Advanced Energy Systems

AES 100 (P/T) 3 Credits
ADVANCED ENERGY SYSTEMS
Quarters: Offered as needed
This introductory course explores the fundamental principles, applications, and technologies of renewable energy systems. Students will examine solar, wind, hydroelectric, geothermal, and biomass energy sources through both classroom instruction and hands-on field experiences. The course covers system components, basic design principles, efficiency calculations, and real-world applications. Technical concepts are reinforced through laboratory exercises and field observations of operational renewable energy installations. At the end of this course, students will be able to evaluate renewable energy systems for specific applications, perform basic system calculations, and recommend appropriate renewable energy solutions based on site-specific requirements.

AES 110 (P/T) 3 Credits
ADV ENRGY SYST I: ENERGY EFFICIENCY
Quarters: Offered as needed
This intermediate course focuses on energy efficiency strategies and applications across residential, commercial, and industrial sectors. Students learn comprehensive approaches to identifying energy waste, conducting energy audits, and implementing conservation measures. Through hands-on laboratory exercises and field studies, students explore building envelope analysis, HVAC systems, industrial process efficiency, and transportation systems. The course emphasizes practical applications of energy-saving technologies and techniques, including cost-benefit analysis and return on investment calculations. At the end of this course, students will be able to conduct basic energy audits, recommend appropriate efficiency measures, and calculate energy savings potential for various applications. Prerequisites: Pass AES 100

AES 120 (P/T) 3 Credits
ADV ENG SYS II: SYSTEM FUNDAMENTALS
Quarters: Offered as needed
This advanced course provides comprehensive analysis of renewable energy systems, focusing on detailed technical principles, performance evaluation, and real-world applications. Students explore the intricate relationships between system design, operational efficiency, and economic viability across various renewable technologies. Through advanced laboratory exercises and system modeling, students learn to evaluate theoretical versus actual system performance, analyze energy storage solutions, and optimize system configurations. The course integrates policy considerations, technical analysis, and economic assessment methods. At the end of this course, students will be able to design, analyze, and optimize renewable energy systems while considering technical, economic, and policy constraints. Prerequisites: Pass AES 100 and AES 110

AES 130 (P/T) 3 Credits
ADV ENG SYS III: INSTALL AND MAINT
Quarters: Offered as needed
This advanced technical course focuses on the practical aspects of installing and maintaining renewable energy systems in residential and commercial settings. Students develop hands-on skills in system installation, troubleshooting, and maintenance procedures while adhering to industry safety standards and building codes. The course emphasizes real-world applications through extensive laboratory work and field exercises. Students learn to conduct thorough site surveys, prepare installation sites, implement preventative maintenance programs, and ensure compliance with local and national regulations. At the end of this course, students will be able to safely install, maintain, and troubleshoot common renewable energy systems according to industry standards and manufacturer specifications. Prerequisites: Pass AES 120

AES 140 (P/T) 3 Credits
ADV ENERGY SYS IV: SYSTEMS DESIGN
Quarters: Offered as needed
This advanced design course integrates previous renewable energy coursework into comprehensive system design projects. Students collaborate in teams to develop complete renewable energy solutions, from initial site survey through final system specification. The course emphasizes real-world design challenges across solar, wind, and micro-hydro applications, including structural considerations, electrical integration, and energy storage solutions. Students utilize industry-standard design tools and practices to create professional system proposals. At the end of this course, students will be able to lead renewable energy system design projects and produce complete technical documentation packages suitable for permit submission and construction. Prerequisites: AES 130

AES 200 (P/T) 3 Credits
ADVANCED ENERGY SYSTEMS CAPSTONE
Quarters: Offered as needed
This final class in the Renewable Energy series will concentrate on a capstone project. Students will evaluate a proposal for an alternative energy solution and then design an installation to meet the needs of the proposal. Students will be expected to perform a site survey, quantify energy requirements, select appropriate technologies, calculate the payback period and finally fabricate an actual or conceptual energy solution where appropriate. At the end of this course, students will be able to develop and present comprehensive renewable energy solutions from initial concept through final implementation. Prerequisites: AES 150

AES 210 (P/T) 3 Credits
INVERTERS, STARTERS, AND STOR DEVICES
Quarters: Offered as needed
This course covers the fundamental principles of battery-based energy systems and their components. Students will learn to analyze customer requirements, design appropriate system architectures, and size components including battery banks, inverters, and charge controllers. The course emphasizes practical applications, safety considerations, and code compliance while providing extensive hands-on experience with system design and installation. At the end of this course, students will be able to design, specify, and implement complete battery-based power systems that meet both customer needs and relevant electrical codes. Prerequisites: AES 100

AES 220 (P/T) 3 Credits
ALTERNATIVE FUELS
Quarters: Offered as needed
This comprehensive course explores the technical, economic, and ecological aspects of alternative fuel systems. Students will gain hands-on experience with various alternative fuel technologies including bio-diesel, vegetable oils, electric vehicles, hydrogen systems, and fuel cells. The course covers fundamental principles, system components, safety considerations, and real-world applications of alternative fuel technologies. Laboratory work includes fuel testing, system analysis, and basic maintenance procedures. At the end of this course, students will be able to evaluate, compare, and work safely with various alternative fuel systems while understanding their practical applications in modern transportation and energy systems. Prerequisites: AES 100

AES 280 (P/T) 1 Credit
ADV ENERGY SYSTEMS CO-OP WORK EXP
Quarters: Offered as needed
Applies actual work experience in a related Career & Technical field. An on-site supervisor evaluates and supervises the work experience student. Requires instructor approval of work setting and placement. Documentation of 36 worksite hours for EACH credit earned.

Ag Eng Tech

AET 212 (P/T) 3 Credits
INDUSTRIAL SAFETY AND MANAGEMENT
Quarters: Fall
Examines and identifies prevention methods for various hazards associated with the agriculture industry. Areas examined include machinery, environmental, and confined spaces. Safety management and governmental compliance will also be addressed.

AET 221 (P/T) 3 Credits
SHOP SKILLS
Quarters: Offered as needed
Develops and builds shop safety techniques and skills through hands-on experience, covering power and hand tools, tool reconditioning, building construction, welding, fasteners, and farm safety. Lab required.

Ag Machine Technology

AMT 111 (P/T) 3 Credits
AG MACHINE MAINTENANCE AND INSPECTION
Quarters: Winter
This course introduces learning to the world of agriculture machinery. Training will include pre-delivery inspection of new machinery and performance of maintenance procedures. Various activities will demonstrate additional equipment add on procedures and safely testing the installed expansion for correct operation. Completing course activities will also develop operating skills for a variety of agriculture machines.

AMT 112 (P/T) 3 Credits
OFF ROAD DIESEL TECHNOLOGY
Quarters: Offered as needed
This course develops knowledge and skills needed to be successful in the off-road diesel equipment industry. Training will include inspection, diagnostics, and repair of diesel-powered equipment. Developing specific skills to diesel systems will expand learning confidence to provide a rewarding career as a service technician of agriculture and construction machinery. Learning will further be empowered to complete tasks related to this equipment field that ensures reliability of repair work and satisfaction of clients the work is completed for. Prerequisites: INED 104, and INED 113

AMT 211 (P/T) 3 Credits
MECHANIZED IRRIGATION
Quarters: Winter
This course introduces the student to the fundamentals of mechanized irrigation systems. Course work includes practical experience with sprinkle, center pivot, and drip irrigation systems. Each system will include experience with pump design and installation. The class includes various site investigations to expand practical experience for developing and servicing an efficient irrigation system. Emphasis will include irrigation service and operation requiring application of various electronic, mechanical, and control system skills. Prerequisites: INED 107, INED 101, INED 113

AMT 212 (P/T) 4 Credits
AG MACHINE CAPSTONE
Quarters: Spring
The Capstone Project includes a senior project and capstone experience to provide an exploratory opportunity to specialize in a focus area of agricultural machinery. Projects will draw on interest areas of the student to independently research an inquiry from the program such as safety, maintenance, agriculture machinery, equipment innovations, hydraulic systems, electrical systems, or agriculture structures. The individual capstone is intended to link theory with real world application to be extended into life long career success. Students will work with instruction to select and develop a capstone project to exemplify the depth of knowledge and skills attained in throughout the program. Upon project completion students will present the results through a community event. Project artifacts may be displayed through actual constructions, equipment demonstrations, digital resources, textual research, or other media to accurately represent the experience. Prerequisites: AMT 112, AMT 211

Ag Resource Economics

AREC 201 (P/T) 3 Credits
AGRICULTURE ACCOUNTING
Quarters: Winter
Teaches proper farm record keeping, including income, expenses, inventory, depreciation, crop and livestock. Utilizes a computerized system for such records, and calculates end-of-year totals for income tax purposes. Some sections may have a no-cost text book option.

AREC 210 (P/T) 3 Credits
FARM BUSINESS MANAGEMENT
Quarters: Fall, Winter, Spring
Teaches students about basic hand record keeping, including inventory, depreciation, and income/expenses. Reviews income tax laws and current regulations for employee records. Discusses basic farm business management terms, forms, and farm ownership types.

AREC 211 (P/T) 4 Credits
MANAGEMENT IN AGRICULTURE
Quarters: Winter, Spring
Applies economic and business principles to the management of agri-business firms, including farms and ranches; goal setting and management information; planning and decision-making tools; and acquiring, organizing, and managing land, labor and capital resources. Some sections may have a no-cost text book option.

AREC 221 3 Credits
MARKETING IN AGRICULTURE
Quarters: Spring
Presents organization and functions of domestic and international markets, market channels for various agricultural commodities, and roles of agri-business, cooperatives, and government in marketing decisions. Discusses, in full detail, the futures market and forward contracting.

AREC 281 (P/T) 3 Credits
GLOBAL AGRICULTURAL MARKETS
Quarters: Fall
Introduces economic and marketing principles in global agricultural markets. Analyzes impacts of foreign policy for exporting and importing countries on agricultural markets. Provides a base knowledge of WTO and GATT history/function in agricultural markets today.

AREC 296 (P/T) 4 Credits
PRODUCTION PROBLEMS
Quarters: Offered as needed
Project oriented course where students will select an agricultural area of focus to create a feasibility study or economic analysis. Currently published data and figures will be used to develop a report. Presentations will be given as a final for the course. Instructor approval required.

Agriculture

AG 111 (P/T) 3 Credits
AGRICULTURE COMPUTERS
Quarters: Fall, Spring
Acquaints students with the use of a micro-computer and software for agricultural uses. Includes farm accounting, spreadsheets, depreciation schedules, rations, PowerPoint, internet/email, and financial analysis.

AG 201 2 Credits
CURRENT ISSUES IN AGRICULTURE
Quarters: Spring
Examines current issues facing all sectors of agriculture. Investigates and considers opposing viewpoints of a variety of groups through guest speakers, seminars, email contact, written and oral presentations. Some sections may have a low-cost text book option.

AG 207 (P/T) 1 Credit
AGRICULTURE SEMINAR
Quarters: Fall
Provides information and self-evaluation in areas of goal setting, educational planning, student activities, electronic student accounts, study skills, and successful navigation of the college system. Emphasizes academic and career plans for students interested in Agriculture.

AG 215 (P/T) 4 Credits
IRRIGATION AND DRAINAGE
Quarters: Spring
Instructs students to design an irrigation system, considering engineering, soil types, crops, seasons, irrigation methods, best management practices, and erosion control measures. Includes a cost estimation of an actual irrigation project.

AG 279 (P/T) 6 Credits
AGRICULTURE INTERNSHIP
Quarters: Offered as needed
Supervised work and learning experience in private, public, business, or government organizations related to the agriculture industry. The internship provides an extension of the classroom learning and includes the opportunity to apply substantial knowledge and skills gain in the academic setting in a supervised, professional work environment. Learn and develop skill outside the classroom. Explore a career field or prepare for a chosen career field through a work experience opportunity. The internship includes a collaborative team consisting of the student, faculty supervisor (course instructor), and a field site supervisor who develop acceptable learning objectives, experiences, and evaluation procedures which enable the student to work in a professional/mentoring setting. Each credit is equivalent to 33 worksite hours. Instructor approval required.

AG 280 1 Credit
AGRICULTURE COOP WORK EXP
Quarters: Summer, Fall, Winter, Spring
Applies actual work experience in a ag-related technical field. An on-site supervisor evaluates and supervises the work experience student. Requires instructor approval of work setting and placement, and documentation of 36 worksite hours for each credit earned.

Allied Health

HEA 101 2 Credits
NURSING AND ALLIED HEALTH SEMINAR
Quarters: Fall
This introduction to college course provides information and an opportunity for self-evaluation of students in goal setting, educational and future planning, career exploration, learning styles, time management, study and classroom skills and information regarding other college systems including but not limited to, financial aid, rights and responsibilities, etc. This course emphasizes these components from the perspective that a student will pursue Nursing and/or other Allied Health programs.

Animal Science

ANS 107 (P/T) 3 Credits
BASIC HOOF MAINTENANCE
Quarters: Fall
Teaches the basic fundamentals and procedure for shoeing a horse, including tools and safety issues.

ANS 108 (P/T) 3 Credits
ADVANCED HORSESHOEING
Quarters: Winter
Examines principles and techniques for properly trimming and shoeing the horse with conformation and/or disease problems. Prerequisites: ANS 107.

ANS 121 4 Credits
INTRO TO ANIMAL SCIENCE
Quarters: Summer, Fall, Winter, Spring
Introduces animal science, offering a foundation in breeds, genetics, nutrition, marketing, management, ration formulation and facilities planning.

ANS 133 (P/T) 3 Credits
WORKING COW-HORSE
Quarters: Fall
In this course students will learn the skills needed to do day work on ranches and feedlots where horsemanship, stockmanship and roping skills are required including: cattle sorting, gate work, and roping.

ANS 140 (P/T) 2 Credits
EQUINE PACKING AND HARNESS TRAINING
Quarters: Offered as needed
Gain knowledge in preparing a horse to pack and properly train a horse to pull a wagon under harness.

ANS 141 (P/T) 3 Credits
BASIC HALTER TRAINING
Quarters: Fall
Provides the skills needed to train a young horse to lead, stand square, pick up feet, turn on forehand and haunches. Includes grooming and fitting. Some sections may have a low-cost text book option.

ANS 143 (P/T) 3 Credits
ADVANCED HORSE TRAINING
Quarters: Winter
In this course students will learn the process of taking a horse from a snaffle bit to a finished bridle horse, how to use ranch work to instill a strong foundation on an all-around performance horse and how to market and show a horse in a performance horse sale. Prerequisites: ANS 252.

ANS 144 (P/T) 3 Credits
RANCH ROPING
Quarters: Offered as needed
This course will cover the skills and knowledge needed to be safe, efficient and keep low stress on cows, horses and people when using a rope on the ranch.

ANS 146 (P/T) 3 Credits
EQUINE TRAINING QUALITY ASSURANCE
Quarters: Winter, Spring
This course is designed to cover Training Quality Assurance industry quality standards and certifications for working on ranches where horsemanship, stockmanship and roping skills are required.

ANS 150 (P/T) 3 Credits
DRIVING AND PACKING
Quarters: Winter
Gain knowledge in preparing a horse to pack and properly train a horse to pull a wagon under a harness.

ANS 151 (P/T) 1 Credit
BUILDING AND STABLE MANAGEMENT I
Quarters: Fall
Covers the practical application of managing an equine facility. Teaches the proper horse handling skills, risk management, and professionalism required to become a stable worker or stable manager.

ANS 152 (P/T) 1 Credit
BUILDING AND STABLE MANAGEMENT II
Quarters: Winter
Covers the practical application of managing an equine facility. Teaches the proper horse handling skills, risk management, and professionalism required to become a herd manager or equine facility director. Prerequisites: ANS 151

ANS 153 (P/T) 1 Credit
BUILDING AND STABLE MANAGEMENT
Quarters: Spring
Covers the practical application of designing a equine facility for all ages of horses. Prerequisites: ANS 152

ANS 181 (P/T) 2 Credits
FUNDAMENTALS OF EQUESTRIAN SKILLS
Quarters: Fall
Teaches the basic fundamentals of horsemanship and safety issues when handling horses while saddling, bridling, mounting, dismounting and riding.

ANS 182 (P/T) 2 Credits
FUNDAMENTALS OF EQUESTRIAN SKILL II
Quarters: Winter
Teaches the basic fundamentals of horsemanship skills while handling and riding horses. Improves the student's feel, timing, and control while riding up to the lope. Prerequisites: ANS 181, or instructor approval.

ANS 183 (P/T) 2 Credits
FUNDAMENTAL OF EQUESTRIAN SKILL III
Quarters: Fall, Spring
Continues to develop the rider's feel and timing while performing more advanced fundamental maneuvers. Teaches more advanced horse theory and performance skills. Prerequisites: ANS 182

ANS 193 (P/T) 3 Credits
REINING
Quarters: Fall
Introduces horse and rider to the fundamentals of training and competing on a reining horse. Includes working experience in the arena.

ANS 194 (P/T) 3 Credits
FENCE WORK
Quarters: Winter
Introduces horse and rider to the fundamentals of training and competing on a cow horse with an emphasis on fence work.

ANS 195 (P/T) 3 Credits
ROPE HORSE
Quarters: Fall, Spring
This course teaches students how to use ranch work to instill a strong foundation on a rope horse, how to introduce a horse to coming out of the box and how to prepare a horse to be sold as a rope horse, team roping, breakaway or calf-roping horse. Prerequisites: ANS 143 or Instructor approval

ANS 200 (P/T) 3 Credits
LIVESTOCK SKILLS
Quarters: Spring
Presents the proper techniques of basic livestock skills, such as branding, implanting, and heat synchronization. Stresses livestock handling, sanitation, facility design, quality beef assurance, and personal safety. Includes skills demonstrated by a qualified veterinarian.

ANS 201 2 Credits
BEEF QUALITY ASSURANCE
Quarters: Offered as needed
Teaches state-of-art technology and trends in the beef industry to produce a competitive, safe, wholesome food source for consumers. Taught on a workshop basis with many industry expert presentations and local field trips.

ANS 205 (P/T) 2 Credits
FOOD ANIMAL HEALTH AND DISEASE
Quarters: Summer, Winter
Studies food animal (bovine, ovine and swine) physiology and health. Including nutritional, metabolic and reproductive disorders; as well as preventative measures and treatments available.

ANS 210 (P/T) 3 Credits
FEED AND RATION FORMULATION
Quarters: Spring
Covers feedstuffs, their analysis, and animal use. Studies how processing affects bio-availability of feeds, mixing feeds to meet specific animal requirements, and meeting animal needs as they change due to increased production, reproduction, and growth. Teaches ration formulation by hand methods and computer. Prerequisites: ANS 121, ANS 211 preferred.

ANS 211 (P/T) 3 Credits
APPLIED ANIMAL NUTRITION
Quarters: Winter, Spring
Covers all aspects of animal nutrition, including analysis of feedstuffs, the anatomy of ruminant and non-ruminant, nutrient metabolism, and the in-depth discussion on the required nutrients (water, protein, lipids, carbohydrates, minerals, and vitamins). Prerequisites: ANS 121 recommended.

ANS 215 (P/T) 3 Credits
BEEF/DAIRY CATTLE PRODUCTION
Quarters: Winter
Covers the history and development of beef cattle, their distribution and adaptation, the types and breeds of beef and dual-purpose cattle, and the fundamental principles of establishing a beef production herd. Discusses cattle, genetics, problems in breeding and feeding, buildings, and equipment.

ANS 216 (P/T) 3 Credits
BEEF PREGNANCY TESTING
Quarters: Fall
Teaches proper techniques for checking beef cows for pregnancy. Discusses anatomy and physiology of cows, the estrus cycle, and a review of diseases associated with reproduction. Much of the class taught in the "field" under actual ranch conditions.

ANS 217 (P/T) 3 Credits
ARTIFICIAL INSEMINATION
Quarters: Spring
Teaches proper procedure in thawing and placing semen in the target area of cattle through "hands-on" experience. Includes nitrogen tank procedure, pregnancy testing, health factors, and genetic selection. Concludes with testing for the Artificial Insemination Certification for Oregon.

ANS 220 (P/T) 3 Credits
INTRO TO HORSE PRODUCTION
Quarters: Fall
Introduces various breeds of horses and their characteristics, including anatomy of the skeletal and muscular system, and parts of the horse and their functions. Discusses the maintenance and purchase of horse equipment, including bits, bridles, grooming supplies, and saddles.

ANS 221 (P/T) 3 Credits
ADVANCED HALTER TRAINING
Quarters: Spring
The course focuses on meeting the industry quality standards for halter training a horse for the public.

ANS 222 (P/T) 3 Credits
EQUINE HEALTH AND DISEASE
Quarters: Winter, Spring
Studies horse health and soundness, including in depth anatomy, diseases, nutrition, soundness or lameness issues, and the available treatments.

ANS 223 (P/T) 3 Credits
EQUINE BUSINESS AND MARKETING
Quarters: Winter
Examines correct procedures in genetic selection, pedigree and performance. Covers developing a bookkeeping system, and how to market, purchase and evaluate horses according to conformation.

ANS 224 (P/T) 2 Credits
PUREBRED HERD IMPROVEMENT
Quarters: Spring
Applies principles learned in livestock breeding to dairy, horses, pigs, and sheep. Provides students a hands-on opportunity to apply what they have learned about selection. Includes several field trips to local farms/ranches to learn breeding program management.

ANS 231 3 Credits
INTRO TO LIVESTOCK EVALUATION
Quarters: Fall
Covers, in depth, basic fundamentals of livestock evaluation and selection of cattle, sheep, swine and goats for herd replacement and market. Teaches students to "see" differences between two or more animals in the areas of structure, muscle, capacity/volume, femininity/masculinity, and eye appeal.

ANS 232 (P/T) 2 Credits
INTERMEDIATE LIVESTOCK EVALUATION
Quarters: Offered as needed
Reviews performance data (including EPD's), and situations/scenarios. Teaches students to describe written and oral differences between cattle, sheep, and swine; also to take notes and describe differences between animals with proper terms and phrases. Prerequisites: ANS 231

ANS 233 (P/T) 3 Credits
ADVANCED LIVESTOCK EVALUATION
Quarters: Offered as needed
Combines all information from the Introduction and Intermediate Livestock Evaluation classes. Teaches students to place livestock classes based on the situation/scenario, performance data, and visual evaluation. Requires students to express their placings with written and oral reasons. Prerequisites: ANS 231 and 232.

ANS 234 3 Credits
LIVESTOCK JUDGING TEAM
Quarters: Offered as needed
Provides the opportunity to compete at regional and national livestock judging contests. Prepares for competition with weekly work-outs, placing livestock classes based on the situation/scenario, performance data, and visual evaluation. Requires students to express their placings with written and oral reasons. Prerequisites: ANS 231, 232, and 233.

ANS 240 (P/T) 2 Credits
INTRO TO ULTRASOUND TECHNOLOGY
Quarters: Winter
Presents information on what ultrasound technology is and how it can be used in animal agriculture. Familiarizes students with ultrasound terminology and machine operations. Includes hands-on opportunities for scanning cattle, sheep, and hogs.

ANS 241 (P/T) 3 Credits
ADVANCED ULTRASOUND TECHNOLOGY
Quarters: Offered as needed
Reviews ultrasound terminology, machine operations, preparing the animal for scanning, and proper procedures for scanning. Practices scanning cattle, sheep, and hogs for fat thickness, ribeye/loineye area, and percent intramuscular fat. Includes interpreting and entering data into a spreadsheet to make carcass predictions. Prerequisites: ANS 240.

ANS 250 3 Credits
INTRO TO MEAT SCIENCE
Quarters: Winter
Follows market animals (cattle, sheep and swine) from the finishing phase to the meat counter. Includes slaughter, meat grading and evaluation, inspection, structure and composition of muscle, conversion of muscle to meat, microbiology and sanitation, cookery of meat, and nutritive value of meat.

ANS 251 (P/T) 3 Credits
INTRO TO COLT STARTING
Quarters: Fall
This class introduces the student to the industry quality standards for starting a horse for the public. This class teaches the industry timeline, quality standards and expectations from the client when receiving payment for training a horse. Students will go through the entire "colt starting" process with an already trained horse to learn correct training philosophy and safety procedures to prepare the student train an un-started horse.

ANS 252 (P/T) 3 Credits
COLT STARTING
Quarters: Winter
This course focuses on applying the knowledge and skill students have received from Intro to Colt Starting to training an un-started horse. The focus of this course will be on safety as students work to meet the industry colt starting standard in training an un-started horse for the public. Prerequisites: ANS 251

ANS 253 (P/T) 3 Credits
INDUSTRY COLT STARTING
Quarters: Spring
This course focuses on taking the confidence students have received from Intro to Colt Starting and Colt Starting to equip students to meet the industry colt starting standard for training horses for the public or become a riding assistant for a trainer in the industry. Prerequisites: ANS 252

ANS 263 (P/T) 3 Credits
BUILDING AND STABLE MANAGEMENT
Quarters: Offered as needed
Covers the practical application of designing and managing a stable for all ages of horses.

ANS 277 (P/T) 2 Credits
EQUINE REPRODUCTION
Quarters: Spring
Presents newer ideas and procedures involved with impregnating mares, along with common problems facing the mares and stallion during the breeding.

ANS 278 (P/T) 3 Credits
PRINCIPLES OF ANIMAL BREEDING
Quarters: Fall, Spring
Covers reproduction anatomy of male and female livestock, and basic genetic terms and principles. Teaches students to design a breeding program utilizing EPD's and performance data based on different breeding systems used in today's livestock operations.

Anthropology

ANTH 110 3 Credits
INTRO TO CULTURAL ANTHROPOLOGY
Quarters: Summer, Winter
Studies the diverse cultures of the modern world, emphasizing the role of culture in human behavior and social structure.

Art Studies

ART 101 3 Credits
INTRO TO VISUAL ARTS
Quarters: Summer, Fall, Winter, Spring
Introduces many facets of art, including an overview of major art movements throughout history, the formal elements of art, various art media, art criticism, explore complex culturally based assumptions that influence the artist and his or her art work, and exercises designed to build perceptual skills. Includes lectures illustrated with slides, power points and audio lectures in Black Board as well as an Art Gallery visitation.

ART 115 3 Credits
BASIC DESIGN - DIGITAL
Quarters: Fall, Winter, Spring
Introduction to the principles and vocabulary of art and design as experienced in a digital environment. Focus will be on the acquisition of technical skills and creative problem solving. Students are introduced to software and hardware used in the commercial design industry. Students will learn principles of color theory, design elements, and typography in the application of solving basic design projects.

ART 116 3 Credits
BASIC DESIGN - PRINT
Quarters: Fall, Spring
Introduces students to the principles and concepts of printed publications. Students will learn elements of corporate identity, page layout, and advanced typography principles through the execution of printed design projects and printed marketing campaigns. Students will gain knowledge of printing standards and the preparation of press ready files as well as the process of professional printing, press checks, and deadlines. Prerequisites: None, but it is preferred that students have already taken ART 115.

ART 117 3 Credits
BASIC DESIGN - USER EXPERIENCE
Quarters: Offered as needed
Introduces students to the concepts of visual web design, user interface design, and user experience design. Focus is oriented towards the planning, content production, and visual design elements to engage a target audience, create products that are easy and enjoyable to use, and lead users towards engagement and call to action. Prerequisites: Pass ART 115

ART 131 3 Credits
DRAWING FUNDAMENTALS
Quarters: Fall, Winter
Introduces students to the basic fundamentals of drawing. Focus is on understating line, value, shading, and one and two point perspective. These are practiced through still life drawing, landscape drawing, cityscapes, and see-through construction drawings. Students work in graphite and practice various shading techniques. Some sections may have a low-cost or no-cost text book option.

ART 132 3 Credits
DRAWING EXPRESSION
Quarters: Fall, Winter
Introduction of expressive communication through drawing portraits, caricatures, hands, and figures. Students learn basic anatomy and proportions to increase drawing construction and expression. Focus is on exploring line, shadows, shadow shapes, light and halftones through the application of charcoal, chalk, ink, and other drawing media. Some sections may have a low-cost or no-cost text book option. Prerequisites: None, but it is preferred that student has previously taken ART 131

ART 133 3 Credits
DIGITAL DRAWING
Quarters: Fall, Winter
Introduces students to digital drawing software and stylus input to achieve various computer based techniques in line, shading, and expression. Also introduces time as an element of drawing through animation. Students will explore character design, basic animation, illustration, and scientific drawing. Some sections may have a low-cost or no-cost text book option.

ART 151 3 Credits
VIDEO PRODUCTION I
Quarters: Offered as needed
Introduces elementary concepts of video production including digital video camera operation, digital non-linear editing, and pre-production planning. Students are taught basic camera techniques, pre-production, and production practices through hands-on learning to develop basic field video skills. Focus is on individual creativity, as well as the importance of teamwork and deadlines. Projects are produced in the context of learning the theory and practice of pictorial continuity as it applies to multimedia productions.

ART 181 3 Credits
BEGINNING PAINTING
Quarters: Summer, Fall, Spring
This course introduces beginning level skills and ideas when learning to paint. Techniques to achieve painted surfaces will be explored and a variety of painting medias will be introduced. Some sections may have a low-cost text book option.

ART 182 3 Credits
INTERMEDIATE PAINTING
Quarters: Summer, Fall, Spring
The course continues and expands on intermediate ability skills and ideas when learning to paint. Techniques to achieve painterly surfaces continue to be explored. Intermediate techniques using a variety of painting media will be applied. Some sections may have a low-cost text book option. Prerequisites: Art 181

ART 183 3 Credits
ADVANCED PAINTING
Quarters: Summer, Fall, Spring
This course continues to expand skills and ideas to an advanced level when learning to paint. Introduction to the technical properties and handling of oil painting as well as related formal and conceptual problems. Learning the art of color mixing, creating 3-dimensional form and space, and surface texture which includes the development of individual style, and the study of contemporary art. Some sections may have a low-cost text book option. Prerequisites: ART 181, 182

ART 199 1 Credit
SPECIAL STUDIES
Quarters: Summer, Fall, Winter, Spring
Presents selected topics of study in art offered on a temporary and experimental basis. Some sections may have a low-cost or no-cost text book option.

