Following is a list of all classes that can be taught by Yavapai College. Not all of these classes are taught every semester. Please see the Class Schedule for a listing of currently offered classes.

**ACCOUNTING (ACC)**

**ACC106F. QuickBooks Basics (.5).**
Use of QuickBooks Basics to perform the basic accounting operations needed in operating a small business. Operations will include cash and credit sales, basic inventory management, basic payroll, and preparation of end of period reports.
Prerequisite: Reading Proficiency.
One lab.

**ACC115. Basic Tax Planning (3).**
Techniques of federal individual, partnership and corporation income tax preparation. Emphasis on tax return preparation, with review of individual income tax law and applications of that law to tax return forms.
Prerequisite: Reading Proficiency.
Three lecture.

**ACC116. Advanced Tax Planning and Preparation (4).**
Advanced study in individual, corporate, and partnership taxation.
Prerequisite: ACC 115. Reading Proficiency.
Four lecture.

**ACC121. Introductory Accounting (3).**
General ledger bookkeeping and preparing financial statements.
Prerequisite: Reading Proficiency.
Three lecture.

**ACC122. Payroll Accounting (3).**
Payroll functions for a business including timekeeping techniques, payroll accounting records, check writing, preparation of federal and state payroll reports, insurance reports, and retirement plan reports. Manual recordkeeping and report submission as well as computerized payroll will be covered.
Prerequisite: ACC 121. Reading Proficiency.
Three lecture.

**ACC131. Principles of Accounting I (4).**
Principles and procedures of accrual accounting applied to preparation and interpretation of general purpose financial statements.
Prerequisite: ACC 121. Reading Proficiency.
Four lecture.

**ACC132. Principles of Accounting II (4).**
Introduction to corporate debt and equity accounting issues including present value calculations. Emphasis on accounting for managerial planning and control applicable to corporate business organizations. Preparation of the statement of cash flows.
Prerequisite: ACC 131. Reading Proficiency.
Four lecture.

**ACC161. Computer Accounting Practice (2).**
Use of microcomputers for general ledger bookkeeping and personal finance. Emphasis on solving advanced accounting simulations.
Prerequisite: ACC 121. Reading Proficiency.
One lecture. Three lab.

**ACC162. Microsoft Excel and Access in Accounting Applications (2).**
Use of the spreadsheet software Microsoft Excel and the database software Microsoft Access in the analysis of financial data and generating accounting reports.
Prerequisite: ACC 121 and CSA 138. Reading Proficiency.
One lecture. Three lab.

**ACC211. Governmental and Nonprofit Accounting (3).**
Accounting practices in governmental units such as cities, counties, state agencies and nonprofit organizations. Includes temporary fund balance accounts, budget entries, encumbrances, and tax receivables.
Prerequisite: ACC 131. Reading Proficiency.
Three lecture.
COURSE DESCRIPTIONS

ACC217. Uses of Financial Information (3).
Financial statements used by managers, owners, lenders, and other stakeholders in publicly-held corporations. Emphasis on valuation and related economic consequences.
Prerequisite: ACC 132. Reading Proficiency.
Three lecture.

Financial accounting topics, including generally accepted accounting principles application, as well as rationale and clarification of the reasons for specific accounting principles. Includes analysis and use of balance sheets, cash and receivables, inventories, and temporary and long-term investments.
Prerequisite: ACC 132. Reading Proficiency.
Four lecture.

ACC232. Intermediate Accounting II (4).
Integration of advanced accounting theory and practice, including investments, long and short term liabilities, pension plans, stockholders’ equity, and advanced analysis of financial statements.
Prerequisite: ACC 231. Reading Proficiency.
Four lecture.

ACC296. Internship: Accounting (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ACC299. Independent Study Accounting (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

AJS105. Basic Emergency Communications (3).
Basic concepts and skills in public safety communications for emergency communications employees.
Prerequisite: Reading Proficiency.
Three lecture.

AJS109. Substantive Criminal Law (3).
Philosophy of legal sanctions and the historical development from common law to modern American criminal law. Classifications and general definitions of crimes. Common defenses to crimes.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS123. Ethics and the Administration of Justice (3).
Ethical issues, cultural influences and moral theories as they relate to the justice system. Focus on underlying values and ethical challenges faced by law enforcement, attorneys, the judiciary and correctional staff. Emphasis on critical thinking and value decision making.
Prerequisite: Reading Proficiency.
Three lecture.

