide a broad overview of global logistics management. Topics discussed in this course will include the role of government in the movement of products across borders, international sourcing strategies, transportation issues, documentation, and export considerations including inventory management and warehousing.

**WARE 1250      Transportation Logistics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is designed to familiarize the student with the types of decisions a transportation or logistics manager has to make on a daily basis. The various modes of transportation will be analyzed. Transportation documents and regulations will be examined. Students will learn how to evaluate carrier performance and the types of information that is available to making good transportation decisions.

**WARE 2150      Supply Chain Management**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course examines the role of supply chain management and how it can be used to improve both customer satisfaction and net income. The major components of supply chain management will be evaluated including information systems, sourcing, transportation and network design. The importance of planning and collaboration will also be explored. Examples of effective supply-chains will be examined.

**WARE 2400      Purchasing Logistics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course familiarizes the student with the theory and application of purchasing and materials management concepts. Topics which will be addressed include purchasing organization and administration, quality management, supplier relationships, and negotiations.

**MACHINE SHOP TECHNOLOGY**

**MACH 1110      Machine Shop**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Identification, use safety and maintenance of hand and machine tools including grinders, drill press, power saws and machine lathe. Fee \$20.

**MACH 1130      Machinist Blueprint Reading**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Blueprint reading for machinists and welders, and fundamentals of drafting and drawing interpretation including lines, views, symbols, abbreviations, standards and terminology. Fee \$10.

**MACH 1210      Machine Shop and Lathe Work**

**4 credit hours**

**120 Classroom = 30 Lecture Hours + 90 Lab Hours**

Machine shop and lathe operation including turning, facing, drilling, boring, tapering and threading with proper setups, feeds and speeds. Fee \$20.

**MACH 1220      Machine Shop and Mill Operation**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Machine shop and milling machine operation using various types of milling machines for all types of operations and setups. Fee \$20.

**MACH 1230      Advanced Machine Shop Operations**

**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**

Advanced lathe operations including turning various types of internal and external threads. Advanced mill operations on vertical and horizontal milling machines including work with boring head, dividing head, rotary table and machining gears. Fee \$20.

**MACH 1250      Advanced Applied Math**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Mathematics for machinists, including fractions, decimals and metric measurements.

**MACH 1540      Basic Principles and Operations of CNC**

**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**

Programming and setting up CNC lathes and milling machines.

**MACH 1710      Machine Shop Fundamentals**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Operations including hand tools, drill press and lathe. Fee \$15.

**MACH 1720      Machine Shop and Lathe Operation**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

General machine shop and lathe operation. Fee \$15.

**MACH 1730      Machine Shop and Lathe Operation, Advanced**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Advanced lathe set up and operation. Fee \$15.

**MACH 1740      Machine Shop and Milling Operation**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Milling machine set up and operation using various bits and mill cutters. Fee \$15.

**MACH 1750      Machine Shop and Milling Operation, Advanced**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Advanced milling machine set up and operation using vertical, horizontal and universal milling machines. Fee \$15.

**MACH 1770      Machine Shop and Grinding Operation**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Surface and cylindrical grinder operations and set up. Fee \$15.

**MACH 1780      CNC Lathe and Milling Machine**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Computerized controls to operate lathes and mills. Fee \$15.

**MACH 1790      Machine Shop Tool and Die**

**2 credit hours**

**45 Classroom Hours = 23 lecture Hours + 22 Lab Hours**

Tool and die manufacture including math for the machinist. Fee \$15.

## COURSE DESCRIPTIONS

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### MATHEMATICS

#### **MATH 0020 Math Study Skills**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Math Study Skills offers techniques to improve students' math skills for a higher level of success with math assignments and tests at all levels. The course is strongly recommended for students whose placement scores indicate MATH 0100 and MATH 0900 and for students who have math anxiety or who are having difficulty passing MATH 1010. Topics included are study skills, test anxiety, memory techniques, and test taking. *Note: MATH 0020 does not meet any program or transfer requirement.*

#### **MATH 0090 Math For Health Occupations**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course is a review of the four fundamental operations on fractions and decimals, Roman numerals, ratio and proportion, percentages and the metric, English, apothecary and household systems of measurement. *Note: This course does not satisfy the general education requirement for the Associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college.*

#### **MATH 0100 Fundamentals of Mathematics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course is a review of the four fundamental operations on whole numbers, operations on fractions and decimals, solution of practical problems involving percentages, investments, ratio, proportion and introduction to algebra. *Note: This course does not satisfy the general education requirement for the Associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college.*

#### **MATH 0900 Elementary Algebra**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Reviewing real number operations, algebraic expressions, exponents, solving linear equations, graphing, operations with polynomials, solving quadratics, solving word problems. *Note: This course does not satisfy degree requirements and cannot be used as an elective. This course is not designed to transfer to a four-year college. Prerequisite: Completion of MATH 0100 with at least a "C" or adequate score on the math placement exam.*

#### **MATH 1000 General Math A**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Review of arithmetic fundamentals and problem solving. Introduction to physical science concepts: Ohm's Law, simple machines, gear ratios, pressure, force and area, geometry of circles and expression of metric measurements. *Note: This course is designed to meet the general education math requirement for the Associate of Applied Science Degree programs in Automotive and Diesel Technology and is not intended for transfer credit.*

#### **MATH 1001 General Math B**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Properties and fundamental operations with whole numbers, fractions, and decimals. Study of measurement including length and measuring instruments, perimeter, area, volume, percents, ratios, direct/indirect proportion, powers, square roots, and basic trig functions. *Note: This course is designed to meet the general education math requirement for the Associate of Applied Science Degree programs in Auto Body, Building Construction, HVAC, Welding, and Machine Shop Technology and is not intended for transfer credit.*

#### **MATH 1002 General Math C**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Basic mathematical concepts of algebra and trigonometry. Power, Ohm's Law, circuit analysis, Kirchoff's laws and Thevenin's theorem. *Note: This course is designed to meet the math requirement for the Basic Electronics Certificate and is not intended for transfer credit.*

#### **MATH 1010 Intermediate Algebra**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Properties of real numbers, factoring, exponents and radicals, linear and fractional equations, linear and nonlinear inequalities, quadratic equations, and functions and graphs. *Note: This course will not satisfy the general education requirement for the Associate of Arts degree but can be used as an elective. This course may not be accepted in transfer toward the general education requirement for a baccalaureate degree. Prerequisite: Completion of MATH 0900 with at least a "C" or an adequate level on the math placement test.*

#### **MATH 1150 College Algebra**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Functions, inverse functions, graphing of linear and quadratic functions, the conic sections, polynomial functions, rational functions, exponential and logarithmic functions, systems of equations, determinants and matrices, and higher degree equations. *Note: This course will satisfy the general education requirement for the Associate of Arts Degree. Prerequisite: Completion of MATH 1010 with at least a "C" or adequate level on the math placement test.*

#### **MATH 1200 Elements of Statistics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Frequency distributions, elementary probability theory, measures of dispersion and central tendency, normal distributions, confidence intervals, hypotheses testing, regression and correlation. *Prerequisite: Completion of MATH 1010 or MATH 1150 with at least a "C" or adequate level on the math placement exam or permission of instructor.*

#### **MATH 1250 Trigonometry**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Designed for students who plan further study at the calculus level. Numerical trigonometry, trigonometric analysis, inverse trigonometric functions, and complex numbers. *Prerequisite: Completion of MATH 1150 with at least a "C" or adequate level on the math placement test.*

**MATH 1300 Quantitative Methods**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Business and economic concepts, techniques, models, analysis and applications with emphasis on quantitative measurements for resource utilization, production, processing, marketing, and management. *Prerequisite: Completion of MATH 1150 with at least a "C".*

**MATH 1350 Applied Calculus For Managerial and Social Science**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Concepts of differential and integral calculus with applications to business, economics and the social sciences. *Prerequisite: Completion of MATH 1150 with at least a "C" or adequate score on the math placement test. Note: Credit will not be given in both MATH 1350 and MATH 1450.*

**MATH 1450 Analytic Geometry and Calculus I**

**5 credit hours**

**75 Classroom Hours = 75 Lecture Hours**

Limits, derivatives of algebraic functions, applications of the derivative, the indefinite integral, fundamental theorem of integral calculus, applications of the definite integral. *Prerequisite: Completion of MATH 1150 and MATH 1250 with at least a "C" or an adequate level on the math placement test and trigonometry in high school. Note: Credit will not be given for both MATH 1350 and MATH 1450.*

**MATH 1550 Analytic Geometry and Calculus II**

**5 credit hours**

**75 Classroom Hours = 75 Lecture Hours**

A continuation of MATH 1450. Trigonometric, logarithmic, exponential functions, methods of integration, polar coordinates, applications and infinite series. *Prerequisite: Completion of MATH 1450 with at least a "C".*

**MATH 2000 Modern Elementary School Mathematics I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Required for the elementary education major. Problem solving, systems of numeration, non-decimal bases, basic number theory, operations on whole numbers, integers, rational numbers. *Prerequisite: Completion of MATH 1150 with at least a "C" or 4 years of high school math, or permission of instructor.*

**MATH 2100 Modern Elementary School Mathematics II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Required for the elementary education major. Modular arithmetic, ratio and proportion, percent, introduction to probability, brief introduction to descriptive statistics, measurement and metric system, measurement of plane and solid geometric figures, geometric constructions and coordinate geometry. *Prerequisite: Completion of MATH 2000 with at least a "C" or permission of instructor.*

