ACCOUNTING

ACCT 1115 Small Business Accounting
This course is intended for the professional office worker of a small business. The content will emphasize the accounting records kept for cash receipts and cash payments, and payroll reports. (Prerequisites: None). (3 C). Offered: Fall, Spring.

ACCT 1807 Accounting Math/Calculators
This course is designed to provide basic mathematical skills needed to make calculations related to computing percentages, commissions, interest, promissory notes, discounts, markup, simple interest, payroll, and bank reconciling. Additionally, this course covers development of the touch system on desk calculator keyboards and microcomputer number pad keyboards. Students will develop speed and accuracy using the touch system for the four basic arithmetic operations and solving business problems. (Prerequisites: None). (3 C). Offered: Fall, Spring.

ACCT 1810 Applied Principles of Accounting I
This course is an introduction to the fundamental accounting concepts and principles used to analyze and record business transactions. Topics include the accounting cycle, accounting for a merchandising business, accounting system design and analyzing accounts of cash and payroll. (Prerequisites: None). (4 C). Offered: Fall, Spring.

ACCT 1811 Applied Principles of Accounting II
This course includes analysis and the recording of transactions related to inventory methods, receivables, temporary investments, plant assets, long-term liabilities, partnerships, and corporate organizations. Additional topics include, but not limited to, business organization, capital structure, stockholder’s equity, earnings, dividends, and the Retained Earnings Statement. Also included are Statement of Cash Flow, financial statement analysis, department and branch accounting, and consolidated financial statements. (Prerequisites: ACCT 1810). (4 C). Offered: Fall, Spring.

ACCT 1814 Payroll Accounting
This course covers the various state and federal laws pertaining to the computation and payment of salaries and wages. Topics include preparation of employment records, payroll registers, time cards, employee earnings records, and state and federal reports. (Prerequisites: ACCT 1810 or consent of instructor). (3 C). Offered: Fall, Spring.

ACCT 1834 Computerized Accounting Applications I
This course is an introduction to computerized accounting applications and spreadsheet applications. Topics include computerized general ledger, accounts receivable, accounts payable, and payroll. Additionally, spreadsheet software is used to solve accounting problems. (Prerequisites: ACCT 1810 or BUS 2217, or consent of instructor). (3 C). Offered: Fall, Spring.

ACCT 1837 Computerized Accounting Applications II
This course covers the use of a computerized spreadsheet and database systems for accounting applications. Topics include document creation, storage and retrieval, editing, printing, and file distribution. (Prerequisites: ACCT 1810 or consent of instructor). (3 C). Offered: Fall, Spring.

ACCT 2821 Applied Intermediate Accounting I
This course is a comprehensive study of accounting theory and concepts with an analysis of the influence on financial accounting by various boards, associations, and governmental agencies. Topics include the income statement, balance sheet, statement of changes in financial position, cash and marketable securities, notes and accounts receivable, inventories, plant and intangible assets. A comprehensive case is included in the course. (Prerequisites: ACCT 1811 or consent of instructor). (4 C). Offered: Fall.

ACCT 2822 Applied Intermediate Accounting II
Long-term investments, current and contingent liabilities, bonds payable, leases, pension plans, owners’ equity, retained earnings and dividends, revenue recognition concepts, accounting for income taxes, non-operating income, and earnings per share. Also included is accounting for changes in price level, and financial statement analysis. (Prerequisites: ACCT 2821 or consent of instructor). (4 C). Offered: Spring.

ACCT 2835 Computerized Accounting Applications III
This course covers additional computerized accounting applications used in business. Topics include fixed asset accounting, manufacturing accounting systems, income tax preparation, inventory procedures, and a computerized accounting simulation. (Prerequisites: ACCT 1834; ACCT 2861 (or concurrent enrollment); or consent of instructor). (4 C). Offered: Spring.

ACCT 2843 Auditing
This course is a study of the methods and procedures used to verify the completeness and accuracy of assertion made in the financial statements. Topics include professional ethics, the audit process, nature of evidence, internal control, audit sampling techniques, the audit examination, and audit reports. (Prerequisites: ACCT 1811, or consent of instructor). (3 C). Offered: Spring.

ACCT 2849 Income Tax
This course provides an explanation and interpretation of the Internal Revenue Code as applied to individual income tax returns. Topics include filing requirements, filing status, gross income inclusions and exclusions, gains and losses, itemized deductions, and deductions for adjusted gross income. Additionally, the course provides an explanation and interpretation of the Internal Revenue Code as applied to partnerships. Topics include partnership investments, withdrawals, distribution of partnership income and loss. (Prerequisites: ACCT 1811 or consent of instructor). (4 C). Offered: Fall.

ACCT 2861 Applied Cost Accounting
This course covers accounting for materials, labor, and factory overhead in a manufacturing entity. Other topics include the job order cost system, the process cost system, equivalent production, and accounting for scrap, spoiled goods, by-products, and joint products. (Prerequisites: ACCT 1811, or consent of instructor). (3 C). Offered: Fall.
ACCT 2862  Applied Cost/Managerial Accounting
This course is a continuation of accounting for materials, labor and factory overhead and how accounting data and concepts can be interpreted and applied by management in planning and controlling business operations. Topics include budgeting, standard costing, break-even analysis and other cost analysis. Also included is cost-volume-profit relationships, differential costs and revenues, the pricing decision, capital investment and decentralized operations. (Prerequisites: ACCT 2861, or consent of instructor). (3 C). Offered: Spring.

ACCT 2863  Fund/Not-for-Profit Accounting
This course covers the application of generally accepted accounting principles for state and local governmental units and not-for-profit entities. Topics include accounting for municipalities, public schools, colleges, universities, hospitals and other not-for-profit organizations. (Prerequisites: ACCT 1811, or consent of instructor). (2 C). Offered: Fall.

ACCT 2874  Integrated Financial Presentations
This course is an advanced study of accounting theory and concepts, including an analysis of the influence by various boards, governmental agencies, and associations on accounting procedures. Additionally, there will be research, reporting, and presentations on current accounting issues and topics. This course will use internet to access data and various computer software to transfer, assemble, and present information. (Prerequisites: ACCT 2821, ACCT 2835, or consent of instructor). (3 C). Offered: Spring.

transfer accounting courses are listed under business.

ADMINISTRATIVE INFORMATION SYSTEMS

AIS 1010  Introduction to Computer Software
This course covers basic information about computer hardware and software and the use of the computer software as a productivity tool. Students will be given introductory training on common business applications: word processing, spreadsheets, graphics, and databases. (Prerequisites: Keyboarding skills). (2 C/3 hours per week). Offered: As requested.

AIS 1020  Keyboarding for Computers
This course is designed to provide the student with the basic skills necessary to input and retrieve data from the computer/word processor through the use of the keyboard. Students will be taught the touch-type method of alphabetic (and numeric) keyboarding with great emphasis placed on accuracy. The course is designed for students who have no keyboarding skills. (Prerequisites: None). (1 C/2 hrs per wk or 4 hrs per wk for half of the semester). Offered: Fall, Spring.

AIS 1030  Keyboarding Speed/Accuracy Improvement
This course offers a scientific method to eliminate errors and build speed systematically. The course helps students to identify particular stroke combinations that cause speed and/or accuracy problems. (Prerequisites: Touch-type keyboarding proficiency). (1 C/2 hrs per wk). Offered: Fall, Spring.

AIS 1050  Keyboarding
This course covers basic “touch keyboarding” skill development and the use of a computer keyboard to produce simple keyboarding tasks and applications. Basic formatting and proofreading skills and straight-copy skill development will be included. (Prerequisites: None). (2 C/3 hrs per wk). Offered: Fall, Spring.

AIS 1150  Introduction to Desktop Publishing
An introduction to desktop publishing using computers and PageMaker and Microsoft word software. Discussions and practical hands-on experience with page design, layout, graphics and typography. (Prerequisites: None). (2 C/2 hours per week). Offered: Fall, Spring.

AIS 1220  Human Relations in Organizations
The study and development of essential communication skills needed in business to interact/work effectively with individuals and/or groups. The course emphasizes verbal/nonverbal communications, transactional analysis, listening, problem solving, decision making, leadership styles, motivation/morale, stress management, business ethics, and group presentations. (Prerequisites: None). (3 C/3 hrs per week). Offered: Fall, Spring.

AIS 1230  Machine Transcription
Word processing through intensive machine transcription drills from dictated tapes on spelling, punctuation, vocabulary, and grammar with application of these concepts to memos, letters, reports, and business forms generated in a variety of business settings. This course will focus on the concepts of mailability, cost efficiency, professionalism, and decision making. (Prerequisites: None). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 1320  Word Processing I
This course is designed for development of basic/beginning word processing knowledge and skills using a full-featured word processing program. Simultaneously, knowledge of formatting various business documents will be expanded. Keyboarding speed and accuracy will continue to be developed. (Prerequisites: Keyboarding or equivalent skill or permission of the instructor). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 1510  Exploring the Internet
This course will provide hands-on instruction on accessing information through the Internet including world-wide webs, listservs, and electronic mail. The student will then complement their knowledge of the Internet using Hyper Text Markup Language (HTML) that is used to create web pages that can be placed on the Internet. The students will create their own web pages for business or personal use. (Prerequisites: None). (3 C/3 hrs per week). Offered: Fall, Spring.

AIS 1600  Introduction to Medical Terminology
This course will introduce the building of medical words including prefixes, suffixes, and combining forms from Greek and Latin word parts and the rules for connecting them to form medical terms. Special emphasis is placed on spelling, pronunciation, and definition of medical words. A foundation is created for the continued development of medical vocabulary. (Prerequisites: None). (2 C/2 hrs per wk). Offered: Fall, Spring.

AIS 1610  Medical Terminology: Body Systems and Diseases
This course covers the introduction to body systems and diseases that relate to them. Study of the following diseases by anatomical system will be covered: cardiovascular, endocrine, female reproductive, gastrointestinal, male reproductive, musculoskeletal, respiratory, and urinary. Emphasis is on terminology, body structure, function, and disease conditions. (Prerequisites: None). (2 C/2 hrs per wk). Offered: Fall, Spring.
AIS 1630  Computerized Medical Data Management  
This course covers medical office data management with the utilization of computerized medical office management software. Topics covered will include patient appointments and scheduling, patient charts, patient billing and collections, and insurance processing. (Prerequisites: AIS 1600, AIS 1050, or equivalent). (2 C/2 hrs per wk). Offered: Spring.

AIS 1640  Medical Insurance and Coding  
This course covers an introduction to medical claims form preparation and processing. It will include CPT, ICD-9-CM, and HCPS coding, insurance provider terminology, and insurance form preparation. (Prerequisites: AIS 1600, AIS 1050, or equivalent). (2 C/2 hrs per wk). Offered: Spring.

AIS 1660  Introduction to Medical Transcription  
This course introduces medical transcription skills using dictation from a variety of specialties. Emphasis is on transcription of medical reports. There will be concentration on proper formatting techniques, building speed and accuracy, and proofreading. (Prerequisites: AIS 1600, AIS 1320, or Keyboarding). (2 C/3 hrs per wk). Offered: Spring.

AIS 1670  Medical Transcription I  
This course introduces medical transcription skills using different dictators from a variety of medical specialties. A variety of medical transcription experiences is provided with special emphasis on medical report formatting and medical letter style. (Prerequisites: AIS 1600 and keyboarding skills). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 1680  Medical Transcription II  
This course is a continuation of Medical Machine Transcription I. Emphasis is on transcription of letters and doctors’ notes from a variety of medical specialties and on transcription of medical reports. There will be particular concentration on proper formatting techniques, building speed and accuracy, advanced editing, and proofreading. (Prerequisites: AIS 1670, AIS 1600, AIS 1610). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 1700  Applied Law for Business  
This course is an introduction to the principles of law as they apply to citizens and businesses and provides a practical understanding of the legal system. Topics include the court system at the federal and state levels, contracts, negotiable instruments, and employer/employee relationships. Important parts of the course include analyzing legal cases and observing a court trial. (Prerequisites: None). (2 C/2 hours per week). Offered: Fall.

AIS 1710  Legal Terms/Transcription I  
This course introduces legal transcription skills using dictation from a variety of specialties. Emphasis is on transcription of legal documents. There will be concentration on proper formatting techniques, building speed and accuracy, and proofreading. (Prerequisites: AIS 1320, AIS 1050, Keyboarding competency). (3 C/3 hrs per wk). Offered: Fall.

AIS 2200  Information Resources Management  
This course focuses on automated and non-automated information storage and retrieval systems and on the management policies and procedures necessary for creating, controlling, implementing, and evaluating today’s information systems. A case study approach and hands-on computer projects are part of this course. (Prerequisites: None). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 2220  Business Communications  
Provides the student with an introduction to principles of business utilized in both oral and written communication. Special emphasis is placed upon refreshing grammar skills, formatting skills, and recognizing the interrelationships between the business communications and the assessment of the audience. Utilizes both a lecture and practical/computer lab approach to teaching these principles. (Prerequisites: None). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 2270  Office Procedures  
This course capstones the administrative assistant training. Students will process a variety of mailable documents, learn proper business telephone etiquette, use presentation software to create electronic slides, use current manuals and Internet technology to do research, maintain an electronic calendar, send and receive e-mail, perform database and spreadsheet tasks, and learn to set priorities when working independently to perform various office tasks. (Prerequisites: AIS 2220, AIS 2350, AIS 2200, AIS 1220, AIS 2330 or concurrent enrollment). (3 C/3 hrs per wk). Offered: Spring.

AIS 2330  Word Processing II  
This course is designed for continued development of advanced word processing knowledge and skills using a full-featured word processing program. Simultaneously, knowledge of formatting various business documents will be expanded. Keyboarding speed and accuracy will continue to be developed. (Prerequisites: AIS 1320). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 2350  Microcomputer Business Applications  
This microcomputer course is designed to provide “hands-on” training in the use of the computer for information processing. Students complete applications using software programs that provide the business productivity tools: word processing, spreadsheets, and database management. Basic Internet concepts are also covered. (Prerequisites: keyboarding competency). (3 C/3 hrs per wk). Offered: Fall, Spring.

AIS 2530  Information Technology Practicum  
Various courses and levels of computer software applications will be offered. Watch semester listings for specific courses/ software offered. Content will vary from the introductory level through the complex and advanced level. May be repeated as the content of the course changes. May be taken pass/fail option grading. No credit if equivalent content/software has been completed in AIS 1320 or AIS 2330 with a grade of C or higher. (Prerequisites: Keyboarding competency). (1-3 C/1-3 hrs per wk). Offered: Fall, Spring.

AIS 2610  Medical Specialties and Pharmacology  
This course covers the various specialty areas of medical practice, medications commonly used in those areas, and location of medications in the Physician’s Desk Reference and other reference materials. Additional topics covered will be drug classifications and modes of administration, characteristics of typical drugs, and usage of the PDR in location, correct spelling, and proper interpretation of medications in dictated material. (Prerequisites: None). (2 C/2 hrs per wk). Offered: Fall, Spring.
AIS 2640 Medical Word Processing
This course covers an integration of medical terminology, medical report formatting, medical correspondence formatting, and medical office document formatting with word processing skills. Emphasis will be placed on formatting and proofreading skill development and accuracy. All medical documents will incorporate medications, medical specialties, and/or medical office concepts. Keyboarding speed and accuracy will continue to be developed. Special emphasis will be placed on importing data to create clinical notes and medical letters. (Prerequisites: AIS 1600, AIS 1610 or concurrent registration; and AIS 1320). (3 C/3 hrs per wk). Offered: Spring.

AIS 2650 Medical Office Procedures
This course covers medical office career information, medical ethics, and professional liability. Topics covered will include medical receptionist tasks, working with patient files, medical records and billing, medical insurance, and coding, making meeting and travel arrangements, mail handling, scheduling patient appointments, and telephone messages. (Prerequisites: AIS 1670, AIS 1600, and AIS 1610). (3 C/3 hrs per wk). Offered: Spring.

AIS 2710 Legal Terms/Transcription II
This course is a continuation of the study and development of legal vocabulary with application of word processing skills in transcribing legal correspondence and documents. Emphasis will be placed on punctuation, spelling, and the use of Latin terms common to the legal profession. (Prerequisites: AIS 1710). (3 C/3 hrs per wk). Offered: Spring.

AIS 2840 AIS Internship
Internship is the opportunity to earn credit for a job that provides work experience related to the student’s career objective. A total of 2-5 credits may be earned per semester; a maximum of 5 credits for a program. (Prerequisites: Major in AIS Program). (2-5 C/60 hours of work experience per semester credit). Offered: Fall, Spring, Summer.

AMERICAN SIGN LANGUAGE

ASL 1107 American Sign Language I
An introduction to the Signing Naturally Series. This course will take students who have no knowledge of Sign Language to the point where they can function comfortably in a wide variety of situations in the deaf community. Deaf culture is taught throughout the curriculum. Level I will introduce language concepts related to people, places, and things within the immediate environment. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

ASL 1108 American Sign Language II
A continuation of ASL 1107. The course will build on topics, vocabulary and grammar introduced in ASL 1107. The course will encourage students to talk about people in a more abstract way and to talk about the environment removed from the classroom. Students will learn to describe past and current events. Students will also learn appropriate cultural behavior for directing and maintaining attention and a way to talk that keeps others informed. Students will learn strategies for controlling the pace of conversation and resuming conversations after an interruption. (Prerequisites: ASL 1107 or permission of instructor). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring.

ANTHROPOLOGY

ANTH 1611 Physical Anthropology & Archeology
The record and analysis of human biological and cultural evolution from earliest humans through the Paleolithic and into the historic periods. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, HD. Offered: Spring.

ANTH 1612 Cultural Anthropology
A study of world cultures to enhance an understanding of adaptation and diversity. Topics include socioeconomic systems, class, behavior and social theory. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, HD. Offered: Fall, Spring.

ART

ART 1110 Art Appreciation
This course is an introductory exposure to art and to ideas about art and its creation. We will discuss general ideas about the nature and uses of art, introduce a basic exploration of visual elements and principles of design, explore common media and techniques, and briefly look at contemporary developments in the visual arts. Near the end of the term there will be a trip to the Walker Art Center and the Minneapolis Institute of the Arts. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 1111 Ancient Art
This course is an introductory survey of the art of the ancient world. It will examine and try to understand the architecture, sculpture, and painting of many important periods and civilizations of the past. It will look at pre-historic art, the art of Egypt and ancient Near East, the arts of the Aegean cultures, Greek art, Roman art, Early Christian art, Byzantine art, Romanesque art, Gothic art, and the art of the Italian Early Renaissance. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA. Offered: Fall.

ART 1112 Modern Art
This course is an introductory survey of the art of the Modern World from the Renaissance to the present. It continues with Neoclassicism and Romanticism, then looks at Realism and Impressionism, and concludes with an expression of some of the many movements and important figures of 20th century painting and sculpture. (Prerequisites: Completion of ART 1111 recommended). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Spring.

ART 1120 Computer as a Creative Tool
This introduction to the unique and elegant Macintosh System offers hands-on experience working with graphic software, both object oriented and bit mapped; word processing; presentation software and desktop publishing. Students will learn computer technology and software and how they can use it for creative problem solving and critical thinking. Previous experience with computers is not necessary. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Spring.

ART 1121 Basic Design
This course is a foundation class in two-dimensional design and color. It is a basic exploration of visual elements and principles of design using simple media and techniques. Those elements, principles and ideas that constitute the shared language of all the visual arts are emphasized. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall.
ART 1123  Three-Dimensional/Sculptural Design
This course is an introduction to the idea and practice of 3-dimensional/sculptural design. Using simple materials and processes, students will investigate aspects of form and sculpture, elements and principles of design, and basic procedures in the invention, construction and understanding of sculptural forms in space. (Prerequisites: ART 1121 recommended). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 1124  Graphic Design I
This course is an introduction to graphic design using typography, illustration, symbols and photography. In this hands-on course, students apply elements of design and historical design style to create several camera ready portfolio pieces. The use of two leading page layout programs will be utilized. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 1130  Computer Graphics I
This course introduces students to basic design techniques, including the history and philosophy of graphic design and ways to apply them to produce effective well designed presentations on and off the computer. Using personal computer and a variety of programs (PageMaker, QuarkXpress, PageMill, Netscape Gold, Power Point, Director), and traditional art materials (markers, storyboards, transparencies) students will develop through hands-on exercises, several presentation pieces for a portfolio, including: web page design, slide presentations, interactive media and multimedia resumes. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 1131  Presentation Graphics
This course introduces students to basic design techniques, including the history and philosophy of graphic design and ways to apply them to produce effective well designed presentations on and off the computer. Using personal computer and a variety of programs (PageMaker, QuarkXpress, PageMill, Netscape Gold, Power Point, Director), and traditional art materials (markers, storyboards, transparencies) students will develop through hands-on exercises, several presentation pieces for a portfolio, including: web page design, slide presentations, interactive media and multimedia resumes. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 1134  Drawing I
This is a class in the practice of drawing. Students will be introduced to concepts and methods involved in learning to draw from observation and imagination. They will be introduced to line, value, the representation of light, structure, spatial organization and composition. Drawing as personal exploration and expression will be emphasized. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring.

ART 1144  Painting I
This course is a basic class in the practice of oil and/or acrylic painting. It begins with an introduction to materials and techniques. Basic elements and principles of the visual arts will be emphasized. We will pay particular attention to aesthetic issues as they arise in relationships of form and space. (Prerequisites: ART 1134, ART 1121, Recommended). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring.

ART 1164  Ceramics I
This art studio is an introductory course for students who have had various levels of exposure to art through high school classes or self-exposure. Class assignments lead students into the exploration of basic hand building and wheel forming techniques of working with clay and glazing procedures. Presentations explore art philosophies, artists, and art styles through lecture, demonstration, slides and video. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring.

ART 1170  Introduction to Crafts
Introduces the student to some of the materials, techniques, and philosophies involved in crafts. Materials to be used include metal, clay, wood, fibers, and found objects. (Prerequisites: None). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA, GP. Offered: Fall.

ART 1193  Art Workshop
Arranged programs in specific or combined areas of art that adapt themselves to particular needs, situations, or opportunities. These classes give students the opportunity to work on original problems that require creative thinking and critical decision making. They also discuss the history of the specific discipline and related philosophy of art. (Prerequisites: None). (1-6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring, Summer.

ART 1232  Designing for the Internet
This course is an in-depth art course dealing with all aspects of web page design, publishing techniques and authoring, including history and philosophy of graphic design. Students will explore typography, latest page layout and image rendering to produce high quality pages with handmade details including animations, buttons, custom made backgrounds and one-of-a-kind illustrations. Students will use a choice of software including Photoshop, Illustrator, Flash 2, 3D Extreme PageMaker, PageMill and Communicator. (Prerequisites: ART 1130, 2230 or 2224). (3 C/0 lect/6 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 2224  Graphic Design II
This course further sharpens visual conceptualization and technical skills. Working in the context of actual projects, students will learn different techniques for putting together a corporate identity system including a logo for stationery, envelope and business card, a postcard with variations, a poster with variations, a 3 fold brochure and personal promotional materials. Technical information includes keylining, printing, and typesetting processes and problem solving leading to the production of portfolio quality pieces. Most of the work will be done on the computer using Adobe Illustrator. (Prerequisites: ART 1124). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 2230  Computer Graphics II
This course further sharpens visual conceptualization and technical skills learned in Computer Graphics I. Students will develop through hands on experience 10-15 portfolio pieces. The emphasis in this course will be on harnessing the power of the computer to create art using Adobe Photoshop, digital cameras and the scanner. Photoshop is an electronic darkroom, which lets you manipulate scanned photolithographs, slides and original artwork in many ways. No previous experience with Photoshop is required, but students must have taken Computer Graphics I or have the approval of the instructor. (Prerequisites: ART 1130). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.
ART 2234 Drawing II
This is a second class in the practice of drawing. It is expected that students will have been introduced to concepts and methods involved in learning to draw from observation and imagination. They will continue to work with assigned problems related to line, value, the representation of light, structure, spatial organization and composition. Drawing as personal exploration and expression will be emphasized. Because it is assumed they will have begun to develop personal goals, interests, and preferences, they will be expected to work from a greater degree of personal motivation and at an accelerated pace. (Prerequisites: ART 1134 or equivalent). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 2237 Animation and 3D Modeling
This course introduces the fundamentals of art including its history and philosophy and 3D computer graphics and animation to traditional artists and multimedia/computer graphics are covered, as well as modeling, surface creation, lighting and different types of output Macromedia 3D Extreme and Director will be used. (Prerequisites: ART 1130). (3 C/6 lect/0 lab). MNTC: CT, HA. Offered: Fall, Spring.

ART 2244 Painting II
This is a second class in the basic practice of oil and/or acrylic painting. It assumes students have had some previous experience with this medium. It begins with an introduction to materials and techniques. Basic elements and principles of the visual arts will be emphasized. We will pay particular attention to aesthetic issues as they arise in the relationship of form and space. (Prerequisites: ART 1144 or equivalent). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring.

ART 2264 Ceramics II
This course is a sequence to Ceramics I and will continue to build on the learnedness developed in that class. It will introduce glaze formulation, kiln loading and firing. (Prerequisites: ART 1164 or equivalent). (3 C/6 lect/studio, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring.

ART 2292 Studio Problems
Studio Problems offers the opportunity for advanced work in studio classes beyond the second term. Advanced work requires learning to proceed with more personal responsibility. (Prerequisites: Permission of instructor). (1-4 C/1-4 lect/studio, 0 lab). MNTC: CT, HA. Offered: Fall, Spring, Summer.

AUTOMOBILE MECHANIC TECHNICIAN

AMT 1710 Automotive Service Theory
This course covers theory and application of auto safety, tools, fasteners, basic electricity, and general auto service. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

AMT 1725 Service and Electrical Lab
This lab covers the service, diagnosis, and repair methods of general automotive maintenance and the automotive electrical systems, including starting and charging systems plus electrical accessories. (Prerequisites: AMT 1710 and AMT 1720 or concurrent enrollment). (3 C/0 lect, 3 lab, 0 OJT). Offered: Fall.

AMT 1730 Hydraulic Brake Theory
This course covers the theory of design operation, diagnosis, and repair of hydraulic brake systems on automobiles and trucks. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

AMT 1735 Hydraulic Brakes Lab
This course covers the service, diagnosis and repair of hydraulic brake systems as will as the necessary maintenance to keep brake systems in good working order. (Prerequisites: AMT 1730 or concurrent enrollment). (4 C/0 lect, 4 lab, 0 OJT). Offered: Fall.

AMT 1740 Ignition Theory
This course covers the design, function, diagnosis and repair steps of conventional and electronic ignition systems. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

AMT 1745 Ignition Lab
This course covers the service, diagnosis and repair of basic ignition systems as well as the necessary maintenance to keep ignition systems in good working order. (Prerequisites: AMT 1740 or concurrent enrollment). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall.

AMT 1810 Engine Repair Theory
This course covers engine design as well as diagnosis, evaluation, and repair, maintenance steps involved in restoring gasoline automotive engines to good running order. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring.

AMT 1815 Engine Repair Lab
This course covers the diagnosis, repair procedure, and testing and maintenance procedures for automotive gasoline engines. (Prerequisites: AMT 1810 as a prerequisite or concurrent). (7 C/0 lect, 7 lab, 0 OJT). Offered: Spring.

AMT 1825 Alignment and Suspension Lab
This course covers diagnosis, evaluation, adjustment and repair of suspension systems and related automotive components. (Prerequisites: AMT 1820 or concurrent enrollment). (3 C/0 lect, 3 lab, 0 OJT). Offered: Spring.

AMT 2740 Drive Train Theory
This course will cover automotive and light truck clutches, transmissions/transaxles, differentials and drivelines. Content includes mechanical, electronic, and hydraulic systems, phasing, alignment, balance, gear ratios and diagnosis. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

AMT 2742 Manual Drive Train Lab
This course is a hands-on lab class and will cover standard automotive and light truck clutches, manual transmissions/transaxles, transfer cases, differentials and drivelines. Content includes mechanical and hydraulic systems, phasing, alignment, balance, gear ratios and diagnosis. (Prerequisites: AMT 2740). (4 C). Offered: Fall.

AMT 2744 Automatic Trans/Transaxle Lab
This course is a hands-on lab class in which various transmissions and transaxles are overhauled, adjusted, and bench tested. Basic overhaul techniques, special tool and gauge usage are taught. (Prerequisites: AMT 2740). (4 C/0 lect, 4 lab, 0 OJT). Offered: Fall.

AMT 2750 Engine Performance Theory
This course covers a study of the theory and principles of operation of automotive fuel systems electrical systems, and mechanical conditions related to engine performance and also the operating principles of automotive computers, sensors, and control devices. (Prerequisites: None). (4 C/4 lect, 0 lab, 0 OJT). Offered: Spring.
AMT 2752 Engine Performance Lab  
This lab course includes diagnosing, servicing, and correcting problems related to automotive fuel systems including carburetors, fuel pumps, fuel tanks, injectors, filters, and emission control systems associated with fuel systems on the automobile. Diagnosis, adjustments, and repair of component parts will be stressed. It will also deal with computer controls for both carbureted models and fuel injection. (Prerequisites: AMT 2750 or concurrent enrollment). (7 C/0 lect, 7 lab, 0 OJT). Offered: Spring.

AMT 2770 Heating & Air Conditioning  
This course covers automatic temperature control systems operation, testing and repairs of vacuum and electrical controls, air flow distribution, and heater system controls. It also will cover the diagnosis and repair of air conditioning components as well as types of refrigerants used. (Prerequisites: None). (3 C/1 lect, 2 lab, 0 OJT). Offered: Spring.

AS/400 SYSTEMS OPERATIONS

ASF 1107 GroupWare/Lotus Notes  
This course provides information about use, installation, and management of Lotus Notes with emphasis on AS/400 use. It will include configuring a Lotus Notes installation, working with both the client and server programs, End User desktop, database, mail and calendar functions. The student will create a database forms, and views. (Prerequisites: ASF 2210). (3 C). Offered: Fall.

ASF 1112 CL Programming  
This course will prepare students with a basic-to-advanced level of Control Language (CL) programming, message handling, and debugging techniques. Emphasis is on efficient programs and techniques for optimum system performance. (Prerequisites: ASF 2210). (3 C). Offered: Fall.

ASF 1117 Customer Service in the Computing Industry  
By assessing the customer’s needs and changing expectations, businesses can increase profitability. This course addresses those general business needs as well as those needs specific to the computing industry. Students will be taught the skills required to motivate fellow employees to higher levels of service excellence. Use of surveys and statistics as tools of measurement will be discussed. (Prerequisites: None). (2 C). Offered: Spring.

ASF 1127 Client/Server Concepts  
This course is designed to help students understand the expanding role of client/server systems in business. The fundamental goals and benefits of client/server systems will be presented and analyzed. Projects include reports and programs in team settings. (Prerequisites: COMP 1150). (3 C). Offered: Fall.

ASF 1142 Introduction to Database/SQL  
This course is an introduction to database design and implementation. The goal of this course is to provide students with a clear understanding of Database Management Systems (DBMS) and how they can be used in industry. Emphasis will be divided evenly between both the theoretical concepts of database design and practical database implementation. At the end of this course the student should have an appreciation of the types of data models, types of DBMS’s, the SQL language and enough information to understand many of the issues in planning, implementing, and managing a DBMS. (Prerequisite/Corequisite: COMP 1150). (2 C). Offered: Fall.

ASF 1199 AS/400 Seminar  
Discussion of job activities and problems. Emphasis is placed on the operation of an integrated midrange computing system in business planning, decision planning, and daily operations. (Co-requisites: ASF 2299). (1 C). Offered: Spring.

ASF 2010 Data Communications  
This course covers the basics of voice, data and video communications including terminology and equipment. Topics include standards, media, data communications codes, voice and image transmission, digital/analog conversion, error checking, modems, multiplexers and other related support concepts and equipment. (Prerequisites: COMP 1150). (3 C). Offered: Fall.

ASF 2020 AS/400 Interactive Programming  
This course is designed to provide practical training for AS/400 interactive programming. The student will be presented with many Data Description Specifications (DDS), Control Language (CL), and Report Program Generator (RPG) concepts and will apply these concepts through practical use on the AS/400. Topics covered will include Command Action vs. Command Function, Display File Functions, Subfiles, Windows, and Advanced Structured Programming. (Prerequisites: ASF 1112; COMP 2298). Offered: Spring.