ART 204 3 Credits
HISTORY OF WESTERN ART/ANCIENT
Quarters: Fall
Presents art from Prehistoric, Ancient Near East, Aegean, Egytian, Greek, early Christian, Byzantine, Medieval, Gothic and Roman periods. Includes lectures illustrated by slides and supplemented by occasional movies.

ART 205 3 Credits
HISTORY OF WESTERN ART/RENAISSANCE
Quarters: Winter
Presents art from the late Gothic, early Renaissance, Italian Renaissance, Northern Renaissance, and Baroque periods. Includes lectures illustrated with slides and supplemented by art history videos.

ART 206 3 Credits
HISTORY OF WESTERN ART/MODERN
Quarters: Spring
Presents art from Rococo, Romantic, 19th century, and the 20th century periods.

ART 253 3 Credits
CERAMICS I
Quarters: Fall, Winter, Spring
Introduces the history of contemporary ceramics, including materials, methods, and techniques. Stresses both wheel thrown and hand built ceramic construction. Includes gallery visitation. Some sections may have a low-cost or no-cost text book option.

ART 254 3 Credits
CERAMICS II
Quarters: Fall, Winter, Spring
Continues the broad introduction to the history of contemporary ceramics, including materials, methods, and techniques. Stresses both wheel thrown and hand built ceramic construction. Introduces glazing and firing. Includes gallery visitation. Some sections may have a low-cost or no-cost text book option.

ART 255 3 Credits
CERAMICS III
Quarters: Fall, Winter, Spring
Continues the broad introduction to the history of contemporary ceramics, including materials, methods, and techniques. Stresses both wheel thrown and hand built ceramic construction. Introduces glazing and firing. Develops fundamental skills to foster artistic growth. Includes gallery visitation. Some sections may have a low-cost or no-cost text book option.

ART 256 3 Credits
CERAMICS IV (RAKU)
Quarters: Offered as needed
Continues the broad introduction to the history of contemporary ceramics, including materials, methods, and techniques. Stresses both wheel thrown and hand built ceramic construction. Introduces Raku glazing and firing. Develops fundamental skills to foster artistic growth. Includes gallery visitation.

ART 261 3 Credits
BEGINNING PHOTOGRAPHY
Quarters: Offered as needed
Introduces black and white photography focusing on camera handling, camera functions, film processing, printing, editing and composition and editing.

ART 265 3 Credits
BEGINNING DIGITAL PHOTOGRAPHY
Quarters: Summer, Fall, Winter, Spring
Introduces digital photography focusing on camera handling, camera functions, capturing images, composition and editing. This will also introduce the image adjusting software Adobe Photoshop Elements. Basic manipulation of images and presentation of projects will be stressed. Course Note: "This certification mark recognizes that this course met Quality Matters Review Standards" Some sections may have a no-cost text book option.

ART 266 3 Credits
INTERMEDIATE DIGITAL PHOTOGRAPHY
Quarters: Fall, Winter, Spring
Continues to explore and investigate the digital camera and it's many functions. The class will continue to stress composition, lighting and presentation. It involves more complex Photoshop tools and computer skills. Some sections may have a no-cost text book option.
Prerequisites: ART 265 or ART 261

Aviation

AV 101 (P/T) 3 Credits
INTRODUCTION TO AVIATION
Quarters: Fall, Spring
This course introduces the student to Federal Aviation Regulations/Aeronautical Information Manual (FAR/AIM as well as provides a brief history of aviation. Designed to build an understanding of the pilot credentials required for careers in aviation and help students explore various career options within the helicopter and airplane industry. A number of employment opportunities are investigated, including commercial, business, corporate, military and general aviation-related occupations.

AV 104 (P/T) 3 Credits
INTRODUCTION TO AIRCRAFT SYSTEMS
Quarters: Summer, Winter
This course introduces the student to the training aircraft used in general aviation, and will look in detail at those aircraft used in this program. Aircraft in current use for the training by the industry will be studied and emphasis placed on basic aircraft system operations, airworthiness issues, ground handling, and pre-flight inspections.

AV 105 (P/T) 3 Credits
INTRO TO AIRPLANE SYSTEMS
Quarters: Summer, Winter
Introduces the student to training aircraft used in general aviation, and will look in detail at aircraft used in this program. Aircraft in current use for the training by industry will be studied and emphasis placed on basic aircraft system operations, airworthiness issues, ground handling, and pre-flight inspections.

AV 110 (P/T) 3 Credits
GROUND-PRIVATE-AIRPLANE
Quarters: Fall, Spring
This aircraft covers the fundamentals of flight, flight operations, aviation weather, aircraft performance, navigation, aircraft systems, aeronautical publications, FAA recalculations, flight planning, radio procedures, meteorology and human factors. This is a comprehensive course that prepares the student for the FAA Private Pilot Airman knowledge test.

AV 111 (P/T) 3 Credits
GROUND-PRIVATE (ADV) -AIRPLANE
Quarters: Summer, Winter
This course covers more advanced fundamentals of flight, flight operations, aviation weather, aircraft performance, navigation, aircraft systems, aeronautical publications, FAA regulations, flight planning, radio procedures, and human factors. This is a comprehensive course that prepares the student for the FAA Private Pilot Airman knowledge & practical test. Prerequisites: AV 110

AV 112 (P/T) 1 Credit
GROUND-PRIVATE (SIMULATOR) AIRPLANE
Quarters: Offered as needed
This course introduces the student to basic airplane operations prior to in-flight training. The Basic Aviation Training Device simulation is designed to train with realistic scenarios involving takeoffs and landings, stalls, upset recognition and recovery techniques, and ground reference maneuvers. This is part of a comprehensive course that prepares the student for the FAA Private Pilot practical flight test. Course Note: Includes 5 flight, 5 ground hours

AV 115 (P/T) 3 Credits
GROUND-PRIVATE-HELICOPTER
Quarters: Fall, Spring
This course covers the fundamentals of helicopter flight, flight operations, aviation weather, aircraft performance, navigation, aircraft systems, aeronautical publications, FAA regulations, flight planning, radio procedures, meteorology, and human factors. This is a comprehensive course that prepares the student for the FAA Private Pilot airman knowledge test.

AV 116 (P/T) 2 Credits
GROUND-PRIVATE (ADV)- HELICOPTER
Quarters: Summer, Winter
This course covers the fundamentals of helicopter flight, flight operations, aviation weather, aircraft performance, navigation, aircraft systems, aeronautical publications, FAA regulations, flight planning, radio procedures, meteorology, and human factors. This is a comprehensive course that prepares the student for the FAA Private Pilot airman knowledge and Practical test. Prerequisites: AV 115

AV 120 (P/T) 4 Credits
INTRO TO AVIATION SAFETY MGT SYSTEM
Quarters: Summer, Winter
This course introduces the student to Aviation Safety Management Systems (ASMS) as defined by the International Civil Aviation Organization. The student will review U.S. Federal Aviation Administration Advisory Circular AC120-92 guiding ASMS in commercial aviation operations. A comprehensive review of the four components of Policy, Risk Management, Safety Assurance, and Safety Promotion will build a foundational understanding of SMS for aviation operations.

AV 121 (P/T) 3 Credits
RISK MANAGEMENT-AVIATION SMS
Quarters: Fall, Spring
This course covers fundamentals of Aviation Risk Management. Students will comprehend risk management process that may be applied during the major levels of flight operations including Operational Risk Management (ORM), and Strategic Risk Management for corporate planning. Some sections may have a low-cost text book option. Prerequisites: AV 120

AV 122 (P/T) 3 Credits
ASMS-QUALITY ASSURANCE
Quarters: Summer, Winter
Prepares the student to apply Quality Assurance principles to aviation safety systems. Students will study quality assurance and understand its applications for ASMS and continuous improvement. This course provides a comprehensive overview of the five components of assurance including system operation, data collection, assessment, and corrective action. Students will understand how program review and auditing enhance operational safety and efficiency. Prerequisites: AV 120

AV 123 (P/T) 3 Credits
AVIATION BUSINESS AND LEGAL ASPECTS
Quarters: Fall, Spring
This provides the student with a thorough overview of aviation business techniques that improve safety awareness. The lectures discuss how promoting safety improves the operational efficiency, enhances learning, and results in a highly reliable organization. Legal aspects and principles of a positive safety culture will be taught. Some sections may have a low-cost text book option. Prerequisites: AV 120

AV 124 (P/T) 3 Credits
AVIATION HUMAN FACTORS (AHF)
Quarters: Summer, Winter
AHF furthers the student understanding of flight physiology and airman psychology factors that have effects on individual airworthiness. Students will gain awareness of physical and mental indicators that may result in poor decision-making or incapacity in the flight environment. Subjects include discussions on the issues of self-medication, fatigue, physical fitness, and hazardous attitudes as they relate to pilot performance. Students demonstrate knowledge of FAA medical certificate requirements and relate medical standards to personal safety. Prerequisites: AV 120

AV 125 (P/T) 3 Credits
INTRO TO AVIATION ACCIDENT INVESTIG
Quarters: Fall, Spring
This course introduces the student to Aviation Accident Investigation responsibilities, techniques and processes. An understanding of the role a pilot plays in mishaps will prepare them to assist the NTSB and the FAA with their roles in mishap investigation and accident prevention. The development of abilities to recognize human error that leads to a mishap chain of event aids the student to avoid situations and enhance their career development. Prerequisites: AV 120

AV 135 (P/T) 2 Credits
AVIATION GPS
Quarters: Summer, Fall, Winter, Spring
Acquaints the student pilot with global position systems or GPS. Includes what GPS is, its uses, it's shortcomings and will include field experience in the use of equipment. Lab required. Prerequisites: For helicopter students - Successfully complete AV 215 with a C- or better; for Fixed-Wing Students- Successfully complete AV 110 with a C- or better.

AV 136 (P/T) 2 Credits
AVIATION GPS
Quarters: Offered as needed
This course covers the usage of various aviation GPS (global positioning system) systems and how to apply learned techniques to both VFR and IFR scenarios with a Fixed-Wing focus. Practical experience will include the use of several GPS simulators. Lab required. Prerequisite/Corequisite: Pass AV 111 Private Ground-Airplane with a C- or better, or corequisite with AV 111 Advanced Private Ground-Airplane.

AV 208 (P/T) 4 Credits
METEOROLOGY II-WEATHER DECISION
Quarters: Summer, Winter
This course prepares the student to apply fundamental weather information to practical flight planning problems. This course focuses on weather factors that the Federal Aviation Administration identifies as key elements involved in controlled flight into terrain, (CFIT) types of accidents. This course will train aviation students on meteorology to ensure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, and wind shear. The course emphasizes practical concepts and critical decision-making to enable students to retain and use the information in real world low-level operations, and to mitigate hazardous weather conditions such as thunderstorms or winter flight conditions. Prerequisites/Corequisites: AV 211 or GSCI 109

AV 210 (P/T) 3 Credits
GROUND-INSTRUMENT AIRPLANE
Quarters: Summer, Winter
The instrument Ground School prepares students for the FAA instrument Knowledge test and an FAA instrument flight exam. The course includes an in-depth study of aircraft flight instruments, basic altitude instrument flying, IFR navigation systems and procedures, aviation weather, applicable Federal Aviation Regulations and the required instrument charts for IFR flight. Prerequisites: AV 110,

AV 211 (P/T) 3 Credits
ADV INSTRUMENT PILOT GROUND-AIRPLAN
Quarters: Fall, Spring
This course introduces the student to more advanced procedural tasks including maneuvering of an aircraft solely by reference to instruments, radio navigation procedures and emergency operations prior to in-flight training. The course is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, ILS, VOR, and ADF. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot practical flight test. Prerequisites: AV 210

AV 212 (P/T) 1 Credit
GROUND-INSTRUMENT SIMULATOR
Quarters: Offered as needed
This course introduces the student to procedural tasks including maneuvering of an aircraft solely by reference to instruments, radio navigation procedures and emergency operations prior to in-flight training while using a classroom- based Aviation Training Device simulator. The simulator is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, ILS, VOR and ADF. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot practical flight test. Course Note: Includes 5 flight, 5 ground hours

AV 213 (P/T) 1 Credit
GROUND-INSTRUMENT AIRPLANE
Quarters: Offered as needed
This course introduces the student to more advanced procedural tasks including maneuvering of an aircraft solely by reference to instruments, radio navigation procedures and emergency operations prior to in-flight training while using a classroom-based Aviation Training Device simulator. The simulator is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, ILS, VOR, and ADF. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot practical flight test. Prerequisites: AV 210, AV 212 Course Note: Includes 5 flight, 5 ground hours

AV 215 (P/T) 3 Credits
GROUND-INSTRUMENT-HELICOPTER
Quarters: Fall, Spring
The Instrument rating Ground School for helicopter prepares students for the FAA Instrument knowledge test and an FAA Instrument Rating. This course includes an in-depth study of aircraft flight instruments, basic attitude instrument flying, IFR navigation systems and procedures, aviation weather, applicable Federal Aviation Regulations and the required instrument charts for IFR flight. Prerequisites: AV 115

AV 216 (P/T) 2 Credits
GROUND INSTRUMENT (ADV)- HELICOPTER
Quarters: Summer, Winter
The instrument rating ground school for helicopter prepares students for the FAA instrument knowledge test and an FAA instrument rating. Includes an in-depth study of aircraft flight instruments, basic altitude instrument flying, IFR navigation systems and procedures, aviation weather, applicable Federal Aviation Regulations and the required instrument charts for IFR flight. Prerequisites: AV 215

AV 220 (P/T) 3 Credits
GROUND-COMMERCIAL AIRPLANE
Quarters: Summer, Winter
This course covers the advanced aerodynamics of flight, flight operations, aviation weather, aircraft performance, navigation, aircraft systems, aeronautical publications, FAA regulations, flight-planning, radio procedures, meteorology, and human-factors. This is a comprehensive course that prepares the student for the FAA Commercial Pilot Airman Knowledge test. Prerequisites: AV 110

AV 225 (P/T) 4 Credits
GROUND-COMMERCIAL HELICOPTER
Quarters: Fall, Spring
Covers the advanced aerodynamics of helicopter flight, flight operations, aviation weather, aircraft performance, navigation, aircraft systems, aeronautical publications, FAA regulations, flight planning, radio procedures, meteorology, and human factors. This is a comprehensive course that prepares the student for the FAA Commercial Pilot airman knowledge test. Prerequisites: AV 115

AV 227 (P/T) 1 Credit
FLIGHT LAB PRIVATE-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The professional pilot course includes certification training for private pilot certification, commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become Certified Flight Instructors (CFI) and Certified Flight Instructors with the instrument (CFII) helicopter ratings.

AV 228 (P/T) 1 Credit
FLIGHT LAB PRIVATE-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight Instructors (CFI) with the instrument (CFII) helicopter rating.

AV 229 (P/T) 1 Credit
FLIGHT LAB PRIVATE-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight Instructors (CFI) with the instrument (CFII) helicopter rating. Prerequisites: AV 228

AV 230 (P/T) 1 Credit
FLIGHT LAB INSTRUMENT-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight Instructors (CFI) with the instrument (CFII) helicopter rating. Prerequisites: Completion of AV 228 with a "C" or better and successfully pass FAA Private Pilot check ride.

AV 231 (P/T) 1 Credit
FLIGHT LAB INSTRUMENT-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The professional pilot course includes certification training for private pilot certification, commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become Certified Flight Instructors (CFI) and Certified Flight Instructors with the instrument (CFII) helicopter ratings.

AV 232 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The professional pilot course includes certification training for private pilot certification, commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become Certified Flight Instructors (CFI) and Certified Flight Instructors with the instrument (CFII) helicopter ratings.

AV 233 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The professional pilot course includes certification training for private pilot certification, commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become Certified Flight Instructors (CFI) and Certified Flight Instructors with the instrument (CFII) helicopter ratings.

AV 237 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot course includes certification training for the Commercial Pilot Certificate with instrument rating. Some sections may have a no-cost text book option. Prerequisites: AV 230 and 231

AV 245 (P/T) 3 Credits
ADVANCED OPERATIONS-HELICOPTER
Quarters: Fall, Spring
This is a classroom course that introduces students to the operations of turbine helicopters, mountain flying, and external load flying. The mountain flying phase will provide students with a working knowledge of operations in and around mountainous terrain. The external load phase covers basic flying skills with and external long line attached to the aircraft. The turbine phase will introduce students to unique operating characteristics of turbine engines. Prerequisites: AV 115

AV 255 (P/T) 3 Credits
CERTIFIED FLIGHT INSTRUCTOR GROUND
Quarters: Summer, Winter
The Certified Flight Instructor Ground teaches techniques of flight and ground instruction. The Fundamentals of Instruction (FOI) will emphasize how students learn, recognition of hazardous altitudes, and skill retention techniques. Students will learn how to effectively teach all material that is covered in Private, Instrument and Commercial ratings as prescribed by the FAA. This is a comprehensive course that prepares the student for the Fundamentals of Instruction, CFI Knowledge test and CFI Instrument Knowledge test for helicopter instruction. Prerequisites: AV 233, AV 225.

AV 258 (P/T) 3 Credits
CFI GROUND- AIRPLANE
Quarters: Fall, Spring
The Certified Flight Instructor Ground - Airplane course teaches techniques of flight and ground instruction. The Fundamentals of Instruction (FOI) will emphasize the learning process, risk management, and effective teaching methods. Students will learn to teach all material that is covered in Private, Instrument, and Commercial pilot training as prescribed by the FAA. This is a comprehensive course that prepares the student for the Fundamentals of Instructing, Flight Instructor Airplane, and Flight Instructor Instrument Airplane FAA knowledge tests. This course will provide the aeronautical knowledge required by 14 CFR Part 61.185. Prerequisites/Corequisites: AV 220, AV 268, AV 272

AV 261 (P/T) 1 Credit
FLIGHT LAB PRIVATE-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the student pilot to basic flight maneuvers and procedures for fixed-wing aircraft. The program is designed to train with realistic scenarios involving takeoffs and landings, stalls, upset recognition and recovery techniques, and ground reference maneuvers. This is part of a comprehensive course that prepares the student for the FAA Airplane Private Pilot practical flight test and as the prerequisite to taking the Private Pilot - Airplane test.

AV 262 (P/T) 1 Credit
FLIGHT LAB PRIVATE PILOT-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Student Pilot to basic flight maneuvers and procedures. This is part of a comprehensive course that prepares the student for the FAA Sport Pilot practical flight test. In addition, this course introduces more advanced flight maneuvers and procedures. The program is designed to train with realistic scenarios involving takeoffs and landings, stalls, upset recognition and recovery techniques, and ground reference maneuvers. This is part of a comprehensive course that prepares the student for the FAA Private Pilot practical flight test.

AV 263 (P/T) 1 Credit
FLIGHT LAB ADV PRIVATE-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Student Pilot to more advanced procedures for cross country flight planning and navigation. The program is designed to train with realistic scenarios involving takeoffs and landings, stalls, upset recognition and recovery techniques, and ground reference maneuvers. This is part of a comprehensive course that prepares the student for the FAA Private Pilot practical flight test. Some sections may have a no-cost text book option. Prerequisites: AV 262

AV 264 (P/T) 1 Credit
FLIGHT LAB INSTRUMENT-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the student to procedural flight tasks focused on operating an aircraft solely by reference to instruments, radio navigation procedures and emergency operations during in-flight training. The flight lab is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, ILS, VOR. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot practical flight test. Prerequisites: Private Pilot Certificate

AV 265 (P/T) 1 Credit
FLIGHT LAB INSTRUMENT-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the student to more advanced procedural flight tasks focused on operating an aircraft solely by reference to instruments, radio navigation procedures and emergency operations during in-flight training. The flight lab is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, VOR, and precision/non-precision approaches. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot practical flight test. Corequisites: AV 210

AV 266 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the private pilot to flight procedures for cross country flight planning and navigation. The program is designed to train with realistic scenarios involving high performance takeoffs and landings and long-distance flight planning. Computations are used to determine center of gravity, weight, and balance for complex aircraft loading. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot Practical Test. The hours included are needed for the pilot to qualify for the Instrument Airplane Practical Test. Prerequisites: Private Pilot Certificate and completion of AV 263 with a grade of C or higher.

AV 267 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL PLT2-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the private pilot to flight procedures for cross country flight planning and navigation. The program is designed to train with realistic scenarios involving high performance takeoffs and landings and long-distance flight planning. Computations are used to determine the center of gravity, weight, and balance for complex aircraft loading. This is part of a comprehensive course that prepares the student for the FAA Instrument Pilot Practical Test. The hours included are needed for the pilot to qualify for the Instrument Airplane Practical Test. Prerequisites: AV 266

AV 268 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Pilot to advanced procedures for commercial maneuvers and cross country flight planning and navigation. The program is designed to train with realistic scenarios involving high performance takeoffs and landings, and advanced ground reference maneuvers. Various computations are used to determine center of gravity, weight, and balance, and takeoff/landing performance data. This is part of a comprehensive course that prepares the student for the FAA Commercial Pilot practical flight test. Prerequisites: AV 265 or completion of Instrument Pilot Practical Test

AV 269 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Pilot to advanced procedures for commercial maneuvers and cross-country flight planning and navigation. The program is designed to train with realistic scenarios involving high performance takeoffs and landings, and advanced ground reference maneuvers. Various computations are used to determine center of gravity, weight, and balance, and takeoff/landing performance data. This is part of a comprehensive course that prepares the student for the FAA Commercial Pilot practical flight test. Prerequisites: AV 268

AV 271 (P/T) 1 Credit
FLIGHT LAB COMMERCIAL-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the pilot to advanced procedures for commercial maneuvers and cross country flight planning and navigation. The program is designed to train with realistic scenarios involving high performance takeoffs and landings, and advanced ground reference maneuvers. Various computations are used to determine center of gravity, weight, and balance, and takeoff/landing performance data. This is part of a comprehensive course that prepares the student for the FAA Commercial Pilot Practical flight test. All hours in this lab are completed in the Advanced Flight Simulator. Prerequisites: AV 265 (Flight Lab Instrument-Airplane) or completion of Instrument Pilot Practical Test.

AV 272 (P/T) 1 Credit
AIRPLANE FLIGHT LAB-COMPLEX AIRCRAF
Quarters: Summer, Fall, Winter, Spring
This course introduces the pilot to advanced procedures for commercial operations and complex aircraft. The program is designed to train with realistic scenarious involving complex aircraft. Various computations are used to determine weight and balance and performance data. Students will learn various propeller and aircraft configurations specific to complex aircraft. This is part of a comprehensive course that prepares the student for the FAA Commercial Pilot practical test. Corequisite: AV 220

AV 278 (P/T) 1 Credit
FLIGHT LAB (ADV)-MULTI ENGINE
Quarters: Summer, Fall, Winter, Spring
This course introduces the pilot to Multi-Engine aircraft operation focused on commercial maneuvers and cross country flight planning and navigation. The program is designed to train with realistic scenarios involving high performance takeoffs and landings, and operations specific to multi-engine aircraft. Various computations are used to determine center of gravity, weight, and balance for complex aircraft loading. This is part of a comprehensive course that prepares the student for the FAA Multi-Engine Pilot practical flight test. Some sections may have a no-cost text book option.

AV 282 (P/T) 1 Credit
FLIGHT LAB CFI- HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight instructors (CFI) with the instrument (CFII) helicopter rating. Prerequisites: Completion of AV 233 with a grade of C or better and successfully pass FAA Commercial Pilot check ride

AV 283 (P/T) 1 Credit
FLIGHT LAB CFI-2-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight instructors (CFI) with the instrument (CFII) helicopter rating. Some sections may have a no-cost text book option.

AV 284 (P/T) 1 Credit
FLIGHT LAB CFII-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight instructors (CFI) with the instrument (CFII) helicopter rating.

AV 285 (P/T) 1 Credit
FLIGHT LAB CFII-2-HELICOPTER
Quarters: Summer, Fall, Winter, Spring
The Professional Pilot flight labs provide ground and flight instruction for students desiring careers as professional pilots in the helicopter industry. The Professional Pilot Course includes certification training for the commercial pilot certificate with instrument rating. Professional Pilot students will be prepared to become certified Flight instructors (CFI) with the instrument (CFII) helicopter rating.

AV 290 (P/T) 3 Credits
AVIATION CAPSTONE
Quarters: Summer, Fall, Winter
The aviation capstone is meant for students ready to graduate with all flight ratings completed and enter the job market. Students will learn how to write an effective aviation resume, present themselves as professionals in the field, and prepare for their first aviation job. The course will guide students through Petition for Graduation, ensuring all requirements for associate degree are met and ensure students have the necessary tools for the next step as a Professional Pilot. Prerequisites/Corequisites: AV 220, AV 225

AV 292 (P/T) 1 Credit
FLIGHT LAB CFI-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Flight Instructor student to procedural flight tasks focused on student instruction while operating an aircraft. The flight lab is designed to train the flight instructor candidate how to instruct basic flight maneuvers with realistic scenarios. This is part of a comprehensive course that prepares the CFI for the FAA Flight Instructor practical flight test. Prerequisites: Completion of AV 268 with a grade of C or better; Completion of Math 93 or higher with a grade of D or better; Completion of WR 115 or higher with a grade of D or better; Completion of PSYC 101 or BA 204 with a grade of D or better.

AV 293 (P/T) 1 Credit
FLIGHT LAB CFI-2-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Flight Instructor to procedural flight tasks focused on student instruction while operating an aircraft. The flight lab is designed to train the student how to instruct basic flight maneuvers with realistic scenarios. This is part of a comprehensive course that prepares the CFI for the FAA Flight Instructor practical flight test. Prerequisites: AV 268 or Commercial Pilot Certificate.

AV 294 (P/T) 1 Credit
FLIGHT LAB CFII-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Flight Instructor to procedural flight tasks focused on student instruction while operating an aircraft solely by the reference to instruments, radio navigation procedures and emergency operations during inflight training. The flight lab is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, ILS, VOR, and precision/non-precision approaches. This is part of a comprehensive course that prepares the CFI for the FAA Instrument Instructor practical flight test. Prerequisites: AV 292 or Certified Flight Instructor Certificate.

AV 295 (P/T) 1 Credit
FLIGHT LAB CFII-2-AIRPLANE
Quarters: Summer, Fall, Winter, Spring
This course introduces the Flight Instructor to procedural flight tasks focused on student instruction while operating an aircraft solely by reference to instruments, radio navigation procedures and emergency operations during inflight training. The flight lab is designed to train with realistic scenarios involving instrument departures and approach to landing, and use of navigation aids such as GPS, ILS, VOR, and precision/non-precision approaches. This is part of a comprehensive course that prepares the CFI for the FAA Instrument Instructor practical flight test.

Biology

BIOL 101 4 Credits
GENERAL BIOLOGY
Quarters: Summer, Fall, Winter, Spring
Studies cellular biology, including scientific method, taxonomy, cell organelles and cell membrane, photosynthesis, cellular respiration, mitosis and meiosis, Mendalian genetics, DNA structure and function and evolution. Lab required. Intended for non-science majors.

BIOL 102 4 Credits
GENERAL BIOLOGY
Quarters: Winter
Studies human evolution and the body system, including circulation, immune system, digestion, respiration, urinary system, nervous system, sense organs, muscles, reproduction and endocrine system. Lab required. Intended for non-science majors.

BIOL 103 4 Credits
GENERAL BIOLOGY
Quarters: Spring
Studies evolution and diversity of plants, plant structure and organization, plant nutrition and transport, control of growth in plants, plant reproduction. Examines ecology of populations, communication, ecology and conservation biology. Lab required. Intended for non-science majors.

BIOL 121 5 Credits
INTRO TO HUMAN ANATOMY AND PHYSIOLOGY
Quarters: Fall, Winter, Spring
Covers body organization with an emphasis on anatomy and function of all the human body systems. Topics include the cell, skin, heart and circulation, nervous system, special senses, blood, immunity, respiration, digestion, bones, muscles and reproduction. This course is designed for the allied health student. Lab required.

BIOL 221 Z 5 Credits
PRINCIPLES OF BIOLOGY: CELLS
Quarters: Fall
Explores fundamental biological concepts and theories about the cellular and molecular basis of life including cell structure and function, metabolism, genetic basis of inheritance and how information flows from DNA to proteins, with a focus on the iterative process of science. Intended for science majors.

BIOL 222 Z 5 Credits
PRINCIPLES OF BIOLOGY: ORGANISMS
Quarters: Offered as needed
Explores fundamental biological concepts and theories about the structure and function of diverse organisms (including plants and animals), evolution and development, transformation of energy and matter, and body systems at a multicellular organismal level. Intended for science majors. Prerequisites: BIOL 221Z, or instructor approval

BIOL 223 Z 5 Credits
PRINC. OF BIOL: ECOLOGY AND EVOLUTION
Quarters: Offered as needed
Explores the unity and diversity of life through evolutionary mechanisms and relationships, and adaptation to the environment. Examines population, community, and ecosystem ecology. Intended for science majors. Prerequisites: BIOL 222Z, or instructor permission

BIOL 231 4 Credits
HUMAN ANATOMY AND PHYSIOLOGY
Quarters: Summer, Fall, Winter
Studies body organization and function with an emphasis on histology and the integumentary, skeletal, and muscular systems. Lab required. Prerequisites: CHEM 104, or 121, or 221, and BIOL 101 or 211.

BIOL 232 4 Credits
HUMAN ANATOMY AND PHYSIOLOGY
Quarters: Summer, Winter, Spring
Studies the organization, structure, and function of the nervous, sensory, endocrine, and cardiovascular systems. Lab required. Prerequisites: BIOL 231

BIOL 233 4 Credits
HUMAN ANATOMY AND PHYSIOLOGY
Quarters: Fall, Spring
Studies respiratory, digestive, excretory, and reproductive systems. Lab required. Prerequisites: BIOL 231 or BIOL 232.

BIOL 234 4 Credits
MICROBIOLOGY
Quarters: Fall, Winter, Spring
Examines the fundamental principles and techniques of microbial study. Emphasizes the structural, functional, and disease causing properties of bacteria and viruses. Lab required. Prerequisites: CHEM 104, or 121, or 221, and BIOL 101 or 211 or 231.