**MATH 2450 Analytic Geometry and Calculus III**

**5 credit hours**

**75 Classroom Hours = 75 Lecture Hours**

A continuation of MATH 1550. Functions of more than one variable, vector and vector functions, partial derivatives,

multiple integrals and applications. *Prerequisite: Completion of MATH 1550 with at least a "C".*

**MATH 2600 Differential Equations**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Elementary differential equations with applications including methods of solving equations of order one, linear differential equations, linear equations with constant coefficients, undetermined coefficients, variation of parameters, inverse operators, solution of systems of differential equations and solution of differential equations by matrix methods and the LaPlace transform. *Prerequisite: Completion of MATH 24500 with at least a "C".*

**MEDICAL LABORATORY TECHNICIAN**

**MEDT 1000 MLT Orientation**

**2 credit hours**

**64 Classroom Hours = 16 Lecture Hours + 48 Lab Hours**

An introduction to medical laboratory technology including medical terminology, the role, function, ethics, conduct, certification, education, employment, and basic medical laboratory techniques. Basic mathematics review and lab related math such as the metric system, temperature conversions, concentration units, dilutions, ratios and statistics used in quality control are covered. Also included is laboratory safety to include physical, chemical and biological hazards, laboratory safety, barriers and isolation techniques. Students are instructed in the collection and preparation of specimens to include venipuncture and capillary sticks, reporting of laboratory results, and quality assurance methods. Lecture and lab. *Prerequisites: Must meet all MLT Program admission criteria, acceptance into the Medical Laboratory Technician Program and permission of the MLT program director. Fee \$25.*

**MEDT 1060 Laboratory Math**

**1 credit hour**

**18 Classroom Hours = 18 Lecture Hours**

A review of basic mathematics progressing into solutions, dilutions, colorimetry, standard curves, quality control and special calculations. Lecture only. *Prerequisite: Acceptance into the Medical Laboratory Technician Program and permission of the MLT program director.*

**MEDT 1100 Hematology**

**5 credit hours**

**128 Classroom Hours = 38 Lecture Hours + 90 Lab Hours**

The study of the formation, function, and identification of normal mature, immature, and abnormal human blood cells; cellular morphology in anemias and leukemias and other blood disorders; the mechanism of blood coagulation; and the laboratory tests necessary to determine the levels and function of these many different cells and components. Lecture and lab. *Prerequisites: Successful completion of MEDT 1000, BIOS 1010 or equivalent, and permission of the MLT program director. Fee \$30.*

**MEDT 1450 Biochemistry Concepts**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A brief introduction to the chemistry and metabolism of fats, carbohydrates, proteins and other biologically important compounds. Lecture/ demonstration. *Prerequisites: MEDT*

## COURSE DESCRIPTIONS

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1000, BIOS 1010 or BIOS 1140, BIOS 2130, CHEM 1050/1060 or CHEM 1090/1100, and permission of the MLT program director.

### **MEDT 1710 Immunology**

**1.5 credit hours**

**24 Classroom Hours = 24 Lecture Hours**

The basic theoretic concepts of immunology are explained; the underlying theory of the immune system and its various cellular and chemical components. Lecture only. *Prerequisites: Successful completion of MEDT 1000, BIOS 1010 or equivalent, and permission of the MLT program director.*

### **MEDT 2010 Serology**

**1.5 credit hours**

**36 Classroom Hours = 24 Lecture Hours + 12 Lab Hours**

The basic theory and concepts in serology are covered with emphasis on the many different serology test procedures utilized in the modern day laboratory. Lecture and lab. *Prerequisites: Successful completion of MEDT 1710 and permission of the MLT program director.* Fee \$10.

### **MEDT 2100 Medical Microbiology**

**5 credit hours**

**114 Classroom Hours = 63 Lecture Hours + 51 Lab Hours**

The morphology, isolation and identification of microorganisms pathogenic to man, including bacteria, fungi, parasites, and viruses. Specimen collection and handling, antimicrobial susceptibility testing and infectious disease control are included. Lecture and lab. *Prerequisites: Successful completion of MEDT 1000, BIOS 1010 or equivalent, BIOS 1110, and permission of the MLT program director.* Fee \$30.

### **MEDT 2200 Special Chemistry**

**2 credit hours**

**36 Classroom Hours = 30 Lecture Hours + 6 Lab Hours**

Theory and techniques in electrophoresis, radioimmunoassay, toxicology, endocrinology and specialized body fluids testing. Lecture and lab. *Prerequisites: MEDT 2100 and permission of the MLT program director.* Fee \$25.

### **MEDT 2250 Urinalysis**

**2 credit hours**

**42 Classroom Hours = 30 Lecture Hours + 12 Lab Hours**

The study of chemical and cellular changes in the urine in health and illness. Lecture and lab. *Prerequisites: Successful completion of MEDT 1000, BIOS 1010 or equivalent, BIOS 1100 or equivalent, and permission of the MLT program director.* Fee \$15.

### **MEDT 2300 Parasitology**

**2 credit hours**

**36 Classroom Hours = 30 Lecture Hours + 6 Lab Hours**

A study of parasites of the blood, tissues and intestinal tract and related organs of humans, including specimen processing and staining and parasite recognition. Lecture and lab. *Prerequisites: MEDT 2100 and permission of the MLT program director.* Fee \$25.

### **MEDT 2410 Clinical Chemistry**

**5 credit hours**

**132 Classroom Hours = 66 Lecture Hours + 66 Lab Hours**

General principles and techniques of test procedures performed in clinical chemistry laboratories, with practice in manual and semiautomated techniques, and techniques in electrophoresis, toxicology, endocrinology and specialized body fluids testing. Lecture and lab. *Prerequisites: Successful completion of MEDT 1000, CHEM 1050/1060 or CHEM 1090/1100, BIOS 1010 or equivalent, BIOS 1100 or equivalent, and permission of the MLT program director.* Fee \$30.

### **MEDT 2500 Blood Banking**

**4 credit hours**

**96 Classroom Hours = 51 Lecture Hours + 45 Lab Hours**

The fundamental principles of immunology related to blood banking; donor selection, blood collection, and processing blood components, preparation and administration of blood and blood products; blood group genetics and inheritance. Basic blood banking techniques will be performed. Lecture and lab. *Prerequisites: Successful completion of MEDT 2010, BIOS 1100 or equivalent, and permission of the MLT program director.* Fee \$30.

### **MEDT 2600 Advanced Hematology**

**2 credit hours**

**54 Classroom Hours = 24 Lecture Hours + 30 Lab Hours**

A study of immature blood cells, abnormal cells, and cellular morphology in anemias and leukemias as well as other diseases. Lecture and lab. *Prerequisites: MEDT 1100 and permission of the MLT program director.* Fee \$25.

### **MEDT 2690 MLT Clinical Seminar**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A review of the knowledge base, didactic theory and clinical laboratory skills applicable to the medical laboratory through lecture. Lecture only. *Prerequisites: MEDT 2410, MEDT 2100, MEDT 2500, MEDT 2600, MEDT 2010, and permission of the MLT program director.*

### **MEDT 2720 Clinical Hematology Practicum**

**4 credit hours**

**192 Classroom Hours = 192 Clinical Hours**

The theory, practical application and technical performance of hematological, coagulation, immunological, serological, and phlebotomy procedures. *Prerequisites: Successful completion all MEDT prefixed courses, all general education program requirements, and permission of the MLT program director.*

### **MEDT 2730 Clinical Chemistry Practicum**

**4 credit hours**

**192 Classroom Hours = 192 Clinical Hours**

The theory, practical application and technical performance of clinical chemistry procedures. *Prerequisites: Successful completion all MEDT prefixed courses, all general education program requirements, and permission of the MLT program director.*

### **MEDT 2740 Clinical Microbiology Practicum**

**4 credit hours**

**192 Classroom Hours = 192 Clinical Hours**

The theory, practical application and technical performance of procedures used for isolation and identification of bacterial,

mycotic, parasitic and viral organisms infecting humans.  
*Prerequisites: Successful completion all MEDT prefixed courses, all general education program requirements, and permission of the MLT program director.*

**MEDT 2750 Clinical Blood Bank Practicum**  
**4 credit hours**

**192 Classroom Hours = 192 Clinical Hours**

The theory, practical application and technical performance of blood bank procedures required for transfusion of blood and blood components and for handling and storage of blood and blood components. *Prerequisites: Successful completion all MEDT prefixed courses, all general education program requirements, and permission of the MLT program director.*

**MEDT 2760 Clinical Urinalysis Practicum**  
**1 credit hour**

**48 Classroom Hours = 48 Clinical Hours**

The theory, practical application and technical performance of procedures utilized in the analysis of urine and other body fluids. *Prerequisites: Successful completion all MEDT prefixed courses, all general education program requirements, and permission of the MLT program director.*

**MEDT 2770 Clinical Special Studies Practicum**  
**1 credit hour**

**48 Classroom Hours = 48 Clinical Hours**

The theory, practical application and technical performance of specialized clinical chemistry laboratory and blood banking procedures used in diagnostic laboratory medicine. *Prerequisites: Successful completion all MEDT prefixed courses, all general education program requirements, and permission of the MLT program director.*

**MUSIC**

**MUSC 1010 Concert Choir I**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

A large mixed choir performing choral works as well as chamber music. Public concerts and tours. Open to all students.

**MUSC 1020 Concert Choir II**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1010.

**MUSC 1030 Select Choir I**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

A select mixed singing group performing chamber choral repertoire including madrigals, motets, jazz, and acappella works. Open to all students.