ASF 2210 AS/400 Operations  
An introduction to the operation of an integrated midrange computer system. Procedures covered are initialization, security and configuration. Displays are used to monitor job queues, output queues, active jobs, and peripheral devices. (Prerequisites: Enrolled in AS/400 Program). (3 C/2 lect, 2 lab). Offered: Fall.

ASF 2215 AS/400 Facilities  
Students will study intermediate to advanced levels of the following AS/400 topics: single level storage objects, libraries, library lists, user profiles, jobs, job descriptions, commands, menus, basic message handling, physical and logical files, display files, Program Development Manager (PDM), Screen Design Aid (SDA), Data File Utilities (DFU), Control Language programming, copy file functions, save/restore, journaling, and security. (Prerequisites: Enrolled in AS/400 Program and successful completion of ASF 2210). (3 C/2 lect, 2 lab). Offered: Spring.

ASF 2299 AS/400 Internship  
Planned and supervised occupational work experience at a work site which includes micro, midrange, and/or main frame computer systems. Job tasks are organized to those of a beginning, intermediate, and an advanced nature to provide exposure to the operation of the system(s). (Prerequisites: Permission of instructor; college level reading). (1-4C/75 hours of work per credit). Offered: Spring, Summer.

BIOL 1101 Elements of Biology  
A one-semester course for non-science majors. Blends traditional and contemporary biological concepts for understanding life in today’s world. The nature of life, cell structure and function, asexual and sexual reproduction, Mendelian inheritance, evolution and ecological principles are covered. (Prerequisites: None). (3 C/2 lect, 2 lab). MNTC: CT, NS, PN. Offered: Fall, Spring, Summer.
**Course Descriptions**

**BIOL 1107 Fundamentals of Anatomy & Physiology**
This course is a one-semester study of Human Anatomy and Physiology. Special emphasis on understanding vocabulary and terminology is made. Appropriate combining forms, prefixes and suffixes will be learned as each of the component body systems is studied. The course deals with clinical procedures, practical applications and pathology. Analysis of current health care and related social issues will be discussed. Laboratory sessions will correlate to lecture material and will include microscope work, computer work as well as dissection of animal specimens. (Prerequisites: None). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Fall, Spring.

**BIOL 1110 Human Biology**
This course is a one-semester study of the biology of the human body. Each of the component systems will be studied in order to develop an understanding of how each part contributes to the whole. This knowledge will be applied to the analysis of current health and social issues. Laboratory sessions are designed to correlate with lecture topics. Dissection of appropriate animal specimens is included. (Prerequisites: High school Biology (1 year) or BIOL 1101). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Fall, Spring.

**BIOL 1112 Humans and the Environment**
Study of the interrelationships which exist between humans and their environment. Ecological problems will be studied and applied to past, present and future situations. Intended for the non-science major. No laboratory. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, PN. Offered: Not offered in 1999-2000.

**BIOL 1127 Principles of Anatomy & Physiology I**
Part one of the two-semester anatomy and physiology sequence covers cell structure and function, tissues, chemistry as it relates to biological sciences, the integumentary, musculoskeletal and nervous systems. This sequence is designed for students who have been admitted to the Mayo Clinic Radiography Program. (Prerequisites: Enrollment in Radiography program). (3 C/2 lect, 2 lab). MNTC: CT, NS. Offered: Fall.

**BIOL 1128 Principles of Anatomy & Physiology II**
Part two of the two-semester anatomy and physiology sequence covers the autonomic nervous system, special senses, endocrine system, digestive system, respiratory system, cardiovascular system, lymphatic system, urinary system and reproductive system. This sequence is designed for students who have been admitted to the Mayo Clinic Radiography Program. (Prerequisites: Enrollment in Radiography program and BIOL 1127). (3 C/2 lect, 2 lab). MNTC: CT, NS. Offered: Spring.

**BIOL 1217 Anatomy & Physiology I**
Part one of the two-semester Anatomy and Physiology sequence covers cell structure and function, tissues, chemistry as it relates to biological sciences, the integumentary, the musculoskeletal systems and the cardiovascular and lymphatic systems. This sequence is designed for students in the following programs: Nursing, Respiratory Therapy, Dental Hygiene, Clinical Neurophysiology, Pre-Physical Therapy, and other pre-professional programs. (Prerequisites: High school chemistry or CHEM 1101 or equivalent, and high school biology or BIOL 1101 or equivalent). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Fall, Spring, Summer.

**BIOL 1218 Anatomy & Physiology II**
Part II of the two-semester Anatomy & Physiology sequence covers the nervous, endocrine, respiratory, digestive, urinary and reproductive systems. (Prerequisites: CHEM 1117, BIOL 1217). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Fall, Spring, Summer.

**BIOL 1220 Concepts of Biology**
A study of the biochemical and structural basis of life including cellular respiration, photosynthesis, genetics, origins and evolution of life, community interactions and ecosystems. Intended for biology majors and individuals majoring in forestry, agriculture, conservation, medicine, veterinary medicine, recreation, physical therapy, optometry, pharmacy, home economics and dentistry. (Prerequisites: High school chemistry or CHEM 1101 or equivalent, and high school biology or BIOL 1101 or equivalent). (4 C/3 lect, 2 lab). MNTC: CT, NS, PN. Offered: Fall, Spring.

**BIOL 1230 Survey of Life Forms**
A study of the diversity of plants and animals including the anatomical and physiological study of select organisms. Intended for biology majors and individuals majoring in forestry, agriculture, conservation, medicine, veterinary medicine, recreation, physical therapy, optometry, pharmacy, home economics and dentistry. (Prerequisites: High school chemistry, CHEM 1101 or equivalent; and high school biology, BIOL 1101 or equivalent). (4 C/3 lect, 2 lab). MNTC: CT, NS, PN. Offered: Fall, Spring.

**BIOL 2021 General Microbiology**
This course covers basic microbiology principles and the nature of the host-pathogen relationship. The course is intended primarily for students preparing for programs in nursing (2 yr and 4 yr degree programs), medical technology, physical therapy, veterinary medicine, pharmacy, respiratory therapy, medicine, dental hygiene and medical laboratory technology. (Prerequisites: BIOL 1217 or equivalent college course). (4 C/3 lect, 2 lab). MNTC: CT, NS, PN. Offered: Fall, Spring, Summer.

**BIOL 2100 Plant Biology**
This is an introductory course which covers anatomy, physiology, life cycles and classifications of major plant divisions. The relationship of plants to topics of genetics, ecology, biotechnology and economic values is covered in the course. (Prerequisites: BIOL 1220 or BIOL 1230). (4 C/3 lect, 2 lab). MNTC: CT, NS, PN. Offered: Spring.

**BIOL 2200 General Zoology**
This is a survey course of the classification, evolution, ecology, anatomy and physiology of animals. Intended for biology majors and minors in medicine, veterinary medicine, dentistry and other preprofessional courses involving biological implications. (Prerequisites: BIOL 1220 or BIOL 1230). (4 C/3 lect, 2 lab). MNTC: CT, NS, PN. Offered: Fall.

**BIOL 2300 Genetics**
This course presents the fundamental concepts of classical transmission genetics and modern molecular genetics. Topics include Mendelian genetics, linkage and mapping, human genetics, population genetics, control of gene expression, genetic engineering and nucleic acid analysis. (Prerequisites: BIOL 1220). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Spring.
BUILDING UTILITIES MECHANIC

BU 1500 Power Plant Theory
Using slides, lecture, discussion, students will study the proper operation theory of boilers. Topics include hot water boiler systems, fitting, and accessories. Students will identify water tube and fire tube boilers along with steam fittings and accessories. (Prerequisites: None). (4 C/4 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1510 Welding Theory
This course covers actual use of arc, gas, and M.I.G., T.I.G., welding along with proper safety and equipment care. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1520 Welding and Equipment Repair
Students will weld various projects using oxy-act, GTAW, GMAW, SAW, skills will include braze welding, metal cutting using shears, plasma cutters, and flame cutting. (Prerequisites: None). (3 C/0 lect, 3 lab, 0 OJT). Offered: Fall, Spring.

BU 1530 Plumbing Theory
This course covers various aspects of the plumbing trade. Consideration will be given to sanitary and waste systems along with proper venting. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1540 Power Plant Operation
Students will have the opportunity to operate a boiler. Students will become familiar with fittings and accessories or a working steam boiler. Students will dismantle parts of the boiler for repair. Water will be tested to ascertain its contents. (Prerequisites: Type I, II, III, or Universal if all sections are passed. (Prerequisites: BU 1530). (2 C/0 lect, 4 lab, 0 OJT). Offered: Fall, Spring.

BU 1550 Plumbing Lab
Actual plumbing situations will be encountered and students will solve plumbing installation problems. Other activities include using pipe wrenches, identifying different types of pipe and fittings, and establishing proper draining. (Prerequisites: Concurrent with BU 1530). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

BU 1560 Basic Electricity
This course covers the basic concepts of AC and DC electricity. Included are voltage, current, resistance, and power usage in series, parallel, and combination circuits. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1561 Electrical Theory I
This course covers wiring layout for general lighting circuits and switches in residential applications. The basic theory of inductors, capacitors, resistors, SCR’s, diodes, transistors, and AC electric motors is also presented. The student will also examine the basic design and installation of electric motor controls. (Prerequisites: BU 1560). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1562 Electrical Lab I
This course covers the basic theory, operation, and practical applications of industrial electronics, electric motors, AC-DC circuits and general wiring diagrams in commercial applications. In this course students will also learn motor control requirements including: control symbols, line diagrams, wiring diagrams, inlays, contacts, and starters. (Prerequisites: BU 1621). (4 C/0 lect, 4 lab, 0 OJT). Offered: Fall, Spring.

BU 1564 Electrical Theory II
In this course students will continue to examine the basic design and installation of electric motor controls. The theory and applications of single-phase and three-phase transformers are also covered. The theory of programmable controllers and advanced motor controls is also presented. (Prerequisites: BU 1720). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1565 Electrical Lab II
This course provides the student with advanced motor control applications including: jogging, counting, braking, plugging, reduced voltage starting, and latching relays. The theory, operation, installation, and practical application of programmable controllers is covered. Solid-state motor controls are also covered. The application and characteristics of single-phase and three-phase transformers are covered. (Prerequisites: BU 1631, BU 1641). (4 C/0 lect, 4 lab). Offered: Fall, Spring.

BU 1611 Electrical Safety and National Electric Code
This course covers the Minnesota licensing requirements and presents the National Electric Code. Topics included from Code are branch circuits, feeders, general requirements, overcurrent protection, grounding, conductors, and electrical safety. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1612 Commercial Refrigeration
This course covers fundamentals of refrigeration, tools and materials, basic refrigeration systems, compression systems, refrigerant controls, refrigerant, domestic refrigerators and freezers, and principles of installing and servicing small hermetic systems. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 1616 Refrigeration Lab
This course covers lab experiences working with tools, tubing, compressors, refrigerant controls, refrigerant, and testing equipment. (Prerequisites: BU 2500). (3 C/0 lect, 3 lab, 0 OJT). Offered: Fall, Spring.

BU 1617 Refrigerant Certification
This course is designed to assist refrigeration and air conditioning technicians in becoming successfully certified. Technician will be EPA approved and certified in the areas tested which include Type I, II, III, or Universal if all sections are passed. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring.
BU 2555 Building Utilities Mechanics Co-op
This course is designed to provide the student with a purposeful occupational experience in the building utilities mechanic field. Each co-op experience is individualized. A training plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. (Prerequisites: None). (5 C). Offered: Spring.

BU 2602 Facility Air Handling Systems Theory
This course covers principles of larger HVAC air handling systems. Economizers/heat/cool decks and zones are analyzed and operated. Hydronic Systems are used. (Prerequisites: BU 2632, BU 2622, and concurrent enrollment in BU 2612). (4 C/4 lect, 0 lab, 0 OJT). Offered: Spring, Summer.

BU 2612 Facility Air Handling Systems Lab
This course covers air temperature controls on larger HVAC air handling systems. Electric/air/computer controls are used to operate student projects. (Prerequisites: BU 1560, and concurrent enrollment BU 2602). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring, Summer.

BU 2622 Forced Air Heat/Cool Controls
This course covers temperature and operating controls related to heat/cool systems. Emphasis is on wiring and troubleshooting control circuits. (Prerequisites: Concurrent enrollment BU 2632). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring, Summer.

BU 2632 Forced Air Heating/Cooling Systems
This course covers the electrical/mechanical and air moving components in heating and cooling systems using standard and high efficiency equipment. (Prerequisites: BU 1560, BU 2500). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring, Summer.

BU 2642 Boiler Review
Students will review boiler regulations, fittings, Minnesota law pertaining to high and low pressure boilers and turbines including hot water systems. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

BU 2651 Building Utilities Mechanics Co-op IV
This course is designed to provide the student with a purposeful occupational experience in the building utilities mechanic field. Each co-op experience is individualized. A training plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. One credit of co-op is equal to 36 hours of on-the-job training. (Prerequisites: All first year courses and/or instructor permission). (2 C/0 lect, 0 lab). Offered: Fall, Spring.

BU 2655 Building Utilities Mechanics Co-op
This course is designed to provide the student with a purposeful occupational experience in the building utilities mechanic field. Each co-op experience is individualized. A training plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. (Prerequisites: None). (5 C). Offered: Fall, Spring.

BU 2661 Building Utilities Mechanics Co-op III
This course is designed to provide the student with a purposeful occupational experience in the building utilities mechanic field. Each co-op experience is individualized. A training plan is created for each student in conjunction with the training site to provide experience related to the skills and knowledge acquired in the program. One credit of co-op is equal to 36 hours of on-the-job training. (Prerequisites: All first year courses and/or instructor permission). (3 C/0 lect, 0 lab). Offered: Fall, Spring.

BUS 1101 Introduction to Business
This is an introductory course which will cover the major functional areas of business, including management, marketing, finance, and their more specialized subfunctions. In addition, we will cover the foundations of American business, including the nature of the free enterprise system, business’s social responsibilities, and the structure of American business. Attention will also be given to the legal and international dimensions of modern business. (Prerequisites: None). (3 C/3 lect). Offered: Fall, Spring.

BUS 1144 Opening and Managing a Business
This course is designed to assist students in identifying and evaluating a business opportunity and the necessary steps involved in opening and operating a business. The course will introduce the elements of business ownership including: the various business forms, entry strategies, risk taking, innovation and business development. Students will analyze the market potential, evaluate the financial feasibility based on the market and determine the management infrastructure necessary to operate a successful business. Topics include: planning, financing options, location, marketing, personnel, cash flow management, inventory control and production/system. (Prerequisites: None). (4 C/4 lect). Offered: Spring.

BUS 1150 Introduction to Desktop Publishing
An introduction to desktop publishing using Macintosh computers and PageMaker and Microsoft word software. Discussions and practical hands-on experience with page design, layout, graphics and typography. (Prerequisites: None). (2 C/2 lect). Offered: Fall, Spring.

BUS 2201 Principles of Marketing
Provides the student with a general introduction to marketing analysis, planning, decision making and program implementation. Students gain an understanding of the principles of marketing and their interrelationship through a computerized business marketing simulation and development of a formal market plan. (Prerequisites: None). (3 C/3 lect). Offered: Fall, Spring.

BUS 2210 The Legal Environment of Business
A study of the legal environment in which business operates. Topics include an introduction to law and the legal system, litigation, administrative law, and alternative dispute resolution; antitrust, securities regulation, consumer protection, employment law, environmental protection, and international business law. (Prerequisites: None). (3 C/3 lect). Offered: Spring.
BUS 2212 Business and Economic Statistics
An introduction and overview of statistics. Topics will include (but not be limited to) descriptive statistics, probability and hypothesis testing. Statistical calculators will be used extensively throughout the class. Emphasis on application of statistical techniques and procedures for solving business-related problems, rather than mathematical theories. (Prerequisites: MATH 0099 or MATH 1103 or appropriate placement score). (4 C/4 lect). Offered: Fall, Spring.

BUS 2214 Retailing
The study of the fundamental and key components of retailing as a marketing approach to consumers and business growth. Elements of the retail marketplace will be explored including: the definition and description of the most common forms of successful retailers today and their relationships with other retailers in competition with suppliers, advertisers, and the all important consumer of today. Elements of site selection, store layout and design will set the stage for studying the analytical side of retailing by understanding and building merchandise budgets, balance sheets and methods of inventory control. The personal side of retailing will be covered by studying the topics of staffing and human resources, consumer behaviors and advertising in today’s world-wide market. (Prerequisites: None). (3 C/3 lect). Offered: Fall.

BUS 2215 Salesmanship
Emphasis will be on the processes of selling of oneself, products, firms, ideas, etc. This will include retail store salesmanship, outside sales, service and all other aspects of the selling profession. (Prerequisites: None). (2 C/2 lect). Offered: Fall, Spring.

BUS 2217 Financial Accounting
A study of assets, liabilities and owner’s equity in the preparation and use of financial statements. The accounting cycle is covered for a service and merchandising business. Interpreting financial reports for corporations will be emphasized. (Prerequisites: None). (4 C/4 lect). Offered: Fall, Spring.

BUS 2218 Managerial Accounting
A study of cash flow and managerial accounting principles including cost behavior, job order costing, process costing, cost-volume-profit relationships, standard costs, budgets, and differential analysis. (Prerequisites: BUS 2217). (4 C/4 lect). Offered: Fall, Spring.

BUS 2227 Business Law I
This course introduces students to the structure and processes of our legal system and then covers the substantive areas of contracts, sales, commercial paper, and agency. (Prerequisites: None). (3 C/3 lect). Offered: Fall, Spring.

BUS 2232 Principles of Management
Provides a general introduction to the broad field of management. Current applications in strategic planning and control, managing workplace dynamics, and understanding the impact of the Internet as a business management tool will be emphasized. (Prerequisites: None). (3 C/3 lect). Offered: Fall, Spring.

BUS 2234 Computerized Accounting
This course will give students an understanding of the basic structure of any computerized accounting system, modules, and fields. Students will also be introduced to basic functions of a popular spreadsheet program from building, editing, and formatting a spreadsheet to creating graphs that represent the material in the spreadsheet. (Prerequisites: BUS 2217). (3 C/3 lect). Offered: Spring.

BUS 2290 Business Topics
Designed to help familiarize the student with the current practices and trends in business and marketing through a series of guest lectures, field trips and computerized business games. (Prerequisites: None). (1-4 C/1-4 lect). Offered: Fall, Spring.

BUS 2294 Marketing Internship
Internship is the opportunity to earn credit from a job that provides work experience related to the student’s career objective. A student may earn up to 8 credits toward graduation. The student is required to submit a report at the end of each quarter describing his/her work experience. Grade is based upon an evaluation of student’s work experience and an employer’s evaluation. (A minimum of 75 hours of work experience per credit). (Prerequisites: None). (2-8 C/0 lect, 2-8 OJT). Offered: Fall, Spring.

BUS 2296 Business Internship
Work experience program designed to help business students apply classroom knowledge on the job. Designed to make the work experience a learning experience so that the student will be able to better understand the practical application of business techniques. (Prerequisites: None). (2-4 C/0 lect, 2-4 OJT). Offered: Fall, Spring.

CAD TECHNOLOGY

CAD 1120 Welding Technology
The purpose of this course is to teach the welding symbols and their applications. Basic drafting skills are incorporated into making complete weldment drawings. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

CAD 1123 Technical Illustration
This course will cover the basic techniques of pictorial drawings on oblique, isometric, diametric, and trimetric axes. Two point perspective will also be covered. The student will complete assembly, exploded and section drawings. One of the drawings will be linked. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

CAD 1129 Introduction to MasterCam
This course provides the related occupation students with the fundamentals of computer and engineering drawing. CAD of the Master CAM software will be used to draw parts, dimension parts and to prepare the student for the next step, CAM. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

CAD 1146 Schematic & PCB Layout
The purpose of this course is to teach students how to make schematic and layout printed circuit boards. A combination of board and CAD work will be required. A basic understanding of electronic components and theory will also be covered. (Prerequisites: None). (4 C/2 lect, 4 lab, 0 OJT). Offered: Fall.
CAD 1223 Technical Drafting I
A continuation of ET 1224. (Prerequisites: ET 1224). (2 C/1 lect, 2 lab). Offered: Spring.

CAD 1229 Technical Drafting II
A continuation of MET 1224. (Prerequisites: MET 1224). (2 C/1 lect, 2 lab). Offered: Spring.

CAD 1235 CAD II
A continuation of ET 1235, including 3-D and other advanced topics in AutoCAD. Major topics of instruction will include advanced drafting commands, using isoplane and elevation practices; also includes 3-D drawing of lines, surfaces, and meshes, dynamic viewing 3-D objects and usage of autolisp’s 3-D macros. (Prerequisites: ET 1235, CAD I). (3 C/1 lect, 4 lab, 0 OJT). Offered: Spring.

CAD 2323 Advanced Dimensioning
This course is designed to meet different drafting standards such as ANSI, 150, MIL or our own school standards. Tolerancing methods and duel dimensioning will be covered as well as the geometric tolerancing and dimensioning symbols and standards. Dimensioning in isometric and 3D will also be covered. (Prerequisites: CAD 1229). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

CAD 2324 Special Projects
In this course students will select an area of interest and specialize in advanced drafting work to reinforce skills and knowledge gained during the first year or a new area that was not covered in the regular program course offerings. Projects will be selected with approval of instructor. A contract will be written on required work. (Prerequisites: Second year student). (2 C/0 lect, 4 lab, 0 OJT). Offered: Fall.

CAD 2335 Working Drawings and Design
This course combined all facets of the first year classes into individual and team projects. More attention is given to geometric tolerancing, fits and detailing practices, and the assembly of parts. Students will have the opportunity to use CAD and design group projects. (Prerequisites: CAD 1229). (3 C/1 lect, 4 lab, 0 OJT). Offered: Fall.

CAD 2339 Three Dimensional CAD
This course offers students the understanding of 3D parametric solid modeling using SolidWorks. It also addresses the concepts of parametric design, design intent, and the necessary commands to carry out these functions. Items covered will be construction of 3D solid modeling parts, assemblies, and creating 2D automated drawings. Learning by example: students will design real world products with SolidWorks. Other application programs will be covered if time permits. (Prerequisites: CAD 1229). (3 C/1 lect, 4 lab, 0 OJT). Offered: Fall.

CAD 2423 Hydraulic/Pneumatic Drafting
In this course students will cover the theory of fluid and pneumatic power circuits. They will learn standard symbols and system components. Students will have an opportunity to design and make schematic drawings of basic power circuits. Piping will also be studied. (Prerequisites: CAD 1229, MET 2358). (2 C/1 lect, 2 lab, 0 OJT). Offered: Spring.

CAD 2424 Special Projects
In this course students will select an area of interest and specialize in advanced drafting work to reinforce skills and knowledge gained during the first year or a new area that was not covered in the regular program course offerings. Projects will be selected with approval of instructor. A contract will be written on required work. (Prerequisites: Second year student). (2 C). Offered: Spring.

CAD 2435 Mechanics
This course is designed to develop the ability to analyze problems and solve them using basic principles. Areas of forces, work and energy, motion as well as fluids, temperatures and sound will be covered. Basic principles of electricity and light and their applications are also covered. (Prerequisites: MATH 1032). (3 C/1 lect, 4 lab, 0 OJT). Offered: Spring.

CAD 2439 HVAC Drafting
Drafting as it pertains to the heating, ventilation, and air conditioning industry. (Prerequisites: MET 2358). (3 C/1 lect, 4 lab). Offered: Spring.

CAREER ORIENTATION

CAOR 1101 Career & Lifestyle Planning
Students will determine interests, skills, values and career life goals by use of standardized assessments, computer software and self evaluation. Explore which occupations fit with anticipated life styles and evaluate occupational trends. Arrange for and carry out informal interviews in the area of occupational choice. Brief review of resume writing and interviewing skills. Use of the internet to search for careers. (Prerequisites: None). (2 C/2 lect). Offered: Fall, Spring, Summer.

CAOR 1103 Career Exploration Workshop
This course is designed to assist students in setting educational and occupational goals through assessment of interests and values, learning about the world of work, and learning to use career center resources. (Prerequisites: None). (1 C/1 lect). Offered: Fall, Spring, Summer.

CARPENTRY

CR 1610 Residential Blue Print Reading
The Purpose of this course is to develop fundamental skills necessary to interpret blueprints used the building trades. Topics included will be blueprint symbols and abbreviations, interpreting structural details, and “hands on” blueprint interpretation. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Summer.

CR 1612 Shop Practice I
In this course students are taught to use and maintain hand tools portable power tools and woodworking machines in a safe and efficient manner. (Prerequisites: CR 1511). (2 C/0 lect, 2 lab, 0 OJT). Offered: Summer.

CR 1613 Site Layout
In this course students will be taught operation techniques of various leveling instruments, how to do site and building layouts, and how to establish elevations for footings and foundations. (Prerequisites: None). (1 C/0 lect, 1 lab, 0 OJT). Offered: Summer.
CR 1614 Carpentry Theory I
This course covers information on the various hand tools and their uses. The student will identify the various power tools, their different attachments, and safety procedures for using each tool. The student will also learn about the different leveling instruments. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Summer.

CR 1622 Carpentry Theory II
In this course the student will identify a variety of building materials and their uses and will study how blueprints and plans are used on various projects. The student will also study footings and foundations, floor joist system, walls, roofs and ceiling applications. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

CR 1623 Rough Framing
In this course students will assemble floor systems and build exterior and interior walls. The students will be introduced to building practices, tools of the trade, and work habits. (Prerequisites: None). (4 C/0 lect, 4 lab, 0 OJT). Offered: Fall.

CR 1625 Footing and Foundation
The student will build footings and slab forms above and below grade, and pour and finish concrete. Wood foundations will also be studied. (Prerequisites: None). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall.

CR 1627 Roofing System
In this course students will be building rafters, setting trusses, and putting on roof materials. (Prerequisites: None). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall.

CR 1632 Construction Estimating
The focus of this course is to develop skills necessary to accurately estimate costs to build a residential structure. As residential construction is very competitive, accurate cost bidding is necessary if a builder is to compete successfully. Estimates will cover cost factors ranging from the foundation through the completed roof to the completed interior. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

CR 1634 Carpentry Theory III
In this course the student will identify different types of insulation and vapor barriers. The student will study different types of exterior finishes, windows, and doors. Gypsum wallboards, and their finishing processes will also be covered. (Prerequisites: CR 1614, CR 1622). (2 C/2 lect, 0 lab, 0 OJT). Offered: Spring.

CR 1635 Shop Practice II
In this course the student will layout and build cabinets using hand and power tools. The student will also study plastic laminations and apply their installation techniques. (Prerequisites: Instructor approval). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring.

CR 1636 Interior finishing
In this course the students will build projects relating to interior finishing and exhibit skills and craftsmanship required for the standards of trade. Mock-ups will be used to give a variety of construction projects. (Prerequisites: First semester classes). (4 C/0 lect, 4 lab, 0 OJT). Offered: Spring.

CR 1637 Exterior Finishing
This course covers installing open and closed cornices, applying siding and moisture barriers, and installing doors and windows of all types. (Prerequisites: None). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring.
CHM 1127 General Inorganic Chemistry I
The first semester of a two-semester study of general inorganic chemistry for the science major. The course covers basic terminology, chemical principles and laws relating to chemical changes, present views as to the structure of matter and its influence on chemical changes. Problem solving related to conversion units, stoichiometry, percent composition, formulas of compounds, gas, liquid and solid state relations and solution mixture. (Prerequisites: MATH 0099 or equivalent; MATH 1117, or concurrent enrollment strongly recommended. High school chemistry with grade of C or better and/or CHEM 1101). (4 C/3 lect, 3 lab). MNTC: CT, NS. Offered: Fall, Spring.

CHM 1128 General Inorganic Chemistry II
The second semester of a two-semester study of general inorganic chemistry for the science major covering basic terminology, chemical principles and laws pertaining to the areas of basic thermodynamics, reaction kinetics, gaseous and solution equilibria, acid-base chemistry, solubility products and oxidation-reduction reactions. (Prerequisites: CHEM 1127 or equivalent; MATH 1115, highly recommended). (4 C/3 lect, 3 lab). MNTC: CT, NS, PN. Offered: Spring.

CHEM 2227 Organic Chemistry I
A thorough overview of atoms, molecules, structures and bonding in organic chemistry. Reactions of organic compounds as acids and bases as well as nucleophiles and electrophiles are covered. Stereoisomerism and simple synthesis of organic compounds are presented. Nucleophilic substitution and elimination reactions complete the course. Many functional groups are introduced and their reactivity studied. An introduction to theory and interpretation of IR and NMR is presented. This course is intended for preprofessional, science and engineering disciplines. (Prerequisites: CHEM 1127; CHEM 1128). (4 C/5 lect, 0 lab). MNTC: CT, NS. Offered: Fall.

CHEM 2228 Organic Chemistry II
An introduction to carbonyl compounds and addition reactions of electrophilic carbon atoms is presented. Nucleophilic substitution reactions of carboxylic acids and their derivatives is presented. Alkylation and condensations reactions are covered. An introduction of UV and mass spectroscopy is presented. Reactions of aromatic compounds, enolate ions and amines are presented. A thorough introduction to organic synthesis is also covered. (Prerequisites: CHEM 2227). (4 C/5 lect, 0 lab). MNTC: CT, NS. Offered: Spring.

CHEM 2237 Organic Chemistry Lab
An introduction to the basic techniques and procedures used in organic chemistry, such as melting point determination, recrystallization, distillation, extraction, gas-liquid chromatography and refractive index. The student will also be required to keep a detailed laboratory notebook. (Prerequisites: Concurrent enrollment in CHEM 2227). (1 C/0 lect, 3 lab). MNTC: CT, NS. Offered: Fall.

CHEM 2238 Organic Chemistry Lab II
The material in this course is designed to reinforce chemistry concepts and reactions taught in CHEM 2227 and CHEM 2228. Column chromatography and other purification techniques are taught. Interpretation of spectroscopy and characterization of compounds are emphasized. Formal laboratory reports are required. (Prerequisites: Concurrent enrollment in CHEM 2228). (1 C/0 lect, 3 lab). MNTC: CT, NS. Offered: Spring.

CHILD DEVELOPMENT

CD 1200 Professional Relations in EC Careers
Students will explore career opportunities for working with young children in a variety of child development programs. Job requirements, duties, regulations, and personal/professional characteristics for becoming successful professionals in early childhood careers will be examined. Students will learn interviewing strategies and resume techniques. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

CD 1210 Foundations of Child Development
This course provides an overview of typical and atypical child development across cultures, from prenatal through school-age. Physical, social, emotional, language, cognitive, aesthetic, and identity/individual development will be explored. Integrating developmental theory with appropriate practices in a variety of early childhood care and education settings will be emphasized. (Prerequisites: None). (3 C/2 lect, 2 lab, 0 OJT). Offered: Fall.

CD 1220 Child Safety, Health and Nutrition
This course will guide the student in obtaining skills needed to establish and maintain a physically and psychologically safe and healthy learning environment for young children. Topics include illness and accident prevention, emergencies, children’s basic nutritional needs, and child abuse/neglect prevention and intervention. (Prerequisites: None). (4 C/3 lect, 1 lab, 0 OJT). Offered: Fall.

CD 1230 Guidance: Managing the Physical and Social Environment
This course provides an exploration of physical and social environmental factors that promote learning and social skill development in young children, infants through school-age. Students will be introduced to basic child guidance strategies for individual and group situations. Problem-prevention and positive guidance strategies will be emphasized. (Prerequisites: None). (4 C/3 lect, 1 lab, 0 OJT). Offered: Fall.

CD 1240 Family and Community Relations
Students will examine how current societal and community issues impact the development of children and the well-being of families. Cultural diversity and dynamics, bias, violence, and other issues will be explored, along with study of contemporary family structures, roles, and diversity. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

CD 1310 Infant/Toddler Development and Learning
This course provides an overview of infant/toddler development and caregiving practices in home or center-based settings. Students will integrate knowledge of developmental needs, developmentally appropriate environments, effective caregiving and teaching strategies, and observation methods. (Prerequisites: None). (4 C/3 lect, 1 lab, 0 OJT). Offered: Spring.

CD 1312 Preschool Development and Learning
This course provides an overview of preschool development and caregiving practices in home or center-based settings. Students will integrate knowledge of developmental needs, developmentally appropriate environments, effective caregiving and teaching strategies, and observation methods. (Prerequisites: None). (4 C/3 lect, 1 lab, 0 OJT). Offered: Spring.
CD 1314 School-Age Development and Learning
This course provides an overview of school-age development and caregiving practices in home, school, or center-based settings. Students will integrate knowledge of developmental needs, developmentally appropriate environments, effective caregiving and teaching strategies, and observation methods. (Prerequisites: None). (4 C/3 lect, 1 lab, 0 OJT). Offered: Spring.