Business Administration

BA 101 Z 4 Credits
INTRODUCTION TO BUSINESS
Quarters: Summer, Fall, Winter, Spring
Presents an integrated view of both established and entrepreneurial businesses by studying their common characteristics and processes in a global context. Introduces theory and develops basic skills in the areas of accounting, finance, management, and marketing, with an emphasis on social responsibility and ethical practices. Explores how businesses can create value for themselves and society by addressing environmental and social challenges.

BA 104 (P/T) 4 Credits
BUSINESS MATH
Quarters: Fall, Spring
Applies mathematical skills to solve business and consumer problems. Includes business applications such as computing finance charges, taxes, discounts, markups, inventory value, bond discount/premium, and present/future value analysis. Prerequisites: MATH 60.

BA 131 4 Credits
INTRO TO BUSINESS COMPUTING
Quarters: Summer, Fall, Winter, Spring
Introduces computer concepts covering computer systems, software and hardware, networking, and databases. Students will complete assignments in Microsoft Office Professional computer applications, including Word, Excel, Access, Publisher and Powerpoint. Emphasizes basic understanding and competency in different applications and concepts.

BA 169 Z 4 Credits
DATA ANALYSIS USING MICROSOFT EXCEL
Quarters: Offered as needed
Covers Microsoft Excel software skills necessary for evidence-based problem-solving, including workbook editing, formula creation, charting, and pivot tables. Emphasizes hands-on learning using Excel functions to perform data analysis to enhance decision-making. Prerequisites: BA 131/CS 101; or CS 160; or instructor approval

BA 203 (P/T) 3 Credits
INTERNATIONAL BUSINESS
Quarters: Spring
Introduces business activities that cross national boundaries. Studies the concepts of international business: its theories and framework for analysis of international transactions.

BA 204 (P/T) 3 Credits
TEAMWORK DYNAMICS
Quarters: Summer, Fall, Winter, Spring
Introduces the formation, development, and management of groups. Examines problems and characteristics common to group situations and generates strategies for improving group productivity.

BA 206 3 Credits
PRINCIPLES OF MANAGEMENT
Quarters: Fall, Spring
Introduces the principles of management, concentrating on organizational structures, planning principles, organizing, leading, controlling, and management techniques.

BA 211 Z 4 Credits
PRINCIPLES OF FINANCIAL ACCOUNTING
Quarters: Summer, Fall, Spring
Imparts an understanding of the purpose of accounting, common financial statement items, and the principles of internal controls. Focuses on recording the impact of economic events on account balances using U.S. Generally Accepted Accounting Principles, and the creation and analysis of financial statements to aid in external decision making.

BA 213 Z 4 Credits
PRINCIPLES OF MANAGERIAL ACCOUNTING
Quarters: Fall, Winter, Spring
Builds an understanding of the role of managerial accounting in a business, focusing on the development and use of information to evaluate production costs and operational performance in support of short- and long-term organizational decision-making. Prerequisites: BA 211Z

BA 214 3 Credits
BUSINESS COMMUNICATION
Quarters: Summer, Winter, Spring
Applies written communication skills to writing and analyzing business letters, memos, emails, and short reports. Incorporates correct format, grammar, and punctuation. Prerequisites: WR 121

BA 215 (P/T) 3 Credits
COST ACCOUNTING
Quarters: Offered as needed
Focuses on the role of the cost accountant in providing accounting information to managers as an aid in economic decision making. Emphasizes the development and application of cost systems as they apply to cost inputs (materials, labor, overhead), and job order versus process costing. Examines actual versus standard cost accounting, direct costing versus full absorption costing, and budgeting.

BA 218 3 Credits
PERSONAL FINANCE
Quarters: Summer, Fall, Winter, Spring
Explores the role of the individual consumer in our economy, problems of financing family and individual needs, including budgeting, banking relationships, borrowing, insurance, risk management, real estate, investing, portfolio management, retirement and personal taxes. Basic financial measurement and calculations will be introduced.

BA 223 3 Credits
PRINCIPLES OF MARKETING
Quarters: Fall, Winter, Spring
Surveys activities by which a firm seeks to anticipate customer needs by directing a flow of need-satisfying goods and services from producer to consumer. Includes market research, buying behavior, product planning, physical distribution, retailing, wholesaling, promotion, and pricing policy.

BA 226 Z 4 Credits
INTRODUCTION TO BUSINESS LAW
Quarters: Fall
Provides a comprehensive overview of U.S. business law, including the legal system, contracts, torts,intellectual property, agency, employment, and business organization forms. Emphasizes practical legal knowledge and explores how laws impact business operations, with a focus on risk management, contract disputes, business formation, and compliance with government regulation. Introduces legal challenges in business through real cases and legal terminology.

BA 227 2 Credits
BUSINESS LAW II
Quarters: Summer, Winter, Spring
Continues study of business law, emphasizing warranties & product liability, sales law, commercial paper, bankruptcy, and bailments. Prerequisites: BA 226, or instructor approval. Prerequisites: BA 226Z, or instructor approval

BA 239 3 Credits
PRINCIPLES OF ADVERTISING
Quarters: Winter
Examines in detail the purpose, preparation, placement, and analysis of various types of advertisements within each of the media. Analyzes and compares the relative merits of the media on local and national advertising.

BA 243 (P/T) 3 Credits
CONSUMER BEHAVIOR
Quarters: Spring
Introduces the dynamic interaction of affect and cognition, behavior, and the environment by which people conduct the exchange aspects of their lives.

BA 249 3 Credits
RETAIL MANAGEMENT
Quarters: Fall
Presents the principles of retail strategy and structures, emphasizing trading area analysis, consumer behavior, store location, and pricing in retailing.

BA 250 3 Credits
SMALL BUSINESS MANAGEMENT
Quarters: Spring
Presents the fundamentals of owning and managing a small business, including organizational, financial, marketing, and management concepts. Studies the dominant impact of small business. Prerequisites: BA 211, BA 206, and BA 223.

BA 255 3 Credits
PERSONNEL SUPERVISION
Quarters: Winter
Introduces the supervisor's special place in management and the essential skills that all managers have in common. Focuses on the unique problems of being a supervisor in any kind of organization, and closely examines the special skills, responsibilities, roles and attributes required of supervisors.

BA 280 1 Credit
BUSINESS MGT COOP WORK EXP
Quarters: Summer, Fall, Winter, Spring
Designed to give students an opportunity to acquire actual work experience in their chosen field. An on-site supervisor will supervise and evaluate the work experience student. Instructor approval of work setting and placement is required. For each credit earned, the student will need to document 36 hours at the work site. Some sections may have a no-cost text book option.

Business Technology

BT 101 (P/T) 3 Credits
KEYBOARDING I
Quarters: Summer, Fall, Winter, Spring
Emphasizes proper techniques of keyboarding through meaningful practice and speed development. Does not include word processing concepts. Lab included.

BT 102 (P/T) 3 Credits
KEYBOARDING II
Quarters: Fall, Winter, Spring
Applies drills specific to speed building and achieving 60 wpm or better. Does not include word processing concepts. Lab included. Prerequisites: Minimum typing speed of 35 wpm.

BT 105 (P/T) 1 Credit
PRESENTATION APPLICATIONS
Quarters: Summer, Fall, Winter, Spring
Introduces presentation software with an emphasis on designing and formatting business-related presentations. Learn how to create a business presentation using electronic presentation, create an initial outline and slides, format and proof text, utilize animation, print a presentation and create and run a presentation. Prerequisites: BA 131/CS 101

BT 210 (P/T) 2 Credits
EMAIL AND PRODUCTIVITY APPLICATIONS
Quarters: Summer, Winter
Introduces the basic features of various email applications (including MS Outlook) to send and receive email, organize schedules and events, and maintain contact lists, to-do lists, and tasks. Emphasizes the email and productivity software skills necessary in business environments.

BT 221 (P/T) 3 Credits
WORD PROCESSING PROCEDURES I
Quarters: Summer, Fall, Winter, Spring
Uses Microsoft Word to create and format Word documents using various formatting tools. Covers the skill needed for MOS certification. Lab included. Prerequisites: Keyboarding skills

BT 222 (P/T) 3 Credits
WORD PROCESSING PROCEDURES II
Quarters: Winter, Spring
Presents advanced features in Microsoft Word to efficiently produce professional documents. Covers the skills necessary for MOS certification. Lab included. Prerequisites: BT 221, or instructor approval.

BT 242 4 Credits
DATABASE APPLICATIONS
Quarters: Fall, Winter, Spring
Introduces microcomputer database systems, including their application, design, and construction. Begins with basic tables, forms, queries, reports, and relational database concepts, and progresses to more advanced concepts and skills, including creating modules, macros and advanced forms and reports. Prerequisites: BA 131, or CS 101 or 160, or instructor approval.

BT 251 3 Credits
CLOUD BASED ACCOUNTING SYSTEMS
Quarters: Fall
Prepares students to perform bookkeeping and accounting functions using cloud-based accounting software platforms.

BT 252 (P/T) 3 Credits
CLOUD BASED TAX ACCOUNTING
Quarters: Winter
Provides students with a beginning level course in federal tax preparation using cloud-based tax accounting systems. Students learn to process and file basic tax schedules and forms along with an introduction to the higher level tax systems used for more complex tax filing scenarios.

BT 290 (P/T) 3 Credits
INTEGRATED OFFICE APPLICATIONS
Quarters: Spring
Provides in-depth, hands on projects with integrated applications and internet research, including importing/exporting functions of technology and software as they relate to business documents. Emphasizes technical skills and the ability to work in teams. Provides the culmination activity (capstone course) at the end of the associate degree program for Office Administration majors. Lab included. Prerequisites: OA 201, CS 125SS, CS 125A

Career Exploration

EXP 100 1 Credit
CAREER EXPLORATION - NAT. RESOURCES
Quarters: Offered as needed
This one-credit course is designed to give students exposure to the breadth of careers related to natural resources.

EXP 101 3 Credits
CAREER EXPLORATION
Quarters: Offered as needed
This course offers a comprehensive exploration of diverse career fields, emphasizing an interdisciplinary perspective to uncover unique pathways within the regional context. Students will gain a general understanding of various industries. Career aptitude data will be utilized, fostering adaptability and informed decision-making as they navigate potential career trajectories. Through classroom lectures and practical experiences, participants will develop a versatile skill set that prepares them for success across various regional professional domains.

Chemistry

CHEM 104 4 Credits
SURVEY OF CHEMISTRY (HEALTH)
Quarters: Summer, Fall, Winter, Spring
Studies the fundamental concepts of chemistry including metric system, atomic structure, chemical reactions and gas laws, buffers, solution chemistry and acids and bases. Examines the relationship of chemical principles to current environmental and health related topics. Lab required. Prerequisites: MATH 60, or suitable placement score.

CHEM 105 4 Credits
SURVEY OF CHEMISTRY (HEALTH)
Quarters: Winter
Studies the fundamental concepts of chemistry, including nuclear radiation, energy, and organic chemistry. Lab required. Prerequisites: CHEM 104.

CHEM 106 4 Credits
SURVEY OF CHEMISTRY (HEALTH)
Quarters: Spring
Studies the fundamental concepts of chemistry, including carbohydrates, lipid and protein metabolism, RNA and DNA synthesis, action of enzymes, hormones and steroids, and overall integration of metabolism. Lab required. Prerequisites: CHEM 105.

CHEM 121 4 Credits
GENERAL CHEMISTRY
Quarters: Fall
Provides an introduction to the fundamentals of inorganic chemistry, including metric system, atomic structure, chemical reactions and gas laws, buffers, solution chemistry, and acids and bases. Lab required. Prerequisites: MATH 65 or suitable placement score.

CHEM 122 4 Credits
GENERAL CHEMISTRY
Quarters: Winter
Covers the radiation and environmental issues. Introduces organic nomenclature, functional groups and reactions. Prerequisites: CHEM 121 or 104.

CHEM 123 4 Credits
GENERAL CHEMISTRY
Quarters: Spring
Covers the basics of organic and biochemistry. Lab required. Prerequisites: CHEM 122

CHEM 221 5 Credits
COLLEGE CHEMISTRY
Quarters: Fall
Studies measurement, chemical reactions, stoichiometry, thermo chemistry, atomic structure, chemical bonding and gas laws. Lab required. Prerequisites: MATH 95 or suitable placement score. Previous chemistry experience strongly recommended.

CHEM 221 Z 4 Credits
GENERAL CHEMISTRY I
Quarters: Fall
Explores and applies principles and applications of chemistry. Emphasis on measurement, components of matter, atomic and molecular structure, quantitative relationships including foundational stoichiometry, and major classes of chemical reactions. CHEM 221Z is a lecture course; CHEM 227Z is the laboratory component. Prerequisites: Pass MATH 95 or equivalent, or suitable placement score Corequisites: CHEM 227Z Lab

CHEM 222 5 Credits
COLLEGE CHEMISTRY
Quarters: Winter
Includes molecular bonding, solution chemistry, chemical reactions, oxidation reduction, chemical equilibrium and acid base equilibrium. Lab required. Prerequisites: CHEM 221.

CHEM 222 Z 4 Credits
GENERAL CHEMISTRY II
Quarters: Offered as needed
Explores and apply principles presented in CH/CHE/CHEM 221Z to the study of the solid, liquid, and gaseous states of matter. Principles of stoichiometry, thermochemistry, kinetics, and foundational equilibrium are explored and applied to the study of aqueous and gas-phase chemical reactions. CHEM 222Z is a lecture course; CHEM 228Z is the laboratory component. Prerequisites: Pass CHEM 221Z and CHEM 227Z Lab Corequisites: CHEM 228Z Lab

CHEM 223 5 Credits
COLLEGE CHEMISTRY
Quarters: Spring
Includes thermodynamics, electrochemistry, nuclear chemistry, metals, nonmetals and transition elements and brief survey of organic and biochemistry. Lab required. Prerequisites: CHEM 222.

CHEM 223 Z 4 Credits
GENERAL CHEMISTRY III
Quarters: Offered as needed
Builds upon the principles presented in CH/CHE/CHEM 222Z, explores thermodynamics and chemical equilibrium, and applies them to the study of aqueous acid-base reactions, solubility, and electrochemistry. CHEM 223Z is a lecture course; CHEM 229Z is the laboratory component. Prerequisites: Pass CHEM 222Z and CHEM 228Z lab Corequisites: CHEM 229 Z lab

CHEM 227 5 Credits
ORGANIC CHEMISTRY
Quarters: Fall
Presents alhanes, alhenes, stereochemistry, role of solvents and organic reactions. Lab required. Prerequisites: CHEM 223.

CHEM 227 Z 1 Credit
GENERAL CHEMISTRY I LAB
Quarters: Fall
Experiments correspond to the topics covered in CHEM 221Z including the fundamentals of chemical measurements, quantitative relationships in chemical analysis, and understanding atomic and molecular structure. CHEM 227Z is the laboratory component; CHEM 221Z is the lecture course. Corequisites: CHEM 221Z

CHEM 228 5 Credits
ORGANIC CHEMISTRY
Quarters: Winter
Examines alhynes, aromaticity, aromatic substitution, spectroscopy, NMR, CMR, IR, aldehydes and ketones and carboxylic acids. Lab required. Prerequisites: CHEM 227

CHEM 228 Z 1 Credit
GENERAL CHEMISTRY II LAB
Quarters: Offered as needed
Experiments correspond to the topics covered in CHEM 222Z including the fundamentals of intermolecular interactions, stoichiometric relationships, chemical equilibria and their application to the synthesis, identification, and analysis of chemical compounds. CHEM 228Z is the laboratory component; CHEM 222Z is the lecture course. Prerequisites: Pass CHEM 221Z course and CHEM 227Z lab Corequisites: CHEM 222Z

CHEM 229 5 Credits
ORGANIC CHEMISTRY
Quarters: Spring
Includes amines, phenols, molecular orbital theory, carbohydrates, lipids, proteins and nucleic acids. Lab required. Prerequisites: CHEM 228

CHEM 229 Z 1 Credit
GENERAL CHEMISTRY III LAB
Quarters: Offered as needed
Experiments correspond to the topics covered in CHEM 223Z including the principles of chemical equilibria and their application to chemical analysis using volumetric and electrochemical methods. CHEM 229Z is the laboratory component; CHEM 223Z is the lecture course. Prerequisites: Pass CHEM 222Z and CHEM 228Z lab Corequisites: CHEM 223Z

CHEM 241 5 Credits
ORGANIC CHEMISTRY
Quarters: Fall
Presents alkanes, alkenes, stereochemistry, role of solvents and organic reactions. Lab required (formerly known as CHEM 227). Prerequisites: Pass CHEM 223Z and CHEM 229Z lab

CHEM 242 5 Credits
ORGANIC CHEMISTRY
Quarters: Offered as needed
Examines alkynes, aromaticity, aromatic substitution, spectroscopy, NMR, CMR, IR, aldehydes and ketones and carboxylic acids. Lab required. This course was previously known as CHEM 228. Prerequisites: Pass CHEM 241

CHEM 243 5 Credits
ORGANIC CHEMISTRY
Quarters: Offered as needed
Includes amines, phenols, molecular orbital theory, carbohydrates, lipids, proteins and nucleic acids. Lab required. Course previously known as CHEM 229. Prerequisites: Pass CHEM 242

Communications

COM 111 Z 4 Credits
PUBLIC SPEAKING
Quarters: Summer, Fall, Winter, Spring
Emphasizes developing communication skills by examining and demonstrating how self-awareness, audience, content, and occasion influence the creation and delivery of speeches and presentations. Prerequisites: Pass WR 95 with a C- or better, or suitable writing placement exam score.

COM 218 Z 4 Credits
INTERPERSONAL COMMUNICATION
Quarters: Offered as needed
Increases the knowledge and use of competent communication skills to better understand oneself, others, and the role of communication in interpersonal relationships.

COM 220 4 Credits
COMMUNICATION AND GENDER
Quarters: Offered as needed
Introduces the differences of communication styles across gender identities and provides tools to manage those differences. Reviews how communication is used to create, structure, and maintain gender identities in a variety of contexts.

Computer Information Systems

CIS 100 (P/T) 4 Credits
INTRO TO PC NETWORK AND CYBERSECURITY
Quarters: Fall
This course is an introduction to the Networking and Cybersecurity courses at TVCC and is a prerequisite for CIS 101, 102, 103, 283, 284, and 285. Concepts covered in the course include computer hardware components, data center technologies, virtualization software, troubleshooting processes, and the foundational concepts of networking and cybersecurity, such as DNS, DHCP, IP addressing and the OSI model of communications. Students will have an opportunity to work with networking hardware to build a Local Area Network and have hands on experience with routing simulation software.

CIS 101 (P/T) 4 Credits
INTRODUCTION TO NETWORK
Quarters: Winter
This course is an introduction to networks. Students will be introduced to the architecture, structure, functions, components and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media and operations are introduced to provide a foundation for the curriculum. By the end of the course. students will be able to build simple LAN's, perform basic configurations for routers and switches, and implement IP addressing schemes. Prerequisites: CIS 100

CIS 102 (P/T) 4 Credits
ROUTING AND SWITCHING ESSENTIALS
Quarters: Spring
This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches, and resolve common issues with virtual LAN's and inter-VLAN routing in both IPv6 networks. Some sections may have a no-cost text book option. Prerequisites: CIS 101

CIS 103 (P/T) 4 Credits
SCALING NETWORKS
Quarters: Summer
This course describes the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement a WLAN in a small-to-medium network. Prerequisites: CIS 102

CIS 110 (P/T) 3 Credits
INFORMATION TECHNOLOGY ESSENTIALS I
Quarters: Fall
Fundamentals and advanced concepts of computer hardware and software. Assembly and installation of computer components and operating systems. Troubleshooting with system tools and diagnostic software. Includes laptops, portable devices.

CIS 122 (P/T) 4 Credits
INTRO SQL AND DATABASE DEVELOPMENT
Quarters: Fall
This course introduces the student to the concepts of structured query language (SQL) used to retrieve records from a relational database. Among covered concepts are set theory, Boolean logic, data normalization and table structure, SQL keywords and operators, primary and foreign keys, retrieval wildcards, and join types. At the conclusions of the course, students will be able to write complex queries which filter and summarize retrieved records. Course Note: Experience with spreadsheets and mathematical formulae will be helpful.

CIS 123 (P/T) 4 Credits
INTER SQL AND DATABASE DEVELOPMENT
Quarters: Winter, Spring
This course is the second in a series which covers the concepts of structured query language (SQL) used to retrieve records from a relational database. Among covered concepts are creating tables, inserting, updating and deleting records, using views, stored procedure, cursors, triggers and tools to facilitate transactional processing. At the conclusion of the course, students will be able to write complex queries controlling Data Definition and Data Manipulation, and will have been exposed to the beginning principles of programming in SQL. Prerequisites: CIS 122

CIS 124 (P/T) 4 Credits
ADV SQL AND APPLIED DATABASE DEVELOP
Quarters: Offered as needed
This course is the third in a series which covers the concepts of structured query language (SQL) and the development of relational database applications. This course serves as a capstone to the course sequence, and is devoted to the development of a database application. Students will be given examples of a business process that would benefit from a dedicated database application, and then design and develop the application to meet the identified need. Prerequisites: CIS 122, CIS 123 Previous experience with Microsoft Access is desirable, but not required.

CIS 140 (P/T) 4 Credits
INTRO TO OPERATING SYSTEMS
Quarters: Summer, Fall
Broad survey of beginning to advanced operating system topics for both the end user and administrator. Introduces history, theory, and various types of operating systems such as Microsoft, MacOSX, and Linux.

CIS 210 (P/T) 4 Credits
ADVANCED OPERATING SYSTEMS
Quarters: Offered as needed
This course provides essential knowledge and hands-on skills for mastering Linux operating systems. Designed for individuals aiming to pursue a career in IT, this course covers core topics such as system architecture, user management, file permissions, networking, and security. Through practical exercises and real-world scenarios, students will gain the expertise to troubleshoot, configure, and administer Linux environments effectively. Ideal for beginners and intermediate users opening doors to a variety of roles in system administration, DevOps, and IT support. Prerequisites: CIS 140, or instructor approval

CIS 260 (P/T) 4 Credits
CLOUD COMPUTING
Quarters: Offered as needed
Provides a strong foundation in the principles, planning, and design of cloud computing infrastructures, with an emphasis on security. Reviews the concepts of cloud services, storage, networking, cloud operations, support and troubleshooting. Prepares students for an AAS degree in Cybersecurity/Networking or skills towards cloud support associate, junior systems Analyst, junior cloud delivery engineer. Prerequisites: CIS 100, CIS 101, CIS 110, CIS 140, or instructor approval

CIS 280 3 Credits
COMPUTER INFO SYSTEM COOP WK EXP
Quarters: Offered as needed
Provides an opportunity to acquire actual work experience in the CIS field. An on-site supervisor will guide and evaluate student. Instructor approval of work setting and placement is required. For each credit earned, the student will need to document 36 hours at the work site. Prerequisites: CIS 120.

CIS 283 (P/T) 4 Credits
CYBERSECURITY FOUNDATION AND GATEWAY
Quarters: Fall
This course provides the student with an understanding of the fundamentals of cybersecurity, the concepts that help IT personnel recognize and potentially mitigate attacks against enterprise networks. Students will learn the basics of networking and the general concepts involved in maintaining a secure network computing environment. Upon successful completion of this course, students will be able to examine, describe general networking fundamentals and implement basic networking configuration techniques. Prerequisites: CIS 102, or demonstrate working knowledge of how to implement basic networking configuration.

CIS 284 (P/T) 4 Credits
CYBERSECURITY ESSENTIALS
Quarters: Winter
This course evaluates cybersecurity principles and demonstrates how to secure a network computing environment through the application of security controls. Students will learn the nature and scope of today's cybersecurity challenges, strategies for network defense, as well as detailed information about next-generation cybersecurity solutions. Students will also deploy a variety of security methodologies as well as technologies and concepts used for implementing a secure network environment. Prerequisites: CIS 283

CIS 285 (P/T) 4 Credits
CYBERSECURITY INFRASTRUCTURE CONFIG
Quarters: Spring
This course provides the student with a general understanding of how to install, configure, and manage firewalls for defense of enterprise network architecture. Students will learn the theory and configuration steps for setting up the security, networking, threat prevention, logging, and reporting features of next generation firewall technologies. Prerequisites: CIS 284

CIS 297 (P/T) 3 Credits
CAPSTONE PROJECT II
Quarters: Spring
This course is a continuation of a two-term sequence begun in CIS 296, where students identify, design and produce a complete client project in one or more aspects of the degree's technology strands (networking, cybersecurity, database development, or server administration). Depending on the scope of the project, this work may be completed individually or in a team with other students. During the second term, students will complete the development work identified in their project proposal completed in CIS 296, and then prepare project documentation once the project has been accepted by the client. Prerequisites: Instructor approval

Computer Science

CS 101 4 Credits
COMPUTER FUNDAMENTALS I
Quarters: Summer, Fall, Winter, Spring
Introduction to computer concepts to include the following areas; computer fundamentals, key applications, and living online. Basic introduction to computer hardware, computer software, and manipulating an operating system. An elementary summary of common program functions and office suites. A straightforward overview of networks, the internet, email, and social impact of networking technologies.

CS 133 CP 4 Credits
COMPUTER PROGRAMMING: C++
Quarters: Offered as needed
Introduces computer programming using the C++ languages, including the structure of the language; manipulation of data, arrays and objects; and how to handle input and output functions. Uses well structured program designs and object oriented programming. Prerequisites: BA 131, or CS 120 or 160, or instructor approval.

CS 160 4 Credits
ORIENTATION TO PROGRAMMING
Quarters: Fall
Explores the field of computer science, providing an overview of machine architecture, software development and engineering, data organization, problem-solving strategies, ethics, and theory of computation. Explores career options and develops rudimentary software development skills using (OOP) Object Oriented. Prerequisites: MATH 60 or suitable placement score.

CS 161 4 Credits
COMPUTER SCIENCE I
Quarters: Offered as needed
Introduces structured methods, including program design concepts, algorithm development, use of pseudo code in designing algorithms, elementary data types, and write code using an (OOP) Object Oriented Programming language. Prerequisites: CS 160.

CS 162 4 Credits
COMPUTER SCIENCE II
Quarters: Offered as needed
Continues the study of computer science, including linear data structures, file access, recursion, and object oriented programming. Prerequisites: CS 161.

CS 194 (P/T) 3 Credits
WEB ESSENTIALS
Quarters: Winter
In this course students will learn to use, edit, secure and extend a Content Management System (CMS) for the development of a webpage. Best practices in Search Engine Management and Optimization. Secure Sockets Layer (SSL) and web publishing will also be explored. Students will be introduced to the basics of web development coding as well, through a practical approach of how to modify existing code within CMS's rather than building code from scratch. The course begins with the setup of a web server and domain names, then transitions into a project lasting the entire term with continual improvements to a webpage based on student interest. There will be an emphasis on modern phot-heavy page structure and design.

CS 195 3 Credits
WEB DESIGN
Quarters: Spring
Presents the fundamental concepts and techniques used for the design, development, and implementation of web pages using (HTML) Hyper Text Markup Language and (CSS) Cascading Style Sheets.

CS 240 (P/T) 4 Credits
SERVER OPERATING SYSTEMS 1
Quarters: Winter
Microsoft Windows Server 2008 Active Directory Configuration prepares students to develop the skills needed to manage a Windows Server 2008 system and to prepare to pass the MCTS 70-640 certification exam. While the focus of topics is on the configuration of Active Directory and related services, coverage of Windows foundational topics such as the file system and networking are also included. Extensive coverage begins with an introduction to Windows Server 2008 and goes on to active directory design, account management, group policy management and configuration, certificate services, AD LOS, AD RMS, AD FS, server core, Windows Hyper-V virtualization, and server management.

CS 241 (P/T) 4 Credits
SERVER OPERATING SYSTEMS 2
Quarters: Spring
This course prepares students to configure networks using the Microsoft Windows Server platform operating system and to be prepared to take the Windows Server certification exams. The course focuses on updates to the software and in-depth coverage of the network aspects of Windows Server, this course includes topics such networking in a Windows environment, configuring DHCP, implementing DNS, and securing a Windows Server.

CS 242 (P/T) 4 Credits
SERVER OPERATING SYSTEMS 3
Quarters: Fall
Microsoft Windows Server 2008, Server Administration prepares students to administer networks using the Microsoft Windows Server 2008 operating system and to pass the MCITP 70-646 certification exam. Focusing on updates to the software and in-depth coverage of the administration aspects of Windows Server 2008, this course includes topics such as installing, configuring, managing and troubleshooting. In addition, the book includes fundamental coverage of topics from other MCTS certifications.

CS 280 1 Credit
COMPUTER SCIENCE COOP WK EXP
Quarters: Fall, Winter, Spring
Designed to give students an opportunity to acquire actual work experience in their chosen field. An on-site supervisor will supervise and evaluate the work experience student. Instructor approval of work setting and placement is required. For each credit earned, the student will need to document 36 hours at the work site. Some sections may have a no-cost text book option.

Criminal Justice

CJ 100 3 Credits
INTRO TO CRIMINAL JUSTICE
Quarters: Fall, Spring
Introduces the philosophy, history, objectives and functions of the American criminal justice system. Focuses on crime in America and policing.

CJ 111 3 Credits
CONCEPTS OF ENFORCEMENT SERVICES
Quarters: Fall
Studies the concepts, theories, and principles of police operation and behavior in an era of changing community attitudes, special interest groups, and minority relations.

CJ 112 (P/T) 3 Credits
PATROL PROCEDURES
Quarters: Winter
Describes the nature and purpose of patrol activities for law enforcement officers. Includes routine and emergency procedures and types of controls.

CJ 113 (P/T) 3 Credits
ACCIDENT INVESTIGATION/TRAFFIC LAWS
Quarters: Spring
Studies the principles and procedures used to investigate and report traffic accidents. Includes basic traffic laws.

CJ 120 3 Credits
INTRO TO JUDICIAL PROCESS
Quarters: Fall
Studies the basic processes in the criminal justice system, covering the steps in a criminal prosecution from the decision to prosecute through sentencing.