AJS150. Arizona Detention Officers Basic Training Academy (13).
Training in basic responsibilities required to be an Arizona Detention officer. Development of professional abilities, and skills required for state certification.
Prerequisite: Agency sponsorship required.
Thirteen lecture.

AJS151. Defensive Tactics for Probation Officers (1).
Techniques for personal defense used by probation officers in job-related situations. Includes self-defense, search techniques, and control strategies.
Prerequisite: Assignment by related agency. Reading Proficiency.
Three lab.

AJS200. Current Issues in Criminal Justice (3).
Current issues, trends, and techniques related to and affecting the criminal justice system.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS212. Juvenile Justice Procedures (3).
History and development of juvenile justice theories, procedures and institutions.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.
AJS225. Criminology (3).
Theories of criminality and the economic, social and psychological impact of crime, victimization, and the relationships between statistics and crime trends. The study of deviance and society’s role in defining behavior.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS230. The Police Function (3).
History and development, procedures and methods of operations of law enforcement agencies. Role of the individual law enforcement officer. Career opportunities and the hiring process.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS240. The Correction Function (3).
History and development of correctional theories, practices, and institutions. Modern ideologies and functions associated with both community-based and custodial corrections systems.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS260. Procedural Criminal Law (3).
Procedural criminal law. Emphasis on rationale underlying major court holdings, the resulting procedural requirements, and the effect on the daily operations of the criminal justice system.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS270. Community Relations (3).
Recognition and understanding of community problems; community action programs; methods of coping with crisis situations, victimology, ethnic and minority cultures, environments, crime prevention and police operations.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS275. Criminal Investigations (3).
Theories of criminal investigation. Includes basic investigative techniques of crime scene procedures, case preparation, and interview techniques.
Prerequisite: AJS 101. Reading Proficiency.
Three lecture.

AJS280. Law Enforcement Instructor Certification (3).
Learning theories, course development and evaluation methods. Effective use of instructional media and creating a learning environment. Successful students may be certified as Arizona Peace officers Standards and Training Board Instructors.
Prerequisite: Students must be appointed by a law enforcement agency. Reading Proficiency.
Three lecture.

AJS296. Internship: Administration of Justice (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

AJS299. Independent Study Administration of Justice (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

ADULT EDUCATION (AED)
AED010. Adult Education Placement and Orientation (.5).
Arizona Department of Education requirements and placement testing prior to enrolling in GED preparation courses.
One-half lecture.

AED030. Adult Education Secondary Skills (3).
Prerequisite: AED 010 and reading, writing, and math at 8.0 on Tests of Adult Basic Education (TABE).
Three lecture.

AGRICULTURAL EQUINE (AGE)
AGE100. Introductory Equine Science (3).
Introduction to horses as they relate to humans including history and development, adaptation, anatomy, types and classes, breeds, and horsemanship. Emphasis on the care of horses including buildings and equipment, behavior management, and business aspects of ownership.
Prerequisite: Reading Proficiency.
Three lecture.

AGE111. Equine Massage and Alternative Therapies (3).
Identifying the muscles of the horse for alternative therapy. Includes musculoskeletal anatomy, bony land marks, pressure points, and veterinary vocabulary. Use the Equiken system to identify the musculoskeletal system.
Prerequisite: Reading Proficiency.
Three lecture.
AGE125. Equine Behavior Management (3).
Horse behavioral concepts. Includes origin, mechanisms, flexibility, and management. Includes horse's ability to process information, special senses, communication and social organization, sexual behavior, welfare, and learning.
Prerequisite: Reading Proficiency.
Three lecture.

AGE126. Equine Nutrition (2).
Principles of horse nutrition and application to horse health. Topics include digestive system, function of feeds, nutrient needs, protein, minerals, vitamins, water-soluble vitamins and rations. Emphasis on feeds for horses, their preparation, and the art of feeding.
Prerequisite: Reading Proficiency.
Two lecture.

AGE140. Introduction to Horseshoeing (3).
Basic anatomy and physiology of the legs and feet, equine conformation, basic blacksmithing, leveling and balancing the foot, and normal shoeing. Includes hoof trimming, and horse handling.
Prerequisite: Reading Proficiency.
One lecture. Six lab.