CD 1340 Planning & Implementing Curriculum
This course examines the role of teacher in early childhood settings. Students will apply their knowledge of child development and developmentally appropriate activities in planning and implementing programs relevant the needs of individual children, varying in age groups, and child care settings. (Prerequisites: None). (4 C/3 lect, 1 lab, 0 OJT). Offered: Spring, possibly other semesters, as an evening course.

CD 2510 Internship
This course provides an opportunity to apply knowledge and skills in an actual child development setting. Students will observe and assess children’s behavior, facilitate free choice play, implement adult-directed learning experiences, and maintain professional relationships. (Prerequisites: Completion of 17 CD credits or instructor permission). (3 C/1 lect, 0 lab, 2 OJT). Offered: Fall, Spring, Summer.

CD 2530 Children with Difficult Behaviors
This course will help students to understand children’s behavior and identify intervention strategies to prevent and resolve problem behaviors, use behavior modification techniques effectively, and design behavior management plans. (Prerequisites: None). (3 C/2 lect, 0 lab, 0 OJT). Offered: Spring, possibly Summer.

CD 2560 Language and Literature Experiences
This course provides developmental framework for planning and implementing language and literature experiences in the early childhood home-based or center setting. Students will integrate knowledge of child development, learning environments, and teaching methods to promote and enhance whole language, conversation, literature, literacy, and bi-lingualism. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Spring, possibly Summer.

CD 2570 Multicultural Learning Experiences
This course provides an overview of multicultural and anti-bias learning experiences in center-based and home settings. Students will integrate knowledge of child development, learning environments, and teaching methods to promote and enhance multiculturalism and anti-bias in the early childhood setting. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Fall, possibly Summer.

CD 2580 Creative Development Experiences
This course provides an overview of creative/aesthetic learning experiences in center-based and home settings. Students will integrate knowledge of child development, learning environments, and teaching methods to promote and enhance children’s artistic, musical, movement, and dramatic play abilities. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Fall, possibly Summer.

CD 2600 Professional Leadership
This course prepares students to take active leadership and advocacy roles in the child development progression by examining the history, current trends, and future of child care and early childhood education. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring.

CD 2620 Inclusion: Special Needs and Mixes Age Groups
Students will examine the development of children with a range of special needs and disabilities. Early intervention and inclusion practices in early childhood settings, including mixed-age groupings will be emphasized. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Spring.

CD 2640 Program Planning
This course provides an advanced level exploration of program management skills for caregivers of young children. Emphasis is on organizing, implementing, and evaluating a quality, comprehensive child care program plan. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Spring.

CD 2810 Practicum I
This course provides an opportunity to apply knowledge and skills in an early childhood setting. Students will implement a variety of learning experiences that are developmentally appropriate for and culturally sensitive to a specific age and group of children. (Prerequisites: None). (3 C/0 lect, 0 lab, 3 OJT). Offered: Fall, Spring, Summer.

CD 2840 Practicum II
This course provides an opportunity to apply knowledge and skills in program planning for early childhood/special education leadership roles. Students identify, design, implement, and analyze a comprehensive program that includes schedules, daily plans, sensitivity to needs of individual children and families, integration of children with special needs, integration of community resources, co-operation with co-workers, and staff development considerations. (Prerequisites: None). (3 C/0 lect, 0 lab, 3 OJT). Offered: Fall, Spring, Summer.

CHIROPRACTIC TECHNICIAN

CT1520 Chiropractic Anatomy & Terminology.
This course covers body structure and function and related medical terminology necessary to function in the chiropractic health care field. Emphasis will be placed on structural-functional relationships and the relation of the vertebral column and the nervous system to the body as a whole. The embryological and physiologic approach to a chiropractic sublimation are stressed. (Prerequisites: None.) (4C/4 lect, 0 lab, 0 OJT.) Offered: Fall

CT1521 Chiropractic Concepts of Motivating Health
This course covers how we can control the transfer of infectious diseases. The student will utilize a chiropractic science frame-of-reference to understand public health issues. As Chiropractic Technician’s you will examine the relationship which exists between the chiropractic practice and the community. Public health issues such as sanitation and immunizations are studied. The concepts of disease and communicable diseases are examined. We will discuss the promotion of wellness and the chiropractic concept of alternative ways to boost the patients immunity. The student will be encouraged to strive towards continued “wellness” with themselves as well as the patient they interact with. (Prerequisites: None) (2 C/1 lect, 2 lab, 0 OJT)
Offered: Spring.
Course Descriptions

CT1522 Chiropractic: The Science, Philosophy and Ethical Standards
This course will focus on scientific data and historical philosophies and theories of chiropractic. This course will blend philosophical and ethical principles that are necessary standards of conduct in a chiropractic clinic. Emphasis will be placed on the development of meaningful framework for health with the practice of chiropractic. (Prerequisites: None) (3 C/2 lect, 2 lab, 0 OJT) Offered: Fall.

CT 1526 Chiropractic Clinic Procedures
This course will define what a Chiropractic Technician is and provide a framework for developing and maintaining control of a healthy appointment book, telephone technique, accounts payable, accounts receivable, collection, clinic accounting, filing, processing forms, receiving the patient, personalized letters, and organizational management components of the chiropractic clinic. (Prerequisites: None). (3 C/2 lect, 2 lab, 0 OJT). Offered: Fall.

CT1534 Introduction to Chiropractic Radiology Dynamics
This course stresses the importance of safety, the basics of film processing, and basic physics as related to the use of radiology in the chiropractic environment. Protection of patient and operator will be stressed as well as laws, regulations and ethical standards regarding radiology in a chiropractic clinic. This will provide appropriate coursework so that a student can test for ACRRT or the Minnesota Department of Health Exam. (Prerequisites: None). (3 C/2 lect, 2 lab, 0 OJT). Offered: Spring.

CT1538 Chiropractic Insurance Processing
This course details laws, codes, resource information that needs to be given to a chiropractic patient and guidelines that need to be followed when processing insurance claims in a chiropractic clinic. The importance of clinic documentation and education will be stressed. (Prerequisites: None) (3 C/2 lect, 2 lab, 0 OJT) Offered: Spring.

CT1540 Chiropractic Radiology Positioning
This course will focus on the skills to position the patient in views that are commonly taken in a chiropractic clinic. The course will prepare the student for ACRR certification and the Minnesota Department of Health Exam. Filtering patient protection will be emphasized. A step by step procedure must be followed in a professional manner when performing radiographs. (Prerequisites: None) (4 C/2 lect, 4 lab, 0 OJT) Offered: Fall.

CET 1722 Conjunctive Therapy
This course offers the student an opportunity to study therapeutic procedures most common to a chiropractic practice. Essential theory on modalities will be covered as well as indications, cautions and contraindications. The course will focus on step-by-step general considerations that need to be followed, regardless of the type of modality used. Infection control applications in a chiropractic clinic. (Prerequisites: Chiropractic Anatomy or instructor approval) (4 C/2 lect, 4 lab, 0 OJT) Offered: Spring.

CT 1730 Chiropractic Internship: Preparation, Interviews and Updates
This course will focus on the preparatory steps that the student’s need to make to acquire a chiropractic internship. It will cover “technical skills” in a chiropractic clinic. Each internship is an individualized experience. A training plan is given to each student which will allow skills and knowledge acquired in the program to be applied during the internship. The student will identify any skills that they need to revisit during the course of the internship. (Prerequisites: Advisor approval) (5 C/1 lect, 0 lab, 12 OJT). Offered: Spring.

CIVIL ENGINEERING TECHNOLOGY

CET 1120 Soils Technology and Construction Materials
A study of the origin, physical properties, classification and engineering use of common construction materials, including soil, portland cement concrete, bituminous pavement, and wood. Commonly used laboratory and field tests are conducted and the duties of the inspector on the construction site are emphasized. (Prerequisites: Enrollment in CET program and ET 1110). (4 C/2 lect, 4 lab, 0 OJT). Offered: Fall.

CET 1210 Surveying I
A lecture and laboratory course in basic plane surveying techniques, data collection and mapping. Practical field exercises in the use of the tape, level, transit, total station and data collector. Electronic data collection methods are used to perform a topographic survey. An engineering base map is prepared using surveying software. All major surveying methods are presented in this course. (Prerequisites: MATH 1102 or Trigonometry). (3 C/2 lect, 4 lab, 0 OJT). Offered: Spring.

CET 2110 Surveying II
A course intended to increase skills in the use of surveying instruments by completion of a route survey. Necessary techniques and calculations are reviewed. Data obtained are used in preparation of digital terrain models, maps and profiles. (Prerequisites: CET 1210). (4 C/1 lect, 6 lab, 0 OJT). Offered: Fall.

CET 2210 Surveying III
A lecture and laboratory class in advanced theory and techniques of surveying. Units include: triangulation, Polaris observation, construction staking and the history and legal principles of land surveying. (Prerequisites: CET 2110). (4 C/1 lect, 6 lab, 0 OJT). Offered: Spring.

CET 2230 Introduction to Structural Design
An introduction to the basic elements of structures including wooden members, steel shapes and connectors, and reinforced concrete. Applications of the AISC Manual of Steel Construction is emphasized. (Prerequisites: ET 2140). (2 C/1 lect, 2 lab, 0 OJT). Offered: Spring.

Education For Life and Work
CET 2231 Municipal and Highway Design
A study of the organization, procedures and the design factors necessary in the construction of modern streets and highways. Emphasis will be placed on those portions most commonly performed by technicians. A set of construction plans will be developed from field notes and data collected in CET 2110, Surveying II. (Prerequisite: ET 2145, CET 2110). (3 C/2 lect, 2 lab, 0 OJT). Offered: Spring.

CLINICAL NEUROPHYSIOLOGY TECHNOLOGY
CNT 1101 Orientation to CNT Overview of Neurophysiology. Introduction to EEG, includes: electrode placement, basic frequencies, normal rhythms, activation procedures and introduction to artifacts. (Prerequisites: Admission to CNT program, college level reading) (1C) Offered: Fall.

COMP 1122 Introduction to Computer Science
Introduction to the field of computer science, including concepts of machine architecture, data representation, operating systems, networking and telecommunications, algorithms, programming languages, software engineering, data organization, and artificial intelligence. Intended as a first course for computer science majors. (Prerequisites: MATH 0099 or ASAP placement into MATH 1115; college level reading). (3 C). MNTC: CT. Offered: Fall, Spring.

COMP 1150 Introduction to Computer Science
Introduction to the field of computer science, including concepts of data representation, algorithms, programming in a high-level language. Algorithm development, modular design, and program debug. This course is intended for students who need an introduction to programming without the computer science theory content of the computer science programming sequence. (Prerequisites: MATH 0099 or ASAP placement into MATH 1115; college level reading). (4 C). MNTC: CT. Offered: Fall.

COMP 2220 Concepts of Programming for Non-Computer Science Majors
A course for non-computer science majors to introduce the concepts of data representation, algorithms, and programming in a high-level language. Algorithm development, modular design, and program debug. This course is intended for students who need an introduction to programming without the computer science theory content of the computer science programming sequence. (Prerequisites: Successful completion of COMP 1150; college level reading). (4 C). MNTC: CT. Offered: Fall.

COMP 2223 Structured COBOL Programming
An in-depth study of structured program design utilizing the COBOL language. Topics include structured design, sequential file processing, direct file processing, data organization, database manipulation, and report writing. (Prerequisites: Successful completion of COMP 1150; college level reading). (4 C). MNTC: CT. Offered: Fall.

COMP 2243 Introduction to Programming and Problem Solving
A course for computer science majors to introduce the major concepts of problem solving, algorithm design, and programming. Algorithm development, analysis, and refinement. Top-down program development. Data types and control structures. (Prerequisites: MATH 1115, COMP 1150 may be taken concurrently with these classes; college level reading). (4 C). MNTC: CT. Offered: Fall, Spring.

COMP 2247 Algorithms and Data Structures
Problem solving techniques with data structures such as records, dynamic structures, and pointer variables. Introduction to object-oriented concepts. Use of linked lists, stacks, queues, and binary search trees. Sorting and searching algorithms. Complexity of algorithms. (Prerequisites: COMP 1150, 2243; college level reading). (4 C). MNTC: CT. Offered: Fall, Spring.

COMP 2297 RPG Programming I
An introduction to the elements of RPG (Report Program Generator) programming and program documentation. The specific orientation will be toward RPG as it is used on IBM mid-range hardware. Applications will be taken from its use in a day-to-day professional programming environment and in report generation. (Prerequisites: Successful completion of COMP 1150; college level reading). (4 C). Offered: Spring, Fall.

COMP 2298 RPG Programming II
Tables, arrays, and structured coding techniques are used to write, compile and run programs. Multiple-occurrence data structures, Source Entry Utility (SEU), Data File Utility (DFU), exception time processing and subroutines are included. (Prerequisites: Successful completion of COMP 2297; college level reading). (2 C). Offered: Fall, Spring.

DENTAL ASSISTING
DA 1205 Introduction To Dental Assisting
This course is designed to introduce the dental assisting student to the dental profession. The first component will introduce the student to the members of the dental team, training and credentialing requirements, methods of delivering dental care, and the dental professional organizations. The second component focuses on nonverbal and verbal communications. The final component reviews current concepts in dental ethics and jurisprudence. This course is to be taken the first year of the two year option. (Prerequisites: None) (1 C/1 lect) Offered: Fall.

DA 1210 Dental Science I
Dental Science I covers anatomy and physiology of the teeth, the oral structures, and structures of the head and neck. Emphasis will be given to their anatomical parts, shape and form, clinical characteristics, development, and physiology. This course gives the student foundation information necessary to effectively communicate and perform in a dental setting. This course is to be taken the first year of the two year option. (Prerequisites: None) (3 C/2 lect, 1 lab) Offered: Fall.
DA 1215 Dental Practice Management
This course focuses on developing skills as a dental business assistant. Topics included are: reception skills, business letter writing, telephone techniques, bookkeeping/accounting procedures, banking procedures, dental insurance, preventive recall programs, appointment scheduling, inventory control and management general office procedures, and dental computer applications. This course also focuses on employment seeking skills to include preparation of resumes, job application letters, job application form, follow-up letters and preparing for an employment interview. This course is to be taken in the first year of the two year option.  (Prerequisites: None) (2 C/1 lect, 1 lab) Offered: Fall.

DA 1220 Chairside Assisting I
Chairside Assisting I covers the following fundamental areas of four-handed dentistry: patient and team positioning; maintenance of the operating field; instrument transfer; dental instruments; supplies and equipment; patient management; prevention, recognition and treatment of medical emergencies; and operative dentistry. This course is to be taken concurrently with DA1225. This course is to be taken the second year of the two year program. (Prerequisites: None) (5 C/2 lect/3 lab) Offered: Fall.

DA 1225 Dental Infection Control
Dental Infection Control will prepare the dental assisting student to function aseptically and safely in the dental clinical environment. The course covers principles of microbiology and disease transmission, hazard communication and management, and current concepts of infection control in dental practice. Course content will review requirements and protocols as recommended by the American Dental Association, The occupational Safety and Health Administration, and the Centers for Disease Control. This course is a pre-requisite to all dental assisting clinical courses. This course is to be taken the second year in the two year option. (Prerequisites: High School Diploma or GED). (2 C/1 lect, 1 lab, 0 OJT). Offered: Fall.

DA 1230 Preventive Dentistry
Preventive Dentistry focuses on dental disease prevention. Specific emphasis is on the health of oral tissues, dental decay and periodontal disease plaque removal techniques, gum stimulation techniques, nutritional counseling and patient dental education presentations. This course is to be taken the second year in the two year option. (Prerequisites: None) (2 C/1 lect, 1 lab) Offered: Fall.

DA 1250 Dental Science II
Dental Science II is a course with four separate focuses. Introduction to Anatomy and Physiology will include an overview of the body layout and each body system. Dental Charting will teach the student how to correctly record patient information, chart oral conditions, and services rendered. Oral Pathology reviews disease processes and dental disease conditions. Dental Pharmacology reviews a study of common drugs and therapies used in dentistry. This course is to be taken the first year of the two year option.  (Prerequisites: “C” letter grade average or better in DA 1210, Dental Science I). (3 C/2 lect, 1 lab, 0 OJT). Offered: Spring.

DA 1255 Dental Materials
This is a study of the properties, uses, and manipulation of chairside and dental laboratory materials. These materials are used in the reconstruction and restoration of the teeth and oral structures. The students will have extensive laboratory experience with the chairside and dental laboratory materials. This course is to be taken the first year of the two year option. (Prerequisites: DA 1210, Dental Science I with grade “C” or better). (4 C/2 lect, 2 lab) Offered: Spring.

DA 1260 Chairside Assisting II
Chairside Assisting II will introduce the student to basic concepts of assisting for each of the dental specialties; to include: Pediatric Dentistry, Fixed Prosthodontics, Removable Prosthodontics, Endodontics, Oral and Maxillo-Facial Surgery, Periodontics, Orthodontics, and Public Health Dentistry. For each specialty, the student will learn terminology, treatment techniques, instrument set-ups, procedural order, and patient pre-operative and post-operative instructions. This course is to be taken in the second year of the two year option. (Prerequisites: DA 1220, DA 1225, DA 1230) (4 C/2 lect, 2 lab) Offered: Spring.

DA 1265 Expanded Functions
This course covers the theory and pre-clinical/clinical experiences required by the Minnesota Board of Dentistry in preparation for becoming a Registered Dental Assistant in Minnesota. After the theory and demonstrations are presented, the students receive practical experience on mannequins and patients under the direct supervision of the dental assisting instructors and the clinic dentist. Students will also be required to demonstrate appropriate professional behavior and skill in patient communications, chairside assisting, dental infection control, and dental practice management. This course is to be taken in the second year of the two year option. (Prerequisites: All first semester courses or Dental Assisting Certification and permission of instructor and successful completion of all required course work) (7 C/2 lect, 5 lab) Offered: Spring.

DA 1280 Dental Assisting Internship
This course is designed to provide the student with a meaningful occupational experience in the dental assisting field. A training plan will be developed for each student including three separate rotations in three different dental practices. Two rotations will be in a general dental practice and one rotation will be in a specialty practice. Seminars are scheduled as part of the required internship experience. This internship is required by the American Dental Association as an integral part of an accredited dental assisting program’s curriculum. Prerequisites: Students must have attained a 2.0 cumulative GPA and successfully completed all Dental Assisting Program required courses. (7 C 36-40 hours per week for 9-10 weeks) Offered: Summer.

DS 1300 Dental Radiology
The course content includes theoretical concepts of the characteristics of radiation, effects of radiation exposure, dental radiographic anatomy and pathology, radiation biology and protection, dental x-ray film processing, and intraoral radiographic procedures. The course content for Dental Radiology is part of the Expanded Functions curriculum. (Prerequisites: Dental Assisting: DA 1205, DA 1220, DA 1225, DA 1210; Dental Hygiene: DH 1512, DH 1510, DH 1511) (3 C/2 lect, 1 lab). Offered: Spring.
DENTAL HYGIENE

DH 1510 Principles of Dental Hygiene I
Introduction to the etiology and prevention of dental diseases, infection control, patient assessment, normal oral conditions, periodontal assessment, selective polishing, patient education and the history of the dental hygiene profession. (Prerequisites: None). (2 C). Offered: Fall.

DH 1511 Dental Hygiene Practice I
Preclinical laboratory sessions designed to introduce basic instrumentation techniques necessary for the practice of dental hygiene. The theory, functions and procedures introduced in DH 1510 will be applied. (Prerequisites: DH 1510 concurrently). (3 C/0 lect, 3 lab, 0 OJT). Offered: Fall semester.

DH 1512 Oral Anatomy
The focus of this course is on the anatomical components and functions of the teeth and tooth supporting structures, soft tissue landmarks of the oral cavity, dental terminology. Embryology and histology of the maxillofacial area and dental structures are emphasized. The skeletal structure, muscular function, blood supply, and innervation of the maxillofacial region will also be covered. (Prerequisites: BIOL 1217 concurrent). (4 C). Offered: Fall.

DH 1520 Principles of Dental Hygiene II
This course is designed to continue the student’s education in the basic clinical theory, functions and procedures necessary for comprehensive patient treatment with an emphasis on primary preventive measures, clinical dental hygiene skills and management of medical emergencies. (Prerequisites: DH 1510). (2 C/2 lect, 0 lab, 0 OJT). Offered: Spring.

DH 1521 Dental Hygiene Practice II
A continuation of Dental Hygiene Practice I introducing the student to basic clinical theory, functions, and procedures necessary for comprehensive patient treatment. Students will continue practice on student partners until all basic competencies are satisfied and will then begin treating clients in the clinical setting. (Prerequisites: DH 1510, DH 1511, DH 1512) (5 C). Offered: Spring.

DH 1523 Oral Pathology
Introduction to the basic inflammatory and immune responses as they relate to the human body. The course will focus on the fundamental disease processes involving the maxillofacial region. (Prerequisites: DH 1512, BIOL 1217) (2 C/ 2 lect) Offered: Spring.

DH 1524 Periodontology
Discussion of the pathogenesis, diagnosis, and treatment of periodontal disease. Emphasis will include the progression of periodontal disease, diagnostic methods, treatment modalities, and the role of the dental hygienist in the prevention and treatment of periodontal disease. (Prerequisites: DH 1512, DH 1510.) (2 C) Offered: Spring.

DH 1510 Principles of Dental Hygiene III
A continuation of Principles of Dental Hygiene II with an emphasis on advanced dental hygiene skills and applied auxiliary skills. This course will familiarize the dental hygiene student with the properties and uses of various dental materials. The focus will be on composition, chemistry, and clinical application of commonly used materials in dentistry. (Prerequisites: DH 1510 , DH 1520). (3 C/2 lect, 1 lab, 0 OJT). Offered: Fall.

DH 2531 Dental Hygiene Practice III
A continuation of Dental Hygiene Practice II with supervised clinical experience and a weekly seminar. Students will apply basic theories, functions and procedures necessary for comprehensive client treatment. (Prerequisites: DH 1521). (6 C). Offered: Fall.

DH 2532 Pain Control
A lecture and laboratory course in the basic and current concepts in the administration of local al anesthsia and nitrous oxide/oxygen analgesia. The content areas include anatomical considerations, local anesthetic and nitrous oxide armamentarium, pharmacology and clinical action of local anesthetics and nitrous oxide, patient evaluation, local and systemic complications, techniques of maxillary and mandibular anesthesia and nitrous oxide administration. (Prerequisites: DH 1512, DH 1521) (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

DH 2533 Dental Pharmacology
Survey of drug groups with special emphasis on the drugs used in dentistry. The course will include content in the following: Physical and chemical properties of the drug covered, modes of administration, therapeutic and adverse effects, and drug interactions. (Prerequisites: CHEM 117, DH 1520, DH 1521.) (2 C) Offered: Fall.

DH 2540 Principles of Dental Hygiene IV
A continuation of Principles of Dental Hygiene III with an emphasis on maintenance of dental implants, subgingival irrigation, special needs patients, nutrition counseling, resume writing and job interviews, legal and ethical responsibilities of the dental team, dental specialties, and health care delivery issues. (Prerequisites: DH 1510 , DH 1520, DH 2530) (3 C) Offered: Spring.

DH 2541 Dental Hygiene Practice IV
A continuation of Dental Hygiene Practice III with supervised clinical experience and a weekly seminar. Students will apply basic and advanced theories, functions, and procedures necessary for comprehensive client treatment. (Prerequisites: DH 2531) (6 C) Offered: Spring.
**Course Descriptions**

**DH 2542 Community Dental Health**
This course provides a spectrum of experience which contributes to the continuing development of insight into community health problems and the needs of people. It provides an understanding of how private dentistry and dental public health can work together to meet the needs of the community. When completed the student will have a working knowledge of the public health process. The laboratory portion of this course includes a community dental health project. The laboratory sessions are designed to assist the students in needs assessment, program planning, program implementation, funding, and program evaluation. This course includes the development and presentation of a table clinic at a continuing education professional meeting. (Prerequisites: High school algebra or the college equivalent) (3 C/2 lect, 1 lab, 0 OJT) Offered: Spring.

**DS 1300 Dental Radiology**
The course content includes theoretical concepts of the characteristics of radiation, effects of radiation exposure, dental radiographic anatomy and pathology, radiation biology and protection, dental x-ray film processing, and intraoral radiographic procedures. The course content for Dental Radiology is part of the Expanded Functions curriculum. (Prerequisites: Dental Assisting: DA 1205, DA 1220, DA 1225, DA 1210; Dental Hygiene: DH 1512, DH 1510, DH 1511) (3 C). Offered: Spring.

**DIGITAL ARTS**

**DIGI 1117 Introduction to Digital Arts**
This course will include an introductory level study of software programs used by arts areas including paint and draw, electronic and desktop publishing, interactive and video authoring, desktop video and audio, and other programs used in Digital Arts areas. Hardware issues of special importance to Digital Arts will also be covered, including color printing, CD ROM production, audio and video digital storage issues, capture cards, digital input devices, and cross platform issues for IBM and MAC computers. Entry level aspects of artistic and aesthetic aspects of design are introduced in this course. (Prerequisites: None). (3 C). Offered: Fall, Spring, Summer.

**DIGI 1127 Digital Audio Production**
This course is intended to give students “hands-on” experience with business audio production. Students will be shown basic studio production techniques including: basic microphone use, basic audio board use, DAT recording techniques, program content and design, commercial spot production and recording, basic audio-studio procedures. Students will produce programs for possible airing on KRPR public radio station. (Prerequisites: None). (2 C). Offered: Fall, Spring.

**DIGI 2211 Digital Video Composition I**
This course will enable the student to develop a foundation of video production skills including production techniques such as image composition, planning scripting, etc. The course will place emphasis on use of video technology as a creative and artistic tool. Students will study and work with audio for video productions, lighting, and video equipment operation. Students will study and use computer based digital video production software and systems to create video production projects with Adobe Premiere and/or other software. (Prerequisites: DIGI 1117, 1147; and MUSC 1127 or permission of instructor). (3 C). Offered: Fall.

**DIGI 2212 Digital Video Composition II**
The content of this course is at an intermediate level for digital video production. Adobe Premiere and/or other software will be used to create sophisticated desktop video productions. Students will learn to use filters, audio, titles, advanced editing techniques, animated images and motion, modify sound and images, and capture and compress files using computer based digital video technology. Students will continue to develop writing and scripting skills for video based media productions; and to enhance their critique and evaluation skills for the video and multimedia fields. Throughout the course the emphasis will be on use of video technology as a creative and artistic tool. (Prerequisites: DIGI 2211). (3 C). Offered: Spring.

**DIGI 2217 Digital Projects I**
This course is intended to be a collaborative lab course involving all areas of emphasis in the Digital Arts A.S. degree. Students with an emphasis in Computer Graphics, Music Technology, and Multimedia Production will work together to create projects such as interactive CD-ROMs, videos, CD’s and case design, web sites and web pages. The projects will be designed, coordinated, and critiqued, by both the faculty and students. The final projects will then be made available to all of the team members (i.e. copy of created programs, CD’s, etc). (Prerequisites: Completion of first year of Digital Arts program). (3 C). Offered: Fall.

**DIGI 2218 Digital Projects II**
This course is intended to be an advanced collaborative lab course involving all areas of emphasis in the Digital Arts A.S. degree. Students with an emphasis in Computer Graphics, Music Technology, and Multimedia Production will work together to create projects such as interactive CD-ROMs, videos, CD’s and case design, web sites and web pages. The projects will be designed, coordinated, and critiqued, by both the faculty and students. The final projects will then be made available to all of the team members (i.e. copy of created programs, CD’s, etc). (Prerequisites: DIGI 2217 and completion of first year of Digital Arts program). (3 C). Offered: Spring.

**DIGI 2240 Multimedia Production**
This course is the first of a two part “hands-on” introduction to the world of multimedia production. The course will center on two multimedia software standard production tools: Director and SoundEdit-16. Students will produce basic sound/animation programs as well as interactive kiosks and other projects. The student will learn basics of animation, sound editing, and basic computer scripting (Lingo). This class will continue with DIGI 2241. (Prerequisites: ART 1120 or consent of instructor). (3 C). Offered: Fall.

**DIGI 2241 Intermediate Multimedia Production**
This course is the second of a two part “hands-on” introduction to the world of multimedia production. The course will continue investigation of two multimedia software standard production tools: Director and SoundEdit-16. Students will continue production of multimedia projects including: Shockwave internet animations; integration with HTML web page writing; basic Quicktime Video production and implementation; intermediate LINGO scripting techniques. Students will create several multimedia projects which will be incorporated in UCR web pages and information kiosks. (Prerequisites: DIGI 2240 or consent of instructor). (3 C). Offered: Spring.
DIGI 2247 Digital Arts Internship
Internship is the opportunity to earn credit from a job that provides work experience related to the student’s career objectives. A student may earn up to three credits toward graduation. The student is required to submit a report at the midterm and the end of the semester describing his/her work experience. Students could also lead labs to create distant learning courses, serving as experts to faculty working on interactive presentations, create publicity media for the public information office, work on the information kiosks, among other University/College based projects. The grade is based upon the evaluation of the student’s work experience as evaluated by the employer and faculty course advisor. (A minimum of 50 hours of work experience per credit). (Prerequisites: Completion of first year of Digital Arts program and consent of instructor). (1-3 C). Offered: Fall, Spring.

EARTH SCIENCE

ESCI 1101 Earth Systems Science
A first course for students interested in Planet Earth. Earth Systems Science is a study of the whole Earth as a system of many interactive parts and focuses on the changes within and between the atmosphere, biosphere, hydrosphere and the solid earth. This course is interdisciplinary and draws on geology, astronomy, meteorology, and oceanography. (Prerequisites: None). (3 C/2 lect, 2 lab). MNTC: CT, NS, PN. Offered: Fall, Spring, sometimes Summer.

ESCI 1114 Physical Geology
This is an introduction to the fundamental processes that shape planet earth. Emphasis is placed on plate tectonics as a framework for understanding these processes. Major content areas include the rock cycle (minerals, rocks, volcanoes, weathering), surface processes (rivers, glaciers, deserts, oceans), earthquakes (hazards and uses), and natural resources (energy and mineral). This course also includes laboratory study of rocks, minerals, and maps. Field trips to significant geological localities are an important part of the course. (Prerequisites: None). (4 C/3 lect, 2 lab). MNTC: CT, NS, PE. Offered: Fall.

ESCI 1124 Solar System Astronomy
A survey of the solar system, including the earth-moon system, the planets and their satellites, asteroids, meteors, comets, and the nearest star, our sun. Study includes the history of astronomy leading up to our modern view of the sun and planets as provided by optical and radio telescopes, spectrographic study and manned and robotic spaceflight. Topics include light and telescopes, planetary surfaces and atmospheres, the origin of planetary systems and the search for extraterrestrial life. Lab work is supplemented by field trips and observations using the unaided eye and telescopes. (Prerequisites: None). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Fall.

ESCI 1134 Stellar Astronomy
This course is a non-mathematical introduction of stellar astronomy for the non-science major. The course covers topics that include light spectra, the sun, stars and galaxies. In the laboratory, students will use computer simulation to study the night sky and the topics covered in class. (Prerequisites: None). (3 C/2 lect, 2 lab). MNTC: CT, NS. Offered: Spring.

ESCI 1144 Environmental Geology
This course examines the relationship between geology and short-term human concerns (periods of no more than a few hundred years). Topics include earthquake hazards, volcanoes, flooding, mass wasting, groundwater and surface water problems, radioactive waste disposal, energy and mineral resources, and radon. Laboratory and field experiences are an integral part of the course. (Prerequisites: None). (4 C/3 lect, 2 lab). MNTC: CT, NS, PN. Offered: Spring.

ECONOMICS

ECON 1101 Introduction to Economics Provides a general economic education for both the non-major transfer student and the career student. Issues covered include product markets, resource markets, environmental problems, unemployment, and inflation. Not a substitute for ECON 2214-2215. (Prerequisites: None). (3 C). MNTC: CT, PN, SS. Offered: Fall, Spring, Summer.