CJ 130 3 Credits
INTRO TO CORRECTIONS
Quarters: Fall
Surveys the history and evolution of corrections, law and legal processes, and the correctional process.

CJ 132 3 Credits
INTRO TO PAROLE AND PROBATION
Quarters: Fall
Introduces the use of parole and probation as a means of controlling criminal offenders within the community. Includes the philosophy, historical development and contemporary functioning of parole and probation agencies and officers.

CJ 140 3 Credits
U.S. CRIMINAL JUSTICE SYSTEM
Quarters: Winter
Emphasizes the adjunction and correctional aspects of the criminal justice system. Prerequisites: CJ 100.

CJ 200 (P/T) 3 Credits
COMMUNITY RELATIONS
Quarters: Spring
Examines how the relationship between the community and the criminal justice system is clarified and enhanced. Investigates how community misunderstandings, lack of cooperation, and mistrust may paradoxically be generated by the system's efforts to make the community a safer place.

CJ 201 3 Credits
INTRO TO JUVENILE JUSTICE SYSTEM
Quarters: Winter
Presents the concept of delinquency, the history and development of the juvenile justice system, theories of delinquency, environmental influences on delinquency, and controlling juvenile offenders.

CJ 202 (P/T) 3 Credits
VIOLENCE AND AGRESSION
Quarters: Winter
Explores the causes and extent of violence in society and the family, and examines preventative measures available to reduce violence in society.

CJ 203 (P/T) 3 Credits
CRISIS INTERVENTION
Quarters: Spring
Presents techniques and approaches to crisis intervention for entry level criminal justice professionals. Covers initial intervention, defusing and assessment, resolution and/or referral, with emphasis on safety. Includes personal effectiveness, recognition of threat levels, voluntary compliance, verbal and non-verbal communication, active listening, and mediation.

CJ 205 (P/T) 3 Credits
VICTIMS OF CRIME
Quarters: Spring
Examines the role of victims of crime in the justice system and their treatment by different criminal justice agencies, national and state data on victimization by types of crime, psychology trauma suffered by victims of violent crimes and paths to recovery, programs available to victims, and victim-related legislation.

CJ 207 (P/T) 3 Credits
CRIMINAL JUSTICE DOCUMENTATION
Quarters: Winter
This course is designed to provide the necessary information to become a knowledgeable and skillful writer of narrative reports which document original crimes and follow-up investigations for students entering the Criminal Justice field. The class will focus on the skills needed to write a report that is complete, clear, accurate, and convincing. The actual writing of reports will be a major component of the course. Specialized formats which meet the needs of various types of investigative activities including crime scene processing, interviews with suspects and witnesses, undercover operations, and the execution of search warrants will be explored. Basic writing skills such as grammar and spelling accuracy related to Criminal Justice terminology will be emphasized. Some sections may have a low-cost text book option. Prerequisites: CJ 100, WR 115 or higher, or professional in the field, or consent of instructor. All prerequisite courses must be completed with a grade of "C" or better.

CJ 208 (P/T) 3 Credits
ETHICS IN CRIMINAL JUSTICE
Quarters: Spring
This course examines the many difficult decisions that criminal justice professionals make in an environment of completing interests. The decision-making of criminal justice professionals is often impacted by their ethical dilemmas. Emphasis is placed on addressing moral issues and concerns of our justice process in personal, social, and criminal justice contexts.

CJ 209 3 Credits
INTRO TO CAREERS IN CRIM JUSTICE
Quarters: Fall
Surveys careers in law, law enforcement, courts, and corrections. Includes facility visitation and contact with persons working in the criminal justice system.

CJ 210 (P/T) 3 Credits
CRIMINAL INVESTIGATION I
Quarters: Offered as needed
Introduces the fundamentals, theory, and history of criminal investigation in the justice system. Describes crime scene-to-courtroom aspects with emphasis on techniques to specific crimes. Co-requisite: CJ 216

CJ 211 (P/T) 3 Credits
CRIMINAL INVESTIGATIONS II
Quarters: Offered as needed
Continues the study and application of investigative techniques for various offenses. Includes collection and preservation of physical evidence, scientific aids, modus operandi, sources of information, interview and interrogation, follow up and case preparation. Prerequisites: CJ 210. Co-requisite: CJ 226.

CJ 212 (P/T) 3 Credits
CRIMINAL INVESTIGATIONS III
Quarters: Offered as needed
Continues the study and application of investigative techniques for various crimes. Stresses scientific method, thoroughness and presentation of evidence. Explores follow up case preparation, including familiarization with the state crime lab facilities and its assistance to law enforcement agencies. Prerequisites: CJ 211. Co-requisite: CJ 236.

CJ 216 (P/T) 1 Credit
CRIME SCENE TECHNICIAN I
Quarters: Offered as needed
Presents techniques of locating, collecting, and identifying physical evidence. Includes the use of fingerprinting, casts and molds, photography, and sketching. Uses basic laboratory aids and scientific equipment in the evidence process. Co-requisite CJ 210

CJ 220 3 Credits
CRIMINAL LAW
Quarters: Spring
Examines the basic concepts of criminal law through studying the essential elements of a crime, the defenses to criminal conduct, and the justifications for criminal laws and punishment. Familiarizes the student with the various crimes against persons and property.

CJ 222 3 Credits
PROCEDURAL LAW
Quarters: Spring
Examines the United States Constitution and Bill of Rights and their impact upon law enforcement, with emphasis on search warrants, interviews, arrest and booking, search and seizure issues, 5th Amendment rights, right to counsel, evidentiary issues and the criminal trial.

CJ 223 3 Credits
RULES OF EVIDENCE
Quarters: Spring
Reviews basic concepts of the requirements for admissibility of evidence, the various burdens of proof, how evidence is used at trial, relevance, competency, privileges, opinion and expert testimony, the hearsay rule and its exceptions, and an introductory review of evidence obtained in violation of the Constitution.

CJ 225 3 Credits
CORRECTIONS LAW
Quarters: Offered as needed
Explores several historical and current cases involving inmate crimes and malpractice with inmates. Examines prisoner's rights, correctional staffs' rights, and emerging trends resulting from recent court cases.

CJ 226 (P/T) 1 Credit
CRIME SCENE TECHNICIAN II
Quarters: Offered as needed
Presents techniques of locating, collecting, and identifying physical evidence. Includes the use of fingerprinting, casts and molds, photography and sketching. Uses basic laboratory aids and scientific equipment in the evidence process. Co-requisite: CJ 211.

CJ 232 (P/T) 3 Credits
CORRECTIONS CASEWORK
Quarters: Winter
Studies the basic concepts of interviewing and counseling techniques used by correctional officers in one-to-one contacts with clients. Builds rudimentary skills through role-playing and demonstration in preparation for practice in the field and to foster an appreciation for further training. Prerequisites: CJ 132

CJ 236 (P/T) 1 Credit
CRIME SCENE TECHNICIAN III
Quarters: Offered as needed
Presents techniques of locating, collecting and identifying physical evidence. Includes the use of fingerprinting, casts and molds, photography and sketching. Uses basic laboratory aids and scientific equipment in the evidence process. Co-requisite: CJ 212.

CJ 280 1 Credit
CRIMINAL JUSTICE COOP WK EXP
Quarters: Summer, Fall, Winter, Spring
Provides work-related experience and study in selected Criminal Justice environments. Some sections may have a low-cost text book option.

Crop Science

CSS 200 4 Credits
PRINCIPLES OF CROP SCIENCE
Quarters: Spring
Studies the origin and adaptability of crops important in world food production. Emphasizes production and management of food and forage crops important to US Agriculture. Includes field trips to area farms, experiment stations and marketing facilities to augment classroom instruction. Lab required.

CSS 205 4 Credits
GENERAL SOILS
Quarters: Fall
Studies basic soil science, including genesis and morphology of soils, and their physical and chemical properties. Covers soil-water relationships, diagnosis, classification, management, essential nutrients, erosion, and soil as a medium for plant growth. Students use soil survey reports. Lab required.

CSS 207 3 Credits
BIOTECHNOLOGY
Quarters: Offered as needed
This course offers an overview of modern biotechnology, focusing on basic concepts and applications. Special focus is given to the applications of biotechnology in plants and microorganisms for food and medicine. Impacts on environments and the relations of biotechnology to society are discussed.

CSS 210 3 Credits
FORAGE PRODUCTION
Quarters: Winter
Identifies the annual feed requirements for a livestock operation and the selection and management of feed and forage crops to meet these needs. Studies grazing and harvest systems and alternatives, and plant growth characteristics in the development of practical farm and ranch programs. Lab required.

CSS 211 4 Credits
INTEGRATED PEST MANAGEMENT
Quarters: Offered as needed
This course is designed to provide students with the understanding needed to bring together preventive, cultural, biological, and chemical control of insect pests in field and greenhouse crops. Students will learn management strategies and the use of economic thresholds for control. Students will also learn to identify regional insect pests of importance.

CSS 215 3 Credits
SOIL NUTRIENTS AND FERTILIZER
Quarters: Offered as needed
Addresses the 9 macronutrients and 6 micronutrients essential for plant growth. Instructs students in fertilizer selection as well interpreting soil sample analysis in making fertilizer recommendations. Prerequisites: CSS 205

CSS 217 (P/T) 1 Credit
PESTICIDE SAFETY AND USE
Quarters: Winter
Presents federal and state pesticide laws and regulations, and the practices necessary for safe, effective handling and distribution of pesticides. Prepares for the "Laws and Safety Examination" for those wanting either a public or commercial license; and the "Private Applicator Examination" administered by the Oregon/Idaho State Department of Agriculture.

CSS 240 (P/T) 3 Credits
INTRO TO NOXIOUS WEEDS
Quarters: Spring
Presents elements needed for a basic understanding of the life cycles, spread, and destructive nature of noxious weeds, including how to distinguish a noxious weed from a weed and identification of the more common noxious weeds found in the Pacific Northwest. This course also serves to address management of noxious weeds through biological controls, chemical applications, and mechanical removal. Lab required. Some sections may have a no-cost text book option.

Drafting

DRFT 112 (P/T) 3 Credits
GENERAL DRAFTING AND SKETCHING WELDER
Quarters: Winter
An introduction course to basic drafting, welding symbols, and print reading. Emphasis will be placed on the use of standard layout procedures, multi-view projection, and hands-on.

Economics

ECON 129 3 Credits
FREE MARKET PRINCIPLES
Quarters: Offered as needed
A study of economies based on voluntary exchange of free markets. Students will examine the relationship between liberty and economic activity, and the theories on how freedom of choice raises the standard of living in a society. The course includes a comparative study of alternative systems of economic organization.

ECON 201 Z 4 Credits
PRINCIPLES OF MICROECONOMICS
Quarters: Fall
Examines how consumers and firms make choices when facing scarce resources, and how those choices are related to government policy and market outcomes, such as prices and output.

ECON 202 Z 4 Credits
PRINCIPLES OF MACROECONOMICS
Quarters: Offered as needed
Examines the aggregate activity of a market economy, economic growth, inflation, unemployment, and the use of fiscal and monetary policy to address macroeconomic problems.

Education

EDUC 106 (P/T) 3 Credits
CHILD DEVELOPMENT II
Quarters: Summer, Spring
Studies child growth and development from prenatal to toddlerhood. Covers issues such as attachment and separation, sensorimotor learning, infant communication, major theories, and appropriate behavioral expectations.

EDUC 140 (P/T) 3 Credits
INTRO EARLY CHILDHOOD EDUCATION
Quarters: Fall
Introduces the field of early childhood education, including history, trends of early childhood, state and federal regulations, community resources, social services, and career opportunities.

EDUC 141 (P/T) 3 Credits
CHILD DEVELOPMENT I
Quarters: Winter, Spring
Introduces child development, including theories of growth and development during 0-8 years. Studies children's behaviors from a developmental perspective and implications for care giving of infants, toddlers, and preschoolers. Covers special needs of 0-8 year olds.

EDUC 143 (P/T) 3 Credits
CHILDHOOD DEVELOPMENT III
Quarters: Offered as needed
Studies physical, social, emotional, language development, and cognitive areas of growth and development for children ages 2 1/2 to adolescence.

EDUC 145 (P/T) 3 Credits
GUIDANCE I-EARLY CHILDHOOD ED
Quarters: Winter
Familiarize students with the principles of positive guidance for young children.

EDUC 149 (P/T) 3 Credits
INFANT/TODDLER CAREGIVING
Quarters: Winter
Presents caregiving techniques for infants and toddlers with special emphasis on group care practices for this age. Studies routines, such as nutrition, feeding, diapering, sleep, and nurturing. Reviews roles of parents, nannies, family daycare provider, and center caregiver provider. Some sections may have a low-cost text book option.

EDUC 150 (P/T) 3 Credits
CURRICULUM I-EARLY CHILDHOOD ED
Quarters: Winter
Introduces appropriate curriculum for young children. Focuses on creative play curriculum and the whole child approach.

EDUC 154 (P/T) 3 Credits
LITERATURE AND LITERACY FOR ECE
Quarters: Spring
Studies how emergent literacy and literature develop in young children, including strategies for working with families of diverse learning styles, in order to promote and support literacy in the home.

EDUC 157 (P/T) 3 Credits
MATH DEVELOPMENT FOR ECE
Quarters: Spring
Studies developmentally appropriate practices for readiness in math skills. Focuses on color and shape, number recognition, attribution, sorting, organizing, simple problem solving, calendar events, counting, time, and patterns. Uses manipulatives as the major strategy.

EDUC 158 (P/T) 3 Credits
BILINGUAL EDUCATION
Quarters: Fall
Applies theories in first and second language acquisition. Studies cognitive, affective, and social variables influencing language acquisition.

EDUC 162 (P/T) 3 Credits
CHILD NUTRITION, HEALTH AND SAFETY
Quarters: Fall
Prepares early childhood educators to meet the nutritional and health and safety needs of young children of all abilities. Considers the developmental abilities and culture of all children and families. Uses a constructivist philosophy to instruct students to implement developmentally appropriate food experiences such as snack and meal times in inclusive early childhood settings of home environments.

EDUC 200 4 Credits
INTRO TO EDUCATION
Quarters: Summer, Fall, Winter, Spring
Surveys the American education system, emphasizing organization, professional practice, technology, governance, law, demographics, effective teaching, philosophies of education, special needs students, covert/overt curriculum, school financing, classroom responsibilities, and rights of teachers, schools, and students. Includes experiences in school teaching, classroom practices, classroom observations, teacher profiles, and professional portfolios.

EDUC 202 (P/T) 4 Credits
EDUCATIONAL TECHNOLOGY
Quarters: Spring
Emphasizes keeping current with effective use of technology in the K-12 classroom. Includes programs, troubleshooting, imaging devices, software, computer support, distance learning, instructional principles, operating systems, evaluations, and human issues in technology learning.

EDUC 210 1 Credit
THEORY AND PRACTICUM
Quarters: Summer, Fall, Winter, Spring
Provides school experience working with classroom teacher and students in areas of reading, outdoor activities, mathematics, language acquisition, learning theories, and use of technology in the classroom. Prerequisites: Instructor approval.

EDUC 213 (P/T) 3 Credits
SCHOOL LAW
Quarters: Winter
Studies laws relevant to classroom processes, rights and responsibilities of teachers, schools, students, and families.

EDUC 230 (P/T) 3 Credits
INTRO TO CHILD ABUSE AND NEGLECT
Quarters: Fall
Explores the definition, scope, and impact of child abuse and neglect. Assessment of child neglect, risk and protective factors are also studied. Child neglect prevention and intervention also studied.

EDUC 231 (P/T) 3 Credits
CHILDREN OF INCARCERATED PARENTS
Quarters: Fall, Spring
Focuses upon working with children of incarcerated parents and the unique issues confronting those children in the classroom setting.

EDUC 232 (P/T) 3 Credits
THERAPEUTIC INTER:CHILD OF NEGLECT
Quarters: Winter, Spring
Focuses upon combining a theoretical foundation with a practical basis for creating therapeutic intervention for early childhood environments by creating a framework for understanding the emotional lives of young children of neglect. Students will learn how to aid children in integrating experience in affective ways, develop adult-child relationships, develop emotionally based curriculum, and address the needs of families of these children. Some sections may have a low-cost text book option.

EDUC 233 (P/T) 3 Credits
CRITICAL FACTORS IN PARENT NEGLECT
Quarters: Summer, Spring
Focuses upon the study of child neglect, neglectful parents, the forces that have damaged parents, and strategies for teachers working with neglectful parents.

EDUC 240 (P/T) 3 Credits
CURRICULUM II- EARLY CHILDHOOD ED
Quarters: Spring
Provides in-depth experiences for students in understanding and creating developmentally appropriate curriculum for young children. Involves student's use of technology as a means of developing curriculum. Familiarizes the student with technology infusion in early childhood education curriculum.

EDUC 241 (P/T) 3 Credits
CURRICULUM III- EARLY CHILDHOOD ED
Quarters: Offered as needed
Emphasizes science, nature, cognition, and large group activities. Includes planning of activities that meet the needs of young children.

EDUC 242 3 Credits
EDUCATIONAL CONCEPTS
Quarters: Winter
Reviews effective teaching, history of education, education philosophies, classroom covert/overt curriculum, school financing, special needs students, classroom responsibilities, career pathways, leadership, and school law. Intended for EOU-bound students.

EDUC 245 (P/T) 3 Credits
GUIDANCE II-EARLY CHILDHOOD ED
Quarters: Winter, Spring
Surveys principles and practices of guidance, emphasizing conflict resolution, self-esteem builders, classroom management, educator's self-esteem, and effective communication with young children.

EDUC 246 (P/T) 3 Credits
FAMILY/COMMUNITY RELATIONS-ECE
Quarters: Winter
Emphasizes building and maintaining positive relationships among school, family, and community, including the use of conferences, meetings, and other resources as effective methods for fostering cooperation and parent involvement.

EDUC 247 (P/T) 3 Credits
CLASSROOM MANAGEMENT
Quarters: Fall
Focuses on techniques for program organization in early childhood classrooms, such as supervising and evaluating adults, conflict resolution skills, budgeting and supplies, policies and procedures, and other supervisory responsibilities.

EDUC 248 (P/T) 3 Credits
SPECIAL NEEDS AND MAINSTREAMING
Quarters: Fall, Winter
Examines specific areas of special needs in the early childhood classroom and the approaches to mainstreaming those students.

EDUC 250 (P/T) 4 Credits
EXCEPTIONALITY IN THE SCHOOLS
Quarters: Spring
Surveys the student's ability and disability in the schools, including characteristics of students with disabilities, legal requirements for educating students with disabilities, and basic educational strategies.

EDUC 258 (P/T) 3 Credits
ETHNIC STUDIES FOR ECE EDUCATORS
Quarters: Summer, Winter, Spring
Studies strategies for assisting classroom teachers in implementing appropriate programs for addressing cultural diversity within the classroom.

Emergency Medical

EMT 090 4 (P/T) 0 Credit
EMT INTERMEDIATE I
Quarters: Offered as needed
Covers theory and practice of procedural responsibilities related to the EMT-Intermediate. Incorporates discussion, demonstration and practical application of roles and responsibilities, patient assessment, oxygenation, ventilation, airway adjuncts, shock, intravenous therapy, intraosseous therapy, basic ECG monitoring, defibrillation, pharmacology, and EMT-Intermediate protocols. Includes 76 hours didactic training and 44 hours clinical training. Presented over two terms. Prerequisites: Oregon certified EMT- Basic.

EMT 090 5 (P/T) 0 Credit
EMT INTERMEDIATE II
Quarters: Offered as needed
Covers theory and practice of procedural responsibilities related to the EMT-Intermediate. Incorporates discussion, demonstration and practical application of roles and responsibilities, patient assessment, oxygenation, ventilation, airway adjuncts, shock, intravenous therapy, intraosseous therapy, basic ECG monitoring, defibrillation, pharmacology, and EMT-Intermediate protocols. Includes 76 hours didactic training and 44 hours clinical training. Presented over two terms. Prerequisites: Oregon certified EMT- Basic, EMT 0904.

EMT 151 (P/T) 6 Credits
EMT BASIC, PART I
Quarters: Fall
Lecture: Develops the student's ability to recognize and treat the symptoms of illness and injury in the prehospital setting. This course has two parts, Term 1 is EMT 151 and must successfully be passed in order to progress to term 2, EMT 152. This two-term course prepares individuals for National Registry certification and licensure in Oregon as an Emergency Medical Technician. Lab: Develops the student's ability to recognize and treat the symptoms of illness and injury by learning and practicing in a lab with skills practice and with simulated emergency scenes. Skills include patient assessment, basic airway management, trauma assessment and management, medication administration, and use of automated external defibrillators (AED). Please be aware this is active learning; no children or visitors are permitted in the lab. Prerequisites: This course requires American Heart Association Basic Life Support CPR card, a criminal background check, a urine drug screen and current immunization records be completed through American Databank/Complio prior to the clinical experience. As a student, you will also be required to complete patient encounters or clinical time with local agencies and in the emergency room.

EMT 152 (P/T) 6 Credits
EMT PART II
Quarters: Winter
Lecture: Develops the student's ability to recognize and treat the symptoms of illness and injury in the prehospital setting. This course has two parts, Term 1 is EMT 151 and must successfully be passed in order to progress to term 2, EMT 152. This two-term course prepares individuals for National Registry certification and licensure in Oregon as an Emergency Medical Technician. Lab: Develops the student's ability to recognize and treat the symptoms of illness and injury by learning and practicing in a lab with skills practice and with simulated emergency scenes. Skills include patient assessment, basic airway management, trauma assessment and management, medication administration, and use of automated external defibrillators (AED). Please be aware this is active learning; no children or visitors are permitted in the lab. Prerequisites: Pass EMT 151

EMT 169 (P/T) 3 Credits
EMT RESCUE
Quarters: Spring
Presents elementary procedures of rescue practices, systems, components, and control of rescue operations for rough terrain, water rescue, vehicle extrication with patient access and care, and patient packaging. Introduces techniques and tools of patient extrication. Lab included.

EMT 170 (P/T) 3 Credits
EMERGENCY COMM AND PATIENT TRANS
Quarters: Spring
Includes emergency response driving, ORS, OAR, DMV laws, maintenance and safety, route planning, communication systems, radio types, and HEAR system. Prerequisites: valid drivers license.

EMT 175 (P/T) 3 Credits
INTRO EMERGENCY MEDICAL SERVICES
Quarters: Offered as needed
Covers the role and responsibilities of the EMT, emergency medical services systems, medical-legal considerations, major incident response, hazardous materials awareness, and stress management.

English Literature

ENG 104 Z 4 Credits
INTRODUCTION TO FICTION
Quarters: Fall
The study of fiction invites us to enter imaginative narratives and confront the challenges of being human. English 104Z provides opportunities for the appreciation of fiction, including deeper awareness of craft and insight into how reading fiction can lead to self-enrichment. Students read a variety of types of fiction, from diverse perspectives and eras, and develop their skills in discussion, literary analysis, and critical thinking.

ENG 105 Z 4 Credits
INTRODUCTION TO DRAMA
Quarters: Offered as needed
The study of plays exposes us to texts with the power to shock, inspire, enlighten, and delight; this course in drama can be an empowering and transformative journey toward keener engagement with the world, local community, and your intended path. English 105Z provides opportunities for the appreciation of drama, including deeper awareness of craft and insight into how reading plays can lead to self-enrichment. Students read a variety of types of drama, from diverse perspectives and eras, and develop their skills in discussion, literary analysis, and critical thinking.

ENG 106 Z 4 Credits
INTRODUCTION TO POETRY
Quarters: Offered as needed
The study of poetry invites us to delve into the biggest questions about life and culture alongside the seemingly smallest issues of words and sounds. English 106Z provides opportunities for the appreciation of poetry, including deeper awareness of craft and insight into how reading poetry can lead to self-enrichment. Students read a variety of types of poetry and poetic forms, from diverse perspectives and eras, and develop their skills in discussion, literary analysis, and critical thinking.

ENG 195 3 Credits
FILM STUDIES
Quarters: Summer, Winter
Covers the history, techniques, and art of film. Includes in-class film viewing and discussions with an emphasis on how to analyze and evaluate a variety of stylistic approaches. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 201 3 Credits
INTRO TO SHAKESPEARE
Quarters: Offered as needed
Covers a cross-section of Shakespeare's major tragedies with attention to his life and times, production techniques, the plays' relevance today, and literary conventions such as structure, theme, and characterization. May include Hamlet, Macbeth, or other selections. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 202 3 Credits
INTRO TO SHAKESPEARE
Quarters: Offered as needed
Covers a cross-section of Shakespeare's major comedies with attention to his life and times, production techniques, the plays' relevance today, and literary conventions such as structure, theme, and characterization. May include Much Ado About Nothing, Twelfth Night, or other selections. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 203 3 Credits
INTRO TO SHAKESPEARE
Quarters: Offered as needed
Covers a cross-section of Shakespeare's major histories with attention to his life and times, production techniques, the plays' relevance today, and literary conventions such as structure, theme, and characterization. May include Julius Caesar, Henry IV, or other selections, and the critics. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 207 3 Credits
INTRO TO WORLD LITERATURE
Quarters: Fall
Explores the development and variety of world literature from the ancient world to the present, focusing from the ancient world to the Renaissance. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 208 3 Credits
INTRO TO WORLD LITERATURE
Quarters: Winter
Explores the development and variety of world literature from the ancient world to the present, focusing on Neoclassicism, Romanticism, and Realism. Some sections may have a low-cost text book option. Prerequisites: Pass WR 115 witha "C-" or better, or suitable placement score.

ENG 209 3 Credits
INTRO TO WORLD LITERATURE
Quarters: Spring
Explores the development and variety of world literature from the ancient world to the present, focusing on the Twentieth Century. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 253 3 Credits
SURVEY OF AMERICAN LITERATURE
Quarters: Fall, Winter
Traces the development of American literature from the age of exploration to the present. Focus: from the age of exploration to the Civil War. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 254 3 Credits
SURVEY OF AMERICAN LITERATURE
Quarters: Offered as needed
Traces the development of American literature from the age of exploration to the present. Focus: from the Civil War to 1910. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 255 3 Credits
SURVEY OF AMERICAN LITERATURE
Quarters: Offered as needed
Traces the development of American literature from the age of exploration to the present. Focus: from 1910 to the present. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

ENG 260 3 Credits
INTRO TO WOMEN WRITERS
Quarters: Offered as needed
Introduces the literature and critical perspectives of women writers, emphasizing British and North American Women writers of the twentieth century. Focuses on developing a critical framework for examining issues related to race, gender, identity, and representation in literary works by women. Prerequisites: Pass WR 121 with a "C-" or better, or suitable placement score.

Environmental Science

ENVI 100 4 Credits
ENVIRONMENTAL SCIENCE
Quarters: Summer, Fall, Winter, Spring
This course will consider scientific principles and their influence on environmental problems in today's society. The role of humans and our impact on these issues will be emphasized. Past, present, and future trends will be evaluated along with the possible impacts of these trends on the local and global populace.

Ethnic Studies

ETHN 101 3 Credits
ETHNIC STUDIES
Quarters: Fall, Winter
Studies American race and ethnic relations from a modern sociological perspective, including prejudice, stereotyping, discrimination, inclusion, and social justice. Focuses on early European immigration, Anglo domination, Native Americans and Asian Americans in terms of their cultural heritage, history, and current sociological issues. Covers other minority ethnic groups, and the history and current policies of immigration.

ETHN 102 3 Credits
ETHNIC STUDIES
Quarters: Winter, Spring
Studies American race and ethnic relations from a modern sociological perspective, including prejudice, stereotyping, discrimination, inclusion, and social justice. Focuses on African-Americans, Arab and Muslim Americans, and Jewish Americans in terms of their cultural heritage, history, and current sociological issues. Covers other minority ethnic groups, and the history and current policies of immigration.

ETHN 103 3 Credits
ETHNIC STUDIES
Quarters: Summer, Fall, Spring
Studies American race and ethnic relations from a modern sociological perspective, including prejudice, stereotyping, discrimination, inclusion, and social justice. Focuses on Hispanic Americans, Eastern Europeans, and religious minorities in terms of their cultural heritage, history, and current sociological issues. Covers other minority ethnic groups, and the history and current policies of immigration.

Exercise Science

EXSI 220 3 Credits
INTRO TO ATHLETIC INJURIES
Quarters: Fall
A survey course introducing principles of care and prevention of sport-induced injury. Emphasis will be on identification and differentiation of minor and major trauma-related to sports participation. Prerequisites: Recommended to complete BIOL 231, or instructor approval.

EXSI 270 3 Credits
APPLIED ANATOMY
Quarters: Offered as needed
This course will thoroughly examine the study of human anatomy from the details of musculoskeletal anatomy to the intricacies of neurological innervation. Moreover, this course specifically provides an applied understanding of human anatomy as it relates to movement.

EXSI 280 2 Credits
INTERNSHIP: EXERCISE SCIENCE
Quarters: Offered as needed
An optimal internship links academic experience to practical opportunity by offering academic credit for the student through work experience. Such an internship facilitates professional skills development, hands-on experience, and career evaluation opportunities. Independent completion of assignments, encouraging reflective thinking, is required to earn the associated academic credits. Successful completion of these assignments, without traditional course reminders, entails self-motivation and professional time management. Requires instructor approval of work setting, placement and documentation of 36 hours work site hours. Student success will be reported via their final supervisor evaluation.

Facilities Maintnc. Specialist

FMS 100 (P/T) 2 Credits
INTRO TO FACILITIES MAINTENANCE SYS
Quarters: Offered as needed
This hands-on course introduces students to the fundamental principles and practices of industrial facility maintenance. Students will gain practical experience with essential maintenance tools, equipment diagnostics, and OSHA-approved safety procedures. The course covers systematic approaches to preventive maintenance, mechanical systems troubleshooting, and basic repair techniques for industrial equipment. At the end of this course, students will be able to perform basic maintenance procedures, conduct safety inspections, and troubleshoot common facility maintenance issues in an industrial setting.