**MUSC 1040 Select Choir II**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1030.

**MUSC 1050 Jazz Band I**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

An instrumental ensemble performing all forms of jazz

music. Public concerts and tours. Open to all students through audition.

**MUSC 1060 Jazz Band II**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1050.

**MUSC 1070 Concert Band I**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

An instrumental group performing the best of symphonic band literature, pep band works, and chamber music. Public concerts and tours. Open to all students through audition.

**MUSC 1080 Concert Band II**  
**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1070.

**MUSC 1300 Music Theory I**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Rudiments of music, including melodic and rhythmic notation, scales, key signatures, intervals, chord structure, and elementary harmonic analysis. Taken concurrently with MUSC 1400 Piano Techniques I and MUSC 1960 Sight Singing and Ear Training I. Open to all students.

**MUSC 1310 Music Theory II**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Continuation of MUSC 1300. Harmonic analysis: chorales and other melodies, using diatonic triads, dominant and leading tone seventh chords, and modulations. Taken concurrently with MUSC 1410 and MUSC 1970.

**MUSC 1400 Piano Techniques I**  
**1 credit hour**

**30 Classroom Hours = 16 Lecture Hours + 16 Lab Hours**

Beginning keyboard fundamentals. This class is a lab taken concurrently with MUSC 1300 and MUSC 1960. Open to all students.

**MUSC 1410 Piano Techniques II**  
**1 credit hour**

**30 Classroom Hours = 16 Lecture Hours + 16 Lab Hours**

Continuation of MUSC 1400. This class is a lab taken concurrently with MUSC 1310 and MUSC 1970. Open to all students.

**MUSC 1420 Piano Techniques III**  
**1 credit hour**

**30 Classroom Hours = 16 Lecture Hours + 16 Lab Hours**

A continuation of MUSC 1410. This class is a lab taken concurrently with MUSC 2300 and MUSC 1980. Open to all students.

**MUSC 1430 Piano Techniques IV**  
**1 credit hour**

**30 Classroom Hours = 16 Lecture Hours + 16 Lab Hours**

A continuation of MUSC 1410. This class is a lab taken concurrently with MUSC 2310 and MUSC 1990. Open to all students.

## COURSE DESCRIPTIONS

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### **MUSC 1660 Music Appreciation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey of the history and development of music covering a broad spectrum of primarily Western music. World and popular music will also be addressed. Examination of musical terms, significant works and their composers throughout the eras. A course designed to introduce representative masterworks to the non-music major.

### **MUSC 1710-1780 Applied Music I**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Development of technical, stylistic, and performing proficiencies through a variety of musical literature. Open to all students. Fee \$50.

**1710 Piano**

**1720 Organ**

**1730 Voice**

**1740 Brass Instruments**

**1750 Percussion Instruments**

**1770 Stringed Instruments**

**1780 Woodwind Instruments**

### **MUSC 1715-1785 Applied Music for Majors I**

**2 credit hours**

**30 Classroom Hours = 30 Lecture hours**

Individual instruction in music for students studying their principal instrument. Emphasis is placed on strong performance skills and includes significant Jury requirements. Fee \$100.

**1715 Piano**

**1725 Organ**

**1735 Voice**

**1745 Brass Instruments**

**1755 Percussion Instruments**

**1775 Stringed Instruments**

**1785 Woodwind Instruments**

### **MUSC 1810-1870 Applied Music II**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Continuation of MUSC 1710-1770. Fee \$50.

**1810 Piano**

**1820 Organ**

**1830 Voice**

**1840 Brass Instruments**

**1850 Percussion Instruments**

**1860 Woodwind Instruments**

**1870 Stringed Instruments**

### **MUSC 1815-1875 Applied Music for Majors II**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Individual instruction in music for students studying their principal instrument. Emphasis is placed on strong performance skills and includes significant Jury requirements. A continuation of MUSC 1715 - 1785. Fee \$100.

**1815 Piano**

**1825 Organ**

**1835 Voice**

**1845 Brass Instruments**

**1855 Percussion Instruments**

**1865 Woodwind Instruments**

**1875 Stringed Instruments**

### **MUSC 1960 Sight Singing and Ear Training I**

**1 credit hour**

**30 Classroom Hours = 15 Lecture Hours + 15 Lab Hours**

Sight singing of standard materials: melodic, rhythmic and harmonic dictation. This class is a lab taken concurrently with MUSC 1300 and MUSC 1400. Open to all students.

### **MUSC 1970 Sight Singing and Ear Training II**

**1 credit hour**

**30 Classroom Hours = 15 Lecture Hours + 15 Lab Hours**

Continuation of MUSC 1960. This class is a lab taken concurrently with MUSC 1310 and MUSC 1410. Open to all students.

### **MUSC 1980 Sight Singing and Ear Training III**

**1 credit hour**

**30 Classroom Hours = 15 Lecture Hours + 15 Lab Hours**

Continuation of MUSC 1970. This class is a lab taken concurrently with MUSC 2300 and MUSC 1420. Open to all students.

### **MUSC 1990 Sight Singing and Ear Training IV**

**1 credit hour**

**30 Classroom Hours = 15 Lecture Hours + 15 Lab Hours**

Continuation of MUSC 1980. This class is a lab taken concurrently with MUSC 2310 and MUSC 1430. Open to all students.

### **MUSC 2010 Concert Choir III**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1020.

### **MUSC 2020 Concert Choir IV**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 2010.

### **MUSC 2030 Select Choir III**

**1 credit hour**

**30 Classroom Hours = 30 Lab**

Continuation of MUSC 1040.

### **MUSC 2040 Select Choir IV**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 2030.

### **MUSC 2050 Jazz Band III**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1060.

### **MUSC 2060 Jazz Band IV**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 2050.

### **MUSC 2070 Concert Band III**

**1 credit hour**

**30 Classroom Hours = 30 Lab Hours**

Continuation of MUSC 1080.

**MUSC 2080 Concert Band IV**  
**1 credit hour**  
**30 Classroom Hours = 30 Lab Hours**  
 Continuation of MUSC 2070.

**MUSC 2300 Music Theory III**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 Continuation of MUSC 1310. Harmonic analysis: an intensive study of diatonic and chromatic harmonic structures and processes – mostly from the Romantic period, sight singing, ear training, and piano techniques.

**MUSC 2310 Music Theory IV**  
**3 credit hour**  
**45 Classroom Hours = 45 Lecture Hours**  
 Continuation of MUSC 2300. Introduction to late 16<sup>th</sup> and 18<sup>th</sup> century counterpoint. Harmonic analysis: mostly from the Romantic period, sight singing, ear training, and piano techniques.

**MUSC 2330 Public School Music I**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 Methods and materials for the integration of music in the elementary classroom are presented. Stress is placed on demonstration and class participation. The course is required for elementary education majors.

**MUSC 2710-2770 Applied Music III**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
 Continuation of MUSC 1810 – 1870. Fee \$50.

- 2710 Piano
- 2720 Organ
- 2730 Voice
- 2740 Brass Instruments
- 2750 Percussion Instruments
- 2760 Woodwind Instruments
- 2770 Stringed Instruments

**MUSC 2715-2775 Applied Music for Majors III**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
 Individual instruction in music for students studying their principal instrument. Emphasis is placed on strong performance skills and includes significant Jury requirements. A continuation of MUSC 1815 - 1875. Fee \$100.

- 2715 Piano
- 2725 Organ
- 2735 Voice
- 2745 Brass Instruments
- 2755 Percussion Instruments
- 2765 Woodwind Instruments
- 2775 Stringed Instruments

**MUSC 2810-2870 Applied Music IV**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
 Continuation of MUSC 2710 – 2770. Fee \$50.

- 2810 Piano
- 2820 Organ

- 2830 Voice
- 2840 Brass Instruments
- 2850 Percussion Instruments
- 2860 Woodwind Instruments
- 2870 Stringed Instruments

**MUSC 2815-2875 Applied Music for Majors IV**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
 Individual instruction in music for students studying piano as their principal instrument. Emphasis is placed on strong performance skills and includes significant Jury requirements. A continuation of MUSC 2715 - 2775. Fee \$100.

- 2815 Piano
- 2825 Organ
- 2835 Voice
- 2845 Brass Instruments
- 2855 Percussion Instruments
- 2865 Woodwind Instruments
- 2875 Stringed Instruments

**NURSING ASSISTANT/AIDE**

**NURA 1100 Nursing Assistant**  
**4 credit hours**  
**76 Classroom Hours = 60 Lecture Hours + 16 Lab Hours**  
 This course will provide training for a non-licensed individual to provide safe, effective, and caring services to patients, residents, and clients in a variety of health care settings. Upon successful completion of the course, students will receive a certificate of completion from MPCC and qualify for placement on the State of Nebraska Nurse Aide Registry. Must be 16 to take this course. Fee \$5.

**NURA 1360 Medication Aide**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 The content of this course will meet the 40-hour training requirement by the Nebraska State Department of Health and Human Services, Credentialing Division for childcare providers, staff members of schools, and persons providing medications in a recipient's home or ICF-MR or AL Facility. Must be 18 to take this course. *Prerequisite: NURA 1100 or permission from course coordinator.*

**PHARMACOLOGY**

**PHAR 1500 Pharmacology**  
**2 credit hours**  
**30 Classroom Hours = 30 Lecture Hours**  
 Basic information in the major areas of pharmacology including general principles, pharmacokinetics, drug interactions, chemotherapy and the pharmacology of the nervous, cardiovascular, renal, gastrointestinal and endocrine systems. *Prerequisites: BIOS 2250 and BIOS 2260, BIOS 1100, or LPNR 1190.*

## COURSE DESCRIPTIONS

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### PHILOSOPHY

**PHIL 1010 Introduction to Philosophy**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to the seven major fields of philosophical inquiry. This course considers a broad range of philosophical problems in relation to the major historical and cultural conditions which have influenced their formulations and proposed solutions. Among topics typically considered are the principles of rational inquiry; the nature of knowledge; the essence of being; the nature of justice; the sources and authority of morality; and, the notion of beauty.