ECON 1901 Introduction to Economics: Honors Provides a general economic education for both the non-major transfer student and the career student. Major units of study are: microeconomic analysis of demand and supply in determining prices in competitive versus monopolistic markets; macroeconomic analysis of changes in the price level, national output, employment, the supply of money; and international issues including currency exchange rates. (Prerequisites: MATH 0098, ENGL 1117 or 1917). (3 C/3 lect, 0 lab, 0 OJT). MNTC: CT, GP, SS. Offered: Usually Spring, every other year.

ECON 2214 Principles of Economics: Micro Emphasis of this course is microeconomic theory. Other topics include: labor and capital markets and the economics of education. (Prerequisites: MATH 1113 or 1115 or permission of instructor). (4 C). MNTC: CT, SS, PN. Offered: Fall.

ECON 2215 Principles of Economics: Macro Emphasis of this course is macroeconomic theory. Other topics include: rational expectations and international trade. (Prerequisites: MATH 1113 or 1115; ECON 2214, or permission of instructor). (4 C). MNTC: CT, SS, GP. Offered: Spring.

ELECTRONICS

ELEC 1005 Electricity I Students will learn the fundamental principles of dc analysis including Ohm’s Law, Kirchhoff’s Laws, Thévenin’s and Norton’s Theorem, Superposition Theorem, and Maximum Power Transfer Theorem. Capacitance, magnetic circuits, and inductance are introduced. Laboratory exercises which include the use of circuit simulation software are used to reinforce concepts presented in the classroom. (Prerequisites: None). (4 C/1 lect, 6 hours lab). Offered: Spring, Fall.

ELEC 1010 Electricity II Students will learn the fundamental principles of ac network analysis. Laboratory exercises which include the use of circuit simulation software are used to reinforce concepts presented in the classroom. (Prerequisites: ELEC 1005). (4 C/1 lect, 6 hours lab). Offered: Spring, Fall.
**ELEC 1015 Electronics I**  
Students will learn the fundamental principles of semiconductor devices, including diodes, bipolar transistors, and field effect transistors (JFET’s and MOSFET’s). Applications such as amplifiers and switching circuits will be covered. Laboratory exercises are used to reinforce concepts presented in the classroom and to enhance the student’s ability to make measurements using test equipment such as meters, function generators, and oscilloscopes. Circuit simulation software is also used in the course. (Prerequisites: None). (4 C/1 lect, 6 lab, 0 OJT). Offered: Spring, Fall.

**ELEC 1020 Electronics II**  
Students will learn the fundamentals of operational amplifiers and study their applications along with the principles of feedback and frequency response. Other topics are the thyristor family, power supplies, and voltage regulators. Laboratory exercises which include the use of circuit simulation software are used to reinforce concepts presented in the classroom. (Prerequisites: ELEC 1015). (4 C/1 lect, 6 lab, 0 OJT). Offered: Spring, Fall.

**ELEC 1025 Digital I**  
This course covers digital systems as they are analyzed through the use of Boolean Algebra. Flip flop circuits and arithmetic circuits are also covered. (Prerequisites: None). (4 C/1 lect, 6 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1030 Technical DOS**  
This course will cover the different commands used in MS DOS, and using those commands in batch files, and config.sys. files. The course will also include the different applications that can be used to enhance the computer and how to rearrange the memory to increase operation of the computer system. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1035 Technical Windows**  
This course will cover the different applications that come with MS Windows. The software operation of the applications will be discussed which will include the parameters in the applications INI files and how Windows uses these parameters. The networking of computers in a peer to peer configuration will be done by the students. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1040 Technical Works**  
This course will cover the different aspects of MS Works. The word processor, database, spreadsheet and communication packages will be discussed and how they can be integrated. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1045 Programming Applications I**  
This course will be an introduction to using Visual Basic to create tools that can be used in Electronics. Visual Basic programs will be created to enhance the students programming skill and to create applications that can be used in their electronics career. (Prerequisites: None). (3 C/2 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1050 Schematic Capture I**  
This course will cover the different computer software command that can be used to create schematics. The course will also introduce the student to the proper layout of schematic drawings. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1055 Electronics Shop**  
In this course students will learn concepts and techniques of electronic assembly. Each student will be expected to construct an electronic project selected by the instructor. Training includes weekly sessions in wire preparation, soldering, circuit board fabrication, component mounting, harness typing, chassis fabrication, safety procedures, and use of tools. (Prerequisites: Enrollment in Electronics program or permission of instructor). (1 C/ 0 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 1060 Quality Soldering**  
This course involves understanding and applying solder to various types of electronic assemblies, from single sided boards to double sided boards. This course also involves analyzing and inspecting solder joints on different types of boards. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 2005 Advanced Electric Circuits**  
This course is offered to Electronics Engineering Technology students and to students desiring advanced concepts in electric network analysis. Students will solve systems of simultaneous equations derived from mesh and nodal analysis of complex dc and ac networks. Phasor notation is introduced and used in ac circuit analysis and in network theorems that were introduced in previous courses. Laboratory exercises which include the use of circuit simulation software are used to reinforce concepts presented in the classroom. (Prerequisites: ELEC 1010). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 2010 Advanced Electronics**  
This course will cover topics primarily related to electronic measurements and instrumentation. Logic analyzers, digital oscilloscopes, and other digital instruments, including counters and digital multimeters will be studied and used in the laboratory. Time and frequency domain measurement techniques will be studied. (Prerequisites: ELEC 1020, ELEC 2025). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 2015 Digital II**  
This course covers digital systems as they are analyzed through the use of Boolean Algebra. I-k-flip flops are used for counters and other sequential circuits. Memory systems along with analog to digital converters are analyzed. Introduction to computers concludes this course. (Prerequisites: ELEC 1025). (4 C/1 lect, 6 lab, 0 OJT). Offered: Fall, Spring.

**ELEC 2020 Electronics Design**  
In this laboratory course students will design, build, and test an electronics project of their choice. Students are provided with the opportunity to apply design principles to an approved technical project. The student is involved with both the mechanical and the electrical design from breadboard to the finished unit. Emphasis is placed on design, component selection, wiring and fabrication, chassis design and preparation, construction technique, and testing procedures. Periodic records are kept of the student’s progress and two written technical reports are required. (Prerequisites: ELEC 1020, ELEC 2025). (4 C/1 lect, 6 lab, 0 OJT ). Offered: Fall, Spring.

**ELEC 2025 Microprocessors I**  
This course will provide an introduction to microcomputer organization, hardware, and programming. Topics covered include addressing modes, subroutines, machine and assembly language programming, and the use of assemblers. (Prerequisites: None). (4 C/1 lect, 6 lab, 0 OJT). Offered: Fall, Spring.
ELEC 2030 Microprocessors II
This course will cover microprocessor and microcontroller interfacing. Input/output hardware and programming will be studied in the classroom and the laboratory. Interrupts, interrupt service routines, programmable timers, and analog to digital converters and their applications will be studied and tested in the laboratory. (Prerequisites: ELEC 2025). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

ELEC 2035 Microprocessor III
This course involves building desk top computers. The computer is constructed from boards. The installed boards include the motherboard, I/O card, Video card, floppy drives and hard drives are installed. After the completion of the hardware, a complete software system is installed in each computer that is constructed. (Prerequisites: ELEC 2025, ELEC 2030). (3 C/2 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

ELEC 2040 Networking Concepts
This course provides an introduction to computer networks, with emphasis on Local Area Networks. It provides information that would be useful to the user of a network and an introduction to network installation and administration. In the laboratory the student will be provided with some experience in LAN installation and more extensive experience using a LAN. (Prerequisites: None). (3 C/1 lect, 4 lab, 0 OJT). Offered: Fall, Spring.

ELEC 2045 Programming Applications II
The student is introduced to programming using the C and C++ Languages. Simple programs will be both used and written by the student to demonstrate input/output, looping and decision operations, data types and arrays. Emphasis will be on applications related to electronics, including the use of the C language to program microcontrollers embedded in electronic systems. (Prerequisites: None). (3 C/2 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

ELEC 2050 Intro. to Programmable Logic Controllers
This course is an introductory course in the programming of a Programmable Logic Controller. Loading Programmable Logic Controller software, configuring the equipment, checking inputs and programming output according to input configurations will be covered. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall, Spring.

ELEC 2055 Internship
This course will give the student the opportunity to apply their schooling in the workplace. They will be required to submit weekly activity reports back to their instructor. The activity report will be completed on a weekly basis by the students supervisor. The report will include work habits, skill knowledge, reliability, team participation, hours worked. (Prerequisites: ELEC 1025). (2 C/O lect, 0 lab, 2 OJT). Offered: Fall, Winter.

EMERGENCY MEDICAL CARE
EMC 1121 EMS: First Responder
This course is designed for students who will be in law enforcement or in another position where they will be responding to emergencies and accidents. It includes CPR, vital signs and handling trauma to the musculoskeletal system and a variety of other emergencies listed in the course outline. (Prerequisites: Enrolled in Law Enforcement or consent of instructor). (3 C/2 lect, 2 lab). Offered: Fall, Spring.

EMT 1200 Emergency Medical Technician
This course is intended for students who wish to become certified as an EMT-Basic. The course is approximately 120 hours in length. Upon successful completion, participants are eligible for the National Registry of EMT’s exam. (6 C). Offered: Fall, Spring.

ENGINEERING
ENGR 1152 Logic Design
This course covers fundamental digital circuit designs. The logic, the electronic devices and their configurations developed to accomplish the logic and how the logic is incorporated into a microcomputer. (Prerequisites: MATH 1128 and Computer Programming C, C++, Pascal or others, or by permission of instructor). (4 C/3 lect, 0 lab). MNTC: CT, NS. Offered: Spring.

ENGR 1153 Microprocessors
This course is the study of programmable logic devices, member devices, and microprocessors. Input/output for a microprocessor and peripheral devices. Interrupt driver input/output. Design of microprocessor based systems. Integrated laboratory. Laboratory exercises involving the operating characteristics microprocessors are studied. The course is intended to be a lower division course for those majoring in electrical engineering. (Prerequisites: MATH 1127). (4 C/3 lect, 2 lab). MNTC: CT, NS, MA. Offered: Spring.

ENGR 2211 Statics
This course is the study of rigid body dynamics in equilibrium. The study of the techniques to analyze a system constrained from motion and to determine the reaction forces and moments of forces acting on the system to keep it from accelerating. Application of the equations of equilibrium to determine the analysis of structures, frames, mechanisms, statically determine beams and cables. The nature and influence of friction on a static system is studied. The Principle of Virtual work is applied. Vector analysis and calculus is used for the application of definitions to dynamic systems. (Prerequisites: MATH 1128, PHYS 1127). (3 C). MNTC: CT, NS. Offered: Fall.

ENGR 2212 Dynamics
This course is the study of rigid body dynamics in fixed and rotating systems. The techniques to analyze a system moving with linear accelerations and/or angular accelerations to determine the reaction forces and moments of force acting on the various components of the system. The time dependent analysis of vibrating/rotating systems is studied. An extensive use of vector analysis and calculus is used for the application of definitions of dynamic systems. (Prerequisites: MATH 1128, PHYS 1127). (3 C/3 lect, 0 lab). Offered: Spring.

ENGR 2213 Electrical Engineering (Linear Circuit Analysis I)
This course is a study of linear circuits. The techniques for the solution and ultimate understanding of electric circuits are studied. Techniques include: Mesh analysis, Nodal analysis, Trees and co-trees. Thevenin’s and Norton’s methods for source transformations are studied. Equivalent circuits, natural and step response to RLC circuits, sinusoidal steady state analysis with phasors and three phase power are also studied. The course is intended to be a lower division course for those majoring in engineering. (Prerequisites: MATH 1128 and concurrent enrollment in MATH 2227). (4 C/3 lect, 2 lab). MNTC: CT, NS. Offered: Fall.
ENGR 2214 Electrical Engineering (Linear Circuit Analysis II)
This course is a study of linear circuits. The more rigorous methods for the solution and ultimate understanding of electric circuits are studied. These techniques are: the method of La Place transforms and Bode diagrams. Complex circuits involving filters (lowpass, highpass, bandpass, band reject) are studied. Laboratory exercises involving the operating characteristics of semiconductor devices are studied. The application of these semiconductor devices: filters, amplifiers (push-pull, Hartley); are also studied. (Prerequisites: ENGR 2213, MATH 2227, and concurrent enrollment in MATH 2228). (4 C/3 lect, 2 lab). Offered: Fall, Spring, Summer.

ENGINEERING TECHNOLOGY

ET 1110 Introduction to Problem Solving Techniques
Introduction to engineering problem-solving techniques and to the presentation of solutions. Topics include computer hardware and software, methodologies for computer-aided problem solving and presentation using spreadsheets, equation solvers, database management and word processing programs. Students will be introduced to currently used engineering software. (Prerequisites: None). (2 C/1 lect, 2.33 lab, 0 OJT). Offered: Fall.

ET 1124 Architectural Drafting
The student will study basic house design. Included will be room planning, plot plans, electrical plans, and floor plans. Estimating building cost, materials and workmanship specifications and other areas will be discussed. A field trip to a residence under construction will be scheduled during the course. (Prerequisites: None). (2 C/0 lect, 4 lab, 0 OJT). Offered: Fall.

ET 1224 Engineering Drafting I
Basic class in drafting to provide a working knowledge of industry graphic language as well as fundamental skills of freehand sketching and instrument drawing. Linework and lettering practice, geometrical construction, projection drawing theory, the multiview system, auxiliary and section views, dimensioning, and projection will be covered. (Prerequisites: None). (2 C/0 lect, 4 lab, 0 OJT). Offered: Fall.

ET 1235 CAD I
A beginning course using the PC and AutoCAD software. Instructional topics include object generation and manipulation commands, plotting using 3 coordinate systems, dimensioning, blocks and attributes, and using isoplane and elevation practices. (Prerequisites: MET 1146 or ET 1110). (3 C). Offered: Spring.

ET 2140 Introductory Statics and Strength of Materials
Basic concepts relating to equilibrium of bodies, force, movement, resultants of force systems, mechanical system isolation, equilibrium, centroids, and moment of inertia. Principles applied to investigation of simple structures. Analytical and experimental investigation of the behavior of engineering materials as related to the design procedure of basic structural members and connections. Concepts include stress, strain and elongation. (Prerequisites: MATH 1104; PHYS 1107). (3 C/2 lect, 2.67 lab per week, 0 OJT). Offered: Fall.

ET 2145 Fluid Mechanics
Basic concepts relative to fluid mechanics, fluid flow and simple hydraulic systems. (Prerequisites: Math 1102). (2 C/2 lect, 0 lab per week). Offered: Fall.

ENGLISH

ENGL 0840 Developmental Reading
This class will cover reading/study strategies for success in a variety of content areas. Some of the topic areas may include: social sciences, science and technology, and humanities. (Prerequisites: ASAP placement score of 20). (4 C/4 lect, 0 lab). Offered: Fall, Spring, Summer.

ENGL 0900 Basic Grammar and Usage for ESL Students
This course is designed to introduce second language learners to the basic elements of English grammar: Subject-verb identification and agreement, sentence structure, punctuation, pronoun usage, capitalization, modifiers, irregular verbs, count/non-count nouns. (Prerequisites: Appropriate test score from CELSA - Combined English Language Skills Assessment). (2 C/2 lect, 0 lab). Offered: Fall, Spring, Summer if needed.

ENGL 0910 Basic Grammar and Usage
This course will cover basic sentence components including subject/verb identification and agreement, run-on sentences, punctuation, capitalization, pronoun usage, and parallel structure. (Prerequisites: None). (1 C/1 lect, 0 lab). Offered: Fall, Spring.

ENGL 0940 Intro. to College Writing: Sentence to Paragraph
The goal of the course is to provide students not yet reading and writing at college level with strategies to improve their reading comprehension and with guided practice to improve their writing of sentences and paragraphs. (Prerequisites: None). (3 C/3 lect, 0 lab). Offered: Fall, Spring, possibly Summer.

ENGL 0970 Reading, Vocabulary, and Academic Skills for ESL Students
This course is designed to develop the reading, vocabulary, and academic skills of second language learners so they can succeed in mainstream classes. Emphasis will be given to reading speed and comprehension, listening and notetaking skills, college textbook vocabulary, and reading/study strategies for specific content areas. (Prerequisites: Appropriate test score from CELSA - Combined English Language Skills Assessment). (4 C/4 lect, 0 lab). Offered: Fall, Spring, summer if needed.

ENGL 0990 Intro. to College Writing: Paragraph to Essay
In English 0990, students will learn to read carefully, to react thoughtfully in speaking and writing, and to use these reactions as a source of ideas for writing paragraphs and short personal essays. Students will learn relevant invention, revision, and editing skills. The goal of this reading-based writing course is to prepare students for college-level work. (Prerequisites: None). (3 C/3 lect, 0 lab). Offered: Fall, Spring, possibly Summer.

ENGL 1102 Listening and Speaking Skills for ESL Students
This course is designed to develop the listening and speaking skills of the second language learner. Oral practice with the rhetorical structures of the language and common conversational situations will be emphasized along with accurate listening comprehension. (Appropriate test scores from CELTL- Comprehensive English Language Test: Listening). (4 C/4 lect, 0 lab). Offered: Fall, Spring, Summer if needed.
ENGL 1103 Writing Skills for ESL Students  
This course is designed to develop the writing skills of second language learners. Students will move from writing correct sentences to well-developed paragraphs and then to short compositions. (Prerequisites: Appropriate test score from CELSA - Combined English Language Skills Assessment). (4 C/4 lect, 0 lab). Offered: Fall, Spring, Summer if needed.

ENGL 1109 Technical Report Writing  
Students learn to plan, write, edit, and present a proposal following the format and style guidelines of their profession. Based on the concepts learned in ENGL 1117, they expand their examination of external resources, develop additional critical thinking skills, and begin to analyze and synthesize texts, especially those texts applied to their profession. Students will demonstrate their ability to support individual readings or primary texts by combining documented and textual evidence. (Prerequisites: ENGL 1117). (3 C/3 lect, 0 lab). Offered: Fall.

ENGL 1110 Literary Impressions for ESL Students  
This course uses multiethnic fiction, non-fiction, and poetry to help the second language learner develop the reading strategies and literary vocabulary needed to comprehend and analyze literature. Creative writing and critical thinking skills are also included. (Prerequisites: ENGL 1103. Appropriate test score from CELSA - Combined English Language Skills Assessment). (3 C/3 lect, 0 lab). Offered: Spring.

ENGL 1111 College Reading  
This class is designed for students who have acquired the basic framework of comprehension, vocabulary, and reading strategies necessary for critical reading of expository materials. This course is for competent readers who are uncertain of their ability to do college work. (Prerequisites: College level reading skills). (2 C/2 lect, 0 lab). Offered: Fall, Spring, Summer.

ENGL 1117 Reading and Writing Critically I  
This course introduces the student to the writing process for both single and multiple-source essays. Through analysis and evaluation, students will respond first to individual sources in essays based on personal experience. The course encourages students to support generalizations with convincing evidence and to challenge the ideas in written and oral discourse of others while respecting multiple points of view. (Prerequisites: ASAP of 30 or successful completion of appropriate developmental course(s). (4 C/4 lect, 0 lab). MNTC: CT, CM. Offered: Fall, Spring, Summer.

ENGL 1118 Reading and Writing Critically II  
This course concludes the emphasis on writing from multiple sources and the development of critical thinking skills begun in ENGL 1117. Based on the concepts learned in the first course, study will expand the examination of external resources, develop additional critical thinking skills, and introduce the analysis and synthesis of texts, especially literary texts. Students will demonstrate their ability to support individual readings of primary texts by combining documented and textual evidence. (Prerequisites: Successful completion of ENGL 1117). (4 C/4 lect, 0 lab). MNTC: CT, CM. Offered: Fall, Spring, Summer.

ENGL 1197, 1198 English, Honors  
The English 1197, 1198 Honors sequence is designed to parallel the English 1117, 1118 composition sequence, but the honors courses are designed for those students who score 90 percent and above on the English portion of the ASAP or who have the instructor’s permission. These honors courses will fulfill the same requirements as English 1117, 1118, but will have the added benefit of being listed on the transcript as “Honors English”.

ENGL 1917, 1918 Reading and Writing Critically I: Honors  
This course utilizes two or three primary sources which the students read, analyze, and write about, focusing specifically upon a topic such as “The Quest for a Sense of Self”. The course also includes a flexible scheduling component, consisting of library research methodology and tools, both technical and non-technical. (Prerequisites: No courses; writing score of 35-40 or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: CT, CM. Honors equivalent to ENGL 1117. Offered: Fall.

ENGL 1918 Reading and Writing Critically II: Honors  
The course will utilize primary sources in a variety of disciplines, focusing on argumentative issues in various disciplines and writing style unique to a particular discipline. Being interdisciplinary in nature, the course will cover style sheets from MLA, APA, or CBE. The flexible scheduling portion of the class will focus on research techniques with Internet and the use of Internet in the professions, including e-mail, lists, Usenet, Telnet, FTP, Web and Gopher. (Prerequisites: Successful completion of ENGL 1117 or 1917; writing score of 35-40 or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: CT, CM. Honors equivalent to ENGL 1118. Offered: Fall.

ENGL 1121 Mythology & Ancient Legend  
A study of the more important myths of classical literature with reference to the major archetypal patterns, as related to ways in which these have been transformed by various artists and authors. (Prerequisites: Minimum reading and writing ASAP score of 27; or permission of instructor). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Spring.

ENGL 1630 College English  
This course uses an editorial focus to study and examine principles of language use; students review and refine the application of standard editorial principles. Students edit a variety of prepared texts representative of business, professional, and academic writing. Designed for practical application, this course allows students to refine those editorial skills they will apply in designing, editing, or transcribing documents in professional settings. Students learn the process for making informed language decisions; they learn to think their way through language applications. (Prerequisites: College level reading and writing skills recommended). (3 C/3 lect, 0 lab). Offered: Fall, Spring.

ENGL 2251 Fiction Writing  
This course emphasizes improving students’ ability to read and critique fiction as aspiring writers and to write fiction. Other topics: Elements of fiction, Approaches to reading fiction as writers, and Process for generating ideas, writing, and revising. (Prerequisites: ENGL 1117 or ENGL 1917 and ENGL 1118 or ENGL 1918; or permission of instructor. (3 C/3 lect, 0 lab). MNTC: CT, CM. Offered: One semester per year.
ENGL 2260 Literature: Topical Studies
This course focuses on a specific topic chosen by the instructor who teaches the class. It could focus on an author or a group of authors, a period, a literary genre, or a theme. Specific course content and number of credits will vary depending upon the nature of the course and may be repeated up to 9 credits for credit if the focus of the class is different. Examples: Literature of the 1920’s, Afro-American Writers, Twentieth Century Poetry, or Literature of the American Frontier. (Prerequisites: ENGL 1118 or 1918 recommended; college level reading, writing skills). (1-4 C/1-4 lect, 0 lab). MNTC: CT, HA, HD. Offered: Periodically.

ENGL 2273 Early American Literature
This course is a survey of American Literature from its beginnings to the time of the Civil War. Representative authors may include Bradstreet, Wheatley, Taylor, Frenaye, Paine, Bryant, Hawthorne, Cooper, Emerson, Jacobs, Dickinson, Douglass, and others. (Prerequisites: ENGL 1118 or ENGL 1918 recommended; college level reading and writing skills). (3 C/3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Fall.

ENGL 2274 Modern American Literature
This course will focus on the development of Asian-American literature as a specific genre that grew out of the immigrant experiences of the Chinese, Japanese, Filipino, Korean, and other Asians who have helped to shape American society and culture. (Prerequisites: ENGL 1118 or 1918 recommended; college level reading and writing skills). (3 C/3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Spring.

ENGL 2275 Asian-American Literature
This course will focus on the development of Asian-American literature as a specific genre that grew out of the immigrant experiences of the Chinese, Japanese, Filipino, Korean, and other Asians who have helped to shape American society and culture. (Prerequisites: ENGL 1118 or 1918 recommended; college level reading and writing skills). (3 C/3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Periodically.

ENGL 2276 Best Sellers
This course will examine definitions, history, and patterns of 'best sellers' — the scope and variety of works within this genre — through selected readings and visual adaptations. (Prerequisites: College level reading and writing skills). (3 C/3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Fall, possibly Summer.

ENGL 2277 Women and Literature
This course focuses on literature by and/or about women. Course content will evolve around questions such as these: What are the images of women in literature? How can feminist literary criticism help us to analyze literary texts? How has women's literature been marginalized? How are women's identities and experiences incorporated in literary texts? What can we learn about the different approaches to the human condition by reading works by women? The particular course content, which will vary from year to year, will include such sub-titles as “Women & the Development of the Novel,” “Images of Women in Fiction,” or “Afro-American Women Writers.” Course may be repeated up to 3 times for credit if the focus of the class is different. (Prerequisites: ENGL 1118 or 1918 recommended or instructor’s permission; college level reading, writing skills). (2-3 C/2-3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Yearly.

FASHION MERCHANDISING - SEE RETAIL MERCHANDISING

FREN

FREN 1001 Introduction to French-Speaking Cultures (in English)
Introduction to French-Speaking regions and cultures: geography, history, social institutions, cultural values, and the arts. Emphasis on development of cultural sensitivity with applications to functioning in the target culture. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, GP. Offered: Fall, Spring.

FREN 1101 Beginning French I
An introduction to the fundamentals of French including speaking, listening, reading, and writing, in the context of Francophone cultures. Sensitivity to culture differences is emphasized. Designed for the student with NO previous foreign language study. This course uses audio and video tapes, computers, and news media. (Prerequisites: None). (4 C/4 lect, 0 lab). MNTC: CT, GP. Offered: Fall, Spring.

FREN 1102 Beginning French II
Conclusion of the introduction to fundamentals of French, including speaking, listening, reading, and elementary creative writing. Emphasis on awareness and sensitivity to cultural differences. This course uses text, audio and video tapes, news media and computers to teach structure and content in the context of the cultures of some of the 44 Francophone communities in the world. (Prerequisites: FREN 1101 or 2-3 years high school French or equivalent). (4 C/4 lect, 0 lab). MNTC: CT, GP. Offered: Spring.

FREN 1111 French Conversation Topics
Development of French conversational skills (pronunciation, vocabulary, expansion and correct structure usage) based on multiple media, such as current events, magazine and news articles, poetry, film, music and art from Francophone communities throughout the world. Course content varies each semester so that course may be repeated for additional language practice. (Prerequisites: FREN 1101). (2 C/2 lect, 0 lab). MNTC: CT, GP. Offered: Fall, Spring.

FREN 2101 Intermediate French I
Short literary forms (poetry, short stories, excerpts from novels or theater), and authentic texts such as songs and news articles are basis for reading, speaking, interpretation, vocabulary development and writing practice. Review/expansion of selected structure topics. Emphasis on discovering cultural, social, religious and linguistic values and differences within a Francophone cultural context. (Prerequisites: 1 yr college, 3-4 years of high school French or equivalent). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall.

FREN 2902 Intermediate French II (Honors Credits)
Intermediate French, continued. Short literary forms such as poetry, short stories, excerpts from novels or theater, and authentic media such as news articles, music and art are basis for reading, interpretation, speaking, vocabulary development and writing practice. Review/expansion of selected structure topics. Emphasis on discovering cultural, social, religious and linguistic differences within a Francophone cultural context. (Prerequisites: FREN 2101 or equivalent). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Spring.
Course Descriptions

GENERAL STUDIES

GSCL 1000 Community CPR/First Aid and Safety
Community CPR/First Aid and Safety is a course that prepares the student to recognize an emergency, implement an emergency action plan, provide basic emergency care, and learn methods of preventing injuries and emergencies. Skill assessment will be included for: assessing a victim, breathing emergencies, obstructed airway techniques, and CPR techniques for conscious and unconscious adults, children, and infants; control of bleeding; treating shock; and applying splints and slings. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring, Summer.

GSCL 1102 Basic Anatomy & Physiology
This course is designed to assist the student in developing a basic understanding of normal anatomy and physiology of the human body. Such knowledge is essential to understanding common disease processes. Medical terminology is incorporated to assist the student to interpret and use common medical abbreviations and symbols. (Prerequisites: None). (4 C). Offered: Fall, Spring, Summer.

GSCL 1104 Applied Psychology
This course will help to prepare students to successfully handle many challenges they will face in their personal and professional lives. Students will explore and comprehend basic psychological principles within the context of everyday life. Students are provided the framework for exploring the physical, cognitive, and psychosocial processes of life span development including issues such as self-esteem, emotions and attitudes, and interpersonal relationships. The course also emphasizes the need for effective communications skills, managing emotions, problem solving/critical thinking skills, and personal goal achievement. The course provides a way for students to self check understanding and apply concepts immediately to their own lives. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall, Spring, Summer Session I.

GSCL 1415 Medical Terminology
The course is based on a systems approach. Students will also learn to interpret and use common medical abbreviations and symbols. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

GSCL 1500 Understanding Human Relations in the Workplace
This course covers the study of the importance of interpersonal skills and social interactions with co-workers, supervisors, and customers. Students will evaluate individual strengths and weaknesses and will be introduce to techniques for improvement. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

GSCL 1510 Managing Parenting & Employment
This course focuses on the dual demands that impact employed parents as they manage both work and family expectations. Topics include personal and parent growth, family communication and development, child development characteristics, and managing children’s behavior. Time management strategies for busy families will be emphasized. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring.

GSCL 1540 Applied Psychology
This course provides students with an introduction to the fundamental concepts of psychology and the scientific research underlying the science. It will help students understand how these concepts and principles affect their thought processes, behaviors and relationships with others. Topics such as stress, coping, conflict, and human diversity are discussed. Life from infancy through old age is examined as students study the intellectual, social, and psychological demands individuals face at every stage of life. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring.

GSCL 1550 Introduction to Windows
This course will introduce the student to Windows. The student will learn how to use Windows for file management, application startup, and customizing Windows. (Prerequisites: None). (2 C/2 hrs per wk). Offered: Fall, Spring.

GSCL 1676 Computer Basics
This course covers an introduction to the microcomputer through hands-on experience with the IBM PC or compatible computer. Students do projects using word processing, spreadsheet, and database software. (Prerequisites: None). (1C/1 hour per week). Offered: Fall, Spring.

GSCL 2870 Employment Strategies
This course offers a highly individualized approach to developing job seeking skills. The student will create resumes, job application letters, complete job application forms, and prepare for the employment interview. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring, Summer.

GEOGRAPHY

GEOG 1614 Human Geography
An introductory study of the human geography of the world in terms of the spatial distribution of cultural and physical phenomena, and a philosophical analysis of the interrelationships of those elements. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP. Offered: Fall, Spring.

GEOG 1615 Economic Geography
A study of the spatial distribution of global economic activities, and the cultural and physical influences on economic systems. Simple and complex systems will be analyzed, as will resource use and abuse, ecological factors, and international relations. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP. Offered: Fall.

GERMAN

GERM 1001 Life and Culture in the German Speaking Countries
An introductory survey of various topics related to life, language, culture, and civilization in the German-speaking countries with an emphasis on Germany. Students will begin to develop an appreciation for the history, arts, and culture in those countries, in addition to an understanding of various aspects of current daily life. (Prerequisites: None). (2 C/2 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring - alternate years.
GERM 1101  Beginning German I  
An introduction to the fundamentals of the German language, including comprehension, speaking, reading, writing, and culture. Conversation, grammar, audio and video tapes, short readings, computer work, and cultural topics are all a part of the course. For students with very little or no previous experience with the German language. (Prerequisites: None). (4 C/4 lect, 0 lab). MNTC: CT, GP. Offered: Fall, Spring.

GERM 1102  Beginning German II  
A continuation of the introduction to the fundamentals of the German language begun in GERM 1101, including comprehension, speaking, reading, writing and culture. Conversation, grammar, audio and video tapes, short readings, computer work, and cultural topics are all a part of the course. (Prerequisites: GERM 1101 or 2-3 years of HS German or equivalent, basic English comprehension skills or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: CT, GP. Offered: Spring.

GERM 1130  German in Business  
An introduction to German as it is used in offices and businesses. Emphasis is on communicative skills such as understanding simple spoken and written business German, using the telephone, making arrangements, etc. Vocabulary development and a basic grammar review are included. Each student will research a company from a German-speaking country. (Prerequisites: Successful completion of GERM 1101 or 2-3 year of high school German). (2 C/2 lect, 0 lab). MNTC: CT, GP. Offered: Fall, Spring - alternate years.