FMS 101 (P/T) 2 Credits
REFRIGERATION I
Quarters: Offered as needed
This introductory course explores the fundamental principles of refrigeration, including heat transfer, temperature, and the basic physics and gas laws that govern refrigeration systems. Students will study the operation and application of basic refrigeration cycles and learn to use industry-standard tools and instruments for charging, evacuation, and recovery methods in a laboratory setting. Emphasis is placed on safe and effective practices within the refrigeration industry. At the end of this course, students will be able to apply fundamental refrigeration principles, safely operate basic refrigeration systems, and perform essential maintenance procedures using industry-standard tools and techniques.

FMS 102 (P/T) 2 Credits
REFRIGERATION II
Quarters: Offered as needed
This course builds upon the foundational knowledge from Refrigeration I, focusing on the operation and analysis of refrigeration system components. Topics include compressors, condensers, evaporators, refrigerants, and metering devices. Laboratory sessions emphasize hands-on experience with system components, compressor testing methods, and advanced charging, evacuation, and recovery techniques. Safety, industry standards, and environmental regulations are emphasized throughout the course. At the end of this course, students will be able to evaluate and service major refrigeration components, perform advanced system maintenance procedures, and implement industry-standard safety protocols and environmental compliance measures. Prerequisites: Pass FMS 101

FMS 103 (P/T) 2 Credits
REFRIGERATION III
Quarters: Offered as needed
This advanced course focuses on the operation and maintenance of refrigeration and HVAC systems, with an emphasis on controls, troubleshooting, and system optimization. Students will gain practical experience in identifying, diagnosing, and resolving system issues while mastering advanced evacuation and charging techniques. Lab sessions will simulate real-world scenarios to prepare students for industry challenges. At the end of this course, students will be able to independently diagnose complex system malfunctions, implement effective repair solutions, and optimize HVAC/R systems for peak performance and efficiency. Prerequisites: Pass FMS 102

FMS 111 (P/T) 2 Credits
REFRIGERATION ELECTRICAL I
Quarters: Offered as needed
This foundational course introduces the basic theory and applications of electrical concepts essential for refrigeration and HVAC systems. Topics include Ohm's Law, electric power, and the operation of electric circuits. Students will also explore alternating current (AC) theory, power distribution, and the interpretation of wiring diagrams and schematics for HVAC system installation. The course combines theoretical instruction with practical laboratory exercises to develop hands-on skills. At the end of this course, students will be able to analyze electrical circuits, safely perform basic electrical measurements, and accurately interpret HVAC electrical schematics and wiring diagrams for system installation and maintenance.

FMS 112 (P/T) 2 Credits
REFRIGERATION ELECTRICAL II
Quarters: Offered as needed
This advanced course builds upon concepts introduced in Refrigeration Electrical I, focusing on the theory and application of electrical motor concepts and complex electrical circuits. Topics include control system components, detailed wiring diagrams, and schematic interpretation. The course emphasizes practical skills in analyzing, wiring, and troubleshooting control systems in HVAC applications. At the end of this course, students will be able to diagnose and repair complex motor control systems, construct advanced electrical circuits, and implement sophisticated control strategies for HVAC applications. Prerequisites: Pass FMS 111

FMS 113 (P/T) 2 Credits
REFRIGERATION ELECTRICAL III
Quarters: Offered as needed
This advanced course focuses on the development and application of schematics for the diagnosis, service, and repair of HVAC systems. Topics include advanced control applications, circuit evaluation techniques, and troubleshooting strategies. Students will gain hands-on experience with real-world HVAC systems, emphasizing critical thinking and problem-solving skills necessary for the industry. At the end of this course, students will be able to design and interpret complex HVAC schematics, diagnose system malfunctions using advanced control logic, and implement effective repair strategies based on thorough circuit analysis. Prerequisites: Pass AES 112

FMS 119 (P/T) 2 Credits
WATER TREATMENT AND DISTRIBUTION
Quarters: Offered as needed
This course provides an introduction to the fundamentals of water treatment and distribution systems, focusing on cooling towers, boilers, wastewater, and water purification processes. Students will explore common issues such as corrosion, scale, fouling, and bacterial contamination. The course will also cover the mechanical equipment involved in water treatment and distribution, along with methods for maintaining optimal system performance. Hands-on laboratory experiences will reinforce theoretical knowledge, including troubleshooting and problem-solving in water treatment systems. At the end of this course, students will be able to analyze water quality issues, select appropriate treatment methods, operate essential mechanical equipment, and implement effective solutions for common water system problems.

FMS 122 (P/T) 3 Credits
INTRODUCTION TO BOILERS
Quarters: Offered as needed
This course introduces students to the fundamentals of hydronics systems and the operation of boilers, focusing on heat loss calculations, physical properties of water, and types of boilers. Students will learn the key components of piping systems, including circulating pumps, to ensure correct fluid flow in heating systems. The course also includes practical maintenance techniques and component identification to prepare students for hands-on work with boiler systems in real-world applications. At the end of this course, students will be able to calculate heat loss requirements, select appropriate boiler systems and components, perform essential maintenance procedures, and troubleshoot common hydronic system issues.

FMS 125 (P/T) 2 Credits
NATURAL GAS EQUIPMENT I
Quarters: Offered as needed
This course introduces the fundamental principles of natural gas, including its properties, pressures, and the installation requirements for natural gas systems. Students will learn about the mechanical code requirements for the installation of natural gas piping and related equipment. Basic diagnostic procedures will also be covered, enabling students to apply their knowledge to identify and troubleshoot common issues in natural gas systems. At the end of this course, students will be able to interpret mechanical codes, design and install natural gas piping systems, perform pressure tests, and diagnose and repair common natural gas system malfunctions.

FMS 201 (P/T) 3 Credits
INTRODUCTION TO CHILLER SYSTEMS
Quarters: Offered as needed
This course provides an introduction to chiller systems and their applications in industrial and institutional settings. Students will learn about the operation of chiller compressors, refrigerants, air-cooled and water-cooled condensers, and associated controls and piping systems. Emphasis is placed on the practical aspects of chiller system installation, maintenance, and troubleshooting, providing students with the foundational knowledge needed to work with chiller systems in commercial and industrial environments. At the end of this course, students will be able to identify chiller system components, perform routine maintenance procedures, diagnose system malfunctions, and implement appropriate solutions for optimal chiller system performance.

FMS 202 (P/T) 3 Credits
DIRECT DIGITAL CONTROL ADV. TECH.
Quarters: Offered as needed
This course explores advanced applications of Direct Digital Control (DDC) technology used in commercial HVAC systems. Students will learn how DDC systems are applied to a variety of HVAC systems, from single-zone air handlers to complex multi-zone and Variable Air Volume (VAV) systems. The course covers advanced topics including valve configurations, engineering calculations, and the integration of DDC systems with life safety systems. Students will develop a deep understanding of how to design, configure, troubleshoot, and optimize these systems for energy efficiency and performance in commercial and industrial buildings. At the end of this course, students will be able to design and implement DDC control strategies, program complex control sequences, integrate multiple building systems, analyze system performance data, and optimize HVAC operations for maximum efficiency and occupant comfort. Prerequisites: Pass INED 112, or receive instructor approval

FMS 204 (P/T) 3 Credits
HEAT PUMPS
Quarters: Offered as needed
This course explores the fundamental principles and operation of heat pump systems. Students will learn through hands-on experience with modern heat pump equipment, gaining practical knowledge of system components, control systems, and testing procedures. The course combines theoretical concepts with real-world applications, emphasizing proper use of diagnostic tools and test equipment. Safety protocols and industry best practices are integrated throughout the curriculum. At the end of this course, students will be able to diagnose, service, and maintain residential and light commercial heat pump systems according to manufacturer specifications.

FMS 207 (P/T) 2 Credits
PNEUMATIC CONTROLS
Quarters: Offered as needed
This course provides HVAC service technicians with the knowledge and skills necessary to diagnose and repair malfunctions in pneumatic control systems. Focus will be placed on Honeywell control systems and other common thermostat/controllers. The course covers the elements of pneumatic systems, such as valve assemblies, dampers, controllers, thermostats, sensors, relays, and air supply equipment, offering hands-on experience in troubleshooting, repair, and maintenance of pneumatic controls. At the end of this course, students will be able to diagnose and repair complex pneumatic control systems, calibrate various types of controllers and thermostats, perform preventive maintenance on pneumatic components, and effectively troubleshoot air supply and distribution problems in commercial HVAC systems.

FMS 210 (P/T) 2 Credits
BASIC HVAC/R INSTALL AND TECHNIQUES
Quarters: Offered as needed
This course introduces students to the foundational practices and techniques involved in HVAC/R system installation. Emphasis is placed on understanding and applying code requirements and executing practical field installations. Topics include basic sheet metal fabrication, piping, venting, and adherence to industry standards. The course combines classroom instruction with hands-on lab activities to develop entry-level skills essential for HVAC/R professionals. At the end of this course, students will be able to perform basic HVAC/R installations according to code requirements, fabricate essential system components, and implement proper venting and piping techniques following industry standards. Prerequisites: FMS 101, FMS 102, and FMS 103, or; FMS 111, FMS 112, and FMS 113, or; instructor approval.

Food and Nutrition

FNUT 225 4 Credits
NUTRITION
Quarters: Summer, Fall, Winter, Spring
Examines the basic principles and practices which comprise the science of nutrition. Studies the effect of food and nutrient intake on the body. Examines retention of nutrients and food substances during processing, the role of digestion and absorption, and components of an adequate diet. Includes scientific research paper on therapeutic nutrition and 5 day Dietary Analysis. Some sections may have a low-cost text book option.

Forestry

FOR 111 3 Credits
INTRODUCTION TO FORESTRY
Quarters: Fall, Spring
This course will serve as a broad overview of the forestry dicipline. Topics covered will range from importance of forest, forest recreation, forest management, forest wildlife, forest measurement, and other forest uses. Students will be exposed to current issues in forestry with particular focus on Oregon and the Pacific Northwest. Students will also learn through field trips to local forested regions.

Forestry Wildland and Range

FWR 101 (P/T) 1 Credit
NATURAL RESOURCES SEMINAR
Quarters: Fall
Provides information and self-evaluation in areas of goal setting, educational planning, student activities, electronic student accounts, study skills, and successful navigation of the college system. Emphasizes academic and career plans for students interested in Natural Resources.

General Science

GSCI 104 4 Credits
PHYSICAL SCIENCE PHYSICS
Quarters: Fall, Winter, Spring
Surveys the general principles of physics. May include mechanics, electricity, heat, light, and nuclear physics. Intended for non-science majors. Lab required.

GSCI 105 4 Credits
PHYSICAL SCIENCE CHEMISTRY
Quarters: Offered as needed
Surveys the fundamentals of inorganic chemistry, including the importance of chemistry in our modern society. Provides practical experience in measurement, density, structure of atom, nuclear chemistry, energy and environmental issues. Intended for non-science majors. Lab required.

GSCI 106 4 Credits
PHYSICAL SCIENCE GEOLOGY
Quarters: Fall, Winter
Introduces minerals and rocks, and a survey of the principles of geology, erosion, plate tectonics and the structure of the earth. Intended for non-science majors. Lab and/or field trip required.

GSCI 107 4 Credits
PHYSICAL SCIENCE ASTRONOMY
Quarters: Offered as needed
Includes solar and galactic astronomy, a study of the sun, planets, stars and galaxies, and modern discoveries in the field of astronomy. Intended for non-science majors. Lab required.

GSCI 108 4 Credits
PHYSICAL SCIENCE OCEANOGRAPHY
Quarters: Offered as needed
Introduces the physical, chemical, geological, and biological processes which occur in the oceans. Intended for non-science majors. Lab and/or field trip required.

GSCI 109 4 Credits
PHYSICAL SCIENCE METEOROLOGY
Quarters: Fall, Spring
Introduces the composition and structure of our atmosphere. Provides the factors and concepts that control weather and the production of wind, precipitation, clouds, storms, and climate change. Intended for non-science majors. Lab required.

GSCI 110 4 Credits
PHYSICAL SCIENCE ENERGY
Quarters: Offered as needed
Surveys the various energy sources used in our society, including fossil fuels, nuclear power, and renewable energy sources. Addresses environmental and societal issues, energy conservation & efficiency, transportation, pollution, climate science and global effects. Intended for non-science majors. Lab required.

GSCI 161 (P/T) 3 Credits
MEDICAL TERMINOLOGY I
Quarters: Summer, Fall, Winter, Spring
Examines the pronunciation, spelling, origin, meaning, and usage of scientific terms employed by health care professionals. Emphasizes human anatomical terminology. Intended for students preparing for careers in the health professions. Some sections may have a low-cost or no-cost text book option.

GSCI 162 3 Credits
MEDICAL TERMINOLOGY II
Quarters: Summer, Winter, Spring
Presents advanced vocabulary, extending and reinforcing those terms acquired in Medical Terminology I. Some sections may have a low-cost or no-cost text book option. Prerequisites: GSCI 161 or instructor permission.

Geography

GEOG 101 4 Credits
PHYSICAL GEOGRAPHY
Quarters: Offered as needed
Provides an overview of physical geography, including foundations of geography; solar energy, seasons, and the atmosphere; energy and global temperatures; atmospheric and oceanic circulation; and water and weather.

GEOG 105 3 Credits
INTRO TO CULTURAL GEOGRAPHY
Quarters: Fall, Spring
Studies the patterns of diversity and unity among the world's cultural groups. Examines the spatial interaction of society and how factors such as climate influence cultures by focusing on analysis of settlement, economics, politics, religion, language and other cultural phenomena. Includes globalization and the effects upon culture.

GEOG 265 (P/T) 4 Credits
GEOGRAPHIC INFO SYSTEMS (GIS) I
Quarters: Winter, Spring
Introduces Geographic Information Systems (GIS) using ArcView desktop mapping software. Emphasizes the management of graphic and textual information within a single system. Uses ArcView's basic tools and object-oriented data structure to create charts, graphs, reports and layouts.

Geology

GEOL 148 4 Credits
VIOLENT EARTH
Quarters: Fall, Winter, Spring
Covers basics of geoscience, with a focus on historical geology and catastrophic events, including: formation of the moon, volcanoes, earthquakes, mega-floods, mass extinctions, asteroid impacts, and life itself. Course is intended for non-science majors.

Health/Physical Education

HPE 100 1 Credit
YOGA
Quarters: Offered as needed
Incorporates a dynamic series of poses performed at a gentle pace. Covers basic yoga philosophy, asanas, pranayama, meditation and relaxation for a better health and wellness. Recommended beginner students who are not ready for a more active yoga.

HPE 101 1 Credit
YOGA-BARRE
Quarters: Summer, Fall, Winter, Spring
Barre is a mixture of modern postural alignment theory, core activation, glute strengthening movements, leg and arm strengthening movements. You use your body weight to churn out rep after rep of muscle-burning moves. The yoga in this course will mainly be a vinyasa flow, which focuses the movement with the breath, a constant movement that allows you to build up heat as you flow. Includes intermediate yoga exercises for increased flexibility, improved health, relaxation, and reduced stress in daily living. Some sections may have a no-cost text book option.

HPE 120 2 Credits
FIRST AID AND CPR
Quarters: Fall, Winter, Spring
Teaches the proper techniques in administering CPR and rescue breathing on an adult, child and infant and the use of an Automated External Defibrillator (AED) on an adult and child victim. Presents the proper techniques for clearing an obstructed airway on both a conscious and unconscious victim of any age, and the proper first aid procedures to control bleeding, treat for shock, bandage wounds, splint broken bones and numerous other emergency care techniques.

HPE 121 1 Credit
BEGINNING WEIGHT TRAINING
Quarters: Fall, Winter, Spring
Stresses the proper guidelines, principles, and techniques of weight lifting and the development of muscular strength and endurance. Introduces the development of individual weight training programs which allow for body and strength differences, including weight training etiquette and safety. Introduces evaluation techniques for muscular endurance and strength. Some sections may have a no-cost text book option.

HPE 122 1 Credit
INDEPENDENT/ADV WEIGHT TRAINING
Quarters: Summer, Fall, Winter, Spring
Development of muscular strength, endurance and power at an advanced level. Continues and reinforces beginning weight training concepts. The students will be held accountable for independent lifting by turning in a work-out log designated by the instructor. Recommended: Beginning Weight Training or equivalent Some sections may have a no-cost text book option.

HPE 131 3 Credits
INTRO TO PHYS ED AND KINESIOLOGY
Quarters: Fall
Introductory investigation into the scientific principles of physical activity, human movement, and exercise as it relates to personal and population health. Introduces the broad spectrum of fields related to exercise science. Covers the history, current, and future trends with the exercise field. Topics include basic anatomy and physiology, biomechanics, motor behavior, cardiovascular endurance, strength and conditioning, nutrition, sports psychology. Students will explore professional and career opportunities related to the study of kinesiology.

HPE 160 B 1 Credit
ADVANCED BASKETBALL - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 BC 1 Credit
BASKETBALL CONDITIONING - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 C 1 Credit
ADVANCED CROSS COUNTRY - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 CC 1 Credit
CROSS COUNTRY CONDITIONING - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 D 1 Credit
ADVANCED SOFTBALL
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 DC 1 Credit
SOFTBALL CONDITIONING
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 F 1 Credit
TRACK AND FIELD - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 FC 1 Credit
TRACK AND FIELD CONDITIONING - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 R 1 Credit
ADVANCED RODEO - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 RC 1 Credit
RODEO CONDITIONING - WOMEN
Quarters: Offered as needed
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 S 1 Credit
ADVANCED SOCCER - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 SC 1 Credit
SOCCER CONDITIONING - WOMEN
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 T 1 Credit
ADVANCED TENNIS - WOMEN
Quarters: Offered as needed
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 TC 1 Credit
TENNIS CONDITIONING - WOMEN
Quarters: Offered as needed
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 V 1 Credit
ADVANCED VOLLEYBALL
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 VC 1 Credit
VOLLEYBALL CONDITIONING
Quarters: Fall
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 W 1 Credit
ADVANCED WRESTLING (WOMEN)
Quarters: Fall, Winter, Spring
Provides advanced skill training, instruction, conditioning, and conception for female athletes in the following intercollegiate/club-sanctioned sports: basketball, cross-country, golf, soccer, softball, tennis, track and field, and wrestling.

HPE 160 WC 1 Credit
WRESTLING CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of wrestling. Conditioning wrestling athletes to train the aerobic and anerobic systems for the enhancement of player performance.

HPE 180 B 1 Credit
ADVANCED BASKETBALL (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of basketball. Team concepts for basketball will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 BC 1 Credit
BASKETBALL CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of basketball. Conditioning basketball athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 C 1 Credit
ADVANCED CROSS COUNTRY (WOMEN)
Quarters: Fall, Winter
Advanced training in the sport of cross country. Team concepts for cross country will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 CC 1 Credit
CROSS COUNTRY CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of cross country. Conditioning cross country athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 D 1 Credit
ADVANCED SOFTBALL (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of softball. Team concepts for softball will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 DC 1 Credit
SOFTBALL CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of softball. Conditioning softball athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 F 1 Credit
ADVANCED TRACK AND FIELD (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of track and field. Team concepts for track and field will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 FC 1 Credit
TRACK AND FIELD CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of track and field. Conditioning track and field athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 R 1 Credit
ADVANCED RODEO (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of rodeo. Team concepts for rodeo will be taught that include strategy for competition, drill work associated with player development, and mental preparation.

HPE 180 RC 1 Credit
RODEO CONDITIONING (WOMEN)
Quarters: Winter, Spring
Advanced conditioning in the sport of rodeo. Conditioning rodeo athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 S 1 Credit
ADVANCED SOCCER (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of soccer. Team concepts for soccer will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 SC 1 Credit
SOCCER CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of soccer. Conditioning soccer athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 T 1 Credit
TENNIS CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of tennis. Team concepts for tennis will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 TC 1 Credit
TENNIS CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of tennis. Conditioning tennis athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 180 V 1 Credit
ADVANCED VOLLEYBALL (WOMEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of volleyball. Team concepts for volleyball will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 180 VC 1 Credit
VOLLEYBALL CONDITIONING (WOMEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of volleyball. Conditioning volleyball athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 185 1 Credit
CO EDUCATIONAL PHYSICAL EDUCATION
Quarters: Summer, Winter, Spring
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes.

HPE 185 B 1 Credit
BASKETBALL ACTIVITY
Quarters: Offered as needed
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes.

HPE 185 D 1 Credit
STEP AEROBICS
Quarters: Offered as needed
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes.

HPE 185 E 1 Credit
TENNIS ACTIVITY
Quarters: Fall, Spring
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes. Some sections may have a no-cost text book option.

HPE 185 F 1 Credit
AEROBIC FITNESS
Quarters: Summer, Fall, Winter
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes. Some sections may have a no-cost text book option.

HPE 185 G 1 Credit
GOLF ACTIVITY
Quarters: Offered as needed
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes.

HPE 185 J 1 Credit
WALK/JOG/WEIGHT TRAINING
Quarters: Summer, Fall, Winter
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes. Some sections may have a no-cost text book option.

HPE 185 K 1 Credit
KICKBOXING AEROBICS
Quarters: Offered as needed
Focuses on three primary aspects of physical fitness: cardiovascular fitness, flexibility, and strength. The primary emphasis is on the cardiovascular component of the course. Increases cardiovascular endurance and strength utilizing punching and kicking techniques while incorporating various aerobic methods.

HPE 185 S 1 Credit
SWIMMING
Quarters: Summer, Fall, Winter
Utilizes swimming pool facilities for aerobic activities. Students will be allowed to set their own schedules in accordance with pool hours. Some sections may have a no-cost text book option.

HPE 185 T 1 Credit
AEROBIC/WEIGHT TRAINING
Quarters: Offered as needed
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes.

HPE 185 W 1 Credit
WEIGHT TRAINING
Quarters: Summer, Fall, Winter
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes. Some sections may have a no-cost text book option.

HPE 185 Y 1 Credit
YOGA
Quarters: Summer, Fall, Winter
Provides instruction and physical exercise and conditioning around a specific activity or sport. Features courses in basketball, aerobic activities, jogging, weight training, yoga, golf, swimming, tennis, and seasonal activity classes. Some sections may have a no-cost text book option.

HPE 190 B 1 Credit
ADVANCED BASKETBALL (MEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of basketball. Team concepts for basketball will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 190 BC 1 Credit
BASKETBALL CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of basketball. Conditioning basketball athletes to train the aerobic and anerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 C 1 Credit
ADVANCED CROSS COUNTRY (MEN)
Quarters: Fall, Winter
Advanced training in the sport of cross country. Team concepts for cross country will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 190 CC 1 Credit
CROSS COUNTRY CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of cross country. Conditioning cross country athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 D 1 Credit
ADVANCED BASEBALL (MEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of baseball. Team concepts for baseball will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 190 DC 1 Credit
BASEBALL CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of baseball. Conditioning baseball athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 F 1 Credit
ADVANCED TRACK AND FIELD (MEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of track and field. Team concepts for track and field will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 190 FC 1 Credit
TRACK AND FIELD CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of track and field. conditioning track and field athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 R 1 Credit
ADVANCED RODEO (MEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of rodeo. Team concepts for rodeo will be taught that include strategy for competition, drill work associated with player development, and mental preparation.

HPE 190 RC 1 Credit
RODEO CONDITIONING (MEN)
Quarters: Winter, Spring
Advanced conditioning in the sport of rodeo. Conditioning rodeo athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 S 1 Credit
ADVANCED SOCCER (MEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of soccer. Team concepts for soccer will be taught that include strategy for competition, drill work associated player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 190 SC 1 Credit
SOCCER CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of soccer. Conditioning soccer athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 T 1 Credit
ADVANCED TENNIS (MEN)
Quarters: Fall, Winter, Spring
Advanced training in the sport of tennis. Team concepts for tennis will be taught that include strategy for competition, drill work associated with player development, and mental preparation. Some sections may have a no-cost text book option.

HPE 190 TC 1 Credit
TENNIS CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of tennis. Conditioning tennis athletes to train the aerobic and anaerobic systems for the enhancement of player performance. Some sections may have a no-cost text book option.

HPE 190 W 1 Credit
ADVANCED WRESTLING (MEN)
Quarters: Fall, Winter, Spring
Provides advanced training, instruction and conditioning for male athletes in the following intercollegiate sports: basketball, cross country, soccer, baseball, track & field, golf, tennis, rodeo and wrestling..

HPE 190 WC 1 Credit
WRESTLING CONDITIONING (MEN)
Quarters: Fall, Winter, Spring
Advanced conditioning in the sport of wrestling. Conditioning wrestling athletes to train the aerobic and anaerobic systems for the enhancement of player performance.

HPE 194 2 Credits
PROFESSIONAL ACTIVITIES
Quarters: Fall, Winter, Spring
Introduces team and/or individual sports, providing a sound foundation of skill development and knowledge in each area of the sport. Emphasizes methods, and progression and analysis of motor skills needed to become an effective teacher of each selected sport and/or event. Concentrates on one sport each quarter in the following six-quarter rotation: soccer, volleyball, tennis, softball, basketball, and golf. Lab required. Some sections may have a low-cost text book option.

HPE 201 3 Credits
PERS TRAIN - INTRO TO STRG AND CONDIT
Quarters: Winter, Spring
This course is designed to provide students with the skills and knowledge necessary to safely and properly execute resistance training exercises and movements. Students will be exposed to basic training principles as well as an understanding of the adaptations to resistance training. In addition, students will be exposed to movement and exercise categories for upper body, lower body, and core movements. The course will help students learn how to facilitate rapport, adherence, self-efficacy, and behavior change in clients, as well as design programs that help clients improve posture, movement, flexibility, balance, core function, cardiorespiratory fitness, muscular strength and endurance, and sports performance.

HPE 231 2 Credits
LIFETIME FITNESS
Quarters: Fall, Winter, Spring
This class explores fitness, nutrition, stress management, healthy literacy, and behavior change to maximize personal wellness by making good choices in regards to wellness. Related topics covered include muscular strength and endurance, writing an exercise plan, analyzing personal diet, and stress management techniques. The class will include a behavior change project, personal fitness plan, nutrition analysis and specific techniques to manage stress to improve overall quality of life.

HPE 259 3 Credits
INTRODUCTION TO ATHLETIC TRAINING
Quarters: Fall, Spring
Introduces the educational background and employment opportunities for future athletic trainers and various medical professionals. Discusses epidemiology of injuries, recognition of specific injuries, and a variety of conditions related to the health of the athlete. Includes preparing to become an athletic trainer, day to day tasks required, structure of a sports medicine team, prevention and management of injuries, and how to establish an emergency response plan. Prerequisites: First Aid or current certification or taking HPE 120 concurrently

HPE 260 J 3 Credits
INTRO TO ATHLETIC TRAINING II
Quarters: Offered as needed
Introduces the proper techniques of injury evaluation, treatment, rehabilitation and/or care of athletic injuries. Covers anatomical structures of the foot, ankle, lower leg, knee, thigh, hip, groin, thoracic region, chest, back, ribs, back, fingers, wrist, hand, elbow, shoulder, head, neck, and spinal area. Discusses how each functions and what injuries may occur. Covers the relevant soft tissue structures, including muscle tendon units, cartilage, and ligamentous structures. Teaches students to complete injury evaluations and provides a working knowledge of how each injury occurred.

HPE 261 J 2 Credits
INTRO TO TAPING AND BRACING
Quarters: Winter
Demonstrates multiple techniques in preventing, supporting and protecting athletes from injury by means of taping, bracing, wrapping and/or splinting. Uses various braces, splints, and types of tape for numerous body parts, including feet, ankles, lower leg, knees, hip/groin, shoulders, elbows, wrists, hands and fingers used in the field of athletic training. Introduces basic wound protocol and procedures.

HPE 288 3 Credits
SCIENCE OF COACHING YOUTH SPORTS
Quarters: Fall, Winter
This course provides a general understanding of exercise physiology, sport pedagogy, sport psychology, and sport medicine for individuals who wish to coach in a school or youth sport setting. The course is designed to prepare the student to take the coaching certification through the National Federation of State High School Association (NFHS).

HPE 294 2 Credits
PE PROFESSIONAL ACTIVITIES METHODS
Quarters: Offered as needed
Introduces team and/or individual sports, providing a sound foundation of skill development and knowledge in each area of the sport. Emphasizes methods, and progression and analysis of motor skills needed to become an effective teacher of each selected sport and/or event. Concentrates on one sport each quarter in the following six-quarter rotation: soccer, volleyball, tennis, softball, basketball, and golf. Lab required.

HPE 295 3 Credits
HEALTH AND FITNESS FOR LIFE
Quarters: Summer, Fall, Winter, Spring
Explores wellness concepts and emphasizes how to maximize health by making informed choices in regards to total wellness, fitness, nutrition and other lifestyle changes. Covers muscle strength and endurance, cardiovascular issues, lifestyle related diseases and their risk factors, and prevention methods.

History

HIST 101 3 Credits
HISTORY OF WESTERN CIVILIZATIONS
Quarters: Fall
Examines the major ideas, issues, events and personalities of the time. Offers different frameworks of analysis to enhance comprehension and critical thinking. Includes the Birth of Civilization, Greece and Rome, Middle Ages, and Renaissance.

HIST 102 3 Credits
HISTORY OF WESTERN CIVILIZATIONS
Quarters: Summer, Winter, Spring
Examines the major ideas, issues, events and personalities of the time. Offers different frameworks of analysis to enhance comprehension and critical thinking. Includes the Reformation, Absolutism, the Scientific and Industrial Revolutions, and the French Revolution.

HIST 103 3 Credits
HISTORY OF WESTERN CIVILIZATIONS
Quarters: Summer, Spring
Examines the major ideas, issues, events and personalities of the time. Offers different frameworks of analysis to enhance comprehension and critical thinking. Includes the age of Napoleon, the age of nation-states, the birth of modern European thought. World War I, Great Depression, World War II, the Vietnam War, and through to the present.

HIST 201 3 Credits
U.S. HISTORY
Quarters: Summer, Fall, Winter
Examines the major ideas, issues, events, and personalities of the time. Offers different frameworks of analysis to enhance comprehension and critical thinking. Includes early migration into North America through nationhood to the eve of the Civil War.