AGE141. Basic Horseshoeing for Certification (3).
Hoof care and shoeing techniques in preparation for the American Farriers Association Certified Farrier Exam. Includes keg shoe modification, hot shoeing, treating disease and injury, and corrective shoeing.
Prerequisite: AGE 140. Reading Proficiency.
One lecture. Six lab.

AGE150. English and Western Riding I (1).
Basic English and Western riding skills. Emphasis on safety, haltering and leading, grooming, saddles, bits, seating, trotting, posting and cantering with collection. Includes care of tack and equipment selection.
Prerequisite: Reading Proficiency.
Three lab.

AGE151. Human to Horse Connection (2).
Develops skills necessary in enhancing the relationship between horse and human. Emphasis on communication through body language and self awareness.
Prerequisite: Reading Proficiency.
Two lecture.

AGE152. Fitness for the Horse and Rider (2).
Emphasis on the enhancement of the riders strength, balance and confidence on horseback. Includes stretching, Yoga, Tai Chi and games on horseback.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

AGE153. Introduction to Ground Skills with Horses (3).
Develop ground skills necessary for safety, control and harmony with horses. Emphasis on communication using the round pen for longe line and liberty exercises. Exploration of the horses movement, foot falls and transitions in preparation for riding.
Prerequisite: Reading Proficiency.
Three lecture.

AGE154. Tying Rope Halters for Horses (1).
Basic knot tying techniques for horsemen. Application of knot tying and rope splicing principals for making rope halters, lead ropes, rope bridles, rope reins and more.
Prerequisite: Reading Proficiency.
One lecture.

AGE155. Equine Driving (1).
Principles of driving horses. Emphasis on picking the right horse, harness use and function, vehicle maintenance, styles of driving, training requirements, and competitions. Emphasis on horse and driver safety.
Prerequisite: Reading Proficiency.
Three lab.

AGE165. Introduction to Dressage (1).
Biomechanics and structural balancing of a horse's movements. Emphasis on learning to move the horse's body correctly and efficiently so that gaits and muscular conformation are improved.
Prerequisite: AGE 150. Reading Proficiency.
Three lab.

AGE211. Advanced Equine Massage Therapy (3).
Instruction in full massage routine, muscle location, function and isolation, massage benefits, 70 point locations, contraindications for massage, bony land mark identification, stretching, dental issues and saddle fitting issues using Zahourek methodologies.
Prerequisite: AGE 111. Reading Proficiency.
Three lecture.

AGE220. Equine Health (2).
Health management of the horse including reorganizing health problems, determining severity of illness or injury, and prescribing a treatment plan. Emphasis on prevention of health problems and early treatments of illness.
Prerequisite: AGE 100. Reading Proficiency.
Two lecture.
COURSE DESCRIPTIONS

AGE225. Horse Breeding (3).
Applying genetic principles to selected improvement of horses through breeding techniques. Performance traits, heritability and quantitative traits, selection, mating systems, color inheritance and breeder responsibility.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGE226. Equine Anatomy and Physiology (3).
Anatomy and physiology of the equine body systems. Includes skeletal, muscular, respiratory, cardiovascular, neurological, endocrine, digestive and reproductive systems.
Prerequisite: AGE 100. Reading Proficiency.
Three lecture.

AGE230. Equine Special Events Management (1).
Special events management for the equine industry. Includes selection of event, marketing, budget, insurance, registration, and facility negotiations.
Prerequisite: Reading Proficiency.
One lecture.

AGE250. English and Western Riding II (1).
Advanced riding techniques for the intermediate or experienced rider in both English and Western styles. Focuses on specific movements between horse and rider as well as training motivators.
Prerequisite: AGE 150. Reading Proficiency.
Three lab.

AGE255. Advanced Equine Driving (1).
Advanced principles of driving horses. Emphasis on harnessing and hitching, proper vehicle and maintenance, driving technique, and horse and driver safety. Class open to singles and pairs of all sizes of horses, ponies, mules and donkeys.
Prerequisite: AGE 155. Reading Proficiency.
Three lab.

AGE260. Training Techniques in Horsemanship (3).
Exploration of training techniques for the young, spoiled or difficult horse. Emphasis on breaking techniques and training horses to ride and drive. Methodologies involved in preparing individuals to teach others to train their own horse.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGE262. Training Techniques in Horsemanship II (2).
Apply various training techniques. Emphasis on starting a young horse under saddle, training and trailering problems.
Prerequisite: AGE 260. Reading Proficiency.
One lecture. Three lab.