GERM 2101  Intermediate German I  
The course focuses on authentic cultural, historical and literary texts in German for reading, interpretation, speaking and writing practice. These authentic texts include original newspaper and magazine articles, advertisements, letters, graphs, tables, brochures, short stories, fairy tales, songs, and poems. Selected grammar topics are reviewed and/or expanded. Supplemental activities include use of videotapes, audio tapes, and computers. (Prerequisites: A. Successful completion of GERM 1102 or 3-4 levels of high school German. B. Reading level 2, Writing level 2, or instructor’s permission in special cases. (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall.

GERM 2902  Intermediate German II (Honors Credits)  
The course focuses on authentic cultural, historical and literary texts in German for reading, interpretation, speaking and writing practice. These authentic texts include original newspaper and magazine articles, advertisements, letters, graphs, tables, brochures, short stories, fairy tales, songs, and poems. Selected grammar topics are reviewed and/or expanded. Supplemental activities include use of videotapes, audio tapes, and computers. (Prerequisites: A. Successful completion of GERM 2101 or equivalent experience. B. Reading level 2, Writing level 2, or instructor’s permission in special cases. (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Spring.

HEALTH

HLTH 1102  Industrial Safety and First Aid  
This course will consist of lectures, video scenarios, demonstrations, and practice in emergency first aid care. The course will cover different safety aspects in industry, safety engineering, industrial hygiene, life safety and the importance of the Occupational Safety and Health Act (OSHA) and the Right To Know Act. An American Red Cross Adult CPR and Standard First Aid Certificate will be issued after successful completion of the course. (Prerequisites: None). (2 C). MNTC: CT, EC. Offered: Fall and Spring.

HLTH 1110  Cardiopulmonary Resuscitation (CPR for the Professional Rescuer/Basic Life Support)  
This course will consist of lecture, demonstration, video scenarios, and practice in cardiopulmonary resuscitation and emergency cardiac care. This course includes instruction in Adult CPR, Infant/Child CPR, Two-person CPR and the use of pocket masks and bag-valve masks. This course will provide the professional rescuer with the knowledge and skills necessary in an emergency to help sustain life, reduce pain, and minimize the consequences of respiratory and cardiac emergencies until more advanced medical help can arrive. Certification will be given to those who successfully complete the course. (Prerequisites: None). (1 C). MNTC: CT, EC. Offered: Fall, Spring, Summer.

HLTH 1111  Health Education  
This course gives the student a meaningful and useful background in a number of major health areas. The class includes a study of stress, mental health, human sexuality, nutrition/fitness, drugs, disease, aging, death and dying, consumerism and health care, ecology, and safety. Designed to help the individual student understand and cope with their environment and to be a responsible citizen. (Prerequisites: None). (3 C). MNTC: CT, EC. Offered: Fall, Spring, Summer.

HLTH 1114  Responding to Emergencies  
This course is designed to prepare students to respond appropriately and with confidence in emergency situations until more advanced help arrives. Instruction will include discussion, lecture, demonstration, video scenarios and practice. The course includes certifications in Community CPR (Adult, Infant and Child) and Responding To Emergencies for those who successfully complete the course. Also included are situations involving sudden illness, severe bleeding, delayed help situations and healthy lifestyle practices. (Prerequisites: None). (3 C). MNTC: CT, EC. Offered: Fall, Spring, Summer.

HLTH 1132  Drug Use and Abuse  
This course allows students to explore many of the historical and current patterns associated with the use of drugs in our society and other cultures and societies of the world. Discussions will include the social, legal, medical, psychological, and rehabilitative aspects of drug use. Health risks and implications surrounding drug use and HIV and AIDS will also be covered. Students will examine their attitudes, values, and assumptions concerning drug use. (Prerequisites: None). (3 C). MNTC: CT, EC. Offered: Fall, Spring.

Education For Life and Work
Course Descriptions

HULT 1135 Holistic Health: Intro. to Complementary Health
This course in holistic health allows students to explore complementary/alternative therapies such as acupressure, aromatherapy, biomagnetic therapy, herbal remedies, and mind/body control. Discussions will include the social, political, and economic aspects of holistic health care, and the healing aspects of exercise and nutrition. Updated research from the national Institutes of Health; Office of Alternative Medicine; and the insurance industry’s views on alternative therapies will also be discussed. (Prerequisites: None). (2 C). Offered: Fall.

HULT 2126 Women’s Health Issues
Students will have an opportunity to identify major health issues confronting women today. This course will examine lifestyle choices dealing with health prevention and promotion. It will explore health issues from the traditional medical mode to the holistic model using an integrative approach. This course will include a overview of critical contemporary women’s health topics. (Prerequisites: None). (3 C). MNTC: CT, HD, EC. Offered: Spring.

HEALTH UNIT COORDINATOR

HUC 1510 Introduction to Health Unit Coordinating
Introduction to Health Coordinating will give the students an overview of the role of the non-clinical member of the health care team. Fundamentals necessary to perform routine job expectations such as medical abbreviations, rules and application of alphabetical indexing and filing, methods of health care delivery, hospital organization and interdepartmental communications and infection control awareness will be taught. (Prerequisites: None) (3 C/3 lect, 0 lab) Offered: Fall, Spring.

HUC 1515 Station Procedures I
Station Procedures will instruct the student in basic procedures necessary in performing the non-clinical functions on a nursing station and allow them hands on practice in a classroom setting of various tasks such as preparing and maintaining patient charts, laboratory organization and interdepartmental communications and infection control awareness will be taught. (Prerequisites: Completion or enrolled in HUC 1510, Intro to HUC and HUC 1524, Intro to Medications for the HUC) (3 C/3 lect, 0 lab) Offered: Fall.

HUC 1516 Station Procedures II
The course will focus on basic anatomy related to diagnostic test and scheduling, laboratory tests and requisitioning, test results, filing of test results, coordination of patients diagnostic tests, non-clinical responsibilities in medical emergencies, and identification of resources available for problem solving. Time will also be spent in this class to finalize internship schedules and preparation requirements. (Prerequisites: Successful completion of HUC 1515, Station Procedures I) (3 C/3 lect, 0 lab) Offered: Fall.

HUC 1519 Health Unit Coordinator Communications and Professional Issues
The course will focus on professional communication in a healthcare setting with an emphasis on telephone etiquette, verbal, and nonverbal communication. Ethical issues will be addressed in regard to things such as Advanced Directives, Living will, and Patient bill of right. Work habits, co-worker interaction, interviewing and job advancement skills will also be focused on during the course. (Prerequisites: None) (3 C/3 lect, 0 lab) Offered: Fall, Spring.

HUC 1524 Introduction to Medications for the Health Unit Coordinator
Introduction to Medications for the Health Unit Coordinator will be a system approach to learning medications as they relate to body systems and diseases. Students will learn how to spell and classify commonly used drugs in each category. They will be introduced to the PDR and other drug reference manuals, systems of measurements, abbreviations, components of drug orders, and drug legislation and standards. (Prerequisites: None) (2 C/2 lect, 0 lab) Offered: Fall, Spring.

HUC 1529 Health Unit Coordinator Internship
Students will apply classroom skills to a clinical setting. Experience will be gained in daily performing all the non-clinical functions on a patient care unit. The clinical experiences will give the student opportunity to complete admission, discharge, and transfer paper work, schedule diagnostic tests, order and maintain unit supplies and transcribe physician orders accurately. (Prerequisites: Completion or current enrollments in all program required courses) (4 C/1 lect, 0 lab, 3 OJT). Offered: Fall, Spring.

HISTORY

HIST 1611 The Ancient World
This course will begin with a survey of ancient near Eastern, Egyptian, Indian and Chinese civilizations and then describe the development of the Greek world. A study of the Roman Republic and Empire and its relations with the world around it will end the course. The religion, philosophy and political development of each of these civilizations will be included to provide a flavor of their background and unique culture. (Prerequisites: None). (3 C/3 lect, 0 lab) MNTC: CT, SS, GP. Offered: Fall.

HIST 1612 The Medieval World
This course will trace the decline and fall of the Roman state and the changes during the Middle Ages in Europe, North Africa, the Middle East and Asia to about 1400 CE. The rise of Islam and its spread through the Medieval world will be discussed along with its impact on the European, Byzantine and Middle Eastern civilizations around it. The impact of the Mongols on the medieval world will also be addressed. Considerable emphasis will be placed upon the various institutions, policies, and cultural patterns at various times and places that explain the growth and decline of a given civilization and its interactions with the civilizations around it. (Prerequisites: None). (3 C/3 lect, 0 lab) MNTC: CT, SS, GP. Offered: Spring.
HIST 1613 Foundations of Western Civilization: From Ancient Greece to 1715
The course begins in Ancient Mesopotamia and focuses on European developments until the death of Louis XIV. It shall cover the Greek World, Roman Empire and the origins of Christianity, the Middle Ages, the ideas formulated in the Renaissance, the various aspects of the Reformation, and the growth of absolutism and constitutional monarchies. (Prerequisites: None). (4 C/4 lect, 0 lab). MNTC: CT, SS, GP. Offered: Fall.

HIST 1614 Europe in the Modern Age
This course traces the history of Europe from the Enlightenment to the present. It will include an analysis of the Age of Reason, the French Revolution, Napoleonic era and social and intellectual movements. In addition it will deal with the unification of Germany and Italy, the Russian Revolution, causes and results of World Wars I and II, the Cold War, and the disintegration of the Soviet Union. (Prerequisites: None). (4 C/4 lect, 0 lab). MNTC: CT, SS, GP. Offered: Spring.

HIST 1615 War and Peace in the 20th Century
The course will begin with the diplomatic background of World War I and then investigate the peace efforts that ended it, the developments that led to World War II, the failure of peace after that war that led to the Cold War and the conflicts associated with it, such as Korea and the Vietnam War. The break up of the Soviet Union and the conflicts that emerged out of it and a discussion of the Gulf War will end the course. Emphasis will be placed on the interests of all parties in the various struggles to show why they chose war or peace in their interactions. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP. Offered: Fall.

HIST 1616 History of Minnesota
The course covers Minnesota’s history from the paleo cultures, the pre-European American cultures, the settlement of New France, the French and British exploration and fur trade, post Revolutionary War, to the Industrial Revolution. Climatic, geo-physical, socio-economic, political, and cultural development will be traced and analyzed. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, HD. Offered: Fall, Spring.

HIST 1617 U.S. History to 1865
The course begins in the pre-Columbian Americas with a discussion of Native American migration, settlement, culture, language groups and civilizations. It is followed by a section dealing with contact between European and Native American peoples, European colonization, and the various battles for continental supremacy. The American War for Independence, the construction of the new nation, and the era of Jacksonian Democracy make up the third portion of the course. Finally, the topics of territorial expansion, immigration, slavery, and the Civil War’s causes and results round out the course. (Prerequisites: None). (4 C/4 lect, 0 lab). MNTC: CT, SS, GP. Offered: Fall, Spring.

HIST 1618 History of the Americas
The course begins in the pre-Columbian Americas with a discussion of the various cultures of the Western Hemisphere from the Paleo-Homosapiens to the present day Amerindian societies. It will show that there existed in the Western Hemisphere a social structure that was as advanced, in some instances more so, than the European cultures that encountered it. The course will also explore the relationships between the Amerindian and European cultures beginning in the 15th century through the present day. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP, HD. Offered: Fall.

HIST 1619 Modern Asian Civilizations
A survey of Asian history in the last two centuries, from the age of imperialism to contemporary nationalism. Regional themes will be traced in Southeast Asia (with emphasis on Vietnam); East Asia (China, Korea, and Japan); South Asia (India), and South- west Asia (the Middle East). Particular attention will be paid to Western Imperialism, World War II, and the Vietnam wars. Middle East topics include developments in the oil producing Gulf states, and Arab-Israeli conflicts. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, GP SS. Offered: Fall.

HIST 1620 Women in History
This course covers the role of women from prehistory to the present. Starting in Europe and the Near East, the course later concentrates on the history of American Women from approximately 1700 AD. In addition to the study of women in general, certain notable women from each era are singled out for close study by the class. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, HD. Offered: Spring.

HIST 1621 History of Religion
This course traces the origins and the development of the belief systems, personalities and historical events of the world’s great religions as well as some pre-historical and lesser known religions. It will also offer a comparative analysis of the fundamental aspects of the religions covered. However, the emphasis of the course will be on the historical and philosophical, not theological aspects of these religions. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP). Offered: Spring.

HIST 1622 History of Religion
A survey of Asian history in the last two centuries, from the age of imperialism to contemporary nationalism. Regional themes will be traced in Southeast Asia (with emphasis on Vietnam); East Asia (China, Korea, and Japan); South Asia (India), and South-west Asia (the Middle East). Particular attention will be paid to Western Imperialism, World War II, and the Vietnam wars. Middle East topics include developments in the oil producing Gulf states, and Arab-Israeli conflicts. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, GP SS. Offered: Fall.
HONORS

ECON 1901 Introduction to Economics: Honors
Provides a general economic education for both the non-major transfer student and the career student. Major units of study are: macroeconomic analysis of demand and supply in determining prices in competitive versus monopolistic markets; macroeconomic analysis of changes in the price level, national output, employment, the supply of money; and international issues including currency exchange rates. (Prerequisites: MATH 0098, ENGL 1117 or 1917). (3 C/3 lect, 0 lab, 0 OJT). MNTC: CT, GP, SS. Offered: Usually Spring, even years.

ENGL 1917, 1918 English, Honors
The English 1917, 1918 Honors sequence is designed to parallel the English 1117, 1118 composition sequence, but the honors courses are designed for those students who score 90 percent and above on the English portion of the ASAP or who have the instructor’s permission. These honors courses will fulfill the same requirements as English 1117, 1118, but will have the added benefit of being listed on the transcript as “Honors English”

ENGL 1917 Reading and Writing Critically I: Honors
This course utilizes two or three primary sources which the students read, analyze, and write about, focusing specifically upon a topic such as “The Quest for a Sense of Self”. The course also includes a flexible scheduling component, consisting of library research methodology and tools, both technical and non-technical. (Prerequisites: No courses; writing ASAP score of 35-40 or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: CT, CM. Honors equivalent to ENGL 1117. Offered: Fall.

ENGL 1918 Reading and Writing Critically II: Honors
The course will utilize primary sources in a variety of disciplines, focusing on argumentative issues in various disciplines and writing style unique to a particular discipline. Being interdisciplinary in nature, the course will cover style sheets from MLA, APA, or CBE. The flexible scheduling portion of the class will focus on research techniques with Internet and the use of Internet in the professions, including e-mail, lists, Usenet, Telnet, FTP, Web and Gopher. (Prerequisites: Successful completion of ENGL 1117 or 1917; writing ASAP score of 35-40 or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: CT, CM. Honors equivalent to ENGL 1118. Offered: Spring.

HUM 2941-2943 Nobel Conference: Honors
This course will focus on the topic of the Nobel Conference held yearly at Gustavus Adolphus. Students will read and analyze works by the participants at the conference, studying the issue from a multiplicity of angles. Attendance at the conference is a requirement. This course can be repeated up to three times for credit. Previous course/conference topics have included “Unlocking the Brain” and “Unveiling the Solar System”. (Prerequisites: None). (2 C). Offered: Fall.

PHIL 2971-2972 Philosophical Problems: Honors
This course is designed to offer the philosophy student an opportunity to pursue philosophical problems. Specific course topics will vary (examples: the concepts of freedom, virtue, or reality; the nature of truth or goodness; utopia/dystopia). Course may be retaken if the content is different. Primary readings and discussion-oriented. (Prerequisites: Recommended ASAP scores of 33 in reading and writing or permission of instructor and PHIL 1114). (3 C/3 lect, 0 lab). MNTC: CT, HA, EC. Offered: Usually Spring.

SOC 1914 Introduction to Sociology: Honors
This is a survey course which focuses on learning and applying the sociological perspective to understanding the social world, including a basic introduction to such topics as culture, socialization, interaction, groups and organizations, deviance, social institutions, social movements, and social change. In this course, students will read, analyze and apply information related to at least three of the primary sociological theories. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP. Offered: Yearly, usually Fall. (Honors equivalent to SOC 1614).

(Various disciplines) 2961-2964 Honors PODS: Pursuing Odysseys
This course will focus on the PTK topic of the year, approaching the topic from a variety of angles and viewpoints. The course can be repeated up to four times for credit. Previous PTK topics have included “The Arts: Landscape of Our Times” and “Science, Humanity & Technology.” (Prerequisites: College level reading/writing skills). (1 C/1 lect, 0 lab). Offered: Fall, Spring.

(Various social science disciplines) 2951-2953 Current Issues: Honors
This interdisciplinary Honors course will be taught by members of the Social Science division, focusing on one to three issues of current interest, including social issues of class, race, and gender, cultural issues, and/or political issues — local, state, national, or international. Content will vary. May be repeated up to three times for credit if the focus of the classes is different. Some examples: “The Rich get Richer: Social Stratification of Society” or “Culture Crash”. Prerequisites: None. (2 C/2 lect, 0 lab). MNTC: CT, HD, SS. Offered: Usually Spring.

students can also receive honors credit for taking the second semester of the second-year language courses: French 2902, German 2902, and Spanish 2902.

HORTICULTURE

HORT 1310 Soil Science
To gain an understanding of the physical and chemical properties of soil. To recognize differences in soil quality as it affects plant growth. To modify a soil by using soil amendments. An understanding of soil principles is critical to the cultural management of any horticultural crop. Soil is important as a plant growth medium which acts as a reservoir of fertility and physical support of plant roots. This course covers topics in the basic study of soils including physical, chemical, and biological properties of soils, soils formation, soil classification, soil pH and soil surveys. Soil amendments as used in horticultural crop soils will also be discussed. (Prerequisites: None). (3 C/ 2 lect, 1 lab, 0 OJT). Offered: Fall.

HORT 1315 Plant Materials I - Woody Plants
This course covers the characteristics and identification of deciduous and evergreen trees and shrubs grown in the upper Midwest. A thorough knowledge of native and commercial plant materials is vital background to any horticultural occupation. Particular attention is placed upon identification of the plant materials and the classification of these materials according to cultural and landscape use characteristics. (Prerequisites: None). (3 C/1 lect, 2 lab, 0 OJT). Offered: Fall.
HORT 1316 Applied Plant Biology for Horticulture Careers
The course will focus on the fundamentals of botany of higher plants that are basic to a good understanding of plant science. Direct horticultural applications will be emphasized. An understanding of plant structure and their growth processes is a cornerstone to all other horticulture knowledge. This course is an overview of the taxonomic, structural, and growth characteristics of higher living plants. Topics covered include plant structure, plant classification, plant growth processes, and basic genetic principles. (Prerequisites: None). (2 C/1 lect, 1 lab, 0 OJT). Offered: Fall.

HORT 1318 Introduction to Turfgrass Management
The development and culture of turfgrass is important in many societies for functional, recreational, and ornamental reasons. A thorough understanding of common turfgrasses and their culture is an important tool in the management of cultured turf. This course is designed to cover topics in turfgrass structures, growth processes, seasonal turfgrasses, cultural practices, and seed blends. (Prerequisites: None). (2 C/1 lect, 1 lab, 0 OJT). Offered: Fall.

HORT 1320 Plant Materials II - Herbaceous Plants
Identification, description, uses, cultural requirements, adaptability and maintenance of non-woody ornamental plants with emphasis on annuals, biennials, perennials, and bulbs. (Prerequisites: None). (3 C/1 lect, 2 lab, 0 OJT). Offered: Spring.

HORT 1323 Introduction to Horticulture
This course examines the fundamentals of horticulture principles and their relation to horticulture business from careers to specific crops. An exploration of the diverse areas of the horticulture industry. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Spring.

HORT 2301 Directed Study
Individual study or a project in some field related to this discipline, directed and adapted to any program area by appropriate members of the faculty. Opportunity for in-depth exploration of concepts, technology, materials, or programs in specific area to expand professional competency and self-confidence. Planning, organizing, implementing and evaluating knowledge obtained from formal education and experience. (Prerequisites: Instructor approval). (1 C/0 lect, 1 lab, 0 OJT). Offered: Fall, Spring Summer I and II.

HORT 2302 Directed Study
Individual study or a project in some field related to this discipline, directed and adapted to any program area by appropriate members of the faculty. Opportunity for in-depth exploration of concepts, technology, materials, or programs in specific area to expand professional competency and self-confidence. Planning, organizing, implementing and evaluating knowledge obtained from formal education and experience. (Prerequisites: Instructor approval). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall, Spring Summer I and II.

HORT 2330 Plant Propagation
This course will present a study of plant propagation principles and techniques. Topics include propagation by seed, cuttings, grafting, budding, specialized stems-roots, and micropropagation techniques. In addition, propagation environmental requirements and micropropagation techniques will be covered. Propagation and production of field and container nursery crops will also be included. (Prerequisites: HORT 1316). (3 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

HORT 2331 Greenhouse Operations and Management
Greenhouses structures are a means by which flowering and foliage plants can be forced to grow on a more accelerated and uniform schedule. Greenhouses have evolved from single-standing glass framed structures to multiple-sectioned mechanized greenhouse ranges. Many greenhouses today have automated systems for lighting, watering, transport, and environmental control. This course will present information applicable to greenhouses ranging in size from small single units to large automated complexes. Topics include greenhouse structures, glazing materials, bench systems, irrigation systems, and environmental control. (Prerequisites: None). (3 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

HORT 2338 Landscape Design I
The ability to produce high quality landscape designs requires and integration of artistic and technical skill. The landscape design professional must be able to (1) carefully analyze and integrate client and site information into the landscape design, (2) apply graphic design skills, and (3) develop the ability to assess the visual feel of the design. Student will learn the various components of the total landscape plan. (Prerequisites: HORT 1315; HORT 1320). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall.

HORT 2348 Horticulture Business Management
This course covers a comprehensive analysis of the many factors involved in a successfully managed horticulture business. The course emphasizes basic principles of business management and the application of these principles to horticultural businesses. Discussion of how and why management skills, techniques, and strategies of horticulture businesses changes to meet the demands of the customer. Customer service and relations and retail sales concepts will also be a part of this course. (Prerequisites: None). (3 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

HORT 2350 Integrated Plant/Pest Management
This course covers an introduction to identification and control of pests affecting the turf and landscape industry. A basic understanding of entomology, plant pathology, physiological, nutrition, mechanical, cultural, biological, and environmental factors affecting plants. (Prerequisites: None) (2 C/1 lect, 1 lab, 0 OJT). Offered: Spring.

HORT 2399 Horticulture Seminar
Enhance critical thinking skills through the preparation and presentation of an in-depth study relating to the horticulture industry. (Prerequisites: Completion of two full semesters or consent of Instructor). (1 C/0 lect, 1 lab, 0 OJT). Offered: Spring.
Course Descriptions

HTFL 1311 Basic Floral Arrangement/Design
This course covers the identification and arrangement of flowers, greens, accessories, and materials used by the retail florist. The principles of floral design are emphasized with the use and construction of design materials. Fresh flowers and permanent design materials are used in the class. (Prerequisites: None). (2 C/0 lect, 2 lab, 0 OJT). Offered: Fall.

HTFL 1321 Advanced Floral Design
This course covers the identification and arrangement of flowers, greens, accessories, and materials used by the retail florist. The principles of floral design are emphasized in the construction of advanced design styles, i.e., wedding and sympathy and others. (Prerequisites: HTFL 1311). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring.

HTFL 2302 Floriculture/Garden Center Internship
On-the-job internship experience or additional college laboratory or classroom experience designed to make the student more acceptable to industry within his or her chosen program or occupational emphasis. (Prerequisites: Completion of one semester and consent of Instructor). (2 C/0 lect, 0 lab, 108 hrs OJT). Offered: Spring, Fall, Summer I and II.

HTFL 2304 Floriculture/Garden Center Internship
On-the-job internship experience or additional college laboratory or classroom experience designed to make the student more acceptable to industry within his or her chosen program or occupational emphasis. (Prerequisites: Completion of one semester and consent of Instructor). (4 C/0 lect, 0 lab, 216 hrs OJT). Offered: Spring, Fall, Summer I and II.

HTFL 2341 Greenhouse Crop Production
Greenhouse crop production typically follows cycles in which peak harvests are centered around heavy consumer demand due to seasonal holidays or events. The intent of this course is to apply greenhouse practices to poinsettia, potted chrysanthemum, cut chrysanthemum, lily, bulb crops, azalea, cyclamen, kalanchoe, freesias, snapdragons, alstroemeria, roses, hydrangea, carnation, foliage plants, bedding plants, and miscellaneous greenhouse crops. Topics include variety selection, soil requirements, nutrient selection and monitoring, and crop maturation stages. Although greenhouse crops can be categorized by seasonal production practices, some of these crops may be grown on a year round basis. (Prerequisites: HORT 2338 or consent of instructor). (4 C/2 lect, 2 lab, 0 OJT). Offered: Spring.

HTFL 2342 Interior Plants and Plantscaping
A through knowledge of foliage plant materials is essential in order for interior foliage specialists to work effectively with interior foliage installations. This course covers topics in foliage plant characteristics, requirements, and identification. Particular attention is placed upon identification of foliage plant materials and the classification of these materials according to cultural and interior site use characteristics. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Spring.

HTLS 1322 Turf and Grounds Management
The production of high quality turfgrass and landscape plantings requires specialized turf and grounds management skills. Principles and practices of landscape maintenance including turf, trees, shrubs, annual and perennial flowers, vines and ground covers, as well as landscape features, will be discussed and performed. An integration of turf and grounds maintenance theory and practice will be applied to residential areas, parks, golf course, athletic fields, and commercial and recreational grounds. The maintenance, operation, and safety of turf and grounds power equipment is also a part of this course. (Prerequisites: HORT 1318). (4 C/1 lect, 3 lab, 0 OJT). Offered: Spring.

HTLS 2302 Landscape, Golf Course and Grounds Maintenance Internship
On-the-job internship experience or additional college laboratory or classroom experience designed to make the student more acceptable to industry within his or her chosen program or occupational emphasis. (Prerequisites: Completion of one semester and consent of Instructor). (2 C/0 lect, 0 lab, 108 hrs OJT). Offered: Spring, Fall, Summer I and II.

HTLS 2304 Landscape, Golf Course and Grounds Maintenance Internship
On-the-job internship experience or additional college laboratory or classroom experience designed to make the student more acceptable to industry within his or her chosen program or occupational emphasis. (Prerequisites: Completion of one semester and consent of Instructor). (4 C/0 lect, 0 lab, 216 hours OJT). Offered: Spring, Fall, Summer I and II.

HTLS 2343 Landscape Installation/Construction
Landscape installation and construction projects will attempt to provide reasons, and practical work experience, about why and how to design and build when installing a landscape. Landscape irrigation theory and practice is also included. (Prerequisites: HORT 2338 or consent of instructor). (4 C/1 lect, 3 lab, 0 OJT). Offered: Spring.

HTLS 2345 Golf Course Field Operations
This course covers the practical applications of golf course maintenance and construction techniques. Emphasis will be on turfgrass observation and diagnosis with recommendations for appropriate solutions. (Prerequisites: HORT 1318). (3 C/1 lect, 2 lab, 0 OJT). Offered: Spring.

HTLS 2347 Landscape Design II
This course is the second in a series of landscape design laboratory experiences and is focused on more advanced landscape design projects. This course allows the student to test their problem-solving ability and to apply design methods to landscape projects. The intent of this series of design courses is to allow the student to build design proficiency and independent problem-solving skills when working with landscape design projects. While the course content of each of the design labs is essentially the same, the content goals will be applied to specific landscape design projects so that the student may experience the breadth of landscape design. An introduction of Computer Aided Design (CAD) to landscape design projects will be introduced. (Prerequisites: HORT 2338, HORT 1315, HORT 1320). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring.
HUMAN SERVICES TECHNICIAN

HS 1511 Medication Administration for Unlicensed Personnel
This course includes the study of legal requirements concerning drugs and drug administration, general information about medications, terminology related to medication administration and the use of reference sources. Students will learn actions, usual doses, toxic symptoms and special considerations of a variety of drugs. While students will not administer medications, they will participate in laboratory practices involving reading actual labels, preparing, and role-play administering medications. (Prerequisites: None). (2 C/1 lect, 1 lab, 0 OJT). Offered: Spring.

HS 1522 Introduction to Human Services
This course covers the role and responsibilities of human services workers and introduces the student to human services agencies. Interpersonal communication skills are stressed throughout the course, and basic interviewing skills will be studied by working through a computer program. Profession ethics, self-understanding, boundary issues, problem solving, and group process are also covered. The student will create resumes, write job application letters, complete a job application form, and prepare for the employment interview. (Prerequisites: None). (3 C/2 lect, 1 lab, 0 OJT). Offered: Fall.

HS 1530 Health Issues
This course presents basic information about nutrition and chronic disease conditions, prevention, causes and treatments. Exploration of attitudes toward persons with conditions will be emphasized. (Prerequisites: None). (2 C/1 lect, 1 lab, 0 OJT). Offered: Spring.

HS 1532 Therapeutic Techniques
This course involves the identification of specific therapeutic techniques for clients with a variety of disabilities. Emphasis is placed on observation, reporting, and recording skills as well as identifying and modifying behaviors and/or teaching new behaviors. Students will have the opportunity for Non-Violent Crisis Intervention certification. (Prerequisites: None). (2 C/1 lect, 1 lab, 0 OJT). Offered: Fall.

HS 1550 Abnormal Psychology Theory
This course explores major and minor mental health disorders and treatment strategies. It provides students with practical knowledge and skills necessary to therapeutically relate to the emotionally disturbed person in any setting. (Prerequisites: None). (2 C/2 lect, 1 lab, 0 OJT). Offered: Spring.

HS 1555 Mental Health Field Experience
This course provides the student with the opportunity to integrate classroom learning with supervised field experience which includes observation and actual work experience in a client setting for mental health issues. Each student will receive experience in one of the following areas: community based treatment center, halfway houses, detoxification facility, social services or a board and lodging facility. (Prerequisites: NA 1600; HS 1550). (3 C/0 lect, 0 lab, 3 OJT). Offered: Fall, Spring.

HS 1560 Chemical Dependency Theory
This course explores chemical Dependency in relation to attitudes, signs, symptoms, medical aspects, commonly abused drugs as well as the effects on individuals, families and communities. Cause, prevention, intervention, treatment and consequences are examined. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

HS 1565 Chemical Dependency Field Experience
This course provides the student with the opportunity to integrate classroom learning with supervised field experience which includes observation and actual work experience in a client setting for chemical health issues. Each student will receive experience in one of the following areas: community based treatment center, halfway houses, detoxification facility, social services or a board and lodging facility. (Prerequisites: NA 1600; HS 1560). (3 C/0 lect, 0 lab, 3 OJT). Offered: Fall, Spring.

HS 1570 Developmental Disabilities Theory
This course is a study of developmental disabilities with an emphasis on mental retardation. Basic ideas, concepts, and issues relating to several developmental disabilities are presented. Mental retardation is studied by exploring the history, causes, legislation, classification, education, community resources, rehabilitation, and employment needs. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

HS 1575 Developmental Disabilities Field Experience
Provides the student with the opportunity to integrate classroom learning with supervised field experience which includes observation and actual work experience in a client setting for developmentally disabled individuals. Each student will receive experience in one of the following five areas: community based residential facility, sheltered workshop, community based work site, educational setting or other day program facility. (Prerequisites: NA 1600; HS 1570). (3 C/0 lect, 0 lab, 3 OJT). Offered: Fall, Spring.

HUMANITIES

HUM 1103 Humanities Through the Arts
This course studies how human values are revealed through the arts. The course will briefly survey art forms selected from among the following: architecture, dance, drama, film, literature, music, painting, photography, and sculpture — with an emphasis on the relationship between form and meaning as well as on the development of each person’s own critical and analytical skills. (Prerequisites: College level reading, writing). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring.

HUM 1111 The Greeks & Romans, the Middle Ages, and the Renaissance
This course concentrates on the creative works and ideas from the perspective of early Greek and Roman authors and the writers of the Middle Ages and Renaissance, approximately 900 BC to 1600 AD. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring, possibly Summer.

HUM 1112 Baroque through the Romantic periods, and the Modern Age
This course will cover the central concerns of human beings as expressed through the creative works and ideas of major artists and thinkers who attempt to understand and define the human condition. The ideas of writers since the Renaissance and their shifting perceptions of life through the Baroque, Neoclassical, and Romantic periods and into the modern age, from approximately 1600 to present. (Prerequisites: College level reading/writing skills). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring, possibly Summer.
HUM 1114 Ethics & Its Application in Healthcare
The classical themes on ethical theory and moral reasoning are presented in this survey course as the foundation for examination of contemporary problems on ethics as they impact health personnel, patients and the community. Various ethical issues are examined, including death and euthanasia, economic justice or allocation of scarce resources, AIDS, confidentiality, abortion, discontinuance of life support and living wills. Issues of the workplace and professional ethics will also be addressed. (1 C/1 lect, 0 lab). Offered: Fall, Spring, Summer.