HIST 202 3 Credits
U.S. HISTORY
Quarters: Winter, Spring
Examines the major ideas, issues, events and personalities of the time. Offers different frameworks of analysis to enhance comprehension and critical thinking. Includes westward movement, Civil War, industrial America, and the Progressive Era. Some sections may have a no-cost text book option.

HIST 203 3 Credits
U.S. HISTORY
Quarters: Fall, Winter, Spring
Examines the major ideas, issues, events and personalities of the time. Offers different frameworks of analysis to enhance comprehension and critical thinking. Includes WWI, Depression and New Deal, WWII, Vietnam War, and the 1960's through to the present.

Horse Production

HPRD 101 (P/T) 3 Credits
ROUGH STOCK I
Quarters: Fall
Teaches basic skills of rough stock rodeo events and activities. Includes physical and mental aspects of successful rodeo competition. Provides opportunity to practice on live animals.

HPRD 102 (P/T) 3 Credits
ROUGH STOCK II
Quarters: Winter
Continues skill acquisition of Rough Stock I, emphasizing sharpening skills, improving techniques and preparing for competition.

HPRD 103 (P/T) 3 Credits
ROUGH STOCK III
Quarters: Spring
Includes participation in NIRA competition and organizing and conducting a college rodeo event..

HPRD 104 (P/T) 3 Credits
TIMED EVENTS I
Quarters: Fall
Teaches basic timed event skills, emphasizing sharpening techniques and the mental and physical aspects of rodeo competition. Provides opportunity to practice with live animals. Requires the student to have a suitable horse for timed events competition.

HPRD 105 (P/T) 3 Credits
TIMED EVENTS II
Quarters: Winter
A continuation of Timed Events I with emphasis on preparation for competition.

HPRD 106 (P/T) 3 Credits
TIMED EVENTS III
Quarters: Spring
Provides students the opportunity to participate in NIRA competitions and organize and conduct their own college rodeo.

HPRD 280 (P/T) 1 Credit
EQUINE WORK EXPERIENCE
Quarters: Summer, Fall, Winter, Spring
Applies actual work experience in an equine-related. An on-site supervisor evaluates and supervises the work experience student. Requires instructor approval of work setting and placement, and documentation of 36 worksite hours for each credit earned.

Horticulture

HORT 111 3 Credits
INTRO TO PLANT GROWTH
Quarters: Winter, Spring
Covers basic botany along with a study of principles of plant growth and reproduction. Emphasis is on understanding how plants grow and the factors which influence yield and quality. Students will learn basic plant parts and their functions.

HORT 211 3 Credits
PLANT PROPAGATION
Quarters: Offered as needed
This course is designed to provide students with the understanding and knowledge for propagating plants from seeds and vegetative tissues. The course covers the basic theory and applications of seed science, including collection testing, handling, treatment, and sowing. Clonal propagation via cuttings, layering, and grafting is also covered. Management of plant genetic material and basic concepts behind plant selection will be addressed.

HORT 220 4 Credits
INTRODUCTORY PLANT BIOLOGY
Quarters: Offered as needed
This course covers biology of plants beginning with classification and anatomy through functional ecology. Major plant groups, plant cells and tissues, plant anatomy, physiology, growth and development, and ecology as well as the function of plants in the environment are discussed. Emphasis is placed on function and physiology, and the determination of functional ecology from life cycles, anatomy, growth, and development. Laboratory included.

HORT 225 4 Credits
GREENHOUSE MANAGEMENT
Quarters: Spring
This course covers the importance of greenhouse structure and operational systems to quality plant production. Emphasis is placed on production requirements for greenhouse crops and management of the environment. Hydroponic and other advanced soilless production systems are also addressed. Prerequisites: HORT 111

HORT 250 3 Credits
PLANT PATHOLOGY
Quarters: Offered as needed
Covers symptoms, causal agents, diagnosis, and prevention of plant diseases with emphasis on fungi, bacteria, nematode, and virus pathogens.

Human Development

HDEV 112 1 Credit
FRESHMAN ORIENTATION
Quarters: Summer, Fall, Winter, Spring
Provides student success strategies, including analyzing academic needs, developing long-term academic plans, exploring career choices, and accessing electronic and human resources on campus. Presents effective communication skills, time management, test taking, note taking, memory and study techniques, and stress management. Some sections may have a no-cost text book option.

HDEV 120 3 Credits
COLLEGE SUCCESS
Quarters: Fall, Winter
Provides student success strategies, including analyzing academic needs, developing long-term academic plans, exploring career choices, and accessing electronic and human resources on campus. Presents effective communication skills, time management, test taking, note taking, memory and study techniques, and stress management. Some sections may have a no-cost text book option.

HDEV 129 2 Credits
STUDENT LIFE LEADERSHIP
Quarters: Fall, Spring
Promotes the understanding of a student leadership position on Student Government, Student Activities, or as a Resident Assistant. Also allows for personal and team goal setting, life skills, conflict resolution skills, and promotes overall student success.

HDEV 130 1 Credit
TUTOR TRAINING (PEER LEADERSHIP)
Quarters: Offered as needed
Students will develop knowledge of the college, student resources and services, adult development, critical thinking, communication skills, and many other topics relevant to "best practices" in tutoring. This course is a required component of the math tutoring services made available by TVCC and is focused on training. There are no pre-requisites other than the application requirements and being selected to take the course by the Math Lab leaders.

Human Services

HSER 100 (P/T) 3 Credits
INTRODUCTION TO HUMAN SERVICES
Quarters: Fall
Provides an overview of the profession of human services, and an opportunity to explore careers. Helps prepare students to be effective human services professionals by providing: Information that will increase knowledge about human services organizations and programs; skill-building oportunities that improve students' professional helping skills; Examples of professional roles, opportunities, and responsibilities to help students consider their own option for a career in human services. Explores such fields of practice as aging, corrections, alcohol and other drug abuse, child welfare, mental health and developmentally disabled.

HSER 101 3 Credits
ADDICTIONS PHARMACOLOGY
Quarters: Fall, Spring
Explains how alcohol and other drugs are processed in the body and the brain. Includes the physiological effects of alcohol and other drugs on the human body, and the possible implications for the treatment and prevention of problems that arise from their use. Prerequisites: Pass WR 095 with a C- or better, or suitable placement score.

HSER 102 3 Credits
DRUG USE, MISUSE AND ADDICTION
Quarters: Fall
Introduces students to drug classification systems and specific drugs within each classification, including physiological and psychological effects, signs and symptoms of use, abuse, dependence, overdose and withdrawal. Examines treatment modalities and the recovery process. Co-requisite: HSER 101.

HSER 120 (P/T) 3 Credits
PEER RECOVERY COACHING
Quarters: Fall, Winter, Spring
This course provides a comprehensive overview of the purpose, tasks, roles, and responsibilities of Recovery Coaches. A Recovery Coach's goal is to serve as a personal guide and mentor for people seeking recovery from addictions and help to remove obstacles and barriers to recovery. Recovery Coaching is not a clinical service. Rather, it is a new and exciting role in the field of substance use disorders. Students will learn to use their lived experience to support the recovery process of others. Additionally, the course provides instruction in the multiple paths toward recovery including how to navigate systems, events, and exploration of the recovery community.

HSER 200 3 Credits
ALCOHOL/DRUGS AND FAMILY
Quarters: Fall
Explores the role of the counselor in the chemically dependent family, from identification of roles through intervention strategies and treatment modalities. Includes competency-based education techniques, including group activities, presentations, research, readings, role playing, attendance in community meetings, and interviewing professionals in the field of family therapy. Co-requisite: HSER 101.

HSER 202 4 Credits
COUNSELING TECHNIQUES I
Quarters: Winter
Introduces a variety of techniques used in group and individual counseling practices, emphasizing those relevant to addictions treatment. Explores cultural diversity, self-awareness in one's personal and professional life, and clients with disabilities. Discusses establishing a helping relationship with the client, professional responsibilities, adapting counseling strategies to individual characteristics of the client, and crisis management skills. Prerequisites: HSER 101 and HSER 102 or 200, with a grade of C- or better.

HSER 219 3 Credits
CASE MANAGEMENT- CAPSTONE
Quarters: Summer
Covers the preparation of clinical documentations related to screening and intake processes, assessments, treatment plans, reports, progress notes, discharge summaries, and other client-related data. Applies state ASAM and other professionally relevant standards. Prerequisites: HSER 101, 102, 200, 202, 224, 226 and 228 with a grade of C- or better.

HSER 224 3 Credits
GROUP SKILLS FOR SUBSTANCE ABUSE
Quarters: Spring
Presents strategies from accepted and culturally appropriate models for group counseling with clients with a variety of disorders including substance abuse. Focuses on the ethical use of groups as an effective therapeutic intervention. Addresses leadership behaviors, group formation and group states. Prerequisites: HSER 202 and HSER 228 with a grade of C- or better,

HSER 226 3 Credits
ETHICS FOR ADDICTIONS COUNSELING
Quarters: Summer, Fall, Winter, Spring
Provides information on personal and professional ethics that apply to addictions counselors. Discusses personal issues and values, client rights, confidentiality, when to report abuse, self-care, sexual dilemmas, cultural diversities and standards, dual relationships and professional code of ethics.

HSER 228 4 Credits
SCREENING AND ASSESSMENT
Quarters: Winter
Surveys the process of obtaining and interpreting client information to determine substance abuse and substance dependence issues. Investigates how to utilize collateral information to determine client characteristics and needs, courses of action and available resources with the client's community. Presents the importance of gathering and interpreting information necessary for treatment planning and evaluating the progress of clients. Prerequisites: HSER 101 and 102, or 200 with a grade of C- or better.

HSER 248 2 Credits
INFECTIOUS DISEASES:ADDICTION RISK
Quarters: Summer
Explores the relationship between alcohol and other drug abuse and infectious diseases, including HIV/AIDS, tuberculosis, sexually-transmitted diseases and hepatitis. Provides counseling techniques for assisting clients to identify personal risk and practice harm reduction. Also addresses special issues affecting diverse populations. Examines personal issues/discomforts arising from frankly discussing sexual behaviors of clients. Some sections may have a no-cost text book option.

HSER 250 3 Credits
INTRO TO MEDITATION, MINDFUL/STRESS
Quarters: Summer, Fall, Winter, Spring
This course explores various meditation, body awareness, and yoga techniques. Learning takes place through practice and study of how your body handles (and can resolve) stress neurologically. The skills developed in this course can increase the ability to cope with stress, pain, and the challenges of everyday life. Students will learn to deal with disturbing events with grace and composure and to become more aware and fully present and alive in the moment. A growing body of research points to the benefits of mindfulness and meditation for mental and physical health. Although these terms are closely related, they are not identical. Mindfulness practice is one of many approaches to meditation; and mindfulness is applicable not just to meditation techniques but to a wide variety of daily life activities as well. These techniques assist us to combating negativity bias: triggers for the fight or flight stress response. By using meditation, mindfulness, and other techniques, and by learning more about how to manage our stress responses, we increase our well-being and life satisfaction. Some sections may have a low-cost or no-cost text book option.

HSER 280 1 Credit
ADDICTION STUDIES COOP WK EXP
Quarters: Summer, Fall, Winter, Spring
Designed to give students an opportunity to acquire work experience in their chosen field. An on-site supervisor will supervise and evaluate the work experience student. Instructor approval of work setting and placement is required. For each credit earned, the student will need to document 36 hours at the work site. Some sections may have a no-cost text book option. Prerequisites: HSER 101, HSER 102, HSER 200, or be working in the field now, or have a degree in Social Work and getting additional credentials.

Humanities

HUMN 148 3 Credits
INTRO TO HUMANITIES
Quarters: Offered as needed
Explores the question, "What does it mean to be human?" through examining the interrelationships of literature, art, and music. Focus: Classical and Medieval periods. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

HUMN 149 3 Credits
INTRO TO HUMANITIES
Quarters: Offered as needed
Explores the question, "What does it mean to be human?" through examining the interrelationships of literature, art, and music. Focus: Renaissance through Neoclassical periods. Prerequisites: Pass WR 115 with a C- or better, or suitable placement score.

HUMN 150 3 Credits
INTRO TO HUMANITIES
Quarters: Offered as needed
Explores the question, "What does it mean to be human?" through examining the interrelationships of literature, art, and music. Focus: Romanticism to the present. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

Industrial Education

INED 100 (P/T) 3 Credits
INTRO TO AUTOMATION/RENEWABLE
Quarters: Spring
This course introduces the student to various applications that are used in the automation and renewable energy field. The class includes practical experience in developing various basic mechanical systems. The systems include building basic gear transmission systems. Use Programmable Logic Controllers (PLCs) to manipulate drive and pneumatic processes, install small DC electric motors and pneumatic actuators, and use Photovoltaic cells and other DC electrical devices to build small-scale machines.

INED 101 (P/T) 3 Credits
INTRO TO BASIC TROUBLESHOOTING
Quarters: Winter, Spring
This course introduces to the student how to critically think regarding how to determine and fix problems with various machines, equipment and mechanical/electrical systems. Those machines, equipment and systems include, AC and DC electric motors, chain and belt drives, and building systems such as solar and HVAC equipment and electrical issues. Students are introduced to the use of basic troubleshooting diagnostic tools and learn the importance of preventing problems before they occur. Students gain practical troubleshooting experience by using critical thinking skills and diagnostic tools to detect and repair various problems on different machines and systems.

INED 103 (P/T) 3 Credits
MECHANICAL SYSTEMS
Quarters: Fall, Spring
This course focuses on learning the fundamentals of mechanical power. Students learn common mechanical components from nuts and bolts to gears, gear boxes, shafts, and bearings. Students perform common mechanical tasks, and learn to fine tune drive systems involving belts, chains, etc. This course demonstrates the importance of lubrication in maintaining gears and other movable parts, and emphasizes operations to reduce friction and wasted motion, which are major contributors to energy inefficiency. Students become acquainted with basic machine design, fabrication techniques and electrical/mechanical machine.

INED 104 (P/T) 3 Credits
ELECT SYSTEMS TROUBLESHOOTING I
Quarters: Fall
DC and AC electrical theory, definitions, basic component identification and analysis of polarity, series, parallel, combination circuits, direct current devices and batteries and their use in renewable applications. Emphasis is placed on practical application, troubleshooting, and problem solving. Students learn to troubleshoot common electrical problems in industry, such as low voltage, high voltage, open circuits, high resistance shorts to ground and current/voltage unbalance. Emphasis is on prevention of electrical waste.

INED 105 (P/T) 3 Credits
AIRBORNE CONTROL SYSTEMS
Quarters: Offered as needed
This course will serve as an overview of Unmanned Aerial Vehicle (UAV) theory of operations, component requirements, assembly and how electrical, mechanical, and computer sciences are part of each function. Topics covered will range from basic electrical and mechanical functions, Internal Navigation Systems (INS) and Global Positioning Systems (GPS) as it applies to UAV's, mission planning, and manual and autonomous operational requirements. Students will be exposed to current issues in the commercial UAS industry with particular focus on Oregon and the Pacific Northwest. Students will also learn through field tests of assembled equipment.

INED 107 (P/T) 3 Credits
ELECT SYSTEM TROUBLESHOOTING II
Quarters: Winter
This course covers the theory and application of magnetism, electromagnetism, the generation of elecomotive force, AC and DC motor principles, transformer theory, types and applications. Students are introduced to electrical troubleshooting methods and procedures to solve process problems. Analyzing motor control schematics and using advanced digital multi meters are stressed. Emphasis is on prevention and correction of energy wasting problems. Prerequisites: INED 104

INED 108 (P/T) 3 Credits
PRINCIPLES OF TECHNOLOGY
Quarters: Spring
Focuses on applying physical concepts and formulae to technology found in the industrial workplace. Students will develop and strengthen critical thinking and problem solving skills required to function and excel in rapidly changing and increasingly complex workplace environments. Lab experiments are intended to reinforce and enhance the scientific principles discussed in class as well as providing an opportunity to learn to work effectively in groups. The impact of technology on energy efficiency in the workplace is studied.

INED 109 (P/T) 3 Credits
HVAC SYSTEM CONTROLS
Quarters: Offered as needed
Students will learn the concepts of the basic operations of various heating and cooling systems for a variety of applications. This course focuses on maintenance and service procedures for initial tuning of HVACR systems for energy efficiency. Practical application of skills include: taking pressures, identifying refrigerants, recovering and recycling refrigerant, evacuating and charging refrigeration systems. Also included are all applicable safety precautions and EPA governed environmental regulations. Energy efficiency will be emphasized. Includes preparation for EPA certification, ESCO HVAC Excellence program.

INED 111 (P/T) 2 Credits
PREVENTIVE MAINTENANCE/ENERGY CONSE
Quarters: Offered as needed
Examines the development and implementation of a preventive maintenance program using proven actions and procedures and common computer software. Students will learn how to design, construct, and maintain industrial transfer systems. The emphasis of this course is the application of preventive maintenance strategies to increase efficiency.

INED 112 (P/T) 3 Credits
CONTROL SYSTEMS
Quarters: Fall, Spring
Students will learn fundamentals of programmable logic control (PLC) operation, and troubleshooting. Variable speed drive operation and programming is covered as are process control principles for temperature and flow. Emphasis is on understanding of control operations for efficiency.

INED 113 (P/T) 2 Credits
BASIC HYDRAULICS
Quarters: Fall, Spring
Use of various forms of fluids to produce power and to do mechanical work. Basics of hydropower systems such as design types, systems, and suitability. Students will do a site investigation, measure head pressure, flow rate, calculate the power contained in moving water, and investigate the fundamental principles of operations of hydraulic and pneumatic systems. Includes schematics, troubleshooting, maintenance, and components of systems such as pumps, valves, cylinders, and motors. Emphasis will be on operation of fluid power systems for energy savings and pollution controls.

INED 114 (P/T) 3 Credits
BASIC PNEUMATICS
Quarters: Winter
Provides instruction in the fundamental principles of pneumatic systems. Investigates the basic components of pneumatic systems such as pumps, valves, cylinders, and motors.

INED 115 (P/T) 3 Credits
PROCESS CONTROL AND INSTRUMENTATION
Quarters: Winter
Provides an introduction to process control and instrumentation. Students will develop a working production line that includes sensors, pneumatics, PLCs, and motor controls. Energy efficiency and maintenance, troubleshooting, and repair of control systems is emphasized. Some sections may have a low-cost text book option.

INED 116 (P/T) 3 Credits
FLUID POWER I
Quarters: Offered as needed
Use of various forms of fluids to produce power and to do mechanical work. Basics of hydropower systems such as design types, systems, and suitability. Students will do a site investigation, measure head pressure, flow rate, calculate the power contained in moving water, and investigate the fundamental principles of operations of hydraulic and pneumatic systems. Includes schematics, troubleshooting, maintenance, and components of systems such as pumps, valves, cylinders, and motors. Emphasis will be on operation of fluid power systems for energy savings and pollution controls.

INED 156 (P/T) 3 Credits
EMPLOYMENT STRATEGIES
Quarters: Offered as needed
Prepares students to create a resume and cover letter, research internet job sources and job search techniques, prepare a portfolio of work examples, and contact potential employers. Provides practical experience through "mock interviews". Discusses appropriate dress for interviews. Includes different work place personality types and conflict resolution.

INED 157 (P/T) 2 Credits
EMPLOYMENT STRATEGIES
Quarters: Summer, Winter, Spring
This course prepares students to create a resume and cover letter, research internet job sources and job search techniques, prepare portfolio of work examples and contact potential employers. Provides practical experience through mock interviews -via a variety of methods. discusses appropriate preparation for interviews- including: phone interviews, skype interviews, appropriate dress, portfolio building. Includes strength based career seeking and working with varied personalities in the work place. Some sections may have a low-cost text book option.

INED 167 (P/T) 4 Credits
CAD I 2D DRAWING
Quarters: Spring
Introduces Auto CAD program, including 2D drawing, editing, display commands and functions, layer management, and line types and colors. Covers multi and auxiliary view layout and prototype drawing creation. Applies the AutoCAD program to mechanical, schematic, and architectural drawings.

INED 203 (P/T) 4 Credits
ADVANCED MECHANICAL SYSTEMS
Quarters: Offered as needed
Learn to troubleshoot, maintain and repair drive systems; bearings and lubrications systems; and industrial pumps and valves. Fundamentals of vibration and oil analysis, shaft alignment, handling and mounting bearings, and operating lubrication systems. Emphasis is placed on effective maintenance of belt, chain, and gear drives for maximum energy efficiency. Appropriate pump and valve selection and print reading for correct installation is stressed. Prerequisites: INED 103

INED 212 (P/T) 3 Credits
INDUSTRIAL SAFETY AND MANAGEMENT
Quarters: Fall, Spring
Examines and identifies prevention methods for various hazards associated with industry. Areas examined include machinery, environmental, and confined spaces. Safety management and governmental compliance will also be addressed.

INED 213 (P/T) 3 Credits
ADVANCED CONTROL SYSTEMS
Quarters: Fall, Spring
Develop advanced skills in programming PLCs. Students will learn to convert common industrial control circuits to PLC ladder logic as well as create programs from narrative description. Special emphasis will be placed on interfacing the PLC with a selection of electro-pneumatic control devices. Also covered are interpreting PLC data sheets and systemic approach to testing and troubleshooting of PLC programs.

INED 225 (P/T) 4 Credits
STRUCTURE AND FABRICATION II
Quarters: Offered as needed
Entry level class that covers safety and basic knowledge of Industrial Structures, including blue print reading and shop drawing: using various ways to bond material together. Students will be introduced to the fundamental principles of MIG welding, TIG welding, and Plasma cutting. This course demonstrates the importance of common construction techniques as they relate to a variety of building materials. This may include materials such as wood, plastics, metal, concrete, and other composites.

INED 280 (P/T) 6 Credits
INDUSTRIAL COOP WORK EXP
Quarters: Summer, Fall, Winter, Spring
Applies actual work experience in a related Career & Technical field. An on-site supervisor evaluates and supervises the work experience student. Requires instructor approval of work setting and placement. Documentation of 36 worksite hours for each credit earned.

Library

LIB 101 1 Credit
INTRODUCTION TO RESEARCH
Quarters: Summer, Fall, Winter, Spring
This course teaches students an understanding of both the research process as well as essential research skills. Students will learn how to identify and narrow research topics, plan and carry out research, identify credible sources, and utilize appropriate citation methods. Some sections may have a low-cost or no-cost text book option.

Mathematics

MATH 060 5 Credits
BEGINNING ALGEBRA I
Quarters: Summer, Fall, Winter, Spring
No familiarity with Algebra is assumed, presents Introductory Algebra. Covers the use of applications, formulas, and reasoning skills to write, manipulate, interpret, solve and graph linear equations. Critical thinking, and problem-solving techniques will also be used. Includes solving linear equations and inequalities, as well as introduction to graphing. Develop skills to communicate results in oral and written form. Corequisites: MATH 103 (Intro to Graphing Calculators, 1 credit) Prerequisites: None

MATH 063 4 Credits
TECHNICAL MATH I
Quarters: Summer, Winter, Spring
This course is an applied Algebra course equivalent to MATH060, but designed to meet the needs of technical/vocational students. Topics include: Tools of Algebra, Formulas and Equations, Right Triangle and Quantitative Geometry. Some sections may have a low-cost or no-cost text book option.

MATH 093 4 Credits
TECHNICAL MATH II
Quarters: Fall, Spring
Introduces the study and application of linear, quadratic, power, exponential, and logarithmic expressions and functions. Working with real data, the mathematics of curve fitting will be developed making extensive use of the graphing calculator. This course concludes the developmental mathematics sequence. Prerequisites: Complete MATH 063 with a C- or better grade.

MATH 095 5 Credits
INTERMEDIATE ALGEBRA I
Quarters: Summer, Fall, Winter, Spring
Emphasizes critical thinking skills and integration of technology to solve problems. Includes linear equations and systems of equations, quadratic equations, inequalities, rational equations, modeling, and graphs of nonlinear models. Prerequisites: Pass MATH 060 with a grade of C- or higher, or suitable placement score. Corequisites: Student must co-register in MATH 103 unless student has already taken and passed MATH 103 in a previous term.

MATH 103 1 Credit
INTRO TO GRAPHING CALCULATORS
Quarters: Summer, Fall, Winter, Spring
Introduces graphing technology with an emphasis on mathematical applications. Presents graphing calculator skills which are normally acquired in Math 70 and 95. Some sections may have a low-cost or no-cost text book option. Prerequisites: MATH 060.

MATH 105 Z 4 Credits
MATH IN SOCIETY
Quarters: Summer, Fall, Winter, Spring
An exploration of present-day applications of mathematics focused on developing numeracy. Major topics include quantitative reasoning and problem-solving strategies, probability and statistics, and financial mathematics; these topics are to be weighted approximately equally. This course emphasizes mathematical literacy and communication, relevant everyday applications, and the appropriate use of current technology. Prerequisites: Complete MATH 095, or MATH 098 with a "C-" or better, or suitable placement score. Corequisites: Student must co-register in MATH 103 unless student has already taken and passed MATH 103 in a previous term.

MATH 111 Z 4 Credits
PRECALCULUS I: FUNCTIONS
Quarters: Summer, Fall, Winter, Spring
A course primarily designed for students preparing for trigonometry or calculus. This course focuses on functions and their properties, including polynomial, rational, exponential, logarithmic, piecewise-defined, and inverse functions. These topics will be explored symbolically, numerically, and graphically in real-life applications and interpreted in context. This course emphasizes skill building, problem solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of present-day technology. Prerequisites: Pass MATH 95 with a "C-" or better, or suitable placement score. Corequisites: Student must co-register in MATH 103 unless student has already taken and passed MATH 103 in a previous term.

MATH 112 Z 4 Credits
PRECALCULUS II: TRIGONOMETRY
Quarters: Summer, Fall, Winter, Spring
A course primarily designed for students preparing for calculus and related disciplines. This course explores trigonometric functions and their applications as well as the language and measurement of angles, triangles, circles, and vectors. These topics will be explored symbolically, numerically, and graphically in real-life applications and interpreted in context. This course emphasizes skill building, problem solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of present-day technology. Prerequisites: Pass MATH 111 with a "C-" or better, or suitable mathematics placement exam score.

MATH 113 4 Credits
ANALYSIS/GEOMETRY/PRECALCULUS
Quarters: Fall, Winter, Spring
Studies pre-calculus, including matrices, determinants, sequences, series, probability, and analytical geometry. Prerequisites: Pass MATH 111 with a "C-" or better, or suitable placement score.

MATH 211 4 Credits
FUNDAMENTALS OF ELEMENTARY MATH I
Quarters: Fall
Prepares the future elementary school teacher to teach math more effectively by giving them a deeper understanding of math. Covers problem solving, sets, numeration, whole numbers, and number theory. Prerequisites: Pass MATH 95 or MATH 96 with a "C-" or better, or suitable placement score.

MATH 212 4 Credits
FUNDAMENTALS OF ELEMENTARY MATH II
Quarters: Winter
Prepares the future elementary school teacher to teach math more effectively by giving them a deeper understanding of math. Covers fractions, decimals, integers, real numbers, statistics and probability. Prerequisites: Pass MATH 95 or MATH 96 with a "C-" or better, or suitable placement score.

MATH 213 4 Credits
FUNDAMENTALS OF ELEMENTARY MATH III
Quarters: Spring
Prepares the future elementary school teacher to teach math more effectively by giving them a deeper understanding of math, including geometry. Prerequisites: Pass MATH 95 or MATH 96 with a "C-" or better, or suitable placement score.

MATH 244 4 Credits
INTRO TO PROBABILITY AND STATISTIC II
Quarters: Spring
Continues the study of statistics, covering inferential statistics, hypothesis testing, rank correlation, signed rant test, population proportions, Kruskal-Wallis test, Chi-Square, and non-parametric methods. Prerequisites: Pass MATH 243 with a "C-" or better.

MATH 251 Z 4 Credits
DIFFERENTIAL CALCULUS
Quarters: Fall
This course explores limits, continuity, derivatives, and their applications for real-valued functions of a single variable. These topics will be explored graphically, numerically, and symbolically in real-life applications. This course emphasizes abstraction, problem-solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of technology. Prerequisites: Pass MATH 112Z with a C- or higher, or suitable placement score; MATH 113 strongly recommended.

MATH 252 Z 4 Credits
INTEGRAL CALCULUS
Quarters: Offered as needed
This course explores Riemann sums, definite integrals, and indefinite integrals for real-valued functions of a single variable. These topics will be explored graphically, numerically, and symbolically in real-life applications. This course emphasizes abstraction, problem-solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of technology. Prerequisites: Pass MATH 251Z witha grade of C- or higher

MATH 253 Z 4 Credits
CALCULUS: SEQUENCES AND SERIES
Quarters: Offered as needed
This course explores real-valued sequences and series, including power and Taylor series. Topics include convergence and divergence tests and applications. These topics will be explored graphically, numerically, and symbolically. This course emphasizes abstraction, problem-solving, reasoning, communication, connections with other disciplines, and the appropriate use of technology. Prerequisites: Pass MATH 252Z with a grade of C- or better

Medical Assistant

MA 112 (P/T) 4 Credits
INTRO TO MEDICAL ASSISTING
Quarters: Fall, Winter, Spring
Focuses on administrative skills performed by the Medical Assistant in the ambulatory care setting. The course provides an introduction to the medical assistant profession, examines medical law and ethics, principles of confidentiality and medical office function. Introduces the medical assisting students to learn practical applications of billing medical insurance both manually and electronically. The course is designed to instruct the student in all phases of the administrative medical assistant.