AGE265. Horse Boarding and Training Facilities (2).
Boarding and training operations including buildings and equipment, local building codes, fences, and building guidelines for the welfare, safety, health and cost of the horse.
Prerequisite: Reading Proficiency.
Two lecture.

AGE296. Internship: Agricultural Science Equine (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.

AGE299. Independent Study Agriculture Equine (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

♦ AGRICULTURAL SCIENCE (AGS)

AGS101. Microcomputers in Agriculture (3).
Use of Microsoft Word, Excel, and PowerPoint for documentation, accounting and presentations in the agriculture industry.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGS102. Agribusiness Management (3).
Introduction to the latest functions of agribusiness including history, starting and running a business, small business plans, input and output sectors, daily financial operations, and basic economic principles. Emphasizes principles of agricultural economics, and economic activity and analysis.
Prerequisite: Reading Proficiency.
Three lecture.

AGS/BIO103. Plant Biology (4).
An introduction to the growth, development, reproduction, and structure of vascular plants. Fundamental activities of plants including photosynthesis and respiration. Emphasis on agricultural and horticultural crops of Arizona.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS105. Soils (3).
Comprehensive overview of the types of soils commonly found in North America with special emphasis on Southwestern soils. Course investigates the origin, formation, physical and chemical properties of soils and emphasizes soil testing, fertilization, and modifications to soils commonly found in landscapes, gardens and turf.
Prerequisite: Reading Proficiency.
Three lecture.
AGS107. Entomology (3).
Fundamental approaches in the control of greenhouse pests. Categories of pests, management practices, herbicide use, alternative pest control techniques, safety, and integrated pest management.
Prerequisite: Reading Proficiency.
Three lecture.

AGS112. Three-Dimensional Computerized Landscape Design (3).
Design of landscapes for the home and business using 3-D computer imaging for the beginner or advanced student. Includes principles of design, color, plant materials, hardscape features, and irrigation.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGS115. Agricultural Mechanics I (3).
Develop basic principles and operative skills in electricity, and welding/cutting applications which are part of agricultural mechanics operations in the areas of Agriscience and Technology.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGS120. Introduction to the Animal Industry (4).
Classification of agricultural animals, the reproductive process, behavior, basic genetics, growth and development, basic nutrition, welfare and consumer concerns. Emphasis on beef, sheep, swine, poultry, horses and fish. Alternative animals including rabbits, llamas, ostrich, baitfish, and honeybees.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS121. Agricultural Marketing Technology (3).
Introduction to marketing in agriculture as well as the concepts of the modern agriculture industry. Includes how to select and develop a marketing plan, the agriculture industry in free enterprise, marketing for profit, motivating consumers and the process of communicating.
Prerequisite: Reading Proficiency.
Three lecture.

AGS125. Conservation and Natural Resources (3).
General concepts related to the conservation and maintenance of natural resources including water, forests, rangelands and wildlife. Includes ecology concepts and foundations for a sustainable future.
Prerequisite: Reading Proficiency.
Three lecture.

AGS150. The Greenhouse Environment (3).
Components of greenhouses including structure types, construction, locating a greenhouse, layout of a greenhouse range, and greenhouse temperature control mechanisms. Emphasis on advantages and disadvantages of each and the appropriate selection of houses for given areas in the horticulture industry.
Prerequisite: Reading Proficiency.
Three lecture.

AGS155. Hydroponics for the Home and Classroom (1).
Construction, design, and use of hydroponic growing units for vegetable production. Includes basic nutrition, lighting, media and growth chambers.
Prerequisite: Reading Proficiency.
One lecture.

AGS180. Canine Behavior and Psychology (2).
Introduction to canine behavior in the human society including methods of affecting positive outcomes for compatible lifestyles. Includes reinforcement techniques, characteristics of major dog groups, health care issues, puppy socialization and canine management.
Prerequisite: Reading Proficiency.
Two lecture.

AGS181. Canine Massage Therapy (1).
Basic canine massage therapy techniques including function and location, land mark identification, contraindications, full massage routine, and muscle locations.
Prerequisite: Reading Proficiency.
One lecture.