HUM 1121 Women’s Perspectives
In an effort to better understand what it means to be a human being, students will examine the autobiographical accounts of several women who have confronted adversity with courage. Their lives represent a variety of historical, cultural and personal events; some examples might include: Armenian Exodus of 1915, Cultural Revolution of China, Apartheid in South Africa, Internment Camps of WWII, The Jewish Holocaust, Civil Rights Movement of the 1960s, AIDS and other illnesses. In addition to autobiographies, poetry, music, art, and drama will be incorporated into the course content. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Spring.

HUM 1131 The Art of Being Human
This course is an introduction to the methods, techniques, and scope of the study of the humanities. The focus is on the concern with the conduct of human life. What makes life good, enriched, in short, worth living? Study will be based on readings and TV tapes professionally prepared for the course. (Prerequisites: College level reading/writing skills). (3 C/3 lect, 0 lab). MNTC: CT, HA, GP. Offered: Fall, Spring, possibly Summer.

HUM 2941-2943 Nobel Conference: Honors
This course will focus on the topic of the Nobel Conference held yearly at Gustavus Adolphus. Students will read and analyze works by the participants at the conference, studying the issue from a multiplicity of angles. Attendance at the conference is a requirement. This course can be repeated up to three times for credit. Previous course/conference topics have included “Unlocking the Brain” and “Unveiling the Solar System”. (Prerequisites: None). (2 C). Offered: Fall.

INTERIOR DESIGN OPTION - SEE RETAIL MERCHANDISING

JOURNALISM

JOUR 1106 American Cinema
Hollywood filmmaking as an art form, economic force, and as a system of cultural communication. Stylistic elements are examined from the perspective of various genre. Students will learn the language of American cinema, increase their understanding of how films work as art and how they convey meaning as cultural artifacts and, most importantly, how to become more active and critical viewers. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Fall, Spring, Summer.

JOUR 1110 Introduction to Mass Communications
This course will cover the nature, function and responsibilities of mass media. Areas include propaganda, newspapers, magazines, radio, music recording, book publishing, advertising, films, public relations, and on-line journalism. Lectures and discussion. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, EC. Offered: Fall, Spring, Summer.

JOUR 1111 Beginning Photography
Discussion and presentation on camera use, exposure control, composition and other principles of improving picture content for personal, commercial and artistic applications. Students learn to develop and enlarge black and white film. Students will also be introduced to computer photo processing/editing and digital camera use. Assignments are critiqued. (Prerequisites: None). (3 C/2 lect, 4 hrs lab arranged). MNTC: HA, CT. Offered: Fall, Spring, Summer.

JOUR 1112 Beginning Newswriting
Principles of writing news with emphasis on accuracy, brevity, clarity and journalistic form. Techniques of news gathering, lectures, critiques and practical writing labs. Editing and headline writing. (Prerequisites: some keyboarding skills). (3 C/3 lect, 0 lab). Offered: Fall.

JOUR 1131 Mass Communications Law
Origins and background principles of mass media law. Libel and its defenses and penalties. Right of privacy and problems of fair trail. Advertising, on-line journalism, and broadcast regulation. Copyright, obscenity statues. (Prerequisites: None). (2 C/2 lect, 0 lab). MNTC: CT, EC. Offered: Spring.

JOUR 1132 Principles of Advertising
Theory, principles, criticism and functions of advertising and its economic and social roles. Introduction to advertising writing, typography and layout. Introduction to broadcast advertising production and presentation. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, EC. Offered: Spring.

JOUR 1150 Introduction to Desktop Publishing
An introduction to desktop publishing using computers and PageMaker and Microsoft word software. Discussions and practical hands-on experience with page design, layout, graphics and typography. (Prerequisites: None). (2 C/2 lect, 0 lab). Offered: Fall, Spring.

JOUR 1161 Publications Laboratory (Newspaper)
Participation in college newspaper activities. Staff assignments given to students based on individual needs and abilities. (Prerequisites: None). (1 C). Offered: Fall.

JOUR 1162 Publications Laboratory (Newspaper)
Participation in college newspaper activities. Staff assignments given to students based on individual needs and abilities. (Prerequisites: None). (1 C). Offered: Spring.

JOUR 2211 Advanced Photo Projects
An opportunity for students to enhance skills in determining picture content and composition as well as perfecting darkroom and computer processing techniques. Critique sessions by Rochester area professional photographers. Course includes five black and white 8x10 assignments and two assignments in color, one with slides and one color print. (Prerequisites: JOUR 1111 or permission of instructor). (2 C/1 lect, 2.5 hrs lab arranged). MNTC: CT, HA. Offered: Periodically.

JOUR 2223 Freelance Writing
How to have non-fiction written work published through proper topic selection, marketing techniques and article content. Students will prepare and submit at least one article for publication. (Prerequisites: None). (1 C/1 lect, 0 lab). Offered: Periodically.
JOUR 2261 Publications Laboratory (Newspaper)
Participation in college newspaper activities. Staff assignments given to students based on individual needs and abilities.
(Prerequisites: None). (1 C). Offered: Fall.

JOUR 2262 Publications Laboratory (Newspaper)
Participation in college newspaper activities. Staff assignments given to students based on individual needs and abilities.
(Prerequisites: None). (1 C). Offered: Spring.

JOUR 2294 Journalism Internship
On-the-job experience in commercial mass communications.
(Prerequisites: Sophomore standing and permission of instructor/department). (4 C). Offered: Fall, Spring.

LAW ENFORCEMENT

LAWE 1105 Introduction to Law Enforcement
Major topics of the course include the history and evolution of law enforcement, police operations and procedures, the court system, corrections and the juvenile justice system. (Prerequisites: None). (3 C/3 lect, 0 lab). Offered: Fall, Spring.

LAWE 1110 Police Report Writing
Major topics of the course will include field notes, report structure and organization, basic grammar, data retrieval and use, and uses of police reports. (Prerequisites: Should complete program English requirements before taking this class). (2 C/2 lect, 0 lab). Offered: Fall, Spring.

LAWE 1112 Introduction to Criminal Investigations
Major topics of the course will include preliminary investigations, investigative techniques, and investigation of specific offenses. The course will involve active participation in the different techniques and in processing evidence. (Prerequisites: None). (3 C/3 lect, 0 lab). Offered: Fall, Spring.

LAWE 2117 Minnesota Statutes
The major content of this course deals with statutes that the new peace officer would most likely deals with during the course of their first years of employment. (Prerequisites: None). (3 C/3 lect, 0 lab). Offered: Fall, Spring.

LAWE 2120 Human Behavior for Law Enforcement
The major focus of this course deals with the types of reactions peace officers may encounter with people who are experiencing emotional or psychological difficulties. (Prerequisites: Enrollment in the Law Enforcement program; PSYC 1611). (2 C/2 lect, 0 lab). Offered: Fall, Spring.

LAWE 2122 Criminal Procedure
The major topics of this course include the content and meaning of the Fourth, Fifth, and Sixth Amendment to the United States Constitution; the rules of arrest, search and seizure; the legalities of confessions; proper identification procedures; and court procedures. (Prerequisites: Enrollment in the LAWE Program). (3 C/3 lect, 0 lab). Offered: Fall, Spring.

LAWE 2125 Community Policing and Service
Major topics of the course will include police administration, various police duties and responsibilities, police statistics and research, and police work involving community service. (Prerequisites: Enrollment in the Law Enforcement program; completion of general education requirements for the program). (1 C/1 lect, 0 lab). Offered: Fall, Spring.

MACHINE TOOL

MT 1510 Machine Tool Theory I
This course consists of classroom study of shop safety, hand tools, dimensional measurement, sawing machines, drilling machines, turning machines and vertical milling machines. (Prerequisites: None). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

MT 1512 Blueprint Reading I
This course consists of classroom study of basic blueprint reading principles. Topics covered are angle projection, title blocks, visible lines, working drawings, dimensioning, hidden lines, circular features, sectional views, multiple detail drawing, tolerancing methods, threads, fits and removed sections. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

MT 1530 Machine Tool Theory II
This course consists of classroom study of preparation for machining operation, types of materials, horizontal milling machines, rotary tables, indexing devices, gears, gear cutting and grinding processes. (Prerequisites: MT 1510). (2 C/2 lect, 0 lab, 0 OJT). Offered: Spring.

MT 1538 Blueprint Reading II
This course consists of classroom study of geometric tolerancing. The student will be given a introduction to geometric characters. Time will also be spent using MasterCam to draw working shop prints. (Prerequisites: MT 1512). (2 C/2 lect, 0 lab, 0 OJT). Offered: Spring.

MT 1540 Basic CNC Programming and Operation
This course will familiarize the student with operations involving programming and operation of computer numerical machines. (Prerequisites: MT 1550). (3 C/1 lect, 2 lab, 0 OJT). Offered: Spring.

MT 1550 Machine Shop Lab I
The student will receive hands-on experience in the use of lathe vertical milling machine, horizontal milling machines, drilling operation, band sawing. The course will also include demonstration on the use of hand tools. Safety will be strongly emphasized. (Prerequisites: None). (10 C/0 lect, 10 lab, 0 OJT). Offered: Fall.

MT 1558 Machine Shop Lab II
This course is a continuation of MT 1550 where the student will receive more in-depth experience on lathe, milling machine, surface grinder, cylindrical grinder, and assorted machine tools. Safety will be strongly emphasized. (Prerequisites: MT 1550). (8 C/0 lect, 8 lab, 0 OJT). Offered: Spring.

MT 2600 Precision Machine Theory I
This course covers high speed and carbide feed and speeds, EDM principles, metallurgical principles, manufacturing theory, manufacturing processes and measuring concepts. (Prerequisites: MT 1530). (3 C/3 lect, 0 lab, 0 OJT). Offered: Fall.

MT 2620 CNC Operation Lab I
This course covers the basics in setup, operation, and tear down of CNC machining centers, turning center, and wire EDM. (Prerequisites: MT 1540). (5 C/0 lect, 5 lab, 0 OJT). Offered: Fall.
Course Descriptions

MT 2630  CNC Programming I
This course is intended to give the student an understanding of the numerous codes used in CNC programming. The student will write numerous programs for CNC machining centers; CNC turning centers; and CNC wire EDM. (Prerequisites: MT 1540). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

MT 2645  Precision Machine Lab I
This course covers precision setup, operation and inspection on the lathe, mill, surface grinder, cylindrical grinder and heat treating process. (Prerequisites: MT 1580). (5 C/0 lect, 5 lab, 0 OJT). Offered: Fall.

MT 2650  Precision Machine Theory II
This course is a continuation of MT 2600 in a greater depth along with problem solving. (Prerequisites: MT 2600). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring.

MT 2657  Precision Machine Lab II
This course is a continuation of the topics covered in MT 2645. (Prerequisites: MT 2645). (4 C/0 lect, 4 lab, 0 OJT). Offered: Spring.

MT 2667  Machine Tool Special Projects
This course is intended for the student to design and build a project using lathes, mills, grinders and CNC machines. (Prerequisites: None). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring.

MT 2670  CNC Operation Lab II
This course will be a continuation of MT 2620. The student will run more complex programs that will be generated on the master cam and down loaded to the machining centers and the turning center. (Prerequisites: MT 2620). (5 C/0 lect, 5 lab, 0 OJT). Offered: Spring.

MT 2680  CNC Programming II
This course is a continuation of MT 2630 in a greater depth along with creating CNC programs using MasterCam. (Prerequisites: MT 2630). (2 C/2 lect, 0 lab, 0 OJT). Offered: Spring.

MATHEMATICS

MATH 0090  Basic Math for Allied Health
This course provides the arithmetic and measurement skills necessary for pharmacology and diploma related health courses. Basic skills with fractions, decimals, and percents are covered and applied to ratio/proportion application problems for the allied health student. Apothecaries, household, and metric conversions are taught. (Prerequisites: None). (1 C). Offered: Fall, Spring, Summer.

MATH 0093  Pre-Algebra
This course is for the student whose ASAP placement test indicates the need for a review of fractions, decimals, ratios, proportions, percents, signed numbers, like terms, and simple linear equations before beginning Elementary Algebra. (Prerequisites: ASAP placement test). (3 C). Offered: Fall, Spring.

MATH 0098  Elementary Algebra
A basic algebra course designed to provide the fundamentals of algebra including sets of numbers, numeric and algebraic expressions and equations, fractions, exponents, and radicals. Knowledge of basic mathematics expected. (Prerequisites: Appropriate ASAP score or successful completion of MATH 0093 as required by the placement test). (4 C). Offered: Fall, Spring, Summer.

MATH 0099  Intermediate Algebra
This course is a fundamental component of algebra beyond the level of Elementary Algebra. Topics include linear and quadratic inequalities, systems of linear equations, and functional notation. Considered primarily as providing a foundation for college level mathematics and science. (Prerequisites: Successful completion of MATH 0098 or appropriate ASAP score). (4 C). Offered: Fall, Spring, Summer.

MATH 1015  Applied Technical Math
This course covers the basic arithmetic skills of fractions, decimals, percents, and ratio/proportion. In addition, applied geometry, measurement, and basic statistical skills will be covered to support diploma, technical programs. Simple linear equations are solved. Basic right triangle trigonometry is introduced to support core program areas. Emphasis is on problem solving with specific application packets designed to interface with the student’s specific core program. In addition to lectures, cooperative learning and lab activities are used to support learning. Students will use scientific calculators throughout the course. (Prerequisites: None). (3 C/2 lect, 1 lab). Offered: Fall, Spring.

MATH 1030  Principles of Technical Math I
Basic arithmetic skills using fractions, decimals, percents, proportions, and powers/roots are used in application problems. English/metric measurements are used to analyze and solve technical problems. Algebraic topics include algebraic symbolism, and linear and literal equations with applied problems. This course covers geometric properties of angles, triangles, polygons, and circles; these skills are applied to technical problems. Team work is emphasized. Scientific calculators are used throughout the course. (Prerequisites: None). (3 C/2 lect, 1 lab). Offered: Fall.

MATH 1032  Principles of Technical Mathematics II
Trigonometric topics include trigonometric ratios, right and oblique triangle trigonometric applications, and vector analysis. Geometric area and volume, advanced topics in algebra including fractional equations, systems of equations, and quadratic equations will also be covered. Team work is emphasized. Scientific calculators are required. (Prerequisites: MATH 1030 or equivalent). (3 C/2 lect, 1 lab). Offered: Spring.

MATH 1101  Math for Technology
This course is a prerequisite for all technology math students. Important technical math skills including scientific calculator usage for scientific and engineering notation will be covered. Basic algebraic skills will be covered. (Prerequisites: MATH 0098 or appropriate ASAP Score). (1 C/1 lect, 0 lab). Offered: Fall, Spring.
MATH 1102 College Math
This course is for technology students. Skills and applications of algebra, right and oblique triangle trigonometry, and graphing will be stressed. Emphasis will be placed on cooperative learning and problem solving techniques. (Prerequisites: MATH 1101). (4 C/4 lect, 0 lab). Offered: Fall, Spring.

MATH 1104 College Calculus for Technology Programs
A course for technology students stressing algebraic and trigonometric skills and the understanding and applications of differential and integral calculus. (Prerequisites: MATH 1102 or equivalent; college reading level and high school writing level). (5 C). MNTC: CT, MA. Offered: Spring.

MATH 1111 Contemporary Concepts in Mathematics
A Liberal Arts course for the student who wishes to acquire a broad background in mathematics without taking the usual sequences of specialized courses. Topics will include: numeration systems, geometry, logic, problem-solving, triangle trigonometry, mathematics of finance, probability, and statistics. (Prerequisites: Successful completion of MATH 0098 (A or B preferred) or appropriate ASAP score; college level reading; Writing level 2). (3 C). MNTC: CT, MA). Offered: Fall, Spring, Summer.

MATH 1113 Finite Math with College Algebra
An introductory course in mathematical modeling and decision making with emphasis on business applications. Students will use matrices to solve problems and will get experience using Present and Future Value financial problems. (Prerequisites: MATH 0099 with B or better or equivalent; college level reading skills). (4 C). MNTC: CT, MA. Offered: Fall, Spring.

MATH 1115 College Algebra
The first college level algebra course. Topics include but are not limited to: Polynomial, Rational, Radical, Exponential, and Logarithmic functions and their Inverses, solving and graphing higher order equations, optimization applications, methods of solving systems of equations, and conic sections. (Prerequisites: Appropriate ASAP score or successful completion of MATH 0099 (B or better recommended) or equivalent; college level reading; ASAP writing score of at least 22). (3 C). MNTC: CT, MA. Offered: Fall, Spring, Summer.

MATH 1117 Precalculus
For students requiring further experience with advanced algebra prior to Calculus. Topics include Trigonometric Functions and their inverses, Law of Sine’s, Law of Cosines, Vectors, complex numbers, linear and non-linear inequalities and equations; graphing polar equations, mathematical induction, analytic trigonometry, sequences, series, and matrices, higher order rational, polynomial, exponential, and logarithmic functions. (Prerequisites: MATH 1115 or equivalent, or appropriate ASAP score; college level reading). (4 C). MNTC: CT, MA. Offered: Fall, Spring, Summer.

MATH 1119 Applied Calculus For Businesses and Economics
A college level introductory calculus course with emphasis on applications. Topics include a brief algebra review, mathematical modeling with regression, derivatives and their application, integration, and partial derivatives. (Prerequisites: MATH 1113 or MATH 1115 or appropriate placement score; college level reading). (3 C). MNTC: CT, MA. Offered: Fall, Spring, Summer.

MATH 1127 Calculus I
A Liberal Arts course for the student pursuing a career in engineering, mathematics, pre-med, computer science, and other science related fields. (Prerequisites: 4 years of high school mathematics including trigonometric functions with a “B” average; college level reading). (5 C). MNTC: CT, MA. Offered: Fall, Spring.

MATH 1128 Calculus II
A Liberal Arts course for the student pursuing a career in engineering, mathematics, pre-med, computer science, and other science related fields. Topics will include more on transcendental functions, trigonometric functions and hyperbolic functions, applications of the definite integral including: areas, volumes of rotation, arc length, surface area, equations of motion, hydrostatic pressure, work and centers of mass; techniques of integration, L’Hoptals rule, improper integrals, sequences and infinite series, Taylor series, conic sections, the polar coordinate system, and parametric forms. (Prerequisites: MATH 1127; college level reading). (5 C). MNTC: CT, MA. Offered: Fall, Spring.

MATH 1191 Special Mathematics Topics
(1-3 C). (Prerequisites: College level reading). MNTC: CT, MA. Offered: Fall, Spring, Summer.

MATH 2051 Quality Control - Statistical Process Control Theory
An introduction to quality control measures in the workplace. Students will use statistical process control methods to analyze data and solve applied problems. (Prerequisites: MATH 1015 or MATH 1030 or equivalent math skills). (1 C/1 lect, 0 lab, 0 OJT). Offered: Spring.

MATH 2052 Quality Control - Statistical Process Control Lab
Students will apply the theory of quality control measures and statistical process control to business and industrial situations. Process analysis and process measurement tools will be created and used to suggest quality improvement steps. (Prerequisites: MATH 1015 or MATH 1030 or equivalent math skills). (1 C/0 lect, 1 lab, 0 OJT). Offered: Spring.

MATH 2208 Fundamentals of Statistics
An introduction and overview of math statistics. Topics will include (but not limited to) descriptive statistics, probability, and hypothesis testing. Computers and graphics calculators will be used extensively throughout the class. (Prerequisites: MATH 0099 or 1111 or appropriate placement score; college level reading). (4 C). MNTC: CT, MA. Offered: Fall, Spring, Summer.

MATH 2218 Discrete Mathematics
A course for mathematics and/or computer science majors. Topics include sets, relations, symbolic language, graph theory, matrices, and Boolean algebra. (Prerequisites: Successful completion of MATH 1115 or equivalent; reading level 3; writing level 2; college level reading). (4 C). MNTC: CT, MA. Offered: Fall, Spring.
MATH 2237 Multivariable and Vector Calculus
First in a sequence which is a continuation of the first year of calculus. Topics are selected from the following: coordinate and vector geometry, vector valued functions, velocity-acceleration and curvature, cylindrical and spherical coordinate systems, partial differentiation and applications, double and triple integrals, Green's - Stoke's Divergence Theorems, Frenet Formulas. (Prerequisites: MATH 2128: college level reading). (5 C). MNTC: CT, MA. Offered: Fall.

MATH 2238 Differential Equations & Linear Algebra
An in-depth look at topics such as mathematical models, first-order differential equations, applications of linear and nonlinear equations, and other topics. (Prerequisites: MATH 2237; college level reading). (5 C). MNTC: CT, MA. Offered: Spring.

MECHANICAL ENGINEERING TECHNOLOGY

MET 1123 Manufacturing Material and Processes I
The course includes blueprint reading, use of hand tools and inspection of equipment, and performing basic lathe, milling machine, surface grinder, and drill press operation. Safety related to the use of all equipment will be stressed. Students will complete a project incorporating all of the course content listed above. (Prerequisites: None). (2 C/1 lect, 2 lab, 0 OJT). Offered: Fall.

MET 1146 Manufacturing Material and Processes II
A lecture/lab course designed to provide a knowledge of materials and processes in the manufacturing of products, machines and structures. Units include foundry, conventional and non-conventional machine tool processes and numerical control. Field trips to industry is an integral part of the class. (Prerequisites: MET 1123). (4 C). Offered: Fall.

MET 1224 Engineering Drafting II
A continuation of ET 1224. Major topics include sheet metal layout, descriptions, tolerancing and other advanced topics. (Prerequisites: ET 1224). (2 C/1 lect, 4 lab, 0 OJT). Offered: Spring.

MET 2358 Machine Design
This course covers mechanisms used to transmit rotary motion and power. Students will design power transmission beginning with ideas and producing layout, detail and assembly drawings. Students work in small groups similar to industrial practices. They will learn to use vendor’s catalogs, assign part numbers, provide cost analysis and to generate bills of materials. (Prerequisites: MET 1224). (5 C). Offered: Fall.

MET 2458 Product Design
The students will apply design concepts and equations to determine the best design for a given set of conditions (load, power, stress and deflection). The class will provide a typical mechanical design experience as a member of an industrial design team. Each team selects a design problem involving a simple mechanism, investigates alternatives for its solution; then prepares a complete graphic display of solutions including an assembly drawing, details, manufacturing processes required and tooling specifications. (Prerequisites: MET 2358). (5 C). Offered: Spring.

MEDICAL ASSISTANT

MA 1070 Medical Laboratory Procedures I
The first of a two-semester course, it will provide an introduction to basic laboratory equipment, laboratory safety and personnel, and basic laboratory procedures. The course will include: routine urinalysis with microscopic exam, basic microbiological principles and procedures (identify and classify bacteria utilizing Gram Staining techniques), specimen collection techniques (capillary, throat, and venipuncture), basic blood chemistry screening tests (glucose and lipid studies) and an introduction to serology that includes the performance of slide agglutination tests. Laboratory regulations including CLIA, OSHA, Transmission-based Precautions, Standard Precautions, Hazardous Communication and Medical Waste will be presented. (Prerequisites: Admission into the MA program) (4C/2 lect, 6 lab) Offered: Fall.

MA 1080 Medical Laboratory Procedures II
The second of a two-semester course, it will provide an introduction to basic hematology. The student continues with specimen collection to obtain practical experience for performing cell counts (RBC, WBC and platelets), hemoglobin, hematocrit and RBC indices determinations, and blood smear and staining for WBC differential. Both manual and automated techniques are utilized. The course culminates in a review and practical assimilation of urinalysis, serology, and basic microbiological procedures. (Prerequisites: Successful completion of MA 1070) (2C/1 lect, 3 lab) Offered: Spring.

MA 1100 Orientation to MA Externship
This course is designed to orient the MA student prior to the externship experience. The bulk of the course will address medical law in relation to the office duties of the Medical Assistant. Job-seeking preparations are also presented and include personal inventory and resume writing, interviewing techniques and approaches, as well as personal attributes, grooming and professional attitude in the medical office. On-the-job expectations will also be presented. Each student is oriented to a community health facility. (Prerequisites: Admission to MA program) (1C/1 lect) Offered: Spring.

MA 1170 Medical Sciences I
The first of a two-semester course designed to familiarize the Medical Assistant student with the structure, functions, and interrelationships of the body systems in health as well as disease. The student will be introduced to normal human anatomy and physiology, common pathology seen in various human body systems and the treatment modalities for common diseases/disorders. The course approaches this task body-system by body-system, incorporating basic pharmacology as well. The laboratory complements the didactic material, utilizing animal dissection, models, and basic physiology exercises. (Prerequisites: Admission to MA program) (4C/3 lect, 2 lab) Offered: Fall.
MA 1180 Medical Science II  The second of a two-semester course designed to familiarize the Medical Assistant student with the structure, functions, and interrelationships of the body systems in health as well as disease. The student will be introduced to normal human anatomy and physiology, common pathology seen in various human body systems and the treatment modalities for common diseases/disorders. The course approaches this task, body-system by body-system, incorporating basic pharmacology as well. The laboratory complements the didactic material, utilizing animal dissection, models, and basic physiology exercises. (Prerequisites: Successful completion of MA 1170) (3C/2 lect, 2 lab) Offered: Spring.

MA 1270 Clinical Procedures I  The first of a two-semester course, this provides a basis for understanding the physician’s office and how it functions. The student practices Standard Precautions and medical asepsis; performs vital signs, takes a health history, rooms patients and assists with a routine physical exam; identifies instruments and performs sterilization techniques; performs ear instillations/irrigations; performs eye instillations and visual acuity; applies physical therapy modalities; orders and maintains office supplies and equipment. Physician, patient, and co-worker relationships are examined through role playing and patient simulation. (Prerequisites: Admission to the MA program) (2C/1 lect, 2 lab) Offered: Fall.

MA 1280 Clinical Procedures II  The second of a two-semester course, this course provides the theory, principles and procedures/techniques for the following: pharmacology, medication administration (oral and injection), electrocardiography (performing and mounting a 12 lead EKG), cast application and removal, suture removal, and minor office surgery. It will prepare the student for assisting with specialty exams (gynecologic, sigmoidoscopic, prenatal, pediatric) with emphasis on patient instruction, patient understanding of the procedure, patient comfort and general patient rapport. The student will be introduced to principles of x-ray and x-ray procedures and be responsible for maintaining office supplies and equipment. Physician, patient and co-worker relationships are examined through role playing and patient simulation. Occasional usage of a community health facility is utilized. (Prerequisites: Successful completion of MA 1270) (4C/2 lect, 4 lab) Offered: Spring.

MA 1840 Medical Assistant Externship  Upon successful completion of the nine-month academic/laboratory experience, the MA student spends six weeks in the physician’s office or small clinic obtaining practical experience of administrative, clinical and laboratory duties prior to entering the job market. The student does not receive any remuneration for the externship. (Prerequisites: Successful completion of the academic portion of the MA program and current CPR certification - adult, child, infant) (6C/35-40 hrs per wk) Offered: Summer.

MUSIC

MUSC 1201 History and Survey of Musical Literature I  A listening course designed to further the students understanding of the music they hear through short studies of types of composition against a historical background. Emphasis on Renaissance and Baroque Eras. (Prerequisites: None). (3 C). MNTC: CT, HA. Offered: Fall.


MUSC 1221 Popular Music in the United States  This course is a survey of American Popular Music from 1840 to the present. The music styles studied include Blues, Gospel, Folk, Bluegrass, Country, Ragtime, Jazz, Latin Music, Musical Theater, Rock and Contemporary Popular Music. (Prerequisites: None). (3 C). MNTC: CT, HA. Offered: Fall, Spring, Summer.

MUSIC 1301 Concert Choir  Rehearsal of choral literature, the study of tone building, balance, interpretation and other factors which embody principles of good choral training. Public concerts will be given by the group and by smaller ensembles selected from the personnel of the choir. (Prerequisites: None). (1 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSIC 1302 Concert Band  Standard literature for band studied for sight reading, development of tone and technique. Public appearances by the group and by small ensemble groups formed from various sections of the band. (Prerequisites: None). (1 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSIC 1321 AIRES  Variety of choral and performance style is the predominant feature of the ensemble including vocal jazz, show, choral and chamber. Extensive work with choreography and public performance make this ensemble “performance intensive”. Music expression, stage presence, audience dynamics and singing technique are stressed. (Prerequisites: None). (1 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSIC 1322 Jazz Band  Rehearsal and performance of Jazz ensemble music. Musical expression, nuance, style and performance technique are stressed. Performance and audience dynamics as part of the human and humane nature of music are gathered through many varied public performances. (Prerequisites: None). (2 C). Offered: Fall, Spring.

MUSC 1331 Vocal Ensemble  Rehearsal and performance of ensemble music of different periods and styles. (Prerequisites: None). (1 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSIC 1332 Instrumental Ensemble  Students are asked to demonstrate an understanding of music’s role in society present and past. Philosophies are expected to include global, inclusive and personality specific dimensions. (Prerequisites: None). (2 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSC 1401 Class Piano  Basic knowledge of piano technique will include note reading in both Treble and Bass clefs, with emphasis on rhythmic reading; playing and transposing simple pieces in the keys of CFGDAE; and harmonizing with tonic and dominant 7th chords. (Prerequisites: None). (2 C). MNTC: CT, HA. Offered: Fall, Spring.
MUSC 1402  Class Piano
Basic knowledge of piano technique will continue with expanded note and rhythm reading; playing and harmonizing in the keys of D-Flat, A-Flat, E-Flat, B-Flat, B, and F#; transposing and harmonizing activities are continued; easy classical pieces are explored; chord progressions, triads and inversions, and arpeggios are presented. (Prerequisites: MUSC 1401 or consent of instructor). (2 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSC 1421  Class Voice
Group instruction in the fundamentals of correct vocal production, breathing, breath management, posture, vocal health, and stage presence. This class should be of special interest to students who are planning to teach music classes at any level as it will give them the opportunity for greater understanding and development of their voices and how to teach others these concepts. (Prerequisites: None). (2 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSC 1422  Class Voice
Intermediate and advanced group instruction in vocal performance skills, methods, and techniques. This class should be of special interest to students who are planning to teach music classes at any level as it will give them the opportunity for greater understanding and development of their voices and how to teach others these concepts. It is also a valuable course for students interested in solo, theatrical, and vocal ensemble performance. (Prerequisites: MUSC 1421). (2 C). MNTC: CT, HA. Offered: Fall, Spring.

MUSC 1450  Applied Music - Vocal
Individualized voice lessons cover from basic to advanced vocal technique and performance practices for all voice ranges from qualified instructors. (Prerequisites: None). (1 C). MNTC: CT, HA. Offered: Fall, Spring, Summer.

MUSC 1460  Applied Music - Instrumental
Individualized instruction on all major instruments from qualified music instructors. Students of all ability levels are welcome. Will cover basics to advanced technique and performance practice. (Prerequisites: None). (1 C). MNTC: CT, HA. Offered: Fall, Spring, Summer.

MUSC 1501  Music Theory I
This course is the first class in a four-semester sequence required for all music majors and minors. The course begins with a review of basic music fundamentals, including: properties of sound; melody notation, scales and modes; intervals; chord quality and function; seventh chords and their inversions. This course is designed to work in conjunction with MUSC 1501, Sight Singing and Ear Training. (3 C). MNTC: CT, HA. Offered: Fall.

MUSC 1502  Music Theory II
This course is the second class in a four-semester sequence required for all music majors and minors. The course continues from MUSC 1501. Topics covered will include: four-part voice leading, harmonic progressions, dominant seventh chords and leading-tone seventh chords, non-dominant seventh chords, modulations, secondary dominants and leading-tone chords, binary and ternary form, and music composition applications. This course is designed to work in conjunction with MUSC 1502, Sight Singing and Ear Training II. (Prerequisites: MUSC 1501 or consent of instructor). (3 C). MNTC: CT, HA. Offered: Spring.

MUSC 1521  Sight-Singing and Ear-Training I
This course is the first class in a four-semester sequence required for all music majors and minors. The course is designed to improve sight singing and writing of music after hearing it (dictation). Sight singing and dictation will include: basic rhythm; intervals; and melodic recognition. The treble and bass clef will be the only clefs used. This course is designed to work in conjunction with Music Theory I, MUSC 1501. (2 C). MNTC: CT, HA. Offered: Fall.