MA 115 (P/T) 3 Credits
PHLEBOTOMY
Quarters: Fall, Winter, Spring
Focus of this course is to demonstrate appropriate blood specimen procurement techniques using vacutainer, syringe, 'winged infusion'/ butterfly with syringe and capillary puncture methods. Other specifics of the blood specimen testing requirements, such as collection into the correct evacuated tube (additive), specimen handling procedures, and collection documentation are also covered; while assuring safe, confidential and professional environment for the patient, and as the phlebotomy technician. Practical experience which will include a minimum of 30 successful venipunctures and 10 successful capillary sticks. Required: Students must be admitted into the current MA cohort, or instructor consent. Prerequisites: MA 112, MA 117 with a grade of C+ or better. Co-requisite: MA 116

MA 116 (P/T) 4 Credits
INTRODUCTION TO MEDICATIONS
Quarters: Fall, Winter, Spring
Introduces the medical assisting students to pharmacology and medication administration, including review of basic mathematical equations and medications calculations. It is designed to give students the fundamentals of medications and the administration of medications essential to the practice of medical assisting. Prerequisites: MA 112, MA 117 and MATH 60 with a grade of C+ or better. Co-requisite: MA 115

MA 117 (P/T) 4 Credits
CLINICAL PROCEDURES
Quarters: Fall, Winter, Spring
This course is designed to instill a basic understanding of simple, common laboratory terminology and procedures used in a general medical office laboratory to aid the physician in the diagnosis of disease. Laboratory safety, the prevention of blood born disease transmission and scope of practice will be emphasized. Required: Instructor consent Enrolled in Medical Assistant program. Prerequisites: BIOL121 with a grade of C+ or better

MA 118 (P/T) 5 Credits
MEDICAL ASSISTANT EXTERNSHIP
Quarters: Summer, Fall, Winter, Spring
Under supervision within the ambulatory care setting, the student will apply both administrative and clinical knowledge and practices as attained within the Medical Assisting course curriculum. Required: Instructor consent. Student must complete and pass all required curriculum, pass criminal history back ground check and urine drug/alcohol screen in order to be placed in a practicum site. Some sections may have a no-cost text book option. Prerequisites: Completion of all MA course work, co-requisite MA 119.

MA 119 (P/T) 1 Credit
EXTERNSHIP SEMINAR
Quarters: Summer, Fall, Winter, Spring
Reflection on Medical Assistant's externship experiences. The student will discuss thoughts, experiences, and feelings about their work in the healthcare environment. This class will also serve as an opportunity to review information before the student undergoes testing for Certification. Co-requisite: MA 118 Some sections may have a no-cost text book option. Prerequisites: Completion of all MA coursework.

Medical Record

MREC 116 (P/T) 3 Credits
MEDICAL OFFICE PROCEDURES
Quarters: Winter
Covers work routines of a medical office assistant, including scheduling appointments, maintaining patient account records, preparing a variety of health insurance forms, and other medically related document preparation. Requires transcription of medical documents and letters. Lab included. Medical Terminology recommended.

MREC 210 (P/T) 3 Credits
MEDICAL BILLING I
Quarters: Summer, Fall, Spring
Covers the roles and compliance issues for an insurance billing specialist; claims processes and introductions to procedural and diagnostic coding; health care payers - the "Blues", Medicare, Medicaid and other programs. Recommended: Medical terminology background or concurrent enrollment in GSCI 161.

MREC 211 (P/T) 3 Credits
MEDICAL BILLING II
Quarters: Summer, Winter, Spring
Continues, with additional emphasis, addressing areas covered in MREC 210. Covers hospital billing for both inpatient and outpatient, electronic claims submission, EOB, and payments, maintaining accounts receivable and collections and the state insurance commissioner. Prerequisites: MREC 210.

Music - Performance

MUP 102 1 Credit
INTERMEDIATE CONCERT BAND
Quarters: Fall, Winter
Student musicians study and perform traditional and contemporary intermediate level band literature. Prerequisites: Previous experience in a band setting or ability to play an instrument at a level two.

MUP 114 1 Credit
SPECIAL ENSEMBLES
Quarters: Offered as needed
Offers applied instruction and participation in small performance groups (i.e. vocal solos, duets, trios, quartets, etc.) and small instrumental groups for the first year student. Offers experience in varied styles and numerous performances.

MUP 171 1 Credit
APPLIED PIANO
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 173 1 Credit
APPLIED ORGAN
Quarters: Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 174 1 Credit
APPLIED VOICE
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 175 1 Credit
APPLIED VIOLIN
Quarters: Summer, Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 176 1 Credit
APPLIED VIOLA
Quarters: Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 177 1 Credit
APPLIED CELLO
Quarters: Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 178 1 Credit
APPLIED BASS
Quarters: Summer, Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 180 1 Credit
APPLIED GUITAR
Quarters: Summer, Fall, Winter, Spring
Offers private instruction in voice, piano, woodwinds, brasses, percussion, strings, guitar, and other instruments for the first year student. Lessons on most instruments can be arranged. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 181 1 Credit
APPLIED FLUTE
Quarters: Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 183 1 Credit
APPLIED CLARINET
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 184 1 Credit
APPLIED SAXOPHONE
Quarters: Fall, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 186 1 Credit
APPLIED TRUMPET
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 188 1 Credit
APPLIED TROMBONE
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 192 1 Credit
APPLIED MISC INSTRUMENTS
Quarters: Summer, Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brass, percussion, strings, guitar, and other instruments for the first year student. Fee Required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Demonstrated ability, audition with instructor

MUP 202 1 Credit
CONCERT BAND
Quarters: Fall, Winter, Spring
Offers applied study and performance to anyone in the community with previous band experience, from high school age to adults. Studies and performs traditional and contemporary band literature. Rehearses evenings. Some sections may have a no-cost text book option.

MUP 205 2 Credits
JAZZ BAND
Quarters: Fall, Winter, Spring
Offers applied study and performance in an ensemble, by audition. Concentrates on big band jazz arrangements and jazz ensemble styles. Some sections may have a no-cost text book option.

MUP 214 1 Credit
SPECIAL ENSEMBLES
Quarters: Offered as needed
Offers applied study in small performance groups (i.e. vocal solos, duets, trios, quartets, etc.) and small instrumental groups for the second year student. Offers experience in varied styles of music chosen by students and instructor. Includes numerous community performances.

MUP 215 1 Credit
WIND ENSEMBLE
Quarters: Offered as needed
Offers applied study and performance in wind ensemble format. Includes study of traditional and contemporary concert band literature and at least one major concert per term.

MUP 221 1 Credit
TREASURE VALLEY CHORALE
Quarters: Fall, Winter, Spring
Offers rehearsal and performance of choral literature. Open to all singers. Some sections may have a no-cost text book option.

MUP 222 2 Credits
CONCERT CHOIR
Quarters: Fall, Winter, Spring
Performs choral literature of all styles and historical periods. No previous choral experience necessary. Some sections may have a no-cost text book option.

MUP 223 1 Credit
CHAMBER CHOIR
Quarters: Offered as needed
The ensemble will learn and perform vocal chamber music.

MUP 225 1 Credit
VOCAL JAZZ ENSEMBLE
Quarters: Offered as needed
Performs vocal jazz repertoire and other styles of music. Open by audition only.

MUP 242 1 Credit
SYMPHONY ORCHESTRA
Quarters: Fall, Winter, Spring
Offers applied study and performance for string and wind players interested in playing orchestral literature with the Treasure Valley Symphony. Rehearses evenings and is open to all interested musicians, including high school students. Some sections may have a no-cost text book option.

MUP 271 1 Credit
APPLIED PIANO
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 273 1 Credit
APPLIED ORGAN
Quarters: Offered as needed
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 274 1 Credit
APPLIED VOICE
Quarters: Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 275 1 Credit
APPLIED VIOLIN
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 280 1 Credit
APPLIED GUITAR
Quarters: Summer, Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 281 1 Credit
APPLIED FLUTE
Quarters: Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 283 1 Credit
APPLIED CLARINET
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 284 1 Credit
APPLIED SAXOPHONE
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 286 1 Credit
APPLIED TRUMPET
Quarters: Fall, Winter
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 288 1 Credit
APPLIED TROMBONE
Quarters: Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

MUP 292 1 Credit
APPLIED MISC. INSTRUMENTS
Quarters: Summer, Fall, Winter, Spring
Offers private instruction in voice, piano, organ, woodwinds, brasses, percussion, strings, guitar, or other instrument for the second year student. Fee required. Some sections may have a low-cost or no-cost text book option. Prerequisites: Successful completion of three (3) consecutive terms of study in MUP 171-192 and/or demonstrated ability through audition with instructor

Music - Studio

MUS 101 3 Credits
MUSIC FUNDAMENTALS
Quarters: Fall, Winter, Spring
Acquaints students with the elements of music fundamentals. Includes note reading, rhythm skills, and basic theory. Some sections may have a low-cost text book option.

MUS 105 3 Credits
MUSIC APPRECIATION
Quarters: Fall, Winter, Spring
Examines the elements of music, classical music of the Western World, its historical creation, and involves listening to samples taken from select composers across the various historical periods and styles.

MUS 206 3 Credits
INTRO TO THE HISTORY OF ROCK MUSIC
Quarters: Summer, Fall, Winter, Spring
Examines the elements of music, rock music, and its attendant sub-genres, its historical creation, and listening to samples taken from select artists across the different periods and styles. Some sections may have a low-cost text book option.

Natural Resources

NATR 101 (P/T) 3 Credits
INTRO TO WILDLAND FIRE (FFT2)
Quarters: Fall, Winter, Spring
Includes S-130, S-190, and L-180 training. Provides entry level firefighter skills, including the primary factors affecting the start and spread of wildfires, and recognition of potentially hazardous situations. Meets the fire behavior training needs of a firefighter type 2 (FFT2) on an incident as outlined in the PMS 310-1.

NATR 102 (P/T) 2 Credits
L-280 FOLLOWERSHIP TO LEADERSHIP
Quarters: Winter, Spring
Offers a self-assessment opportunity for individuals preparing to step into a leadership role. Combines one day of classroom instruction followed by a second day in the field, working through a series of problem solving events. Prerequisites: NATR 101

NATR 103 (P/T) 3 Credits
APPLIED BOTANY
Quarters: Spring
Introduces plant identification. Familiarizes students with basic field characteristics necessary for identifying forest and range plants. Includes terminology, morphology, nomenclature and classification with basic techniques for using plant keys. Introduces ecological concepts and plant relationships. Lab required.

NATR 104 (P/T) 3 Credits
S-290 INTERMEDIATE FIRE BEHAVIOR
Quarters: Spring
Prepares the prospective supervisor to undertake safe and effective fire management operations. Develops fire behavior prediction knowledge and skills. Discusses fire environment differences. Prerequisites: NATR 101.

NATR 105 (P/T) 3 Credits
FIELD METHODS IN NATURAL RESOURCES
Quarters: Fall, Winter, Spring
This course serves as an introduction to field work in Natural Resources. Classes will be held largely outside using a variety of field measurement tools and methods used commonly by natural resource professionals in subdisciplines of water resources, wildlife, forestry, cartgraphy, range management, surveying, and other related fields. Lab required

NATR 106 (P/T) 3 Credits
INTRO TO FIRE EFFECTS
Quarters: Fall
Introduces the physical and biological effects of fire on ecosystems. Includes effects on individual plants and animals, range sites, timbered areas, air quality, watersheds, soil, and other related resources. Lab required.

NATR 107 (P/T) 2 Credits
S-260 INTERAGENCY INCIDENT BUS MGT
Quarters: Offered as needed
Provides general training needs for all positions requiring an understanding of interagency incident business management. Prerequisites: NATR 101.

NATR 108 (P/T) 2 Credits
S-270 BASIC AIR OPERATIONS
Quarters: Offered as needed
Discusses aircraft types and capabilities, aviation management and safety for flying and working with agency aircraft, tactical and logistical uses of aircraft, and requirements for helicopter take-off and landing areas. Prerequisites: NATR 101.

NATR 109 (P/T) 2 Credits
S-200 INITIAL ATTACK IC
Quarters: Spring
This course will provide the individual in charge of the initial attack of small non-complex fires, the training needed for size-up, deployment of forces, suppression, mopup, communications, and administrative duties. Prerequisites: NATR101, NATR 104.

NATR 111 (P/T) 5 Credits
INTRO TO NATURAL RESOURCES
Quarters: Fall
The term "Natural Resources" covers a variety of topics and disciplines. This course serves as an introduction to the broad diverse field of natural resources. Each week students will research and study various disciplines within Natural Resources. Much time will be focused on current issues in various fields. Field labs to regional natural resource sites as well as guest lectures will be held weekly. Lab required

NATR 112 (P/T) 2 Credits
GLOBAL POSITIONING SYSTEMS (GPS)
Quarters: Spring
Acquaints the student with global positioning systems or GPS. Includes what GPS is, its uses, its short-comings, and field experience in the use of the equipment. Lab required.

NATR 115 (P/T) 2 Credits
S-230 CREW BOSS-SINGLE RESOURCE
Quarters: Spring
Produces student proficiency in the performance of duties associated with the single resource boss position from initial dispatch through demobilization to the home unit. Includes operational leadership, preparation and mobilization, assignment preparation, risk management, entrapment avoidance, safety and tactics, offline duties, demobilization, and post incident responsibilities. Prerequisites: NATR 101, NATR 102, NATR 104. Recommended prerequisite: NATR 121.

NATR 116 (P/T) 2 Credits
S-215 FIRE OPERATION WILDLAND/URBAN
Quarters: Spring
Assists structure and wildland firefighters in making tactical decisions when confronting wildland fire that threatens life, property, and improvements, in the wildland/urban interface. Includes size-up, initial strategy, structure triangle, tactics, action assessment, public relations, and followup and safety.

NATR 117 (P/T) 1 Credit
S-231 ENGINE BOSS-SINGLE RESOURCE
Quarters: Spring
Produces student proficiency in the performance of the duties associated with engine boss, single resource, including engine and crew capabilities and limitations, information sources, fire size-up consideration, tactics, and wildland/urban interface. Prerequisites: NATR 101, NATR 104, NATR 115.

NATR 121 (P/T) 1 Credit
S-131 SQUAD BOSS
Quarters: Fall, Spring
Meets the advanced training needs of the Firefighter Type I (FFT1) in an interactive format. Contains several tactical decision games designed to facilitate learning the objectives. Prerequisites: NATR 101 and one year experience in the field.

NATR 122 (P/T) 2 Credits
S-390 WILDLAND FIRE BEHAVIOR CALC
Quarters: Winter
Introduces fire behavior calculations by manual methods, using nomograms and the Fire Behavior Handbook Appendix B. Examines the determinants of fire behavior through studying inputs (weather, slope, fuels, and fuel moisture). Instructs how to interpret fire behavior outputs, documentation processes, and fire behavior briefing components. Prerequisites: NATR 101, NATR 104, NATR 115.

NATR 123 (P/T) 2 Credits
S-330 TASK FORCE/STRIKE TEAM
Quarters: Winter
Provides training for the positions of Task Force Leader and Strike Team Leader specific to wildland fire suppression, as outlined in the Wildland Fire Qualification System Guide and the Position Task Books. Prerequisites: NATR 101, NATR 104, NATR 122.

NATR 127 (P/T) 3 Credits
S-336 TACTICAL DECISION MAKING
Quarters: Offered as needed
Provides training requirements for the Operations Section of the Incident Command System. Prerequisites: NATR 101, NATR 104, NATR 115.

NATR 140 (P/T) 4 Credits
MAP USE AND ANALYSIS
Quarters: Winter
Introduces the development, understanding, and practical use of planimetric and topographic maps, along with aerial photographs. Includes map scale, finding distances, directions, and area on maps and photos, and identification of map and photos features. Also introduces application of GPS and GIS in Natural Resource Management. Lab required

NATR 201 (P/T) 3 Credits
ENVIRONMENT AND SOCIETY
Quarters: Winter
Provides an overview of the complex political, social and economic issues met when managing Natural Resources of the Pacific Northwest. The course exposes students to local, regional and global environmental issues faced by a growing society. Topics will include climate change, habitat loss, sustainability, environmental justice, and global population growth. The course develops critical thinking skills useful in seeking out complex resource management solutions for a dynamic society.

NATR 202 (P/T) 3 Credits
S-212 WILDLAND FIRE CHAIN SAWS
Quarters: Winter, Spring
Introduces the function, maintenance and use of internal combustion engine powered chain saws, and their tactical wildland fire application. Provides entry level training for firefighters with little or no previous experience in operating a chain saw. Does not constitute certified faller designation. Prerequisites: Qualified FFT2, and current first aid/cpr certification.

NATR 203 (P/T) 2 Credits
S-211 PORTABLE PUMPS AND WATER USE
Quarters: Fall, Spring
Consists of three skill areas: supply, delivery and application of water. Requires set up, operation, and maintenance of pump equipment in a field exercise.

NATR 217 (P/T) 3 Credits
INTRO TO WATERSHED MANAGEMENT
Quarters: Spring
Surveys the theory, principles and practices involved before water is utilized for commercial production projects. Studies the microclimate, hydrology, and soil as influenced by the vegetation in relation to the regional variables of climate, geology, topography, and vegetation type and structure. Follows the water from the atmosphere, to the ground, and down the watershed to the area where it can be used for natural resources, industry, recreation, and domestic needs. Lab required.

NATR 221 (P/T) 3 Credits
INTRO TO NATURAL RESOURCE ECOLOGY
Quarters: Winter
Introduces ecology, including evolution, adaptation, plant and animal distributions, terminology, ecological relationships and interactions individual ecosystems, and global ecological principles. Stresses the ecology of the northwest.

NATR 241 (P/T) 4 Credits
INTRO TO RANGE MANAGEMENT
Quarters: Spring
Introduces the science of range management, including identification, physiology, and ecology of range plants; stocking rate considerations; grazing system selection; range improvement methods; range inventory methods and analysis; and nutrition. Emphasizes range management objectives to provide society with meat, water, wildlife, and recreational opportunities on a sustained basis from lands unsuited for permanent cultivation. Lab required.

NATR 251 (P/T) 3 Credits
OUTDOOR RECREATION MANAGEMENT
Quarters: Winter
Outdoor Recreation Management explores outdoor recreation as a vital aspect of natural resources and land management. Concepts discussed include multiple use management, recreational enterprises, state and federal outdoor recreation agencies, environmental education, and current topics in outdoor recreation. Lab required.

NATR 252 3 Credits
WILDLIFE MANAGEMENT
Quarters: Winter
Introduces the principles of wildlife management and some of the practices and techniques used in controlling wild animal populations. Emphasizes the multiple use concept necessary for natural resource management.

NATR 280 1 Credit
NATURAL RESOURCE COOP WK EXP
Quarters: Summer
Designed to give students an opportunity to acquire actual work experience in their chosen field. An on-site supervisor will supervise and evaluate the work experience student. Instructor approval of work setting and placement is required. For each credit earned, the student will need to document 36 hours at the work site.

NATR 290 (P/T) 1 Credit
NATURAL RESOURCE FIELD STUDIES CAMP
Quarters: Offered as needed
Introduces students to field work within the Natural Resource discipline at a remote work site. Field Studies emphasizes critical thinking in the field, teamwork approaches to field work problem solving, using technolody in the field, and working in adverse weather conditions. This course may require multiple days in the field. Backcountry hiking and camping required.

Nursing

NRS 100 (P/T) 5 Credits
FUNDAMENTALS OF NURSING
Quarters: Fall
This course introduces the learner to the foundations of nursing practice including, legal and ethical considerations, evidence-based practice, critical thinking, and the nursing process. Students learn to access evidence about healthy lifestyle patterns and risk factors for disease/illness. Cultural competency, client centered care, inter-professional team dynamics, and reflective thinking are emphasized in this course Prerequisites or Corequisites: Acceptance into the TVCC Nursing program is required prior to registration. Corequisite NRS 105 Fundamentals of Nursing Lab.

NRS 105 (P/T) 4 Credits
FUNDAMENTALS OF NURSING-LAB
Quarters: Fall
This course emphasizes safety in nursing skills and client care. The student will begin utilizing clinical judgement and decision-making skills through the practice of nursing skills, thinking aloud, and demonstration of skill proficiency. Knowledge and safety of medication administration and dosage calculations will be emphasized during the lab course. Co-requisite: NRS 100 Prerequisites or Corequisites: Acceptance into the TVCC Nursing program is required prior to registration. Corequisite for NRS 100 Fundamentals of Nur

NRS 115 (P/T) 8 Credits
MEDICAL SURGICAL-1
Quarters: Winter
In this course, medical and surgical content integrating pathophysiology and clinical judgement related to a "stable" client will be taught. Focus will include nursing assessment and data related to body systems, health screening and promotion, and client education. Clinical decision making will be addressed through understanding of reduction of harm with a therapeutic and holistic approach to culturally diverse populations. Co-requisite: NRS 116

NRS 116 (P/T) 1 Credit
MEDICAL SURGICAL I-LAB
Quarters: Winter
This course continues applying nursing skills and client care. The student will utilize clinical judgement and decision-makings skills through the practice of nursing skills, thinking-aloud, and demonstration of skill proficiency related to disease processes. Co-requisite: NRS 115

NRS 120 (P/T) 3 Credits
PHARMACOLOGY I
Quarters: Winter
This course introduces the student to concepts in pharmacology and clinical reasoning related to drug classes, over the counter medications, and herbal products across the lifespan. Students will focus on client assessment, therapeutic outcomes, medication safety, and client education. Clinical decision making will be addressed through understanding of pharmacodynamics, physiologic stability, reduction of harm, therapeutic and holistic approach to culturally diverse populations. The course focuses on cardiac, respiratory, and endocrine drugs as well as antibiotics and fluid and electrolyte balance. Prerequisites: Pass NRS 100 & NRS 105 Corequisites: NRS 115 & NRS 116 Audit by exception or LPN to RN Bridge student

NRS 125 (P/T) 9 Credits
MATERNITY AND PEDIATRIC NURSING
Quarters: Spring
This course focuses on the concepts unique to maternal and pediatric nursing. Students will focus on the nature of pregnancy, the basics of labor and delivery, and nursing care provided to postpartum clients, newborn infants, and children. Common illnesses and disorders of pregnant and pediatric clients will be discussed. Client care including safe, cultural diversity, communication, clinical reasoning, professionalism, legal and ethical standards, and family-centered care.

NRS 130 (P/T) 3 Credits
PHARMACOLOGY II
Quarters: Spring
This course continues concepts in pharmacology and clinical reasoning related to drug classes, over the counter medications, and herbal products across the lifespan. Students will focus on client assessment, therapeutic outcomes, medication safety, and client education. Clinical decision making will be addressed through understanding of pharmacodynamics, physiologic stability, reduction of harm, therapeutic and holistic approach to culturally diverse populations. This course focuses on drugs affecting the neurological system including psychiatric disorders, men's and women's health, musculoskeletal system and cancer treatments. Prerequisites: Pass NRS 120, NRS 115, and NRS 116 Corequisites: NRS 125 Audit by exception or LPN to RN Bridge student

NRS 146 2 Credits
LPN TO RN TRANSITIONS
Quarters: Fall
This course is designed for the Licensed Practical Nurses (LPNs) preparing to transition into the Registered Nurse (RN) role. Students will develop the skills, knowledge, and mindset required to succeed as a registered nurse. The course focuses on understanding the expanded responsibilities of an RN, enhancing clinical judgment, and fostering effective communication in complex care environments. Topics include critical thinking, professional identity, evidence-based practice, delegation, and legal and ethical considerations in nursing. This hybrid course will consist of asynchronous learning, open lab time for skills practice, and skill validation. Corequisites: NRS 120 (Pharmacology for Nursing I), and LPN to RN acceptance

NRS 200 (P/T) 9 Credits
MEDICAL SURGICAL II
Quarters: Fall
In this course, medical and surgical content integrating pathophysiology and clinical judgement related to an unstable and/or higher acuity client will be taught. Focus will include nursing assessment, data related to body systems and the unpredictable changing client condition. Clinical decision making will be addressed through understanding of reduction of harm with a therapeutic and holistic approach to culturally diverse population

NRS 205 (P/T) 2 Credits
PHARMACOLOGY III
Quarters: Fall
This course continues concepts in pharmacology and clinical reasoning related to drug classes, over the counter medications, and herbal products across the lifespan. Students will focus on client assessment, therapeutic outcomes, medication safety, and client education. Clinical decision making will be addressed through understanding of pharmacodynamics, physiologic stability, reduction of harm, therapeutic and holistic approach to culturally diverse populations.

NRS 215 (P/T) 9 Credits
COMMUNITY AND MENTAL HEALTH
Quarters: Winter
This course will examine nursing and medical science in relation to community and mental health nursing across the lifespan. Community and mental health nursing incorporates elements of prevention, education, assessment, and therapies. Focus on psychosocial skills in the utilization of effective therapeutic communication and safety awareness to provide care to individuals, families and communities experiencing acute and chronic mental illness. Pathophysiology and disease progression will be incorporated.

NRS 220 (P/T) 1 Credit
PHARMACOLOGY IV
Quarters: Winter
This course continues concepts in pharmacology and clinical reasoning related to drug classes, over the counter medications, and herbal products across the lifespan. Students will focus on client assessment, therapeutic outcomes, medication safety, and client education. Clinical decision making will be addressed through understanding of pharmacodynamics, physiologic stability, reduction of harm, therapeutic and holistic approach to culturally diverse populations

NRS 224 (P/T) 7 Credits
INTEGRATIVE PRACTICUM CLINICAL
Quarters: Spring
This course is designed to formalize the clinical reasoning and judgement, knowledge, and skills necessary to create a safe, client care environment as a graduate nurse. The practicum is designed for the student to partner with a practicing nurse preceptor to learn both nursing role and skills. Learning during the practicum is important as the student will recognize the development their own intellectual knowledge, psychomotor skills, and affective attitudes as they transition from nursing student to nurse graduate.

NRS 225 (P/T) 2 Credits
INTEGRATED PRACTICUM CLINICAL-LAB
Quarters: Spring
This course utilizes a computer-based instructional method to provide a comprehensive review of nursing concepts in preparation for the National Council Licensure Examination-Registered Nurse (NCLEX-RN). Students will utilize an online platform to simulate the NCLEX-RN and allow them to understand their strengths and weaknesses of the NCLEX-RN test plan. Feedback will be provided to the student based on the Clinical Judgement Measurement Model. Remediation is integrated to increase the successful completion of NCLEX-RN.

NURS 090 8 (P/T) 0 Credit
MEDICATION ASSISTANT
Quarters: Offered as needed
This course leads to eligibility for certification as a Medication Assistant in the state of Oregon, and meets all Oregon State Board of Nursing requirements. Upon completion of the course students will be able to safely, legally, and accurately administer and document medications to clients in appropriate healthcare settings. This course follows the approved OSBN curriculum requirements for Certified Medication Aide in Oregon. Prerequisites: Current Oregon or Idaho Certified Nursing Assistant I certification, 6 months documented full time Certified Nurses Aide I work experience (or equivalent part time experience), criminal background check).

NURS 106 6 Credits
NURSING ASSISTANT
Quarters: Summer, Fall, Spring
This course is a combination of 110 hours which is divided into 40 hours of didactic, 28 hours of lab, 40 hours clinical, and a 2-hour Final Exam. Specifically, 40 didactic hours are spent in a live online learning environment. Lab skills include 28 hours, completed on Fridays, weeks 1-4. Clinical experiences are completed in 40 hours on Fridays, weeks 5-9. The Final Exam is in Week 10 and will be 2 hours (Week 8 during the summer term). A skills review will be held week 10 for 4 hours (Week 8 during the summer term), this is not mandatory but highly recommended for state testing preparation. Sign-in will be required for Week 10 skills day (Week 8 during the summer term), those that opt not to attend will not have an additional opportunity to practice prior to state testing. The clinical experience is spent in local long-term and/or acute care facility. The clinical experience will be an opportunity for students to acquire real life patient care as a student nursing assistant. The objective is to gain the knowledge to successfully pass the National Nurse Assistant Assessment Program Examination (NNAAP).

Office Administration

OA 116 (P/T) 3 Credits
OFFICE PROCEDURES
Quarters: Summer, Fall, Spring
Provides the foundation necessary for entry-level employment as an office assistant with exercises that simulate entry-level administrative work situations.

OA 120 (P/T) 3 Credits
BUSINESS EDITING
Quarters: Summer, Fall
This course focuses on the development of basic keyboarding skills while emphasizing the production of a wide range of typical business correspondence from unarranged and rough-draft sources. It introduces effective proof reading techniques emphasizing spelling, word division, capitalization, abbreviations, numbers, grammar, punctuation, and formatting of business documents using current office practices. Prerequisites: inimum typing speed of 35 wpm

OA 121 (P/T) 3 Credits
KEYBOARDING I
Quarters: Offered as needed
Emphasizes proper techniques of keyboarding through meaningful practice and speed development. Does not include word processing concepts. Lab included.

OA 122 (P/T) 3 Credits
KEYBOARDING II
Quarters: Offered as needed
Applies drills specific to speed building and achieving 60 wpm or better. Does not include word processing concepts. Lab included. Prerequisites: Minimum typing speed of 35 wpm.

OA 124 (P/T) 2 Credits
KEYBOARDING SKILL BUILDING
Quarters: Offered as needed
Emphasizes improvement of proficiency in keyboarding skills (speed and accuracy). Lab included.

OA 220 (P/T) 3 Credits
ADVANCED DOCUMENT PRODUCTION
Quarters: Summer
Covers development of correct formats for business reports, letters, memos, tabbed columns, and forms. Use a variety of input methods, such as dictation and printed rough drafts. Stresses application of language arts skills. Develops the skill to produce documents accurately within specified time. Prerequisites: OA 120, BT 221

OA 240 (P/T) 3 Credits
RECORDS MANAGEMENT
Quarters: Summer, Spring
Focuses on Records Information Management (RIM). Covers terminology, data, employment opportunities, current developments, technology, and legal and ethical concerns in RIM. Includes field trips to selected businesses to provide further emphasis.

OA 251 (P/T) 3 Credits
OFFICE MANAGEMENT
Quarters: Summer, Spring
Provides a capstone experience in the Office Administration program. This course offers both a theoretical and a practical hands-on approach to managing complex business projects. Students learn the life cycle of a project and develop essential skills to define the critical path of a project. Students integrate spreadsheet, texting-editing, presentation, and project management skills to develop and track a comprehensive team-based project. Prerequisites: OA 116, BA 206, OA 120, OA 220, BT 221

OA 280 1 Credit
OFFICE APPLICATIONS COOP WK EXP
Quarters: Summer, Fall, Winter, Spring
Designed to give students an opportunity to acquire actual work experience in their chosen field. An on-site supervisor will supervise and evaluate the work experience student. Instructor approval of work setting and placement is required. For each credit earned, the student will need to document 36 hours at the work site. Some sections may have a no-cost text book option.