**PHIL 1100 Introduction to Critical Thinking**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Critical Thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information. Students will encounter an analytical method of language analysis, logic, fallacies, construction of valid arguments, the notion of evidence, relevant questioning, and problem solving techniques.

**PHIL 2200 Elements of Ethics**  
**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course considers a wide range of basic issues and schools of thought in moral philosophy. Ethics is the philosophical study of moral judgments and fundamentally implores the student to ponder the following question: Which moral judgments are correct, and why?

### PHYSICAL EDUCATION

**PHED 1010 Swimming I**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to introduce very basic fundamentals of swimming such as breath holding, basic floats, kicking and basic strokes for swimming. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1020 Swimming II**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to improve basic strokes and learn more advanced strokes such as the breaststroke, sidestroke, and back crawl. *Prerequisites: PHED 1010 or permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1030 Swimming and Conditioning**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

An independent study course designed for students whose schedules or preferences make it difficult to enroll in scheduled physical education classes. This course will provide an opportunity for the student to improve personal stamina and overall fitness in an aquatic surrounding. Class meets for 16 weeks. Fee \$10.

**PHED 1040 Walking and Jogging**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

An independent study course designed for students whose schedules or preferences make it difficult to enroll in scheduled physical education classes. This course will introduce the student to the fundamental skill of walking and/or jogging. The intent is to improve a person's stamina and overall fitness. Class meets for 16 weeks. Fee \$10.

**PHED 1050 Canoeing and Nature Study I**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

This is a conservation-canoeing class that spends two days on the Niobrara River. Emphasis is on water conservation, bird watching, plant and animal ecology, survival, camping techniques, and canoeing. *Prerequisite: Permission of instructor required.* Fee \$10.

**PHED 1080 Weight Training I**  
**2 credit hours**

**48 Classroom Hours = 16 Lecture Hours + 30 Lab Hours**

A co-educational activity class with emphasis on activity. The class attempts to explain physiological training principles and a body's reaction to weight training. Students will participate in an aerobic/weight training circuit that will allow individuals to work beyond their present physical state. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1090 Weight Training II**  
**2 credit hours**

**48 Classroom Hours = 16 Lecture Hours + 30 Lab Hours**

A continuation of PHED 1080. *Prerequisites: PHED 1080 or permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1120 Training and Conditioning I**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

This is course which is designed to expose the student to several programs for aiding the individual to become physically fit and to move efficiently in daily life. The instructor provides counseling and guidance in the selection of

activities for immediate and future needs. The instructor helps in planning the student's own individual exercise programs. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1130 Training and Conditioning II**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

This course is a continuation of PHED 1120. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1140 Aerobics I**  
**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course which is designed to provide a high-energy workout. The class combines music with aerobic moves to provide a varied workout which enhances

the cardiovascular system as well as developing general body strength. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1150      Aerobics II**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A continuation of PHED 1140. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1160      Step Aerobics I**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course which is designed to provide a low-impact workout. The class combines music, aerobic moves, and a step bench to provide a varied workout which enhances the cardiovascular system as well as developing general body strength. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1170      Step Aerobics II**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A continuation of PHED 1160. Fee \$10.

**PHED 1180      Fitness for Living – Outdoor**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course which is designed to offer the student a variety of outdoor activities. The course is a study of exercise programs and their general effect on body condition. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1190      Fitness for Living – Indoor**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course which is designed to offer the student a variety of indoor activities. The course is a study of exercise programs and their general effect on body condition. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1220      Bowling**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to instruct the beginning student in the fundamental techniques of bowling. Students will practice the skills after learning the mechanics of the sport. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1240      Golf**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to introduce the student to the sport of golf. Emphasis will be placed on teaching fundamental etiquette, skill techniques, rules and history of the leisure sport of golf. Students will participate in the activity

of golf individually and within a group. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1260      Beginning Yoga**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to promote balance and strength for the physical body/mind. The class combination of breathing, stretching, and positive affirmations relaxes the body/mind while creating strength and tone for total body wellness. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

**PHED 1270      Intermediate Yoga**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

An intermediate co-educational course built on Beginning Yoga techniques designed to promote balance and strength designed to promote balance and strength for the physical body/mind. The class combination of breathing, stretching and positive affirmations relaxes the body/mind while creating strength and tone for total body wellness. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

**PHED 1280      Weight Training III**

**2 credit hours**

**45 Classroom Hours = 15 Lecture Hours + 30 Lab Hours**

A continuation of PHED 1090. *Prerequisites: PHED 1090 or permission of instructor.* *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1290      Weight Training IV**

**2 credit hours**

**45 Classroom Hours = 15 Lecture Hours + 30 Lab Hours**

A continuation of PHED 1280. *Prerequisites: PHED 1280 or permission of instructor.* *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1320      Racquetball**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to instruct the beginning student in the fundamental techniques of racquetball. Basic strokes and shots will be emphasized and game strategy to implement the basics. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1340      Tennis I**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A co-educational course designed to instruct the beginning tennis player in the fundamentals of the various skills of the game of tennis. The class will stress skills and techniques in proper play of recreational tennis. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

## COURSE DESCRIPTIONS

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### **PHED 1350 Tennis II**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A continuation of PHED 1340. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1450 Fitness Physiology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Fitness Physiology will introduce the student to the human body's response to exercise. Field testing for strength, endurance, flexibility, body composition, and exercise prescription for an apparently healthy population will be examined in depth. Exercise prescription for specific disease states will be introduced. *BIOS 2250 is strongly recommended or permission of instructor.*

### **PHED 1480 Practicum I**

**1 credit hour**

**45 Classroom Hours = 45 Practicum Hours**

Practicum I will allow the student to apply attained knowledge to evaluation, assessment, and prescription to a healthy population. The student will spend time working with injured athletes in an athletic training room setting. *Prerequisites: PHED 1450 and PHED 1960 or permission of the instructor.*

### **PHED 1490 Practicum II**

**1 credit hour**

**45 Classroom Hours = 45 Practicum Hours**

Practicum II will allow the student to apply attained knowledge to evaluation, assessment, and prescription to an unhealthy population. The student will spend time working in both cardiac and pulmonary rehabilitation. *Prerequisite: PHED 1480 or permission of instructor.*

### **PHED 1500 Men's Intercollegiate Basketball I**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate basketball. Freshmen register for PHED 1500 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1510 Men's Intercollegiate Basketball II**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate basketball. Freshmen register for PHED 1510 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1520 Women's Intercollegiate Basketball I**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate basketball. Freshmen register for PHED 1520 first semester. *Prerequisites: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1530 Women's Intercollegiate Basketball II**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate basketball. Freshmen register for PHED 1530 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1540 Intercollegiate Golf I**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate golf. Freshmen register for PHED 1540 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1550 Intercollegiate Golf II**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate golf. Freshmen register for PHED 1550 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1560 Intercollegiate Volleyball I**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate volleyball. Freshmen register for PHED 1560; Sophomores register for PHED 1570. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1570 Intercollegiate Volleyball II**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate volleyball. Freshmen register for PHED 1560; Sophomores register for PHED 1570. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1580 Men's Intercollegiate Basketball III**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate basketball. Sophomores register for PHED 1580 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

### **PHED 1590 Men's Intercollegiate Basketball IV**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

Credit for participation in intercollegiate basketball. Sophomores register for PHED 1590 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1600 Sports Officiating**  
**2 credit hours**  
**48 Classroom Hours = 16 Lecture Hours + 30 Lab Hours**  
 Course designed to provide individuals with the rules, skills, mechanics, and experience of officiating at the junior and senior high school level. Football, basketball and volleyball receive main emphasis. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1610 Women's Intercollegiate Basketball III**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate basketball. Sophomores register for PHED 1610 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1620 Women's Intercollegiate Basketball IV**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate basketball. Sophomores register for PHED 1620 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1630 Intercollegiate Golf III**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate golf. Sophomores register for PHED 1630 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1640 Intercollegiate Golf IV**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate golf. Sophomores register for PHED 1624 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1650 Intercollegiate Softball I**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate softball. Freshmen register for PHED 1650 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1660 Intercollegiate Softball II**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate softball. Freshmen register for PHED 1660 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1670 Intercollegiate Softball III**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate softball. Sophomores register for PHED 1670 first semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1680 Intercollegiate Softball IV**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate softball. Sophomores register for PHED 1680 second semester. *Prerequisite: Permission of instructor. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1700 Intercollegiate Baseball I**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate baseball. Freshmen register for PHED 1700 first semester. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1710 Intercollegiate Baseball II**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate baseball. Freshmen register for PHED 1710 second semester. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1720 Intercollegiate Baseball III**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate baseball. Sophomores register for PHED 1720 first semester. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1730 Intercollegiate Baseball IV**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate baseball. Sophomores register for PHED 1730 second semester. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1750 Introduction to Physical Education**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 Course designed as an introductory course for students interested in careers in health, physical education, athletic training or coaching. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

**PHED 1760 Intercollegiate Volleyball III**  
**1 credit hour**  
**150 Classroom Hours = 150 Lab Hours**  
 Credit for participation in intercollegiate volleyball. *Prerequisite: PHED 1560 and PHED 1570. Note: This course may not transfer toward general education or degree requirements at some four-year colleges.* Fee \$10.