MUSC 1522  Sight-Singing and Ear-Training II
This course is the second class in a four-semester sequence required for all music majors and minors. The course is designed to improve sight singing and writing of music after hearing it (dictation). This course is designed to work in conjunction with Music Theory II (MUSC 1502). (Prerequisites: MUSC 1521 or consent of instructor). (2 C). MNTC: CT, HA. Offered: Spring.

MUSC 1601  Electronic Music Synthesis I
This course is a “hands-on” introduction to the world of contemporary electronic music. The relationship between computer, software, and electronic instruments will be investigated by the student. Basic MIDI concepts and applications, studio recording concepts, multi-track recording, digital editing, and digital processing will be investigated by the student. The student will be presented with and practice the use of numerous software and hardware packages in the multi-station electronic music lab. The student will then be given individual lab time in either studio A or B electronic music studio where the student will create music compositions and audio projects. (Prerequisites: None). (2 C). MNTC: CT, HA. Offered: Fall.

MUSC 1602  Electronic Music Synthesis II
This course is the second of a two part “hands-on” introduction to the world of contemporary electronic music. The relationship between computer, software, and electronic instruments will be investigated by the student. This course will continue with use of concept investigated in the first course. Additional areas will include: writing music and data CDs; creation of sound and music for video productions, basic Quicktime video editing and production. The student will be presented and practice the use of numerous software and hardware packages in the multi-station electronic music lab. The student will then be given individual lab time in production studio A where the student will create music and audio/video projects. (Prerequisites: MUSC 1601). (2 C). MNTC: CT, HA. Offered: Spring.

MUSC 1621  Audio Production I
This course is the first of a two part “hands-on” introduction to the world of contemporary music recording technology. This course is a core-curricular course for the “Digital Arts” program as well as for potential transfer students wishing to attain a Bachelor of Music-Recording Engineering degree. The student will learn basic terminology and practice of contemporary recording theory and practice. The student will be given individual lab time for production practice in Studio A or B. (Prerequisites: None). (2 C). MNTC: CT, HA. Offered: Fall.
MUSC 1622 Audio Production II
This is a continued course, which will familiarize students with the fundamentals of recording studio sound engineering. This course will emphasize the understanding of sound and acoustics; microphone design, construction and placement; and equalization and its application and its aesthetic treatment. This course will include some hands-on experience in the recording studios on campus and final preparation for potential internship in an area recording studio. (Prerequisites: Successful completion of MUSC 1127). (2 C). Offered: Spring.

MUSC 2501 Music Theory III
This course is the third class in a four-semester sequence required for all music majors and minors. The course continues from MUSC 1502. Topics covered will include: polyphony of the late Renaissance, Eighteenth Century two-voice counterpoint and composition, the fugue, chromatic harmony, borrowed chords, Neapolitan-sixth chords, augmented-sixth chords, variation techniques, sonata form, and the Rondo forms. This course is designed to work in conjunction with Sight Singing and Ear Training III, (MUSIC 2521). (Prerequisites: MUSC 1501, 1502). (3 C). MNTC: CT, HA. Offered: Fall.

MUSC 2502 Music Theory IV
This course is the fourth class in a four-semester sequence required for all music majors and minors. The course continues from MUSC 2501. Topics covered will include: chords; chromatic mediants; Nineteenth and Twentieth century theory and composition practice including: harmonic practices of the Romantic, Impressionistic, and Contemporary Periods. This course is designed to work in conjunction with Sight Singing and Ear Training IV, MUSC 2522. (Prerequisites: MUSC 2501). (3 C). MNTC: CT, HA. Offered: Spring.

MUSC 2521 Sight-Singing and Ear-Training III
This course is the third class in a four-semester sequence required for all music majors and minors. The course is designed to improve sight singing and writing of music after hearing it (dictation). This course is designed to work in conjunction with Music Theory III (MUSC 2502). (Prerequisites: MUSC 1521, 1522, or consent of instructor). (2 C). MNTC: CT, HA. Offered: Fall.

MUSC 2522 Sight-Singing and Ear-Training IV
This course is a four-semester sequence required for all music majors and minors. The course is designed to improve sight singing and writing of music after hearing it (dictation). This course is designed to work in conjunction with Music Theory IV (MUSIC 2502). (Prerequisites: MUSC 1521, 1522, 2521). (2 C). MNTC: CT, HA. Offered: Spring.

NETWORKING SPECIALIST
NETW 1060 Cisco Networking Academies I
This course is the first course of a four course series. The four courses are designed to teach students the skills needed to design, build, and maintain small to medium-size networks. This provides them with the opportunity to enter the workforce and/or further their education and training in the computer field. (Prerequisites: None). (4 C). Offered: Fall, Spring.

NETW 2060 Cisco Networking Academies III
This course is the third course of a four course series. The four courses are designed to teach students the skills needed to design, build, and maintain small to medium-size networks. This provides them with the opportunity to enter the workforce and/or further their education and training in the computer field. (Prerequisites: None). (4 C). Offered: Fall, Spring.

NETW 2065 Cisco Networking Academies IV
This course is the fourth course of a four course series. The four courses are designed to teach students the skills needed to design, build, and maintain small to medium-size networks. This provides them with the opportunity to enter the workforce and/or further their education and training in the computer field. (Prerequisites: None). (4 C). Offered: Fall, Spring.

NURSING
NURS 1117 Fundamentals of Nursing
This course introduces the student to the profession of nursing and stresses the role of the registered nurse as provider and manager of health care. An introduction to Maslow’s Hierarchy of Basic Human Needs and the fundamental skills used to meet these needs are presented. Nursing process is utilized to assess health needs and individualize patient care. The role of therapeutic communication in the nurse-patient relationship is stressed. The student is introduced to alterations in basic human needs with an emphasis on musculoskeletal deficits and care of the elderly. Perioperative nursing care with management of intravenous fluids, pain, and infection is stressed. Oral and parenteral medication administration with relevant pharmacology is introduced. Spiritual and cultural needs are addressed. (Prereq: Admission into the nursing program. Previous or concurrent registration in BIOL 1217, CHEM 1117, ENGL 1117 or ENGL 1917. CPR*) A grade of C is required. (6C/3 lect, 9 lab) Offered: Fall and Spring.

NURS 1118 Adult Nursing I
This course provides an overview of nursing care for adults with cardiac, hematology, respiratory, and integumentary health problems. The course also discusses nursing care for adults with altered immunity, cancer, and diabetes mellitus. The course has three hours of lecture per week. The students also attend one clinical laboratory and one college laboratory period per week. Prior to each clinical experience the student prepares by developing an individual plan of care for their assigned patient. In addition the student must complete an elderly assessment and teaching project. LPNs who graduated from an LPN program before 1983 are required to meet the Minnesota Board of Nursing Abilities that are evaluated in N1117: to be arranged. (Prereq: Satisfactory completion of Semester I requirements as identified in the ADN program sequence. Previous or concurrent registration in BIOL 1218, BIOL 2021, PSYC 2626, CPR*. A grade of C is required.) (6C/3 lect, 9 lab) Offered: Fall and Spring.
NURS 1120 Transition for LPNs
This course provides an overview of the RCTC ADN Nursing Program. The emphasis of lecture and discussion is on the RN role of assessment and planning nursing care for patients with multisystem needs and disorders. The assignments allow the student to apply the nursing process to selected patients in the acute care setting. The course has one and a half hour of lecture a week and four acute care clinicals. The course builds on the LPN’s knowledge and experience and allows the student to explore the role of the RN. LPNs who graduated from an LPN program before 1983 are required to meet the Minnesota Board of Nursing Abilities that are evaluated in N1117 and N1118: to be arranged. (Prereq: Satisfactory completion of BIOL 1217, CHEM 1117, ENGL 1117 or ENGL 1917. Previous or concurrent registration in BIOL 1218, BIOL 2021, PSYC 2626. Current CPR*. Current LPN license.) (2C/1.5 lect, 1.5 lab) Offered: Fall and Spring.

NURS 2207 Maternal Newborn Nursing
This course is designed to help the student develop a comprehensive knowledge of the growth and development of families from conception of the fetus to maturation of the reproductive adult. It includes care of the mother and newborn and understanding of the needs of the entire family during the childbirth experience. The course reflects the concept that childbirth is a normal event which affects each family and its individual members in a unique way. It emphasizes the importance of each family’s interactions to the well being of its members and stresses health promotion through education that will enable women/families to meet their health care needs. (Prereq: Satisfactory completion of Semester II requirements as identified in the ADN program sequence. Previous or concurrent registration in SOC 1614 or SOC 1914 and HUM 1114. Concurrent registration in NURS 2217. CPR* A grade of C is required.) (3C/3 lect/8 lab: 1/2 semester. Family study to be arranged.) Offered: Fall and Spring.

NURS 2208 Mental Health Nursing
This course is designed to help students develop a comprehensive knowledge of psychiatric-mental health nursing. The course introduces students to various perspectives on mental health and mental illness and concepts related to effective communication in a mental health setting. Students will focus on increasing sensitivity to human behavior and effective communication by developing therapeutic use of self within the context of the therapeutic milieu. With involvement in the milieu of the psychiatric unit the student reflects on how one behavior affects other behaviors. Emphasis is placed on self-awareness, analysis of effective communication techniques, and the application of the nursing process in the care of psychiatric patients. Community mental health experience to be arranged. (Prereq: Satisfactory completion of Semester II requirements. Previous or concurrent registration in SOC 1614 or SOC 1914 and HUM 1114. Concurrent registration in NURS 2217. CPR*. A grade of C is required.) (3C/3 lect, 9 lab: 1/2 semester) Offered: Fall and Spring.

NURS 2209 Pediatric Nursing
This course is designed to help the student develop a comprehensive knowledge of the growth and development of all children. Pediatrics includes care of the well child and children with disabilities with emphasis on assessing the effects of illness and/or hospitalization on growth and development of the child and family. The concept throughout this course is that child and family health or disability relates to growth and development from infancy through adolescence. The course prepares the student to provide care to children with both acute and chronic illness, communicable diseases, and congenital birth defects. Clinical experience is designed for application of theory to patient care. At the completion of this semester students are required to take the PRE-RN review examination. This is a computerized exam designed as a diagnostic instrument to assist nursing students structure their review prior to writing the NCLEX-RN. (Prereq: Satisfactory completion of semester III requirements as identified in the ADN program sequence. Previous or concurrent registration in SPCH 1114 or 1130. Concurrent registration in NURS 2218. CPR*. A grade of C is required.) (3C/3 lect, 9 lab: 1/2 semester.) Offered: Fall and Spring.

NURS 2217 Adult Nursing II
This course is designed to provide an overview of gerontological nursing, including RN roles in acute, long term, and community based settings. Standards of nursing care are defined for adults with chronic and terminal illness as well as health problems related to neurological, sensory, gastrointestinal, hepatic, biliary, renal and reproductive systems. (Prereq: Satisfactory completion of semester II requirements as identified in the ADN program sequence. Previous or concurrent registration in SOC 1614 or SOC 1914 and HUM 1114. Concurrent registration in NURS 2207 and NURS 2208. CPR*. A grade of C is required.) (5C/2 lect, 9 lab) Offered: Fall and Spring.

NURS 2218 Advanced Concepts in Nursing
This course provides an overview of the nursing care for critically ill patients. Principles of nursing management of patients with endocrine disorders, multisystem organ dysfunction, and common emergencies including trauma and burns are examined. Organ donation/transplant issues and nursing implications are discussed. Ethical considerations and priority nursing interventions are applied to course content. Each student has one acute care clinical laboratory period a week. Students will have an opportunity to observe in a critical care and/or emergency care setting to correlate RN roles and health team collaboration in meeting priority patient health needs. (Prereq: Satisfactory completion of Semester III requirements as identified in the ADN program course sequence. Previous or concurrent registration in SPCH 1114 or 1130. Concurrent registration in NURS 2209. CPR*. A grade of C is required.) (3C/3 lect, 9 lab: 1/2 semester.) Offered: Fall and Spring.
NURS 2219 Leadership and Management in Nursing
This course is a study of nursing leadership and management. Students learn to assign, supervise, and evaluate nursing care for a group of patients by leading a group of nursing peers. Students provide comprehensive care to multiple patients including discharge planning to assist in the role transition to a beginning staff nurse. Course content also includes current trends in health care delivery systems and the implications for nursing. Students complete a research paper on a community health problem which effects individual health and develop a plan to modify the problem. At the completion of this semester, students are required to take the PRE-RN review examination. This is a computerized exam designed as a diagnostic instrument to assist nursing students structure their review prior to writing the NCLEX-RN. The student will have a four hour observation experience in a community-based setting to correlate RN roles and health team collaboration in meeting patient health needs. 
(Prereq: Satisfactory completion of Semester III requirements as identified in the ADN program sequence. Previous or concurrent registration in SPCH 1114 or 1130. Concurrent registration in NURS 2220, CPR* A grade of C is required.) (4C/2 lect, 18 lab; 1/2 sem.) Offered: Fall and Spring.

NURS 2220 Professional Practice Issues
This course is designed to assist the student make an effective role transition from the nursing student to the graduate nurse. Students formulate a beginning personal philosophy of nursing that will guide their nursing practice and provide direction in setting career goals. A career planning unit introduces students to the employment seeking process in nursing. Additional course content includes defining nursing roles and responsibilities, levels of educational preparation, the concept of delegation, and legal and ethical issues pertaining to the discipline of nursing. 
(Prereq: Satisfactory completion of Semester III requirements as identified in the ADN program sequence. Previous or concurrent registration in SPCH 1114 or 1130. Concurrent registration in NURS 2219. A grade of C is required. CPR*) (1C/2 lect; 1/2 semester.) Offered: Fall and Spring.

*CPR Students must complete a CPR course prior to beginning nursing program and must be current throughout the program. This course must be either the American Heart Association Course C or Red Cross Basic Life Support Course (Adult one- and two-person, and infant and child).

NURSING ASSISTANT

NA 1600 Nursing Assistant/Home-Health Aide Theory
This 64-hour course introduces the concepts of basic needs and basic nursing skills in the long-term care and/or home care environment. Skills are taught in a simulated laboratory setting utilizing demonstration of skills and guided practice. Performance mastery of skills is emphasized. The student must successfully complete this class to participate in the clinical component. This course meets the Federal OBRA law and Minnesota Department of Health requirements for educating the Nursing Assistant/Home-Health Aide. It is part of the Human Services Technician and Surgical Technologist programs. It is a prerequisite for Hospital Nursing Assistant and Practical Nursing. (Prerequisites: None). 
(3 C/2 lect, 1 lab, 0 OJT) Offered: Fall, Spring, Summer.

NA 1601 Nursing Assistant/Home-Health Aide Clinical
In meeting Federal OBRA regulations and Minnesota Department of Health Guidelines this clinical will give the student actual experience in the long-term care facility. The student will perform tasks necessary to meeting the basic needs of the resident. Upon completion of this class and its prerequisite the student will be eligible to complete the State Nursing Assistant/ Home-Health Aide Competency Evaluation which is necessary for employment in long-term care facilities and home health agencies. 
(Prerequisites: NA1600) (1 C/0 lect, 1 lab) Offered: Fall, Spring, Summer.

NA 1602 Hospital Nursing Assistant
This course will give the student who has completed a 75-hour Nursing Assistant program the knowledge and skills necessary for employment in a hospital or other acute care setting. The student will be provided with classroom and laboratory experience which will aid in preparation to care for the acutely or chronically ill patient. Actual experience in the hospital setting will be provided during clinical. 
(Prerequisites: CPR, NA 1600; NA 1601) (2 C/1 lect, 1 lab, 0 OJT) Offered: Fall, Spring, Summer.

NUTRITION

NUTR 1211 Principles of Nutrition
This course covers the composition of, the sources of, and the human requirements of carbohydrates, lipids, proteins, vitamins and minerals in the diet throughout the life-cycle. Metabolism of nutrients, energy balance and fluid and electrolyte balance will also be discussed. 
(Prerequisites: BIOL 1217 or BIOL 1220, one college chemistry course above CHEM 1101). (3 C). Offered: Fall, Spring, sometimes Summer.

PERSONAL LIFE

PL 1102 Self Esteem
Origins of one’s self esteem; impact of self talk; positive affirmations; value of realistic goal setting; impact of distorted and irrational thinking; features, characteristics and manifestations of perfectionism and procrastination; value of one’s support system; self evaluation. 
(Prerequisites: None). (1 C). Offered: Fall, Spring, Summer.

PL 1104 Stress Management
This course examines the positive and negative ramifications of stressors and practical interventions to manage stress more completely. Course content is designed to challenge students through awareness of the model of stress and use of various strategies to develop healthier coping skills. 
(Prerequisites: None). (1 C). Offered: Once per year or on demand.

PHARMACY TECHNICIAN

PHRM 1101 Orientation to Pharmacy Practice
An overview of the various responsibilities and functions of the pharmacy technician and how this is related to the role of the pharmacist will be introduced. Emphasis will be placed on the differences in the scope of the work responsibilities of the pharmacy technician in community based and institutional based pharmacies. Issues related to work performed by the technician, delegation by the pharmacist and skills needed for interaction with the client will be a part of this course. An overview of the drug approval process will also be presented. 
(Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT) Offered: Fall.
PHRM 1102 Pharmaceutics I
This course will begin exploring the actions, uses, and side effects of drugs and introduce the student to dosage forms, administration routes, and drug stability parameters. The basics required to interpret medication orders, and use specialized equipment will also be covered. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

PHRM 1103 Pharmacy Calculations
In this course, students will perform the basic mathematical calculations necessary for pharmaceutical calculations required for usual dosage determinations and solution preparation. The student will also be introduced to various calculations in specialty areas, such as pediatrics and critical care. (Prerequisites: MATH 0098). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

PHRM 1104 Pharmaceutics II
This course will begin exploring the actions, uses, and side effects of drugs and introduce the student to sterile product preparation and techniques to ensure quality of products and safety of personnel. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

PHRM 1105 Pharmacy Law and Ethics
Moral and ethical issues related to the role of the pharmacy technician will be covered. Delegation by the pharmacist and interactions with patients as related to legal and ethical issues will be discussed. Laws which govern medication dispensing, licensing requirements, and controlled substances will become familiar to the student. A grade of “C” is required. (Prerequisites: First semester program courses). (2 C/2 lect, 0 lab). Offered: Spring.

PHRM 1106 Pharmacy Management and Inventory Skills
This course provides the students with a working knowledge of the functions relating to drug purchasing and inventory control. The student will learn the usual technician functions associated with an institutional drug distribution system including the manipulative and record keeping functions. Major topics include: inventory and purchasing procedures and records, maintaining controlled substance records, inspection of nursing supplies, and physician order sheets and patient medication profiles. A grade of “C” is required. (Prerequisites: First semester program courses). (2 C/2 lect, 0 lab). Offered: Spring.

PHRM 1107 Compounding and Unit Dose Lab
This course introduces the student to the compounding of medications and packaging of unit dose medications. The student will gain “hands-on” experience in preparing these products. A grade of “C” is required. (Prerequisites: First semester program courses). (3 C/2 lect, 2 lab). Offered: Spring.

PHRM 1108 IV Admixture Lab
This course will introduce the student to the role and responsibilities of the pharmacy technician in working with intravenous drug admixture orders. The student will gain “hands-on” experience in preparing small and large volume parenterals. A grade of “C” is required. (Prerequisites: First semester program courses). (3 C/2 lect, 2 lab). Offered: Spring.

PHRM 1109 Outpatient Dispensing Laboratory
This course will provide a “hands-on” introduction to pharmacy equipment and procedures required to fill outpatient prescriptions. Skills will be learned by completing assigned tasks in the laboratory setting. A grade of “C” is required. (Prerequisites: First semester program courses). (3 C/2 lect, 2 lab). Offered: Fall.

PHRM 1194 Sterile Products Dispensing Externship
The student will participate in sterile products dispensing activities at an off campus pharmacy in order to develop skills by working under actual job conditions. A grade of “C” is required. (Prerequisites: All program courses or concurrent enrollments in PHRM 1195 and 1196). (2 C/0 lect, 2 lab). Offered: Summer.

PHRM 1195 Unit Dose Dispensing Externship
The student will participate in unit dose dispensing activities at an off campus pharmacy in order to develop skills by working under actual job conditions. A grade of “C” is required. (Prerequisites: All program courses or concurrent enrollments in PHRM 1194 and 1196). (2 C/0 lect, 2 lab). Offered: Summer.

PHRM 1196 Outpatient Dispensing Externship
The student will participate in outpatient dispensing activities at an off campus pharmacy in order to develop skills by working under actual job conditions. A grade of “C” is required. (Prerequisites: All program courses or concurrent enrollments in PHRM 1194 and 1195). (2 C/0 lect, 2 lab). Offered: Summer.

PHILOSOPHY

PHIL 1114 Introduction to Philosophy
This course is designed to introduce students to main fields of investigation of the problems of philosophy. Study will include principal methods and schools of philosophy and historical and contemporary views, with the goal of expanding students knowledge of the human condition and human cultures, especially in relation to behavior, ideas, and values expressed in works of philosophy. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, EC. Offered: Fall, Spring, possibly Summer.

PHIL 1125 Ethics
Examination of problems that arise when human beings attempt to think systematically about conduct and values. The course will include a survey of historical views about the right and the good. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, EC. Offered: Fall, Spring.

PHIL 1145 Logic
A study of the differences between logical and fallacious reasoning, functions and use of language, rules of good definition, and sound argument. To expand the method of natural deduction, the emphasis is on applying deductive rules to construct valid arguments, especially ones drawn from ordinary language, and on using decision procedures for detecting the presence or the absence of logical properties. (Prerequisites: None). (3 C/3 lect, 0 lab). Offered: Spring.
PHIL 2971-2972  Philosophical Problems: Honors  
This course is designed to offer the philosophy student an opportunity to pursue philosophical problems. Specific course topics will vary (examples: the concepts of freedom, virtue, or reality; the nature of truth or goodness; utopia/dystopia). Course may be retaken if the content is different. Primary readings and discussion-oriented. (Prerequisites: Recommended ASAP scores of 33 in reading and writing; and PHIL 1114 or permission of instructor). (3 C/3 lect, 0 lab). MNTC: CT, HA, EC. Offered: Usually Spring.

PHED 1100  Badminton  
Designed to acquaint students with the game of badminton. Instruction will cover the proper techniques involved in playing the game of badminton, i.e., serves, drives, clears, smashes, drops. Some emphasis will be placed on singles and doubles game strategies. The course will also include game and tournament play. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1101  Canoeing  
This course in recreational canoeing allows students to experience both lake and whitewater canoeing. Students will learn the fundamentals of canoeing: proper stroke technique, situation water reading, current equipment, water safety, and river rescue. (Prerequisites: None). (1 C). Offered: Spring, Summer.

PHED 1103  Social Dance  
This course provides the opportunity to develop physical skills in the performance of a number of social/ballroom dances as well as an appreciation for the art and skill of social dance. The dances will include the fox-trot, waltz, lindy, cha-cha, and two-step, as well as several contemporary line dances. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1105  Lifetime Fitness  
Lifetime fitness provides contemporary information concerning the beneficial effects of a healthy lifestyle and how to implement and live such a lifestyle. It also includes laboratory inventories that help to assess an individuals current health lifestyle and provide guidelines for modifications and change. (Prerequisites: None). (3 C/2 lect, 2 lab). Offered: Fall, Spring.

PHED 1106  Soccer  
This course is intended to introduce the student to the basic and intermediate aspects of soccer. Through instruction, demonstration, practice and play the student will learn the skills, rules, and strategies involved in the game of soccer. It will also cover some of the basic aspects of conditioning, fitness and the benefits of exercise. Time will be spent working in groups and developing teamwork. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1107  Cycling (Non-motorized)  
The student will learn the basic rules of operation of the bicycle, rules of the road, and how to properly care for equipment. It is expected that the student will realize the value of cycling in achieving physical fitness and will be encouraged to have a carry-over interest in cycling. (Prerequisites: None). (1 C). Offered: Fall, Spring, Summer.

PHED 1110  Bowling  
This course is intended to teach students how to bowl using the spot bowl system. Students will learn how to keep score and select appropriate equipment. (Prerequisites: None). (1 C). Offered: Fall, Spring, Summer.

PHED 1111  Archery  
This course is designed to teach students the history of archery, terminology and skills useful for a lifetime activity. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1112  Jogging/Walking  
This course is designed to introduce the student to various aspects of jogging and walking activities. Topics to be covered include but are not limited to stretching, form, fitness principles, and proper equipment needed for jogging and fitness walking. The course will help students to develop lifelong fitness programs by developing and understanding aerobic principles, cardiovascular conditioning, nutrition and performance enhancement. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1114  Softball  
Physical education activity course offering instructions on skill development, playing strategy, scoring, and rules applicable to slow pitch softball. (Prerequisites: None). (1 C). Offered: Fall.

PHED 1115  Volleyball  
This course is intended to introduce the student to all aspects of power volleyball. Through instruction, practice and play the student will learn the skills, rules and strategies involved in the game of power volleyball. It will also cover some of the basic aspects of conditioning, fitness and the benefits of exercise. Students will learn the importance of teamwork and working in groups. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1117  Swimming  
Physical education activity course designed to educate the novice swimmer with demonstrated knowledge of basic water safety and current rescue techniques. Instruction will be given in a variety of swimming strokes along with analysis and endurance swimming involving the various strokes. (Prerequisites: None). (1 C). Offered: Spring - alternate years.

PHED 1119  Aerobic Dance  
An aerobic exercise program done to music. Classes are designed to include a warm-up, an aerobic (high and low impact) workout, muscle toning and a cool-down. (Prerequisites: None). (1 C). Offered: Fall, Spring, Summer.

PHED 1122  Circuit Training  
This course is designed to teach students techniques in weight training, in both free weights and machines, and cardiovascular endurance activities. The student will also be exposed to basic anatomy/physiology principles regarding warm-up, stretching and body musculature. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1126  Step Aerobics  
An aerobic exercise class that uses a 4” - 10” step bench. Each class will include a warm-up, a step segment, muscle toning and a cool-down. (Prerequisites: None). (1 C). Offered: Fall, Spring.
PHED 1127 Body Toning
An exercise program designed to increase your muscle tone, strength and flexibility. Dyna bands, hand weights and exercise bars are used to add resistance. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1130 Tennis
This course is designed to cover the basic fundamentals of tennis and to develop an appreciation for the game. It will also cover some of the basic aspects of fitness. (Prerequisites: None). (1 C). Offered: Fall, Summer.

PHED 1131 Golf
This course is designed to introduce the student to the grip, stance and swing used in golf. The class is divided between skill development, the rules of the game and course management during a round of golf. (Prerequisites: None). (1 C). Offered: Fall, Spring, Summer.

PHED 1138 Outdoor Winter Activities
This course is designed to introduce the student to a wide variety of winter activities, i.e. cross country skiing, downhill skiing, snow shoeing, ice skating, boot hockey, broom ball, ice fishing, and winter jogging. (Prerequisites: None). (1 C). Offered: Spring.

PHED 1141 Hiking/Orienteering
Orienteering is the use of map and compass. Hiking is a long walk. This class is designed to introduce students to the use of map and compass and hiking as a leisure activity and an enjoyable means to physical fitness. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1143 Self-Defense
This course is designed to provide the student with a variety of practical skills necessary to escape a physical attack. Special tactics such as throws, kicks, falls, submission holds and counter moves are taught. Students are taught how to get away from potentially dangerous situations safely. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 1144 Introduction to Scuba
This course includes the basics of enjoyable safe diving taught through academic training, and confined and open water diving sessions. Successful completion of all of the elements of the course earns an PADI (Professional Association of Dive Instructors) Open Water certification. The course is divided into two parts, the academic and pool practice sessions, and the open water dives at an area lake. (Prerequisites: None). (1 C). Offered: Spring.

PHED 2210-2236 Varsity Athletics
All courses are one credit. Participation is limited to varsity athletes. Daily practice and attendance at scheduled events are required. (Prerequisites: None). (1 C). Offered: Fall, Spring.

PHED 2250 Prevention and Care of Athletic Injuries
This course will give you the knowledge and the practical experience to identify, treat, rehab, and prevent many common injuries that occur in athletic settings. (Prerequisites: None). (2 C). Offered: Fall, Spring.

PHED 2270 Introduction to Physical Education
The course is designed to introduce the student to professional fields of physical education. Study will include history, philosophy, objectives, career opportunities, scientific and scholarly disciplines, allied fields, future problems and prospects. (Prerequisites: None). (2 C). Offered: Spring.

PHED 2294 Physical Education Internship
On the job supervised work experience in the field of HPER. (Prerequisites: Physical Ed or REC major or minors and consent of instructor). (2-3 C). Offered: Fall, Spring.

PHYSICS

PHYS 1101 Elements of Physics
This course is a non-mathematical introduction to physics for the non-science major. The course covers topics that include units and measurement, linear motion, Newton’s laws of motion, work and energy, temperature and heat, heat transfer, specific heat and latent heat, waves, sound, reflection and refraction, mirrors and lenses, color theory, electrostatics, electricity, magnetism and magnetic induction. In the laboratory, we will cover topics in experimentation that include data taking, graphing, use of scientific instruments and simple error analysis. (Prerequisites: None). (3 C/2 lect, 2 lab). MNTC: CT, NS. Offered: Fall, Spring.

PHYS 1102 Physics for the Health Sciences
A one-semester course that provides a broad scope of physics with detailed applications directed toward the needs of students in allied health programs. Pertinent applications to biological and physiological problems will make these principles more useful as professional tools. In the laboratory, we will cover topics in experimentation that include data taking, graphing, use of scientific instruments and simple error analysis. (Prerequisites: MATH 0099 and enrollment in an Allied Health program at RCTC/Maxo Clinic or permission of the instructor). (3 C/2 lect, 2 lab). Offered: Fall.

PHYS 1107 Technical Physics I
This course is an algebra-based introduction to physics for students in the following programs: Electronics Engineering Technology, Civil Engineering Technology and Mechanical Engineering Technology. The course covers topics from mechanics that include linear and parabolic motion, Newton’s Laws of motion, energy, momentum, angular motion, torque, stress, strain and simple machines. This course also includes topics in fluids, periodic motion and waves and sound. Emphasis will be on both concepts and problem solving. The laboratory will emphasize topics in experimentation that include data, experimental graphing, curve fitting, accuracy, precision, significant figures, estimation, error analysis, equipment use, the scientific method and technical writing. (Prerequisites: MATH 1101 and 1102; and enrollment in MATH 1104). (4 C/3 lect, 2 lab). Offered: Spring.
PHYS 1108  Technical Physics II
This course is an algebra-based introduction to physics for students in the following programs: Electronics Engineering Technology, Civil Engineering Technology and Mechanical Engineering Technology. This course covers topics in thermodynamics, electrostatics, DC and AC circuits, magnetism, optics and nuclear physics. The laboratory deals with topics in experimentation that include data analysis, experimental graphing, curve fitting, accuracy, precision, significant figures, estimation, the difference between random and systematic errors, equipment use, the scientific method and technical writing. (Prerequisites: PHYS 1107 or permission of instructor). (4 C/3 lect, 2 lab). Offered: Fall.

PHYS 1117  Introductory Physics I
This course is the first semester of a two-semester algebra-based introduction to physics for students majoring in pre-architecture, pre-agriculture, forestry, pre-physical therapy, pre-home economics, pre-medical technology, liberal arts, pre-dentistry, pre-pharmacy and pre-veterinary medicine. The course covers topics from mechanics that include linear and parabolic motion, Newton’s Laws of motion, energy, momentum, angular motion and torque, fluid mechanics, periodic motion, waves and sound. Emphasis will be on both concepts and problem solving. The laboratory will emphasize topics in experimentation that include data analysis and elementary statistics, experimental graphing, curve fitting, accuracy, precision, significant figures, estimation, error analysis, equipment use, the scientific method and technical writing. (Prerequisites: MATH 1117). (5 C/4 lect, 2 lab). MNTC: CT, NS. Offered: Spring.