AGS212. Landscape Installation and Maintenance (4).
Skills and principles associated with installing and maintaining a landscape including selection of plant material, lawn installation and irrigation installation.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS213. Veterinary Technician State and National Exam Review (3).
Principles of veterinary medicine as they apply to preparation for the Arizona and National Veterinary Technician exams.
Prerequisite: Two years full time (or equivalent) experience in veterinary field. Reading Proficiency.
Three lecture.
AGS214. Landscape Hardscapes (4).
Design, build and install landscape hardscape features, including walkways, retaining walls, patios, planters and ornamental ponds. 
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS215. Agricultural Mechanics II (3).
Develop principles and operative skills in small engine maintenance and repair, hydraulic design and use, agriculture equipment maintenance and problem solving which are part of agricultural mechanics operations in the area of Agriscience and Technology. 
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGS224. Agricultural Sales Techniques (3).
Processes involved in moving food and fiber from the producer to the consumer. Emphasis on communicating with and motivating consumers including selling, distributing, advertising, displays, and human relations.
Prerequisite: Reading Proficiency.
Three lecture.

AGS231. Turfgrass Science (4).
Identification of types of grasses associated with sports and recreational turf areas. Involves the establishment and maintenance of turf in the industry of turfgrass science. 
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS232. Turfgrass Management (4).
Theory and practice of cultivating and maintaining turfgrass for sports. Emphasis on site development, pest control, grooming, and equipment in recreational turf settings. 
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS238. Pesticide Management Certification (2).
Includes pre-emergent and post-emergent pesticides, systemics, contacts, annual weed pests, biennial weed pests, insect and rodent control, applications, equipment, safety procedures, and management programs for the turf industry, home and landscape industry. 
Prerequisite: Reading Proficiency.
Two lecture.

Greenhouse production activities including cuttings, seedlings, sowing, tagging, fertilizers, sanitation, nutrition, and elements of container grown crops. Emphasis on production of tomatoes, lettuce, flowers, foliage plants, and bedding plants. Operation of industry standard computer control systems for greenhouses. Emphasis on the ARGUS system for environmental control, watering, fertilization, and shipping. 
Prerequisite: Reading Proficiency.
Two lecture. Six lab.

Activities conducted in commercial greenhouses including propagation, sowing, distribution, light and temperature management, hardening off, preharvest and post harvest handling, inventory, deliveries, and sanitation. Emphasis on final stages of production and care of production. Computerized scheduling of greenhouse operations. 
Prerequisite: AGS 250. Reading Proficiency.
Two lecture. Six lab.

AGS255. Micro Propagation of Plant Tissue (2).
Plant tissue culture techniques for cloning, reproduction, and manufacturing including media mixing, cell growth and development, aseptic transfer, manipulation, observation, and documentation. 
Prerequisite: Reading Proficiency.
One lecture. Three lab.

Introduction to the aquaculture and fisheries industry and the related career opportunities. Basic fish culturing environments and species identification of fresh and saltwater fish. Fish biology, diseases, prevention and treatments. Includes fish feeds and feeding techniques. 
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS264. Aquaculture Management (4).
Methodologies used in managing aquaculture systems. Including breeding and rearing procedures of common fin fish, saltwater fish and crustaceans. Field experience in maintaining a rearing facility and producing a food fish from incubation to stocker or market size. 
Prerequisite: Reading Proficiency.
Three lecture. Three lab.
COURSE DESCRIPTIONS

AGS274. Water Management (3).
Irrigation techniques for golf courses, greenhouses, aquaculture, and horse production including sizing pipes and fittings, backflow prevention, filtration, pumps, sprinklers, spraybooms, misters, and valves. Includes code requirements, blueprint reading, and bidding.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AGS280. Zoo and Domestic Animal Care (4).
Introduction to zoo and domestic animal care. Includes safety issues, zoo orientation, animal observation skills, sanitation, housing, feeding, capture and restraint equipment, animal transport, animal measurements, abnormal behavior and injuries.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS281. Herpetoculture (3).
A study of the biology, ecology, and taxonomy of reptiles and amphibians. Includes identification techniques, care, maintenance and display.
Prerequisite: Reading Proficiency.
Three lecture.