## COURSE DESCRIPTIONS

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### **PHED 1770 Intercollegiate Volleyball IV**

**1 credit hour**

**150 Classroom Hours = 150 Lab Hours**

*Credit for participation in intercollegiate volleyball. Prerequisite: PHED 1560, 1570, and 1760. Note: This course may not transfer toward general education or degree requirements at some four-year colleges. Fee \$10.*

### **PHED 1800 Introduction to Recreation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Course is specifically designed to study the principles, history and philosophy of recreation. The student is offered an opportunity to develop concepts concerning recreation, the social economic movements, and the types of areas and facilities used in recreation. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

### **PHED 1810 Drugs and Sports**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

Course designed as an introduction to the knowledge of the roles that drugs play in modern day sport. The class will cover performance enhancing drugs, as well as the effects of prescription drugs, narcotics, over the counter drugs, alcohol, tobacco, and all other nutritional supplements used to enhance an athlete's performance. The class will cover the science of each classification of drug, all social and ethical issues that arise with the topic of drugs and sports, and cover the testing agencies, methods, and reporting of drug use in sports.

### **PHED 1850 Introduction to Coaching**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to the knowledge, requirements and responsibilities for coaching. Includes sport philosophy, sport sciences, sport medicine, and sport management. Fulfills requirements of ACEP Leader Level I. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

### **PHED 1960 Prevention and Care of Athletic Injuries**

**4 credit hours**

**75 Classroom Hours = 45 Lecture Hours + 30 Lab Hours**

Instruction in theory and practice of conditioning, taping, and rehabilitation of common sports injuries. An anatomical review and evaluation techniques for common injuries to the ankle, knee, shoulder, wrist, and hand as well as hip, thigh, head, neck, face, ear, eye, nose, and dental injuries. Universal precautions for blood borne pathogens and disposal of contaminated materials. Emergency procedures for sports injuries will be covered. (Replaces PHED 1950.)

### **PHED 2020 Training and Conditioning III**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

Continuation of PHED 1130. This is a course which is designed to expose the student to several programs for aiding the individual to become physically fit and to move efficiently in daily life. The instructor provides counseling and guidance in the selection of activities for immediate and future needs. The instructor helps in planning the student's own individual exercise programs. *Note: This course may*

*not transfer toward general education or degree requirements at some four-year colleges.*

### **PHED 2030 Training and Conditioning IV**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

Continuation of PHED 2020. This is a course which is designed to expose the student to several programs for aiding the individual to become physically fit and to move efficiently in daily life. The instructor provides counseling and guidance in the selection of activities for immediate and future needs. The instructor helps in planning the student's own individual exercise programs. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

### **PHED 2050 Canoeing and Nature Study II**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

A continuation of PHED 1050. *Prerequisite: Permission of instructor required.*

### **PHED 2150 Certification Preparation**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Certification Preparation will be taken the semester prior to taking the American College of Sports Medicine's Health and Fitness Instructor or Personal Trainer Certification examination(s). The class will be designed to evaluate the student's knowledge, skills, and abilities needed for successful completion of one or both of these certifications. *Prerequisites: PHED 1450 and HLTH 1500 or permission of the instructor.*

### **PHED 2200 Self Protection I**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

An opportunity to train in an extreme effective and powerful self defense system, for the everyday person. Taught in a friendly easy to learn environment. Fee \$10.

### **PHED 2210 Self Protection II**

**1 credit hour**

**24 Classroom Hours = 8 Lecture Hours + 16 Lab Hours**

This class will build on the basics learned in Self Protection I. It will also teach advanced scientific movement. Fee \$10.

### **PHED 2400 Activities for Elementary Physical Education**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

A course designed to teach techniques of teaching perceptual-motor activities, fundamental movement skills, sport skills, low-organized and lead-up games, and self-testing for elementary children. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges. Fee \$10.*

### **PHED 2410 Rhythmic Activities for Elementary Physical Education**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

A course designed to teach techniques of teaching fundamental rhythms, creative dance, singing games, parachute play, streamers, lummi sticks, rope jumping, folk

dance, square dance, social mixers, and other aspects of rhythmic activity. *Note: This course may not transfer toward general education or degree requirements at some four-year colleges.*

**PHYSICS AND PHYSICAL SCIENCE**

**PHYS 1020 Astronomy**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An elementary course designed for non-science majors. Topics include the nature and motions of the Earth, Moon, planets, Sun, stars, galaxies, as well as other deep sky objects. A historical overview of manned and unmanned space flights is included.

**PHYS 1100 Physical Science**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey course in physical science. Areas of study include physics, chemistry, and astronomy. *Note: A background in high school algebra or MATH 1010 is desirable. Fee \$15.*

**PHYS 1101 Physical Science Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Physical Science.

**PHYS 1150 Descriptive Physics**

**4 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This is a survey of physics at a conceptual (non-mathematical) level. The course covers motion, fluids, heat, sound, electricity, magnetism, and light. Emphasis will be placed on using concepts to analyze physical problems.

**PHYS 1151 Descriptive Physics Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for Descriptive Physics.

**PHYS 1410 General Physics I**

**5 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

The first semester of a comprehensive course in physics. Mechanics, heat and wave motion. *Prerequisites: MATH 1150 and 1250 or permission of instructor. Fee \$15.*

**PHYS 1411 General Physics I Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for General Physics I.

**PHYS 1420 General Physics II**

**5 credit hours**

**60 Classroom Hours = 60 Lecture Hours**

A continuation of PHYS 1410. Topics of study include sound, electricity and magnetism, optics, and modern physics. *Prerequisite: PHYS 1410 or permission of instructor. Fee \$15.*

**PHYS 1421 General Physics II Lab**

**0 credit hours**

**30 Classroom Hours = 30 Lab Hours**

Lab for General Physics I.

**PHYS 2230 Engineering Statics: Vector Mechanics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The action of forces on engineering structures and machines. Force systems, static equilibrium of frames and machines, centroids, friction, moment of inertia. *Prerequisite: MATH 1550 and PHYS 1410.*

**PHYS 2410 General Physics Calculus Supplement I**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course, together with materials from PHYS 1410, is equivalent to the traditional first semester course in calculus-based physics. Derivations and problems which involve the use of the calculus or the more intense application of algebra and trigonometry than is customary in PHYS 1410 constitutes the subject matter of this course. The topics covered correspond to those in a first semester calculus-based physics course. *Prerequisites: PHYS 1410 with at least a grade of C and MATH 1450.*

**PHYS 2420 General Physics Calculus Supplement II**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course, together with materials from PHYS 1420, is equivalent to the traditional second semester course in calculus-based physics. Derivations and problems which involve the use of the calculus or the more intense application of algebra and trigonometry than is customary in PHYS 1420 constitute the subject matter of this course. The topics covered correspond to those in a second semester calculus-based physics course. *Prerequisites: PHYS 1420 with at least a grade of C and MATH 1450.*

**POLITICAL SCIENCE**

**POLS 1000 American Government and Politics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A course which examines the organization and operation of the national government in the United States. This will include a brief survey of historical foundations along with a strong emphasis on current political events and public policy.

**POLS 1600 International Relations**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

How and why countries act as they do in contemporary international relations, power, war, resource allocation, multinational corporations, and international organizations are analyzed. The course also covers contemporary global issues including drugs, the environment, population and economic development.

**POLS 1700 Comparative Politics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will examine the structures and functions of governments around the world. The course will focus on the major institutions of government, the role of constitutions in other countries and the similarities and differences in the approach and role of government.

## COURSE DESCRIPTIONS

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### **POLS 2000 Criminal Law**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Outlines the purpose and function of criminal law. Topics include, but are not limited to, the rights and duties of citizens and police in relation to local, state, and federal law (i.e. arrest, search and seizure, confessions); the development, application and enforcement of laws; constitutional issues; and sentencing.

### **POLS 2200 State and Local Politics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course will examine state and local governments according to the duties, processes, and methods of local governing. The course will include studies of governors, state legislatures, judiciaries, county and city governments, and local boards.

### **POLS 2900 American Constitutional Law**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A study of constitutional law. Supreme Court interpretation of the U.S. Constitution vital to an understanding of the American political system. Assumes basic knowledge of American government. *Prerequisite: POLS 1000 except for Criminal Justice majors. Be advised that this course has an upper level number at four-year colleges and universities, and may not meet any general studies requirements.*

## **PSYCHOLOGY**

### **PSYC 1050 Resident Hall Assistant I**

**1 credit hour**

**31 Classroom Hours = 7 Lecture Hours + 24 Lab Hours**

A student selected by the Area Office of Student Life as a Student Resident Hall Assistant may receive one credit hour for the successful completion of one semester as an MPCC Student Resident Assistant. Students are required to successfully complete the following course requirements: attendance at Fall RA Training, periodic journaling, written assignments, student programming, and other tasks as assigned. Primary emphasis is on building a successful living and learning community in the residence halls.