PHYS 1118  Introductory Physics II
This course is an algebra-based introduction of physics for students majoring in pre-architecture, pre-agriculture, forestry, pre-physical therapy, pre-home economics, pre-medical technology, liberal arts, pre-dentistry, pre-pharmacy and pre-veterinary medicine. The course covers topics from mechanics that include linear and parabolic motion, Newton’s Laws of motion, energy, momentum, angular motion and torque, fluid mechanics, periodic motion, waves and sound. Emphasis will be on both concepts and problem solving. The laboratory will emphasize topics in experimentation that include data analysis and elementary statistics, experimental graphing, curve fitting, accuracy, precision, significant figures, estimation, error analysis, equipment use, the scientific method and technical writing. (Prerequisites: PHYS 1117). (5 C/4 lect, 2 lab). MNTC: CT, NS. Offered: Spring.

PHYS 1127  Classical Physics I (Mechanics, Fluids & Gases)
This course is the study of the general principles of classical physics using the technique of vector calculus. The course uses the principles of vectors extensively. The fundamental definitions of physics are derived and physical phenomenon that relate these principles to applications that are part of our human experience are studied. Fundamental units of measure are studied and the laws of physics are derived. The techniques of problem solving are studied and the student will learn the use of the free body diagram in problem solutions. The student is expected to gain an expertise in solving multi-conceptual problems using the techniques studied here with the application of vector calculus. The laboratory experience will provide the student with opportunities of discovery, measurement, report writing and data analysis. The course is intended to be a lower division course for those majoring in physics, engineering, medicine and computer science. The topics emphasized are vectors, motion in one and multi-dimensional frames, particle dynamics, work and energy, conservation of momentum, rotational motion, rigid bodies, extended bodies, simple harmonic motion, gravitation and relativity, waves, temperature, heat, the first law of thermodynamics, entropy and the second law of thermo dynamics. (Prerequisites: MATH 1127 or concurrent enrollment in MATH 1127). (5 C/5 lect, 2 lab). MNTC: CT, NS. Offered: Fall.

PHYS 1128  Classical Physics II (Electricity, Magnetism & Optics)
This course is the study of the general principles of classical physics using the technique of vector calculus. The course uses the principles of vectors extensively. The fundamental definitions of physics are derived and physical phenomenon that relate these principles to applications that are part of our human experience are studied. Fundamental units of measure are studied and the laws of physics are derived. The techniques of problem solving are studied and the student will learn the use of the free body diagram in problem solutions. The student is expected to gain an expertise in solving multi-conceptual problems using the techniques studied here with the application of vector calculus. The laboratory experience will provide the student with opportunities of discovery, measurement, report writing and data analysis. The course is intended to be a lower division course for those majoring in physics, engineering and computer science. The topics emphasized are magnetic fields, electric charge, electric field, electric potential, Kirchhoff’s Laws, emf and simple electrical circuits and techniques for their analysis, Ampere’s Law, Faraday’s Law, inductance, AC circuits, magnetic properties of matter, electromagnetic waves, Maxwell’s equations, Poynting Vector, physical optics, interference, diffraction gratings, electromagnetic spectrum, waves and the wave equation. (Prerequisites: PHYS 1127 and MATH 1128 or concurrent enrollment in 1128). (5 C/5 lect, 2 lab). MNTC: CT, NS. Offered: Spring.

PHYS 2202  Radiation Physics
This course is the study of the physics of radiology. The course topics include a history of the discovery of x-radiation, systems of measurement, mechanics, heat, and energy. Atomic structure and essential elements in radiology are included. The student will recognize and apply the concepts of electrostatics and electromagnetism to the production of x-radiation. The structure and function of the x-ray tube and electric circuits will be studied in detail. (Prerequisites: PHYS 1102; admission to Radiography Program). Offered: Summer.
PHYS 2212 Principles of Radiographic Exposure
Principles of exposure begins with x-ray production. Emission Spectrum from tungsten and molybdenum targets are described. Interactions of radiation with matter, dose and the radiographic image are presented. The effect of scattered and secondary radiation on image quality and methods of control are included. Image receptors (film/screen) are discussed in terms of structure, function, types, and uses. The role of the primary variables (kVp, time mA, and SID) in radiography is presented. Their effects on density, contrast, and visibility of detail are defined. Methods of exposure calculation for changes in the primary variables are reviewed. Systems for building workable technique charts are presented. (Prerequisites: PHYS 2202; admission to the Radiography Program). (3 C). Offered: Fall.

PHYS 2227 Modern Physics
The topics of physics which are studied in Modern Physics are: relativity, kinetic theory of matter, statistical thermo dynamics - Boltzman’s distribution, introduction to wave mechanics, the Schrodinger Equation, the Schrodinger equation applied to the hydrogen atom and the development of the atomic structure, molecular structure, solid state and nuclear structure. (Prerequisites: PHYS 1128, MATH 1128 and concurrent enrollment in MATH 2237). (3 C/3 lect, 0 lab). Offered: Fall.

POLITICAL SCIENCE
POLS 1617 American Government Theory, Principles, Process
Survey course of American Government with an emphasis on political theory and history, the constitution, civil liberties, and political process and participation. (Prerequisites: None). (3 C). MNTC: CT, SS, EC. Offered: Fall, Spring.

POLS 1618 American Government Structure - Domestic/Foreign Policy
Survey course of the operation of the Executive, Legislative, and Judicial branches of government with emphasis on domestic and foreign policy development, and an overview of state and local government. (Prerequisites: None). (3 C). MNTC: CT, SS, GP. Offered: Fall, Spring.

PRACTICAL NURSING
PNM 1106 Community Health Concepts
This course will introduce the student to the healthcare community including the different roles of caregivers and their contribution to the health and well being of the community. Discussions will focus on individual, family, and community health promotion and prevention. Related topics will include: basic nutrition, diet management, common infections, the health needs of special and diverse populations and accessibility of community health resources. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall, Spring, Summer.

PNM 1200 Clinical I
This course provides the beginning level of clinical experience. The student will have the opportunity to integrate classroom/lab learning with supervised client care experience. The student will implement the basic steps of the nursing process and utilize basic communication skills in planning and implementing routine personal care to one client; make observations of obvious client needs and perform specified abilities with instructor/staff guidance and supervision. (Prerequisites: All nursing foundation courses). (5 C/0 lect, 5 lab, 0 OJT). Offered: Fall.

PNM 1202 Nursing Skills and Concepts
This course introduces the student to basic skills, concepts, principles and expectations of the practical nurse. Topics will include the nursing process, communication skills, ethical/legal responsibilities, medical and surgical asepsis, medical documentation and basic nursing procedures. Nursing procedures will be taught by clinical simulation in a supervised lab setting utilizing the nursing process. After successful completion of skills in the lab setting, a clinical orientation in acute care and long-term care setting is included. (Prerequisites: GSCL 1102). (4 C/2 lect, 2 lab, 0 OJT). Offered: Fall.

PNM 1204 Care of the Older Adult
This course will cover the changing demographics and diversity of the aging population. Special topics will include biological theories of aging, physical/psychological changes, social, psychosexual and cognitive needs. Community services which are available to facilitate maximum health promotion will be researched. Aspects of losses and ethical dilemmas of the elderly are included. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

PNM 1206 Introduction to Pharmacology
This course includes a brief review of math concepts and methods for solving drug dosage problems. This course will also cover preparation, medication action/effects, drug classification and preparing and administering medication by all routes. Specific drug therapy will be incorporated into the appropriate nursing courses that follow. The nursing process is utilized to identify client needs related to medication administration. (Prerequisites: PNM 1202). (2 C/1 lect, 1 lab, 0 OJT). Offered: Fall.

PNM 1208 Family Nursing
Course material includes pregnancy, postpartum care and common disorders that affect infants and children. The obstetrical portion of the course presents the fundamental principles of labor and delivery and the nursing care of the family. The pediatrics portion of the course presents physiological response of children to illness. Special needs of children who are mentally and physically delayed will be discussed. Cultural diversity and families feelings and responses in obstetrical and pediatric nursing care will also be discussed. (Prerequisites: GSCL 1102 and 1104). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

PNM 1300 Clinical II
This clinical course will provide students with second level experiences in the care of clients with medical surgical disorders, older adult, obstetrical, and pediatric patients. Students will implement basic steps of the nursing process more independently and utilize communication and planning skills more effectively in the total care of clients. Course objectives include medication administration, sterile procedures, specified nursing procedures, observational experiences, and documentation. A daily care plan is developed and implemented with staff and instructor guidance. (Prerequisites: PNM 1200). (6 C/0 lect, 6 lab, 0 OJT). Offered: Spring.
PNM 1302 Adult Nursing I
This course provides an introduction to the nursing care of the adult client. Principles and concepts of health and illness, fluid and electrolyte balance, pain management and psycho-social aspects of nursing care are covered. Selected topics of system disorders are discussed (nursing assessment, diagnosis and treatment, diet and drug therapy, and nursing management). Client basic needs and nursing process is integrated in the care planning of adult clients. (Prerequisites: All nursing foundation courses). (4 C/4 lect, 0 lab, 0 OJT). Offered: Spring.

PNM 1304 Adult Nursing II
Continued study of the exploration and interaction of adult health disorders, nursing care problems, and care management. The importance of nursing observations and selecting safe and effective nursing interventions is emphasized in the care of adults with selected system disorders. Client basic needs and the nursing process is integrated in developing care plans for the adult client. (Prerequisites: All nursing foundation courses). (3 C/3 lect, 0 lab, 0 OJT). Offered: Spring.

PNM 1306 Mental Health Concepts
This course will provide the beginning health care professional with the basic principles of mental health and mental illness. It will assist the student in understanding and developing skills necessary to care for clients exhibiting maladaptive behaviors and those with stabilized psychiatric, emotional, and mental disorders. Additional topics include human sexuality, substance abuse, violence, psychotherapies, and community resources. The nursing process is utilized to identify the basic needs of the mentally ill client. (Prerequisites: GSCL 1104). (2 C/2 lect, 0 lab). Offered: Spring.

PNM 1408 Transitions to Nursing Practice
This course will assist the graduating student in his/her transition role to the graduate practical nurse. Special topics include: nursing career opportunities, employer/employee expectations, interdisciplinary nursing practice, organizational communications, group process/team building, leadership styles/skills, licensure/board of nursing roles, and professional/ethical decision making and problem solving. (Prerequisites: Successful completion of all fall and spring nursing courses). (2 C/2 lect, 0 lab, 0 OJT). Offered: Summer I.

PNM 1410 Integrated Practicum
This clinical course will provide graduating students with the third level learning experiences which includes eight hour shifts. The student will exhibit higher levels of problem solving and critical thinking as they implement the nursing process in multiple patient assignments. Students will also demonstrate a coordinated, interrelated total care plan on two or more clients. Effective team membership, leadership, and ethical/professional decision making skills will also be evaluated. (Prerequisites: Successful completion of all fall and spring courses). (3 C/0 lect, 3 lab, 0 OJT). Offered: Summer I.

PSYCHOLOGY

PSYC 1611 Psychology of Adjustment
The course emphasizes personal growth and human adjustment, including topics such as learning, conflict, frustration, motivation, stress, emotion, personality, psychopathology, and psychology of gender. (Prerequisites: College level reading, writing skills). (3 C). MNTC: CT, SS, PN. Offered: Fall, Spring, Summer.

PSYC 2611 Social Psychology
Relationship of the individual to the social environment emphasizing group influences on individual behavior. (Prerequisites: PSYC 1611). (3 C). MNTC: CT, SS, HD. Offered: Fall, Spring.

PSYC 2618 General Psychology
Analysis of human behavior, covering topics of psychological methods, mind and body, sensation, perception and motivation, learning, individual behavior, personality, mental illness and group behavior. (Prerequisites: College level reading, writing skills or consent of instructor). (4 C). MNTC: CT, SS, EC. Offered: Fall, Spring.

PSYC 2626 Human Growth & Development
A general course in human development, physical, cognitive, psychosocial; from conception through developmental stages to maturity and old age, with special stress on the psychological aspects of development. (Prerequisites: PSYC 1611 or 2618). (3 C). MNTC: CT, SS, HD. Offered: Fall, Spring, Summer.

RECREATION

REC 2223 Outdoor Education and Recreation
A course developed to acquire an acquaintance and understanding of the history and scope of Outdoor Education and Recreation; special emphasis will be placed on practical application of outdoor education and recreational activities in the natural setting. (Prerequisites: None). (3 C). Offered: Spring.
**RC 2294 Recreation Internship**
On the job supervised work experience in the field of Recreation. (Prerequisites: Recreation majors/minors or consent of instructor). (2-3 C). Offered: Fall, Spring.

**RESPIRATORY CARE**

**RC 1101 Orientation to Respiratory Care**
The purpose of this course is to review the profession of respiratory care with an emphasis on the clinical roles/responsibilities and professional career options. Students will have the opportunity to review the subspecialties within respiratory care as well as the differences in settings, i.e. medical center, community hospital, home care, etc. Participants will be able to interview practicing therapists, physicians and current second-year students. The laboratory will allow demonstration of equipment used in the hospital setting, and application to simulated patients or fellow students. (Prerequisites: Freshman year). (1 C). Offered: Spring.

**RC 2201 Introduction to Respiratory Care Clinical Practice**
This course is designed to prepare students to begin clinical practice in respiratory care within a hospital setting. Laboratory will be used to allow students hands-on practice with the procedures, operate monitoring and life support equipment. Discussion, simulation and role playing will allow development to patient approach. (Prerequisites: Sophomore year). (3 C). Offered: Summer.

**RC 2202 Mathematics and Physics Applied to Respiratory Care**
Students review literal equations and other forms of algebra as they solve problems that relate to physiological relationships or equipment function. The second component of the course involves further study of physical relationships that have a physiological or physical/technical basis. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (2 C). Offered: Summer.

**RC 2203 Patient Care Techniques for Respiratory Care**
This course introduces students to the fundamental practice attitudes and skills needed by all health care providers, including respiratory care practitioners. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (2 C). Offered: Summer.

**RC 2205 Medical Terminology and Informatics**
Students will be introduced to the language of medicine. There will be emphasis on the terms, abbreviations, acronyms and symbols used in respiratory care, cardiopulmonary physiology and pathophysiology. The second part of the course will involve students in the acquisition, storage and manipulation of medical information using the computer. Students will be introduced to both the “paper” and computerized version of a patient’s chart. The computer will be used to: search the medical literature, access patient laboratory records and monitoring information as well as analyze data trends. Students will use the Mayo Medical Center Intranet and the internet to access information in respiratory care. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (1 C). Offered: Summer.

**RC 2208 Respiratory Care Modalities & Equipment I**
Students will become proficient in performing non-invasive monitoring and therapeutic procedures. Those procedures will include: medical gas therapy, humidity and aerosol therapy, bronchial drainage, and volume expansion therapy. Commonly prescribed aerosol medications will also be reviewed. Procedures will be discussed in context with national practice guidelines as to the scientific basis of: rational, limitations, hazards and complications, issues of asepsis and modification to adapt to patient needs. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (5 C). Offered: Fall.

**RC 2229 Cardiopulmonary Patient Assessment**
Patient assessment skills are developed to allow students to interpret patient data including: the chart record, interview, physical examination, medical laboratory data, pulmonary function reports (including blood gas analysis), electrocardiogram, hemodynamic record, mechanical ventilator flow sheet, and radiographic imaging. Cardiopulmonary diseases are introduced with emphasis on pathophysiological manifestations that can be assessed. The laboratory provides a setting for role playing, mock exams and practice of assessment skills. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (4 C). Offered: Fall.

**RC 2230 Respiratory Care Modalities & Equipment II**
Students will become competent in the implementation and operation of a range of invasive monitoring devices and life-support technology used in care of the critically ill patient. This will include airway management, hemodynamic and respiratory monitoring, and mechanical ventilation for perinatal, pediatric and adult patients. The course will conclude with completion of the American Heart Association’s course in advanced cardiac life support (ACLS). Laboratory exercises will allow simulated patient care for a range of scenarios representing cases seen in the emergency room or intensive care units. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (5 C). Offered: Spring.

**RC 2231 Respiratory Care Modalities and Equipment II**
The first half of the course will provide students with a detailed study of the physiology cardiovascular and pulmonary systems. Once the normal function has been mastered, a review of adult, pediatric and perinatal pulmonary and cardiac disorders will be undertaken. There will be emphasis on: presenting assessment, laboratory evaluation, major pathology, pathophysiologic manifestations and treatment options. Lab will allow observation and measurement of normal and simulated abnormal cardiopulmonary physiology. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (5 C). Offered: Spring.

**RC 2237 Clinical Practice I**
During a 5 week period, students observe a wide range of direct respiratory care performed in a variety of clinical settings at the Mayo Medical Center. Students gain skills as they perform general floor care and non-intensive care procedures with the supervision of a clinical instructor. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (1 C). Offered: Summer.
RC 2238 Clinical Practice II
Students begin in a series of rotations including 18 different clinical areas at the Mayo Medical Center. Each rotation requires completion of specific competencies. Those areas include 9 intensive care units, the operating room, emergency room, general floor care areas, pulmonary function labs, sleep disorders center, smoking cessation clinic, pulmonary rehabilitation program, home care, and an outpatient clinic. Students will perform respiratory care procedures and diagnostic testing with the supervision of a clinical instructor. (Prerequisites: Appointment to Respiratory Care Program; Appointment to Respiratory Care Program; Sophomore year). (5 C). Offered: Fall.

RC 2239 Clinical Practice III
Students conclude a series of rotations including 18 different clinical areas at the Mayo Medical Center. Those areas include 9 intensive care units, the operating room, emergency room, general floor care areas, pulmonary function labs, sleep disorders center, smoking cessation clinic, pulmonary rehabilitation program, home care, and an outpatient clinic. Students will perform respiratory care procedures and diagnostic testing with the supervision of a clinical instructor. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (6 C). Offered: Spring.

RC 2240 Seminar in Respiratory Care: Current Topics and Case Reports
Students will attend weekly conferences and seminar to discuss topics on current interest and clinical importance in respiratory care. The use of the professional medical literature database and scientific approach to advances in medicine will be reviewed. Students and faculty will present updates on selected topics and review patient cases to develop critical thinking and problem solving skills. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (2 C). Offered: Fall.

RC 2241 Respiratory Care Seminar: Case Reports and Fundamentals of Research
Students will attend weekly conferences and seminar to discuss cases of clinical importance in respiratory care. The professional medical literature will be critically reviewed both from the standpoint of scientific method and clear writing style. Students will review patient cases with attention to events that required problem solving and critical thinking. Students will collaborate on a class research project leading to abstract submission. (Prerequisites: Appointment to Respiratory Care Program; Sophomore year). (2 C). Offered: Spring.

RETAIL MERCHANDISING

RMDS 1110 Introduction to Retail Merchandising
An introduction to the business of retail merchandising with an emphasis on men’s, women’s, and children’s apparel and accessories, as well as merchandise related to the home and office. A focus on merchandising and marketing activities at both wholesale and retail to include international business and trade issues. The economical, sociological, and psychological factors that influence buying patterns of consumers will be studied. Related careers will be examined. (Prerequisites: None). (3 C). Offered: Fall.

RMDS 1120 Visual Merchandising
A study of total visual presentation of merchandise to the consumer. Elements and principles of design are incorporated when analyzing and developing exterior and interior store windows and store layouts. The use of themes, mannequins, props, lighting, fixtures, and signage in the retail environment will be explored. A store plan will be developed which will include store layout, promotions, and advertising procedures to achieve marketing objectives. (Prerequisites: None). (3 C). Offered: Fall, Spring.

RMDS 1130 Textiles
A study of the factors involved in clothing selection emphasizing the business wardrobe for both men and women relative to the elements and principles of design. The development of a professional image will be explored through such topics as business etiquette, leadership and time management skills, communication skills, resume writing, and interviewing. (Prerequisites: None). (2 C). Offered: Fall, Spring.

RMDS 1140 Professional Image in Business
A study of the factors involved in clothing selection emphasizing the business wardrobe for both men and women relative to the elements and principles of design. The development of a professional image will be explored through such topics as business etiquette, leadership and time management skills, communication skills, resume writing, and interviewing. (Prerequisites: None). (2 C). Offered: Fall, Spring.

RMDS 2220 Home Furnishings Merchandising
Home Furnishings Merchandising by primary types of retail stores providing home furnishing product information in terms of features and benefits relevant to function, style, maintenance, materials, and construction. Career opportunities within the home furnishings industry will be explored. (Prerequisites: None). (2 C). Offered: Fall.

RMDS 2221 Interior Design
Historic American architecture and period furnishings will be studied along with the elements and principles of interior design. Materials and components used in both residential and non-residential interiors will be studied as well as code requirements, and an overview of computer technology as relative to interior design. Career opportunities, business procedures and the development of a professional portfolio will be discussed. This information will be applied to a project in residential design and a non-residential interiors project. (Prerequisites: None). (3 C). Offered: Spring.
Course Descriptions

RMDS 2230 Showmanship and Promotion
Application of the procedures involved in the promotion of retail merchandising with regard to oral and written promotional communication and publicity. Students will participate in the production of a professional fashion show and develop a retail merchandising promotional plan. (Prerequisites: None). (3 C). Offered: Fall.

RMDS 2240 History of Costume
Survey of costume beginning with ancient civilizations that contributed to the development of Western civilization to the year 2000. Analysis of American costume as it evolved from colonial to contemporary times with emphasis on aesthetic costume characteristic and the social, political, religious, and economic influences. Fashion as it reflects cultures and influences contemporary costume will be explored. (Prerequisites: None). (3 C). Offered: Spring.

RMDS 2250 Store Management
Development of management skills for retail stores of varying sizes as well as development of management skills for a variety of management levels within a retail company. Techniques to increase sales, hiring and maintaining a motivated staff, retaining staff, determining individual sales goals, and managing a store effectively will also be developed. (Prerequisites: None). (3 C). Offered: Spring.

RMDS 2290 Retail Merchandising Seminar
An examination of special topics of current interest to retail merchandising students. Guest lecturers from the retail merchandising industry are invited to share their background and knowledge. Students will participate in field trips to observe current practices and trends in retail. (Prerequisites: None). (1 C). Offered: Spring.

RMDS 2294 Retail Merchandising Internship
Work experience program designed to help retail merchandising students apply classroom information on the job. Designed to make the work experience a learning experience to the student will be able to advance into a management position. Students may enroll in this class more than once if the second internship provides a different experience than the first. Examples might include: a position with Walt Disney World, Florida; a different position with another type of retail company. (Prerequisites: None). (2 C). Offered: Fall, Spring.

SECRETARIAL

See Administrative Assistant/Legal, Medical Secretary, or Office Clerk

SOCIOLOGY

SOC 1614 Introduction to Sociology
An introduction to the process of applying a sociological perspective to understanding the social world including patterns of behavior and interaction, culture, socialization, social structure, groups and organizations, social stratification, institutions and social change. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HD, SS. Offered: Fall, Spring, Summer.

SOC 1914 Introduction to Sociology: Honors
This is a survey course which focuses on learning and applying the sociological perspective to understanding the social world, including a basic introduction to such topics as culture, socialization, interaction, groups and organizations, deviance, social institutions, social movements, and social change. In this course, students will read, analyze and apply information related to at least three of the primary sociological theories. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, SS, GP. Offered: Yearly, usually Fall. (Honors equivalent to SOC 1614).

SOC 1616 Social Problems
A sociological analysis of the nature, causes and possible responses to a variety of contemporary and future American and global social problems including problems associated with individual and group deviance, inequality and exploitation, social change, institutional dysfunction and international and global conflict. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, EC, SS. Offered: Fall, Spring.

SOC 2612 Marriage and the Family Across the Life Span
Sociological analysis of historical and contemporary patterns and trends in family life over the family span including investigations of dating, spouse selection, marriage, marital adjustment, parenting, aging, death and dying, divorce and remarriage, and family dysfunction. (Prerequisites: SOC 1614 or SOC 1914). (3 C/3 lect, 0 lab). MNTC: CT, HD, SS. Offered: Fall, Spring.

SOC 2625 Minority Group Relations
This course examines the social interaction of racial, ethnic and cultural groups in the United States. Topics include prejudice, discrimination, class and caste, stereotyping, ethnocentrism, segregation, assimilation, amalgamation, conflict and various proposals for responding to minority status. A special emphasis on the effects of social institutions on minority-majority relations. (Prerequisites: SOC 1614 or SOC 1914). (3 C/3 lect, 0 lab). MNTC: CT, HD, SS. Offered: Fall, Spring.

SOC 2630 Field Experience
This course provides a field experience with a community social service agency. The students will be assigned a client and, under supervision, will identify the problem, goals and implement a plan in reaching goals. (Prerequisites: SOC 1614 or SOC 1914; or concurrent enrollment and consent of coordinator/instructor). (1-2 C). Offered: On request.
SPANISH

SPAN 1001 Introduction to Hispanic Cultures
A comparative study of Hispanic cultures and societies exploring geographical, historical, socio-economic, political and religious issues, as well as the regional customs and interpersonal relations of the Hispanic world. Because these courses are taught in English, it is particularly suitable for students who have never studied a foreign language. This class is strongly recommended for students who are taking foreign language (Spanish). (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HD, GP. Offered: Fall and Spring (with sufficient enrollment).

SPAN 1101 Beginning Spanish I
The Beginning Spanish series (a two semester sequence) is designed to offer basic training in the Spanish language with emphasis on pronunciation, coherent speaking, grammar, listening comprehension, writing and reading skills. The study of the language includes the cultural, geographical, linguistic and historical components that are an integral part of the vocabulary and syntax of Spanish. (Prerequisites: None). (4 C/4 lect, 0 lab). MNTC: CT, GP. Offered: Fall and Spring.

SPAN 1102 Beginning Spanish II
The second course in the Beginning Spanish series. Continuation of pronunciation, coherent speaking, grammar, listening comprehension, writing and reading skills. (The study of the language includes the cultural, geographical, linguistic and historical components that are an integral part of the vocabulary and syntax of Spanish). (Prerequisites: 2 years of High School Spanish; SPAN 1101 or equivalent). (4 C/4 lect, 0 lab). MNTC: CT, GP. Offered: Fall and Spring (with sufficient enrollment).

SPAN 1130 Introductory Medical Spanish
The unique circumstances for health care workers in providing effective treatment can often be difficult due to communication barriers. This course provides a basic background in conversational Spanish to allow medical health care personnel to improve communication with their Spanish-speaking patients. Although students will be advised on how to work with an interpreter, this beginning course does not train the health care professional to assume the role of an interpreter. (Prerequisites: None). (2 C/2 lect, 0 lab). MNTC: CT. Offered: Fall and Spring (with sufficient enrollment).

SPAN 2101 Intermediate Spanish I
The Intermediate Spanish series reviews the fundamentals of the Spanish language, including additional and more advanced material in listening comprehension, speaking, idiomatic usage of vocabulary, grammar and writing exercises and awareness of cultural differences, appropriateness and sensitivity. It develops oral proficiency in real life contexts that will give the students a deeper understanding of Hispanic/Latino cultures. (Prerequisites: SPAN 1102 or three years of high school with a grade of A or B and/or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: HA, GP, CT. Offered: Fall (with sufficient enrollment).

SPAN 2102 Intermediate Spanish II
This course provides a comprehensive review of grammatical forms through listening, speaking, reading and writing. These skills are attained through conversational practice and are enhanced with a concurrent study of the civilization, culture, literature, and art of the Hispanic people. The student will gain a deep understanding of the language and its people and will be able to establish the differences between the Spanish and English speaking countries which impact international relations. (Prerequisites: SPAN 2101 or four years of high school Spanish with a grade of A or B and/or instructor’s permission). (4 C/4 lect, 0 lab). MNTC: CT, HA, GP. Offered: Spring (with sufficient enrollment).

SPAN 2111 Spanish Conversation
This course is designed to increase vocabulary and develop oral skills through systematically guided conversation and dialogue concerning such possible topics as daily life, family, hobbies/recreation, education systems, food, travel and current events. (Prerequisites: SPAN 1102 or equivalent (2 years of high school Spanish). (2 C/2 lect, 0 lab). Offered: Fall and Spring (with sufficient enrollment).

SPEECH

SPCH 1114 Fundamentals of Speech
Speech 1114 focuses on the theory and practice of oral communication skills which affect critical thinking, in public speaking situations with an emphasis on research. Topics may include using visual aids, how to effectively organize a speech in compliance with the speaker’s objective, an understanding of various organizational patterns, and the execution of competent vocal and physical delivery skills. (Prerequisites: College level reading/writing skills). (3 C/3 lect, 0 lab). MNTC: CT, CM. Offered: Fall, Spring, Summer.

SPCH 1121 Beginning Acting
Beginning Acting is designed to give the student an overview as well as some experience in the art and craft of acting through an analysis of performances, object and scene study, improvisation, body movement, rhythms and vocalizations in creating a role. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA. Offered: Fall, Spring.

SPCH 1125 Oral Interpretation
Theory and practice in oral presentations with an emphasis on selection, cultural significance and study in individual and group readings from the world’s literature. (Prerequisites: SPCH 1114). (3 C/3 lect, 0 lab). MNTC: CT, HA. Offered: Spring.

SPCH 1130 Interpersonal Communication
Focus is on the theory and practice of communication skills which affect critical thinking, intercultural consciousness, empowerment, and day-to-day interaction with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships. (Prerequisites: None). (3 C/3 lect, 0 lab). MNTC: CT, HA, HD. Offered: Fall, Spring.
ST 2110 Surgical Technology Medications and Microbiology
This course is designed to provide comprehensive knowledge of many classifications of drugs, routes of administration, effects, and side effects of drugs used in surgery. This course also will provide an opportunity to learn about natural body defense mechanisms and of the methods by which infectious diseases are transmitted, recognized, prevented and treated. (Prerequisites: BIO 1217, CHEM 1117, ENGL 1117, AIS 1600, NA 1609). (3 C). Offered: Fall.

ST 2120 Operating Room Techniques I
This course covers the fundamental knowledge and skills necessary to work in the operating room and related areas. Emphasis is on aseptic technique, scrub and circulator roles, equipment, supplies, instrumentation, legalities and the peroperative process of the patient. (Prerequisites: BIO 1217, 1218; CHEM 1117, ENGL 1117, AIS 1600, NA 1609). (5 C). Offered: Fall.

ST 2121 Operating Room Techniques II
This course covers knowledge on skin prep, positioning, instrument set-ups, and draping. Practice will continue on basic skills learned in ORTI. Emphasis will be on general surgery procedures, lasers, obstetrics, pediatrics, and ear surgery. (Prerequisites: ST 2120). (5 C). Offered: Fall.

ST 2122 Introduction to the Operating Room
This course covers surgical procedures performed in orthopedic and eye specialties. It includes introduction to clinical experience where the scrub and circulator roles are practiced. (Prerequisites: ST 2120, ST 2121). (3 C). Offered: Fall.

ST 2123 Surgical Procedures I
This course combines classroom and clinical experience with a focus on procedures in neurosurgery, cardiovascular, peripheral vascular, plastics, and transplantation. In clinical, scrubber and circulating duties are practiced. (Prerequisites: ST 2110, ST 2122). (9 C). Offered: Spring.

ST 2124 Surgical Procedures II
This course combines classroom and clinical experience with a focus on procedures in thoracic, nose, throat, dental, genitourinary, and gynecology surgery. In clinical, scrubber and circulating duties are practiced. (Prerequisites: ST 2110, ST 2122). (9 C). Offered: Spring.

STSK 1670 College Study Skills
This class will cover the concepts, methods, and strategies of effective and efficient learning in college. Topics to be explored and practiced will include: motivation/attitude, time management, note taking, test taking, and the use of the library. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall, Spring, Summer.

STSK 1671 College Success Strategies
This class will address the affective as well as cognitive skills necessary for success in college. Topics to be covered include: responsibility, precision, relationships, wellness, college resources, and learning styles. (Prerequisites: None). (1 C/1 lect, 0 lab, 0 OJT). Offered: Fall, Spring, Summer.

TT 1720 Electrical Theory
This course covers the theory of basic electricity, starting and charging systems, electrical accessories, and troubleshooting and repair of these systems. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.

TT 1820 Alignment and Suspension Theory
This course covers suspension design, alignment geometry and wheel and tire factors as well as recommended maintenance steps concerning suspension systems and related compounds. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Spring.

TT 1900 Welding
This course covers theory and practice of oxy-acetylene, stick arc, and wire-fed welding. Students will learn theory and safety and have an opportunity to learn and practice hands-on welding skills. (Prerequisites: None). (2 C/0 lect, 2 lab, 0 OJT). Offered: Spring.

TT 2650 Automotive Science
This course covers basics of hydraulics, gear ratios, and engine physics as related to automobiles and trucks, with emphasis on formulas and calculations of various related factors. (Prerequisites: None). (2 C/2 lect, 0 lab, 0 OJT). Offered: Fall.