Assessment of animal behavior in a variety of species including domestic and exotic animals. Includes internal and external factors influencing animal behavior, social organization, genetics, communication, conflict, mating systems, and biological rhythms.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AGS296. Internship: Agriculture (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

AGS299. Independent Study Agriculture (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

AIR FORCE ROTC (AFR)

Introduction for cadets to the United States Air Force and the Air Force Reserve Officer Training Corps. Topics include mission and organization of the Air Force, officership/professionalism, and Air Force officer opportunities.
Prerequisite: Leadership Laboratory is mandatory for AFROTC cadets.
One lecture. Two lab.

Continuation of AFR 101.
One lecture. Two lab.

AFR201. The Evolution of USAF Air and Space Power I (1).
Examination of air and space power through historical perspective. Study of Air Force capabilities and evolution of the modern United States Air Force. Discuss Air Force Core Values and develop communication skills.
Prerequisite: Leadership Laboratory is mandatory for AFROTC students.
One lecture. Two lab.

AFR202. The Evolution of USAF Air and Space Power II (1).
A continuation of AFR 201.
One lecture. Two lab.

ALLIED HEALTH SERVICES (AHS)

AHS100. Fundamentals of Health Care (3).
Overview of current U.S. health care delivery systems and professions including workforce information, practices, behaviors, ethical and legal implications.
Prerequisite: Reading Proficiency.
Three lecture.

AHS103. Phlebotomy (2).
Theory and practice of basic phlebotomy and specimen processing including laboratory test codes, equipment, procedures, role development and the health care team, ethics and safety, and legal issues and quality assurance.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

AHS109. Introduction to Medical Coding (3).
Introduction to diagnostic and procedural coding. Basics of CPT coding including rules and general requirements, with emphasis on structure, organization and general guidelines.
Prerequisite: Reading Proficiency.
Three lecture.
COURSE DESCRIPTIONS

AHS110. Computers in the Medical Office (2).
Introduction to use of computers in front office work of clinics and/or related health care agencies. Use of computer software to record patient information, schedule appointments, print reports and produce patient statements and claim forms. Special attention will be given to completing the general medical insurance claim form - HCFA 1500.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

AHS120. Foundations of Medical Assisting I (3).
Introduction to the role of the Medical Assistant, basic anatomy and physiology, legal aspects of health care, and customer service.
Prerequisite: AHS 100; AHS130, BIO160. Reading Proficiency.
Three lecture.

AHS121. Foundations of Medical Assisting II (3).
Introduction to patient assessment, diagnostic and surgical procedures, medication administration, and immunization.
Prerequisite: AHS103, AHS120, MAT100. Reading Proficiency.
Two lecture. Three lab.

AHS 130. Medical Terminology for Patient Care Staff (3).
Medical terminology used in direct patient care, with special care populations and in special services. Building and analyzing terms using work parts. Body-systems approach to terms related to structure and function, pathologies, and diagnostic procedures. Spelling and pronunciation of terms, medical abbreviations and symbols.
Prerequisite: Reading Proficiency.
Three lecture.

AHS131. Medical Terminology I (3).
Introduction to medical vocabulary for students in allied health and science fields. Includes word roots, prefixes, suffixes, and abbreviations. Emphasis on spelling, pronunciation and definition.
Prerequisite: Reading Proficiency.
Three lecture.

AHS132. Medical Terminology II (3).
Advanced course for students in allied health and science fields. Includes terminology related to body systems and disorders of body systems. Emphasis on spelling, pronunciation, and interpretation of medical reports. Objectives may be adapted to meet occupational need of the health student.
Prerequisite: AHS 131. Reading Proficiency.
Three lecture.

AHS133. Terminology for Pharmacology (2).
Terminology associated with pharmacology and the administration of drugs. Introduction to drug standards, pharmacological principles, prescription symbols and abbreviations.
Prerequisite: AHS 131 and AHS 132. Reading Proficiency.
Two lecture.

AHS164. Medical Transcription (3).
Instruction in medical transcription to develop familiarity with medical terms and speed and accuracy in transcription.
Prerequisite: CSA 130 or CSA 140 and AHS 131. Reading Proficiency.
One lecture. Four lab.

AHS166. Physician Office Transcription (2).
Transcription of doctor's office medical records suitable for permanent record of patient care. Development of proper formatting techniques and skills is emphasized.
Prerequisite: AHS 164. Reading Proficiency.
Six lab.