### **PSYC 1060 Resident Hall Assistant II**

**1 credit hour**

**31 Classroom Hours = 7 Lecture Hours + 24 Lab Hours**

A student selected by the Area Office of Student Life as a Student Resident Hall Assistant may receive one credit hour for the successful completion of one semester as an MPCC Student Resident Assistant. Students are required to successfully complete the following course requirements: Assisting in the selection and training of MPCC Resident Assistants for the following year, periodic journaling, written assignments, a research paper, student programming, and other tasks as assigned. Primary emphasis is on building a successful living and learning community in the residence halls. *Prerequisite: PSYC 1050.*

### **PSYC 1130 Psychology Field Experience**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

Directed field experience in agencies offering psychological counseling or guidance services. The cooperating agency

retains the right to accept or deny student participation in this program. *Prerequisite or co-requisite: Completion of/or concurrent enrollment in PSYC 1810 is mandatory.*

### **PSYC 1810 Introduction to Psychology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduction to concepts and research in the areas of personality, motivation, emotion, learning, memory, perception, cognition and social phenomena, as well as environmental (including cultural), developmental and biological bases of behavior and mental processes as applied to the field of psychology.

### **PSYC 1900 Psychology of Personal Adjustment**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course includes practical applications of personality theories. It is designed to help the student gain a greater awareness of interpersonal relationships. *Prerequisite: PSYC 1810 or permission of instructor.*

### **PSYC 2060 Lifespan Development**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Life Span Development provides an overview of human development across the life span. It includes theories and techniques of study of the physiological and the environmental determinants of human behavior across the life span. Focus will be given to cognitive development, social-personality development, emotional development, and physical development at various age levels. PSYC 2060 includes an examination of the issues and scope of human development in the light of traditional studies as well as recent research. *Prerequisite: PSYC 1810 or equivalent, or permission of instructor.*

### **PSYC 2310 Educational Psychology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Current psychological research about learning and development in children and adolescents is applied to schools. The emphasis is on types, modes and styles of learning, methods of teaching and their relevance to classroom management, learning and motivation, and patterns of thinking and relating in classroom settings. Fifteen hours of school observation are required. *Prerequisites: PSYC 1810 required with a grade of C or better, EDUC 1310 recommended.*

### **PSYC 2500 Research Methods in Psychology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An overview of the scientific method of inquiry, methods of data collection, descriptive statistics, graphing, research design, inferential statistics, and the interpretation and evaluation of research methods. It will instruct the student on methodologies necessary in psychological research and focus upon special dealing with artifacts, bias, interpretation of experimental results, and the appropriateness of research design to various problems. The course includes an introduction to the usage of computers for science research.

**PSYC 2700 Positive Psychology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The primary basis for this course is to learn more about "positive" aspects of behavior such as subjective well-being, resilience, self-acceptance, goal development, self efficacy, and purpose and meaning in life. This class discusses the healthy personality structure and its impact on lifestyle, feelings, and thinking in terms of acceptance and enjoyment.

*Prerequisite: None, but a course in Introduction to Psychology is recommended.*

**PSYC 2800 Abnormal Behavior**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This class discusses the healthy personality structure and methods of assessment. The major portion of the course material will deal with maladjustments and methods of interventions. *Prerequisite: PSYC 1810 or equivalent, or permission of instructor.*

**READING**

**READ 0910 Reading Skills**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This basic reading course is designed to improve word recognition, dictionary use, vocabulary, and reading fluency. It is the first class in the reading preparation series. *Note: This course does not satisfy the general education requirement for an associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college*

**READ 0920 College Prep Reading**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This reading skills course is designed to improve vocabulary, reading rate, comprehension, and study skills to be successful in college. *Note: This course does not satisfy the general education requirement for an associate degree and cannot be used as an elective. This course is not designed to transfer to a four-year college.*

**REALESTATE**

**REES 1710 Real Estate Principles and Practices**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

Character of land, real estate markets, ownership interests, legal instruments, contracts, closing transfers, financing, brokerage, management, appraising, development and ownership.

**REES 1720 Real Estate Finance**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

Methods of financing different types of real estate, funding sources, and analysis of mortgage risks. F.H.A. underwriting and influences of governmental agencies is also included.

**REES 1730 Real Estate Law**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

A study of estates in land, deeds, leases, mortgages,

easements, zoning ordinances, covenants, trespass, nuisance, trespassers, licensees, invitees, real estate brokers, and descendant's estates.

**REES 1740 Real Estate Appraisal**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

A study of valuation theories as applied to land, residential, commercial, and leasehold real estate. The course includes depreciation, capitalization, and three approaches to value.

**REES 1750 Real Estate Investments**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

A study of the feasibility and the analysis of long-term investment characteristics of condominiums, apartments, housing complexes, office buildings, shopping centers, industrial properties, and subdivisions.

**REES 1760 Real Estate Management**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

Managing residential, cooperative, office, commercial, shopping and special purpose properties, merchandising space, tenant selection and relations, and maintenance.

**REES 1770 Real Estate Sales and Brokerage**

**3 credit hours**

**48 Classroom Hours = 48 Lecture Hours**

This course introduces the student to the operational functions of the real estate agency. Topics included are office location and layout, sales management and training, listings, inventory, advertising, sales and promotions.

**RENEWABLEFUELS**

**RNEW 1100 Process Dynamics**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course gives an introduction to concepts which deal with physical forces and their relationship to energy through temperature and pressure and are frequently encountered in an operating plant environment. An explanation and understanding of a plant system is crucial to this course. The scientific principles of flow, temperature, pressure, heat, gases, liquids, solids, fluid systems, process dynamics, and heat transfer, are covered in detail. The curriculum of this course encompasses basic physics and science.

**RNEW 1101 Ethanol Process Fundamentals**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course covers in detail the overall fundamental process of ethanol production. A Process Flow Diagram (PFD) of atypical ethanol plant will be used to examine the sequence of operation including residence time, pressures, and temperature seen in various stages of production. The course will explain the rationale for feedstock and additives used in ethanol processing as well as product and co-product production and use.

## COURSE DESCRIPTIONS

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### **RNEW 1105 OSHA and Safety**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course covers detailed information about the OSHA CFR Standards for General Industry, along with practical applications toward workplace safety. Hazards that exist in dry mill ethanol plants will be discussed with an emphasis towards creating and maintaining a safe working environment.

### **RNEW 1115 Mechanical Fundamentals**

**2 credit hours**

**30 Classroom Hours = 30 Lecture Hours**

This course will give the student a basic understanding of pumps, valves, compressors, and heat exchanges. It will explain the proper procedure on how to start, operate, and shutdown pumps. Troubleshooting common operating problems of centrifugal pumps will be discussed. Functions and characteristics of reboilers, cooling towers, and condensers will be covered in detail.

### **RNEW 1125 Piping and Instrumentation Diagram**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

This course will cover the symbols and diagrams commonly used on piping and instrumentation diagrams (P & ID's) and electrical one-line diagrams. Focus will be on identifying the types of diagrams, identifying instrument symbols and line symbols used on P & ID's, understanding the types of information typically found on a legend, using P & ID to locate the components of a system, identification of symbols used on electrical one-line diagrams and reading a flow diagram to trace the flow paths of a system.

### **RNEW 1160 Instrumentation and Control**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Building on Mechanical Fundamentals and Process Dynamics, this course will cover the essential elements of a process control system. It will cover common types of electrical and pneumatic signals used for data collection while exploring devices used to measure flow rate, pressure, temperature, level and analytical control. This course will compare fundamental control concepts such as on/off and PID. It will explain how control concepts are used in the various control loops of feedback, cascade, ratio, and feed forward.

### **RNEW 1170 Microbial Ecology and Lab**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course introduces students to the structure, classification, and ecology of microorganism, especially as they relate to an ethanol processing facility.

## **SAFETY TRAINING**

### **SFTX 1005 Safety**

**1 credit hour**

**15 Classroom Hours = 15 Lecture Hours**

A General Safety procedures and practices course with an introduction to OSHA.

### **SFTX 1750 Forklift Training**

**0.5 credit hour**

**10 Classroom Hours = 8 Lecture Hours + 2 Lab Hours**

This program fulfills the training required under OSHA

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Regulations. To include state-of-the-art, comprehensive training for fork-lift truck operators on the safe operation of fork-lift trucks.

## **SMALL ENGINE MECHANICS**

### **SENG 1710 Small Engine Maintenance**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Small engine design and operation, maintenance, tune-up, and troubleshooting.

### **SENG 1720 Small Engine Repair**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Tear down, overhaul and tune-up of engines for small portable tools such as chain saws and small equipment, including lawn mowers, garden tractors, and rototillers.

### **SENG 1730 Motorcycle and ATV Maintenance**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Motorcycle engine design and operation, overall maintenance, tune-up, and troubleshooting.

### **SENG 1740 Motorcycle, ATV and Snowmobile**

**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**

Tear down, overhaul and tune-up of engines for motorcycles, all terrain vehicles, and snowmobiles.

## **SOCIOLOGY**

### **SOCI 1000 Human Relations: People Skills in the Work Place**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course focuses on soft-skills training. Thirteen areas for skill improvement in human relations (people-skills) are studied. These *major universal training needs* are shared by most managerial, business, professional, technical and sales personnel. The training needs include understanding individual differences, interpersonal communication, teamwork skills, problem solving, cross-cultural relations, effective leadership, motivating self and others, helping others develop, positive political skills, personal productivity, stress management, customer service skills and enhancing ethical behavior. This is a practical working course that provides students with service learning experiences.

### **SOCI 1010 Introduction to Social Work**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A history of social work. Includes the development of the field through our English and early American heritage. Social work defined in relation to its functions, areas of interest, and goals in American society.