Philosophy

PHIL 101 3 Credits
PHILOSOPHICAL PROBLEMS
Quarters: Summer, Fall, Spring
Introduces the problems and systems of philosophy, including metaphysics, epistemology, ethics, social and political philosophy, and religion. Prerequisites: Pass WR 115 with a "C-" or better or suitable placement score and pass.

Phlebotomy

PHLB 115 3 Credits
PHLEBOTOMY
Quarters: Fall, Winter, Spring
Focus of this course is to demonstrate appropriate blood specimen procurement techniques using vacutainer, syringe, winged infusion/ butterfly with syringe and capillary puncture methods. Other specifics of the blood specimen testing requirements, such as collection into the correct evacuated tube (additive) , specimen handling procedures, and collection documentation is also covered; while assuring safe, confidential and professional environment for the parent, and as the phlebotomy technician. Practical experience which will include a minimum of 30 successful venipunctures and 10 successful capillary sticks. Prerequisites: Student must be able to provide proof of high school graduation or GED program, or official high school transcript demonstrating that student will graduate from high school within 12 months of enrollment in course.

Physics

PHYS 201 4 Credits
GENERAL PHYSICS I
Quarters: Offered as needed
Explores classical mechanics, including motion, forces, and energy. Intended for students without a calculus background. Lab required. Prerequisites: MATH 112

PHYS 202 4 Credits
GENERAL PHYSICS II
Quarters: Offered as needed
Explores fluids, elasticity, waves and sound, thermodynamics, and electrostatics. Intended for students without a calculus background. Lab required. Prerequisites: PHYS 201.

PHYS 203 4 Credits
GENERAL PHYSICS III
Quarters: Offered as needed
Explores electric and magnetic theory, electronics, light, and optics. Intended for students without a calculus background. Lab required. Prerequisites: PHYS 202.

PHYS 211 5 Credits
CLASSICAL PHYSICS I
Quarters: Offered as needed
Explores classical mechanics, including motion, forces, and energy. Intended for students with a calculus background. Lab required. Prerequisites: MATH 251 or concurrent enrollment in MATH 251.

PHYS 212 5 Credits
CLASSICAL PHYSICS II
Quarters: Offered as needed
Explores fluids, elasticity, waves and sound, thermodynamics, and electrostatics. Intended for students having a calculus background. Lab required. Prerequisites: PHYS 211 and MATH 251 and 252, or concurrent enrollment in MATH 252.

PHYS 213 5 Credits
CLASSICAL PHYSICS III
Quarters: Offered as needed
Explores electric and magnetic theory, electronics, light, and optics. Intended for students with a calculus background.. Lab required. Prerequisites: PHYS 212, and MATH 252, and MATH 253, or concurrent enrollment in MATH 253.

Political Science

POSC 201 3 Credits
AMERICAN GOVERNMENT
Quarters: Fall, Winter
Introduces the principles of the American constitutional system, and examines civil liberties, minority rights, and issues of social equality.

POSC 202 3 Credits
AMERICAN GOVERNMENT
Quarters: Fall, Winter
Examines issues of public opinion, interest groups, and their impact upon government systems; political party structures; campaigning and elections; the influence of media; and state and local governments.

POSC 203 3 Credits
AMERICAN GOVERNMENT
Quarters: Spring
Examines the three branches of government plus governmental bureaucracies. Analyzes major policy areas of national government. Some sections may have a low-cost text book option.

Psychology

PSYC 101 3 Credits
PSYCHOLOGY OF HUMAN RELATIONS
Quarters: Summer, Fall, Winter, Spring
Emphasizes the theory and practice of human relations in the work setting, including self-management skills, role as employee, and effective participation in work groups. Stresses self awareness, awareness of others, managing stress and emotions, building healthy relationships, interpersonal communications, intercultural sensitivity, conflict resolution, and professional behavior.

PSYC 201 Z 4 Credits
INTRODUCTION TO PSYCHOLOGY I
Quarters: Summer, Fall, Winter, Spring
Introduction to the science and application of psychology. Emphasis will be placed on psychological concepts, theories, and principles related to: Research Methods, Behavioral Neuroscience, Consciousness, Sensation/Perception, Learning, Memory, Thinking and Intelligence, and related topics. Some sections may have a low-cost text book option.

PSYC 202 Z 4 Credits
INTRODUCTION TO PSYCHOLOGY II
Quarters: Summer, Winter, Spring
Introduction to the science and application of psychology. Emphasis will be placed on psychological concepts, theories, and principles related to: Personality, Social Psychology, Health and Well-Being, Motivation and Emotion, Disorders, Therapies, Lifespan Development, and related topics. Prerequisites: PSYC 201Z, or BIOL 101, or BIOL 231, or BIOL 232

PSYC 203 3 Credits
GENERAL PSYCHOLOGY
Quarters: Summer
Stresses abnormal psychology and social psychology. Discusses theories of personality adjustment, abnormal psychology, psychological intervention, stress, conflict, and social psychology. Prerequisites: PSYC 201, or BIOL 101.

PSYC 231 3 Credits
HUMAN SEXUALITY
Quarters: Spring
A comprehensive study of human sexuality with an emphasis on sexual issues from scientific and humanistic perspectives. This course includes a survey of historical, cultural and cross-cultural variation in sexuality, sex research, female and male sexual and reproductive anatomy and physiology, gender issues, sexual response, sexual communication, sexual behavior patterns, love and sexual orientations.

PSYC 235 3 Credits
INTRO TO HUMAN DEVELOPMENT I
Quarters: Summer, Fall, Winter
Discusses theoretical perspectives, and physiological, social, and psychological forces that impact the stages of human development form conception through late childhood. Prerequisites: PSYC 201, or BIOL 101.

PSYC 236 3 Credits
INTRO TO HUMAN DEVELOPMENT II
Quarters: Summer, Winter
Discusses theoretical perspectives, and physiological, social, and psychological forces that impact the stages of human development from adolescence through late adulthood. Discusses special topics pertaining to those stages in life. Prerequisites: PSYC 201, or BIOL 101.

PSYC 237 4 Credits
SEASONS OF LIFE
Quarters: Summer, Fall, Spring
Focuses on the concept that development is a lifelong process, beginning at conception and continuing into late adulthood. Considers human development as influenced by three "clocks": the biological clock, the social clock, and the psychological clock. Prerequisites: PSYC 201, or BIOL 101.

Religion

R 201 3 Credits
EASTERN RELIGIONS
Quarters: Fall
This course uses critical reading, thinking, writing, and discussion to examine the history, evolution, ideology, philosophy, sacred practices, and rituals of the dominant and lesser known religions in the Eastern tradition, including Hinduism, Buddhism, Taoism, Shinto, and Jainism.. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

R 202 3 Credits
WESTERN RELIGIONS
Quarters: Winter
This course uses critical reading, thinking, writing, and discussion to examine the history, evolution, ideology, philosophy, sacred practices, and rituals of the dominant and lesser known religions in the Western tradition, including Judaism, Christianity, Islam, and Zoroastrianism. Prerequisites: Pass WR 115 with a "C-" or higher, or a suitable placement score.

R 203 3 Credits
AMERICAN RELIGIONS
Quarters: Offered as needed
This course uses critical reading, thinking, writing, and discussion to examine the history, evolution, ideology, philosophy, sacred practices, and rituals of the dominant and lesser known religions in the American tradition, including Mayan religion, Native American religions, Puritanism, LDS, Scientology, and others. Prerequisites: Pass WR 115 with a "C-" or higher, or a suitable placement score.

Social Work

SOWK 111 3 Credits
INTRO TO SOCIAL WORK
Quarters: Spring
Introduces the profession of social work, surveying the professional knowledge, skills, values, and ethics applicable for generalist social work practices. Reviews the historical, philosophical, educational, and social dimensions of the profession. Considers various fields of social work practice and their unique attributes, including income levels of each. Places special emphasis on rural areas. Recommended Co-requisite: SOWK 280.

SOWK 220 3 Credits
SOCIAL WELFARE SYSTEM AND POLICY
Quarters: Spring
Addresses the historical impact and current delivery of social services to people of poverty, people of color, elderly, women, homosexuals, and persons with mental and or physical disabilities, recognizing the fundamental duty of the social work profession to promote social equity and justice. Traces the historical evolution of the American social service delivery system, and examines development of policies as they relate to societal values. Prerequisites: SOWK 111 or instructor approval.

Sociology

SOC 204 Z 4 Credits
INTRODUCTION TO SOCIOLOGY
Quarters: Fall
Introduces the central concepts, theories, and methods that define the sociological approach to investigating the social forces that shape our lives. Topics may include social structure, culture, socialization, race, class, gender, sexuality, and inequality.

SOC 205 Z 4 Credits
SOCIAL CHANGE AND INSTITUTIONS
Quarters: Fall
Sociological analysis of social institutions, such as family, education, health care, the economy, and the state. Includes an examination of connections among institutions and their impact on patterns of inequality and individual outcomes. Examines the forces and dynamics behind social change, such as social movements, culture, economic forces, technologies, and the environment.

SOC 206 Z 4 Credits
SOCIAL PROBLEMS
Quarters: Offered as needed
Applies the sociological perspective to the study of social problems, including their social construction, causes, and consequences. Explores the complexities surrounding their solutions, such as how solutions are socially constructed and policy proposals from sociologists and social movements. Topics may include poverty, discrimination, interpersonal violence, crime, addiction, ecological crises, war/global conflict, and health inequality.

SOC 210 3 Credits
MARRIAGE/FAMILY/INTIMATE RELATIONS
Quarters: Summer, Fall
Presents sociological analyses of topics which may include romantic love, sexual patterns, courtship and dating, intimate relationships, divorce, widowhood, remarriages, family systems in other cultures, family systems in America, current changes, and prospects for the future. Guides students into ways of coping better in their own relationships.

SOC 231 3 Credits
HUMAN SEXUALITY
Quarters: Spring
A comprehensive study of human sexuality with an emphasis on sexual issues from scientific and humanistic perspectives. This course includes a survey of historical, cultural and cross-cultural variation in sexuality, sex research, female and male sexual and reproductive anatomy and physiology, gender issues, sexual response, sexual communication, sexual behavior patterns, love and sexual orientations.

Spanish

SPAN 101 4 Credits
1ST YEAR SPANISH I
Quarters: Fall, Winter, Spring
First Year Spanish is based on the Standards of Learning Spanish. Instruction Incorporates the major organizing principles for the Standards for Foreign Language Learning: Communication, Cultures, Connections, Comparisons and Communities. Grammar is taught within the context of real world interaction in the target language (Spanish), including reading, writing, speaking, and listening.

SPAN 102 4 Credits
1ST YEAR SPANISH II
Quarters: Winter
First Year Spanish is based on the Standards of Learning Spanish. Instruction Incorporates the major organizing principles for the Standards for Foreign Language Learning: Communication, Cultures, Connections, Comparisons and Communities. Grammar is taught within the context of real world interaction in the target language (Spanish), including reading, writing, speaking, and listening. Pre-requisite: SPAN 101, Two years of high school Spanish, or instructor approval.

SPAN 103 4 Credits
1ST YEAR SPANISH III
Quarters: Fall, Spring
First Year Spanish is based on the Standards of Learning Spanish. Instruction Incorporates the major organizing principles for the Standards for Foreign Language Learning: Communication, Cultures, Connections, Comparisons and Communities. Grammar is taught within the context of real world interaction in the target language (Spanish), including reading, writing, speaking, and listening. Prerequisites: SPAN 102 or Instructor permission.

SPAN 201 4 Credits
2ND YEAR SPANISH I
Quarters: Offered as needed
Continues the review and expansion of vocabulary, grammar, conversation and composition. Introduction to cultural and literacy readings. Prerequisites: two years high school spanish, SPAN 103 or Instructor permission.

SPAN 202 4 Credits
2ND YEAR SPANISH II
Quarters: Offered as needed
Continues the review and expansion of vocabulary, grammar, conversation and composition. Introduction to cultural and literacy readings. Prerequisites: SPAN 201.

SPAN 203 4 Credits
2ND YEAR SPANISH III
Quarters: Offered as needed
Continues the review and expansion of vocabulary, grammar, conversation and composition. Introduction to cultural and literacy readings. Prerequisites: SPAN 202.

Speech

SP 112 3 Credits
PERSUASIVE SPEECH
Quarters: Offered as needed
Provides students an understanding of the persuasive communication process in order to make more persuasive presentations and better understand persuasive mechanisms in the issues they encounter. Prerequisites: College level reading ability is an advantage.

SP 219 3 Credits
SMALL GROUP DISCUSSION
Quarters: Fall, Winter, Spring
Stresses skill building and theory in decision making, goal setting, presentation planning, and knowledge of group process. Assists students in using effective small group techniques in a variety of settings. Prerequisites: Pass WR95 with a C- or better, or suitable placement score.

Statistics

STAT 243 Z 4 Credits
ELEMENTARY STATISTICS I
Quarters: Winter, Spring
A first course in statistics focusing on the interpretation and communication of statistical concepts. Introduces exploratory data analysis, descriptive statistics, sampling methods and distributions, point and interval estimates, hypothesis tests for means and proportions, and elements of probability and correlation. Technology will be used when appropriate. Prerequisites: Pass MATH 111 or 105 with a "C-" or better, or suitable math placement exam score.

Surgical Technology

ST 101 (P/T) 6 Credits
SURGICAL TECHNOLOGY I
Quarters: Offered as needed
This course provides a comprehensive study of the operating room environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in the field of surgical technology. Additional content will include pharmacology, anesthesia, microbiology, asepsis, sterile technique, an intro to surgical instrumentation and the sterilization process. Prerequisites: Acceptance into Surgical Technologist Program Co-requisite: ST 111

ST 102 (P/T) 6 Credits
SURGICAL TECHNOLOGY II
Quarters: Offered as needed
This course will focus on the technology used in the surgical setting, including computer systems, electronic medical record systems, lasers, electrosurgery, ultrasound, robotics, and guided surgery. Other topics included will be surgical instrumentation (names, uses, etc.) and surgical supplies. The course will also cover perioperative management during the preoperative phases. Students will learn about surgical attire, proper techniques for gowning and gloving, hand hygiene, how to effectively perform a surgical scrub and how to properly establish a sterile field. Additional topics will include performing surgical counts, draping the surgical field, perioperative documentation, patient identification and time-out procedures. Prerequisites: ST 101 and ST 111 Corequisite: ST 112

ST 103 (P/T) 6 Credits
SURGICAL TECHNOLOGY III
Quarters: Offered as needed
This course focuses on perioperative management during the intraoperative phases. Content will include types surgical incisions and their purposes, wound exposure, hemostasis, wound management and application of sterile dressings. The course will also discuss maintaining the sterile field during surgery and the breakdown of the sterile field, how to appropriately handle and label surgical specimens, post-anesthesia care, and assistant circulator duties within the operating room environment. An introduction to surgical procedures will also be provided during this course, to prepare students for mock surgeries. Prerequisites: ST 102 and ST 112 Corequisite: ST 113

ST 111 (P/T) 4 Credits
SURGICAL TECHNOLOGY LAB I
Quarters: Offered as needed
The lab will provide students instruction and hands-on learning experiences. Students will learn proper sterilization and disinfection techniques for surgical instrumentation, how to properly prepare instrumentation for sterilization and how to apply sterile technique within the operating room setting. Prerequisites: Acceptance into TVCC Surgical Technologist program Co-requisite: ST 101

ST 112 (P/T) 4 Credits
SURGICAL TECHNOLOGY LAB II
Quarters: Offered as needed
The purpose of this lab is to provide instruction and hands-on learning experiences. Students will continue building on their knowledge and understanding of sterile techniques and will learn how to properly establish a sterile field, perform a surgical scrub using various scrub agents, don surgical attire in a sterile manor, perform surgical counts, and how to drape out the surgical field while maintaining sterility. Prerequisites: ST 101 and ST 111 Corequisite: ST 102

ST 113 (P/T) 4 Credits
SURGICAL TECHNOLOGY LAB III
Quarters: Offered as needed
This course is a continuation where students will apply, practice, and demonstrate skills from previous labs, including preparing the operating room, establishing a sterile field, setting up the back table and mayo stand, and draping the patient. Students will participate in mock surgeries, from start to finish, in order to demonstrate knowledge of surgical practices in the role of a surgical technologist, as well as undergo a surgical skills assessment to test their skill level and readiness for clinical rotations in the operating room environment. Additional skills that will be taught in this lab will include wound exposure, hemostasis in surgery, care and handling of surgical specimens, and urinary catheterization. Prerequisites: ST 102 and ST 112 Corequisite: ST 103

ST 206 (P/T) 10 Credits
SURGICAL PROCEDURES I
Quarters: Offered as needed
The didactic portion of this course is designed to teach various surgical procedures within the general, pediatric, obstetrics, gynecologic and genitourinary specialties. Content will include medical terminology, anatomy and physiology, surgical approaches, diagnostic procedures and pathology used to obtain a diagnosis, preoperative preparations, supplies, instrumentation and equipment, medications, wound classifications and postoperative care, as it relates to each procedure. The purpose of the clinical portion of this course is to provide students with clinical rotations within the operating room and allow students to obtain required case counts, with the goal to develop a well rounded, competent, entry-level surgical technologist. Students will be required to complete a minimum of 120 surgical cases in various specialties, defined within the Core Curriculum for Surgical Technology, 7th edition, published by the Association of Surgical Technologist. Prerequisites: ST103 and ST113

ST 207 (P/T) 10 Credits
SURGICAL PROCEDURES II
Quarters: Offered as needed
The didactic portion of this course is designed to teach various surgical procedures within the orthopedic, ophthalmologic, and neurosurgery specialties. Content will include medical terminology, anatomy and physiology, surgical approaches, diagnostic procedures and pathology used to obtain a diagnosis, preoperative preparations, surgical supplies, instrumentation and equipment, medications, wound classifications and postoperative care, as it relates to each procedure. The purpose of the clinical portion of this course is to provide students with clinical rotations within the operating room and allow students to obtain required case counts, with the goal to develop a well rounded, competent, entry-level surgical technologist. Students will be required to complete a minimum of 120 surgical cases in various specialties, defined within the Core Curriculum for Surgical Technology, 7th edition, published by the Association of Surgical Technologist. Prerequisites: ST 206

ST 208 (P/T) 10 Credits
SURGICAL PROCEDURES III
Quarters: Offered as needed
The didactic portion of this course is designed to teach various procedures within the Otorhinolaryngologic, oromaxillofacial, plastic, cardiovascular, and peripheral vascular specialties. Content will include medical terminology, anatomy and physiology, surgical approaches, diagnostic procedures and pathology used to obtain a diagnosis, preoperative preparations, supplies, instrumentation and equipment, medications, wound classifications and postoperative care, as it relates to each procedure. The purpose of the clinical portion of this course is to provide students with clinical rotations within the operating room and allow students to obtain required case counts, with the goal to develop a well rounded, competent, entry-level surgical technologist. Students will be required to complete a minimum of 120 surgical cases in various specialties, defined within the Core Curriculum for Surgical Technology, 7th edition, published by the Association of Surgical Technologist. Prerequisites: ST 207

ST 209 (P/T) 1 Credit
SURG TECH TEST PREP AND JOB SKILLS
Quarters: Offered as needed
The purpose of this course is to provide students with employability skills, including interview strategies, resume assistance, and employment strategies to help students find employment after graduation. The course will also provide test preparation for the national certification exam. Prerequisites: ST 207

Theatre

TA 100 3 Credits
INTRO TO THEATRE
Quarters: Fall, Spring
This course introduces theatre as an art form, as entertainment and as cultural phenomenon. It is designed to enhance the student's enjoyment and understanding of the theatrical experience through a thorough examination of theatre productions from the Ancient Greeks to more contemporary theatrical works. Course Note: This course is not intended to teach you how to be a theatre artist. You will not learn how to act, be a playwright, design, or direct a production. This course will invite you to view the world through the lens of a theatre artist from the perspective of an audience member.

Welding

WELD 102 (P/T) 3 Credits
PIPE WELDING
Quarters: Spring
Designed for the student seeking employment in the welding industry where pipe welding is a major component. The student will be introduced to pipe layout and fitting techniques. The student will then apply their welding skills to produce welds in the 2G, 5G, and 6G positions to industry standards.. Prerequisites: WELD 150, WELD 160, WELD 120, WELD 103, or instructor approval.

WELD 103 (P/T) 5 Credits
SHIELDED METAL ARC WELDING II
Quarters: Fall, Winter, Spring
Instruction given in the selection and use of Shielded Metal Arc Welding (SMAW) equipment and in the basic techniques of safely welding ferrous metal in the five American Welding Society defined joint configurations and in the flat, horizontal, vertical and overhead positions. Included is the selection and use of mild steel electrodes. Prerequisites: WELD 150, or instructor approval

WELD 104 (P/T) 3 Credits
GAS METAL ARC WELDING
Quarters: Fall, Spring
Instruction given in the selection and use of Gas Metal Arc Welding (GMAW) equipment and in the basic techniques of safely welding ferrous and non-ferrous metals in the five American Welding Society defined joint configurations and in the flat, horizontal, vertical and overhead positions. Prerequisites: WELD 160, or instructor approval

WELD 105 (P/T) 2 Credits
ADVANCED PIPE WELDING
Quarters: Spring
Designed for the student to improve and expand the skills learned in WELD 102. The focus will be on welded joints requiring multiple welding processes to complete. Prerequisites: WELD160, WELD 102, or instructor approval

WELD 106 (P/T) 3 Credits
FLUX CORED ARC WELDING
Quarters: Winter, Spring
Instruction given in the selection and use of Flux Cored Arc Welding (FCAW) equipment and in the basic techniques of safely welding ferrous and metal in the five American Welding Society defined joint configurations and in the flat, horizontal, vertical and overhead positions. Proper electrode selection will be covered. Prerequisites: WELD 160, or instructor approval

WELD 120 (P/T) 3 Credits
WELDING SYMBOLS AND PRINT READING
Quarters: Fall, Winter, Spring
Designed to give the student an introduction to the basic concepts of industrial drawing systems used in the fabrication and erection of welded components. Emphasis is placed upon the application and understanding of welding symbols.

WELD 130 (P/T) 2 Credits
PERFORMANCE WELDING-OAW
Quarters: Spring
Performance Welding-OAW is designed for the student who needs to develop a higher level of manipulative skill proficiency then obtained in WELD 150. Some sections may have a no-cost text book option. Prerequisites: WELD 150, or instructor approval

WELD 131 (P/T) 2 Credits
PERFORMANCE WELDING-SMAW
Quarters: Fall, Winter, Spring
Performance Welding-SMAW is designed for the student who needs to develop a higher level of manipulative skill proficiency then obtained in WELD 150 or WELD 103. Some sections may have a no-cost text book option. Prerequisites: WELD 150, or instructor approval

WELD 132 (P/T) 2 Credits
PERFORMANCE WELDING-GMAW
Quarters: Fall, Winter, Spring
Performance Welding-GMAW is designed for the student who needs to develop a higher level of manipulative skill proficiency then obtained in WELD 160 or WELD 104. Some sections may have a no-cost text book option. Prerequisites: WELD 160, or instructor approval

WELD 133 (P/T) 2 Credits
PERFORMANCE WELDING-FCAW
Quarters: Fall, Winter, Spring
Performance Welding-FCAW is designed for the student who needs to develop a higher level of manipulative skill proficiency then obtained in WELD 160, or WELD 105. Prerequisites: WELD 160, or instructor approval

WELD 134 (P/T) 2 Credits
PERFORMANCE WELDING-GTAW
Quarters: Summer, Fall, Winter, Spring
Performance Welding-GTAW is designed for the student who needs to develop a higher level of manipulative skill proficiency then obtained in WELD160. Prerequisites: WELD 160 or instructor approval

WELD 135 (P/T) 2 Credits
PERFORMANCE WELDING-CODE PRACTICAL
Quarters: Fall, Winter, Spring
Performance welding-Code Practical Plate is designed for the student who needs to develop a higher level of manipulative skill in preparation for a practical weld qualification test. Prerequisites: WELD 103, or instructor approval

WELD 136 (P/T) 2 Credits
PERFORMANCE WELDING-CODE PRACTICAL
Quarters: Fall, Spring
Performance Welding-Code Practical Pipe is designed for the student who needs to develop a higher livel of manipulative skill proficiency then obtained in WELD 102. Prerequisites: WELD 102 or instructor approval

WELD 150 (P/T) 5 Credits
BASIC WELDING I
Quarters: Fall, Winter, Spring
Entry level class that covers safety and a basic knowledge of the setup and operation of the followings processes. Oxy-Acetylene Welding (OAW), Oxy-Acetylene Cutting (OAC), Plasma Arc Cutting (PAC), Air Carbon Arc Cutting (CAC-A) and Shielded Metal Arc Welding (SMAW.

WELD 160 (P/T) 5 Credits
BASIC WELDING II
Quarters: Winter, Spring
Designed to give the student a basic knowledge and ability to safely set up and operate the Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), and Gas Tungsten Arc Welding (GTAW) processes.

WELD 190 (P/T) 5 Credits
WELDING CODES, PROCEDURE AND INSPECT
Quarters: Spring
Design to give the student a working knowledge of code sections and how they apply to the welding industry. Inspection requirements will be covered and applied to the student's practical weld test. Prerequisites: WELD 150, WELD 160, WELD 103, WELD 105 or instructor approval

WELD 296 (P/T) 4 Credits
WELDING FABRICATIONS PRACTICES
Quarters: Spring
Instruction in fabrication techniques including blueprint reading, layout tools, material lists, time management, job cost calculations, measuring, fitting, cutting, and welding. Beginning projects will be assigned. Prerequisites: WELD 150, WELD 160, or instructor approval

WELD 297 (P/T) 2 Credits
WELDING FABRICATION PRACTICES II
Quarters: Spring
Students will be assigned intermediate fabrication projects based on skills acquired in WELD296 Welding Fabrication Practices. Prerequsites: WELD 296, or instructor approval

WELD 298 (P/T) 2 Credits
WELDING FABRICATION PRACTICES III
Quarters: Spring
Students will be assigned advanced fabrication projects based on skills acquired in WELD 296 Welding Fabrication Practices, and WELD 297 Welding Fabrication Practices II. Prerequisites: WELD 297, or instructor approval

Writing

WR 090 3 Credits
FUNDAMENTALS OF COMPOSITION
Quarters: Fall, Winter
Develops basic writing skills such as sentence structure, grammar, and punctuation used in paragraph structure. Some sections may have a low-cost text book option. Prerequisites: Suitable placement score.

WR 095 3 Credits
ENGLISH COMPOSITION
Quarters: Summer, Fall, Winter, Spring
Emphasizes basic grammar, punctuation, sentence structure, and paragraph development necessary for effective college-level writing. Some sections may have a low-cost text book option. Prerequisites: Pass WR 90 with a "C-" or better, or suitable placement score.

WR 115 4 Credits
INTRO TO COLLEGE WRITING
Quarters: Summer, Fall, Winter, Spring
Develops the students' critical thinking skills and emphasizes basic competence in grammar, mechanics, and sentence structure, with particular attention to unified writing, and coherent essays. Some sections may have a low-cost text book option. Prerequisites: Pass WR 95 with a C- or better, or suitable placement score.

WR 118 1 Credit
INTRO TO INFORMATION LITERACY
Quarters: Fall
This course teaches students an understanding of both information literacy and research processes. Students will learn how to identify and narrow research topics, plan and carry out research, identify credible sources, and utilize appropriate citation methods.

WR 121 Z 4 Credits
COMPOSITION I
Quarters: Summer, Fall, Winter, Spring
Engages students in the study and practice of critical thinking, reading, and writing. The course focuses on analyzing and composing across varied rhetorical situations and in multiple genres. Students will apply key rhetorical concepts flexibly and collaboratively throughout their writing and inquiry processes. Prerequisites: Pass WR 115 with a grade of "C-" or better, or suitable writing placement exam score.

WR 122 Z 4 Credits
COMPOSITION II
Quarters: Summer, Fall, Winter, Spring
Builds on concepts and processes emphasized in WR 121Z, engaging with inquiry, research, and argumentation in support of students' development as writers. The course focuses on composing and revising in research-based genres through the intentional use of rhetorical strategies. Students will find, evaluate, and interpret complex material, including lived experience; use this to frame and pursue their own research questions; and integrate material purposefully into their own compositions. Prerequisites: Pass WR 121 with a "C-" or better.

WR 123 3 Credits
ENGLISH COMPOSITION
Quarters: Offered as needed
Assists students in using successful steps for the research process, including formulating research proposals, using effective search strategies, analyzing and evaluating sources, and demonstrating mastery of documentation. Emphasis is on writing a lengthy research paper which will support an argumentative thesis using appropriate rhetorical strategies, applicable evidence, and effective language. Prerequisites: Pass WR 122 with a "C-" or better.

WR 227 Z 4 Credits
TECHNICAL WRITING
Quarters: Offered as needed
Introduces students to producing instructive, informative, and persuasive technical/professional documents aimed at well-defined and achievable outcomes. The course focuses on presenting information using rhetorically appropriate style, design, vocabulary, structure, and visuals. Students can expect to gather, read, and analyze information and to learn a variety of strategies for producing accessible, usable, reader-centered deliverable documents that are clear, concise, and ethical. Prerequisites: Pass WR 122 with a "C-" or better.

WR 241 3 Credits
INTRO TO IMAGINATIVE WRITING
Quarters: Spring
Explores reading and writing some of the major varieties of imaginative, or "creative", writing. Focus: reading and writing short fiction. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

WR 242 3 Credits
INTRO TO IMAGINATIVE WRITING
Quarters: Offered as needed
Explores the reading and writing of three of the major varieties of imaginative, or "creative", writing. Focus: reading and writing creative nonfiction. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.

WR 243 3 Credits
INTRO TO IMAGINATIVE WRITING
Quarters: Offered as needed
Explores the reading and writing of three of the major varieties of imaginative, or "creative", writing. Focus: reading and writing poetry. Prerequisites: Pass WR 115 with a "C-" or better, or suitable placement score.