### **SOCI 1120 Introduction to Anthropology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Introduction to Anthropology is a study of mankind and its past. Emphasis is on the cultural and linguistic diversity of mankind. Special attention will be given to the following topics: language, religion, paleontology, physical

anthropology and evolution theory, and folk ways. Additional coverage will also be given to marriage and the family, kinship systems, and the legal systems of other cultures of the world.

**SOCI 1530 Introduction to Sociology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An analysis of society including the development of the social system, group formations and types of social organizations, and the basic elements affecting these classifications.

**SOCI 2010 Social Problems**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Analysis of the processes of disorganization in society with attention to some of the principle problem areas in contemporary society. *Prerequisite: SOCI 1530 or PSYC 1810.*

**SOCI 2100 Introduction to Social Gerontology**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory study of the sociological, psychological, physiological, and economic aspects of growing old in American society. Special emphasis will be placed on the social aspects and forces that encompass the aging process. *Prerequisite: SOCI 1530 or permission of instructor.*

**SOCI 2120 Drugs, Society and Human Behavior**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

A survey of licit and illicit drugs and their effects on animals and human physiology (particularly the nervous system). Psychological theories that account for drug usage and abuse and sociocultural relationships accounting for drug usage will also be explored, as well as co-dependent others that live with drug dependent individuals.

**SOCI 2250 Marriage and Family Relationships**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Important traditional and contemporary aspects of male-female roles and relationships and the implications for modern day courtship and marriage. Emphasis on changing functions of the family and problems of adjustment of rapidly changing social values.

**SOCI 2500 Dealing With Diversity**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The course covers diverse populations including Native Americans, Hispanic-Americans, African-Americans, Asian-Americans, and Euro-Americans. Important sociological lessons in social interaction, concepts of race, social class, age, gender, sexual orientation, and sociology of minorities are included in the course.

**SOCI 2900 Sociology Internship**

**2 credit hours**

**120 Classroom Hours = 120 Internship Hours**

The course is an opportunity to apply concepts and methods of sociology in a field setting. Student will obtain experience that will be valuable preparation for professional assignments

in research, policy analysis, and administration in the Department of Social Service. *Prerequisites: 9 hours of Sociology or Psychology, sophomore status, and permission of instructor.*

**SOCI 2910 Sociology Internship**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

The course is an opportunity to apply concepts and methods of sociology in a field setting. Student will obtain experience that will be valuable preparation for professional assignments in research, policy analysis, and administration in the Department of Social Service. *Prerequisites: 9 hours of Sociology or Psychology, sophomore status, and permission of instructor.*

**SPANISH**

**SPAN 1010 Beginning Spanish I**

**5 credit hours**

**75 Classroom Hours = 75 Lecture Hours**

Fundamentals of pronunciation, grammar structures, reading, writing, speaking and listening comprehension. Study of the Hispanic culture is incorporated throughout the course. The focus is on linguistic proficiency for communication. Oral laboratory one hour per week required.

**SPAN 1020 Beginning Spanish II**

**5 credit hours**

**75 Classroom Hours = 75 Lecture Hours**

Continuation of SPAN 1010. Pronunciation, grammar, reading, writing, speaking and listening skills are further developed. A continued study of the Hispanic culture. The focus is on linguistic proficiency for communication. Oral laboratory one hour per week required. *Prerequisite: SPAN 1010 or two semesters high school Spanish.*

**SPAN 2010 Intermediate Spanish I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours + Arranged Lab**

Continuation of SPAN 1020. Grammar, reading (including some literature), writing, speaking, listening comprehension and Hispanic culture. The focus is on linguistic proficiency for communication. *Prerequisite: SPAN 1020 or four semesters high school Spanish, or permission of instructor.*

**SPAN 2020 Intermediate Spanish II**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours + Arranged Lab**

Continuation of SPAN 2010. Grammar, reading (including some literature), writing, speaking, listening comprehension and the Hispanic culture. The focus is on linguistic proficiency for communication. *Prerequisite: SPAN 2010 or permission of instructor.*

**SPEECH**

**SPCH 1010 Fundamentals of Speech Communication**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introductory course which focuses on communication skills including the communication process, interpersonal relationships, small group discussion, and public communication. A minimum of five formal speeches.

## COURSE DESCRIPTIONS

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### **SPCH 1050 Interpersonal Communication**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Process of communication in interpersonal and group situations. Contemporary and rhetorical theories of effective communications.

### **SPCH 1090 Fundamentals of Human Communication**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

The communication system of individuals and small group communication processes; students explore perception, semantics, listening, self-concept, non-verbal communication, relationships, conflict resolution, and cross-cultural communication as aspects of interpersonal relationships. Class exercises emphasize the personal experience of students to reinforce theories. Minimum of three formal speeches.

### **SPCH 1110 Public Speaking**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

This course provides both theoretical basis and practical instruction for speaking effectively in public. The course emphasizes training in basic speech skills, development of voice, topic selection, audience analysis, speech preparation and organization, researching, strategic and creative language use, effective listening and delivery skills, and common types of public speeches, acknowledging the influence of various cultural and ethnic backgrounds.

### **SPCH 2050 Interpretive Reading**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Detailed practice in effective oral reading of literature for adults and children. Special training in group reading. Participation in the Readers' Theater before audiences in the College area.

### **SPCH 2080 Small Group Communication**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours** Study of the theory of small group processes; practice in methods of group decision making, problem solving, and cohesiveness-development in small group discussions.

## THEATER

### **THEA 1010 Introduction to Theater**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

An introduction to the forms and functions of the dramatic arts within a historical perspective. Includes an introduction to basic theater skills as well as an introduction to a range of dramatic literature.

### **THEA 1140 Acting I**

**3 credit hours**

**45 Classroom Hours = 45 Lecture Hours**

Stage movement, mime, body awareness, voice, script analysis, and rehearsal technique.

### **THEA 1601 Theater Internship**

**1 credit hour**

**60 Classroom Hours = 60 Internship Hours**

Theater Internship places a student in a business/professional organization that emphasizes some aspect of theater and/or performance. The cooperating business retains the right to accept or deny student participation in this program.

### **THEA 1602 Theater Internship**

**2 credit hours**

**120 Classroom Hours = 120 Internship Hours**

Theater Internship places a student in a business/professional organization that emphasizes some aspect of theater and/or performance. The cooperating business retains the right to accept or deny student participation in this program.

### **THEA 1603 Theater Internship**

**3 credit hours**

**180 Classroom Hours = 180 Internship Hours**

Theater Internship places a student in a business/professional organization that emphasizes some aspect of theater and/or performance. The cooperating business retains the right to accept or deny student participation in this program.

### **THEA 1850 Play Production I**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

Intensive application of principles of interpretive and technical theater practices. The class project each semester is a college play. *Prerequisite: Permission of instructor.*

### **THEA 1860 Play Production II**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

Continuation of THEA 1850. *Prerequisite: Permission of instructor.*

### **THEA 1870 Play Production III**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

Continuation of THEA 1860. *Prerequisite: Permission of instructor.*

### **THEA 1880 Play Production IV**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

Continuation of THEA 1870. *Prerequisite: Permission of instructor.*

### **THEA 1890 Play Production V**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

Continuation of THEA 1880. *Prerequisite: Permission of instructor.*

### **THEA 1900 Play Production VI**

**1 credit hour**

**50 Classroom Hours = 50 Lab Hours**

Continuation of THEA 1890. *Prerequisite: Permission of instructor.*

**THEA 2010 Stagecraft and Lighting**  
**3 credit hours**  
**60 Classroom Hours = 48 Lecture Hours + 12 Lab Hours**  
 Basics of technical theater practice including scene design, drafting, construction, painting, and lighting of stage scenery and properties; emphasis on practice and terminology; safe use of hand tools and power equipment in translation from design to actual materials for open stage productions. Lecture and lab. *Prerequisite: THEA 1010 Introduction to Theater or permission of instructor.*

**THEA 2020 Play Direction**  
**3 credit hours**  
**45 Classroom hours = 45 Lecture Hours**  
 This course is an introduction to the fundamentals of play direction. Students will apply principles and techniques of basic directing skills to in-class and public one-act and cutting projects. Students will develop skills in play selection, script analysis and interpretation, blocking, movement and ad stage composition, production values, auditions, rehearsals, and performance. *Prerequisite: THEA 1140 or permission of instructor.*

**THEA 2130 History of the Motion Picture**  
**3 credit hours**  
**48 Classroom hours = 48 Lecture Hours**  
 History of the Motion Picture examines the invention and development of cinema. From the first audiences watching a motion picture in 1895, through the development of sound, color film, 3-D, and computer-generated images, the history of motion pictures has been one of technical development along with the development of a social awareness and consciences in the subject matter. Race, gender, and ethnicity in films is investigated as part of this awareness. The emerging voices of African Americans, Hispanic Americans, Native Americans and women, point out similarities and differences in dealing with economic, cultural, social and personal issues. The course will focus on a global and national perspective of cultural diversity, in looking at the development of film as the recorder of cultural awareness in America, and in the world.

**THEA 2140 Acting II**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A continuation of THEA 1140 Acting I. Work will focus on concentration, relaxation, sensory awareness, script analysis, movement, and improvisation. Work on character analysis will be done through in-class scenes. A final project will be required. *Prerequisite: THEA 1140 or permission of instructor.*

**THEA 2180 Intro to Filmmaking**  
**3 credit hours**  
**60 Classroom Hours = 30 Lecture Hours + 30 Lab Hours**  
 This course will introduce students to theories and practices involved in pre-production phase (budgeting, finalizing shooting script, design conceptions) production (rehearsing, shooting, lighting, sound) and post-production (film editing, sound editing) of filmmaking. Student will work through a combination of instruction, reading, research, and practical application by producing a short film. (Replaces THEA 2150, 2160, and 2170.)

**THEA 2210 Fundamentals of Stage Management**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 An introduction to the functions of the theatrical stage manager. Includes an introduction to basic theater skills as well as an introduction to the forms the Stage Manager must use. Class exercises will focus on the various tasks of the Stage Manager.

**THEA 2240 Acting III**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A continuation of THEA 2140 Acting II. Students will learn Greek, Elizabethan, Naturalism, and Absurd acting style, as well as acting for the camera. A final project is required.

**THEA 2340 Acting IV**  
**3 credit hours**  
**45 Classroom Hours = 45 Lecture Hours**  
 A continuation of THEA 2140 Acting III. Students will receive advance training in period styles, script analysis, acting for the camera, and professional development. A final project is required.

**TRANSPORTATION**

**TRAN 1005 Safety**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
 Specific safety practices for auto/diesel mechanic shops.

**TRAN 1130 Mechanics Electrical**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 Diagnosis of basic electrical principles, automotive circuits, and batteries.

**TRAN 1235 Mechanics Air Conditioning**  
**3 credit hours**  
**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**  
 Air conditioning and heater system diagnosis and repair procedures. *Prerequisite: TRAN 1005 or permission of instructor.* Fee \$10.

**TRAN 1410 Allison Transmissions**  
**2 credit hours**  
**60 Classroom Hours = 15 Lecture Hours + 45 Lab**  
 Allison automatic transmission design, operation, an overhaul. *Prerequisite: AUTO 2415 or DSLT 1200.* Fee \$5.

**UPHOLSTERY**

**UPHR 1610 Furniture Upholstering**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Materials, tools, and techniques used in furniture upholstery and frame construction. Fee \$35.

**UPHR 1620 Furniture Upholstering, Adv.**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Upholstery layout, sewing and placement. Fee \$35.

## COURSE DESCRIPTIONS

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**UPHR 1630 Furniture Repair**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Furniture construction, repair and preparation for upholstering or refinishing. Fee \$35.

**UPHR 1640 Furniture Refinishing**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Refinishing techniques and use of stains, wood fillers, sealers, varnishes, lacquers and oil finishes. Fee \$35.

**UPHR 1650 Furniture Repair/Restoration**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Bracing, piece replacement and preparation for applying filler, stains and finishes. Fee \$35.

**UPHR 1660 Furniture Restyling and Upholstery**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Furniture design and structure and frame strengthening. Fee \$35.

**UPHR 1670 Couch Reconstruction and Upholstering**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Frame and spring repair, pad replacement, and recovering large projects. Fee \$35.

**UPHR 1680 Auto Seat Upholstering**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Recovering car seats and replacing floor carpet. Fee \$35.

**UPHR 1690 Auto Interior Recovering**  
**2 credit hours**  
**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
Recovering inside door panels and replacing headliners and carpeting. Fee \$35.

**UPHR 1710 Furniture Upholstering**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Materials, tools and techniques used in furniture upholstery and frame construction. Fee \$35.

**UPHR 1720 Furniture Upholstering, Advanced**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Upholstery layout, sewing, and placement. Fee \$35.

**UPHR 1730 Furniture Repair**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Furniture construction, repair and preparation for upholstering or refinishing. Fee \$35.

**UPHR 1740 Furniture Refinishing**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Refinishing techniques and use of stains, wood fillers, sealers, varnishes, lacquers and oil finishes. Fee \$35.

**UPHR 1750 Furniture Repair and Restoration**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Bracing, piece replacement and preparation for applying filler, stains and finishes. Fee \$35.

**UPHR 1800 Beginning Antiques**  
**0.50 credit hour**  
**7.5 Classroom Hours = 7.5 Lecture Hours**  
Family heirlooms, insurance, settling estates, care of antiques, appraisal and speculation.

**UPHR 1810 Antiques and Collectibles**  
**1 credit hour**  
**23 Classroom Hours = 16 Lecture Hours + 7 Lab Hours**  
Family heirlooms, insurance, settling estates, care of antiques, appraisal and speculation.

**UPHR 1820 Antiques and Collectibles, Advanced**  
**1 credit hour**  
**23 Classroom Hours = 16 Lecture Hours + 7 Lab Hours**  
Glass, pottery, stoneware, children's items, foreign collectibles, silhouettes, furniture and dinnerware.

**UPHR 2710 Furniture Restyling and Upholstering**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Furniture design and structure and frame strengthening. Fee \$35.

**UPHR 2720 Couch Reconstruction and Upholstering**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Frame and spring repair, pad replacement, and recovering large projects. Fee \$35.

**UPHR 2730 Auto Seat Upholstering**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Recovering car seats and replacing floor carpet. Fee \$35.

**UPHR 2740 Auto Interior Recovering**  
**3 credit hours**  
**72 Classroom Hours = 35 Lecture Hours + 37 Lab Hours**  
Recovering inside door panels and replacing headliners and carpeting. Fee \$35.

### WELDING TECHNOLOGY

**WELD 1005 Safety**  
**1 credit hour**  
**15 Classroom Hours = 15 Lecture Hours**  
Dealing with safety with specifics on hazards in the workplace for welders.

**WELD 1110 Arc and Gas Welding**  
**3 credit hours**  
**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**  
In- and out-of-position arc welding, oxyacetylene welding and cutting mild steel; selection of rods, fluxes, electrodes and materials; and safety. Fee \$20.

**WELD 1120 Advanced Arc and Gas Welding**  
**3 credit hours**  
**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**  
Selection and preparation of metals and types of joints; and

welding with various welding rods on thick and thin material. Fee \$20.

**WELD 1130      MIG and TIG Welding**  
**1 credit hour**

**45 Classroom Hours = 10 Lecture Hours + 35 Lab Hours**  
 Metallic and Tungsten Inert Gas welding set up; operation and safety; basic joints and positions; semiautomatic welding of ferrous and difficult-to-weld metals. Fee \$25.

**WELD 1140      Metals and Metallurgy**  
**3 credit hours**

**75 Classroom Hours = 30 Lecture Hours + 45 Lab Hours**  
 Manufacture and processing of ferrous and nonferrous metals; identification; physical and chemical properties; low, medium and high carbon steels; alloy steels; cast iron and stainless steel.

**WELD 1210      All Position Arc Welding**  
**3 credit hours**

**105 Classroom Hours = 15 Lecture Hours + 90 Lab Hours**  
 Use of multiple passes on plate mild steel. Fee \$20.

**WELD 1230      Welding Pattern Development**  
**2 credit hours**

**60 Classroom Hours = 15 Lecture Hours + 45 Lab Hours**  
 Blueprint, schematic and diagram reading for welders, basic drawing interpretation and welding symbols and their significance.

**WELD 1510      Plate, Pipe and Pressure Vessel Welding**  
**4 credit hours**

**120 Classroom Hours = 30 Lecture Hours + 90 Lab Hours**  
 Heavy plate, pipe and pressure vessel welding with various electrodes in all positions. Fee \$25.

**WELD 1515      Welding Prefabrication**  
**1 credit hour**

**45 Classroom Hours = 45 Lab Hours**  
 Designed to prepare the student for the required adjustments to the world of work with speed and quality work habits to the satisfaction of the employer or customer. Fee \$25.

**WELD 1530      Advanced MIG and TIG Welding**  
**1 credit hour**

**45 Classroom Hours = 0 Lecture Hours + 45 Lab Hours**  
 Metallic and Tungsten Inert Gas welding set up, operation and safety; basic joints; semiautomatic welding of ferrous and nonferrous metals, including aluminum and stainless steel. *Prerequisite: WELD 1130.* Fee \$20.

**WELD 1710      Oxyacetylene Welding**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 All position oxyacetylene welding, brazing and cutting. Fee \$20.

**WELD 1720      Arc Welding**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 All position arc welding technique, equipment, materials and selection of electrodes. Fee \$20.

**WELD 1730      Arc and Oxyacetylene Welding**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Arc and gas welding technique, equipment, materials and selection of electrodes. Fee \$25.

**WELD 1740      Arc and Oxyacetylene Welding, Advanced**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Welding out of position and with different metals and electrodes. *Prerequisite: WELD 1730.*

**WELD 1750      TIG Welding (GTAW)**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Tungsten-Inert gas welding of steel, aluminum and stainless steel. Fee \$50.

**WELD 1760      MIG Welding (GMAW)**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Maintenance and production wirefeed welding using metallic-inert gas on ferrous and nonferrous metals in all positions. Fee \$20.

**WELD 1770      Certification Welding**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Preparation to obtain certification for welding in accordance with code qualification. Fee \$30.

**WELD 1780      Commercial Art Welding**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Art welding using all types of materials and equipment to weld art sculptures, figurines and ornamental projects.

**WELD 1790      Welding Review Refresher**  
**2 credit hours**

**45 Classroom Hours = 23 Lecture Hours + 22 Lab Hours**  
 Welding review for new techniques and certification.

**WELD 1810      Machine Shop and Welding**  
**1 credit hour**

**30 Classroom Hours = 8 Lecture Hours + 22 Lab Hours**  
 Machine shop and power tools including lathe and milling operation and arc, MIG and TIG all position welding on various metals.

**WELD 1820      Machine Shop and Welding**  
**1.5 credit hours**

**38 Classroom Hours = 15 Lecture Hours + 23 Lab Hours**  
 Machine shop and power tools including lathe and milling operation and arc, MIG and TIG all position welding on various metals.