AHS167. Medical Surgical Transcription (2).
Transcription of inpatient medical and surgical documents suitable for permanent record of patient care.
Prerequisite: AHS 164. Reading Proficiency.
Six lab.

AHS168. Diagnostic Therapeutic Transcription (2).
Transcription of reports in the diagnostic and therapeutic areas of medicine for both inpatient and outpatient health care offices. Emphasis on clarifying and editing dictation discrepancies.
Prerequisite: AHS 164. Reading Proficiency.
Six lab.

AHS296. Internship: Allied Health Services (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

AHS299. Independent Study Allied Health Services (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
COURSE DESCRIPTIONS

- **AMERICAN SIGN LANGUAGE (ASL)**

  **ASL101. Beginning American Sign Language I (4).**
  Principles, methods, and techniques of American Sign Language skills, with emphasis on developing visual/receptive skills and basic communication.
  Prerequisite: Reading Proficiency.
  Four lecture.

  **ASL102. Beginning American Sign Language II (4).**
  American Sign Language vocabulary, grammar, receptive, and expressive technique development.
  Prerequisite: ASL 101. Reading Proficiency.
  Four lecture.

  **ASL131. Conversational Sign Language (3).**
  Conversational approach to communicating with deaf people who sign. Basic foundation of grammar and deaf culture with emphasis on expressively signing and recognizing key phrases related to work, survival, leisure, medical and emergency situations.
  Prerequisite: Reading Proficiency.
  Three lecture.

  **ASL201. Intermediate American Sign Language I (4).**
  Proficiency and development of intermediate expressive and receptive skills. Emphasis on practical application of American Sign Language skills and cross-cultural communication.
  Prerequisite: ASL 102. Reading Proficiency.
  Four lecture.

  **ASL296. Internship: American Sign Language (3).**
  Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
  Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

  **ASL299. Independent Study American Sign Language (1-6).**
  Supervised Special project in this field. Approval of supervising Division Dean is required.

- **ANTHROPOLOGY (ANT)**

  **ANT101. Stones, Bones, and Human Origins (3).**
  Introduction to physical anthropology. Emphasis on population genetics, primate evolution and behavior, and fossil man.
  Prerequisite: Reading Proficiency.
  Three lecture.

  **ANT102. Introduction to Cultural Anthropology (3).**
  Survey of anthropological principles with emphasis on concept of culture and nature of man as a social animal.
  Prerequisite: Reading Proficiency.
  Three lecture.

  **ANT104. Buried Cities and Lost Tribes (3).**
  Introduction to the portion of human history that extends back 2.5 million years before the time of written records and archives. Emphasis on study of the world prehistory of humankind from a global perspective.
  Prerequisite: Reading Proficiency.
  Three lecture.

  **ANT201. Forensic Anthropology (3).**
  Introduction to forensic anthropology. Emphasis on the examination of human skeletal remains for law enforcement agencies to determine the identity of unidentified bones.
  Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
  Three lecture.

  **ANT211. Women in Cross-Cultural Perspective (3).**
  Cross-cultural study of definition, trends, and issues of women’s status by examining and evaluating operative forces behind women’s role in society.
  Prerequisite: Reading Proficiency.
  Three lecture.

  **ANT214. Magic, Witchcraft and Healing: The Supernatural in Cross-Cultural Perspective (3).**
  Comparative anthropological survey of supernatural practices employed by western and non-western peoples in dealing with life crises, adversity, misfortune, bad luck, illness, death and similar phenomena beyond human control.
  Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
  Three lecture.

  **ANT230. Principles of Archeology (3).**
  Introduction to methods, theory, and techniques used in archaeology. The scope of human prehistory from the earliest human cultures to the rise of complex civilizations.
  Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
  Three lecture.
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ANT231. Southwestern Archeology (3).
Survey of man's prehistory in the southwestern United States beginning with the earliest evidence of man in the Southwest and concluding with the period just before Spanish contact. Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

ANT232. Indians of the Southwest (3).
Survey of major Indian groups of the southwestern United States: Pueblo, Navajo, Apache, Papago, Pima, River Yuman and Mountain Yuman (Yavapai, Hualapai, Havasupai). Emphasis on historical factors that have led to culture change. Development of these groups from Spanish contact to present. Prerequisite: Reading Proficiency. Three lecture.

ANT296. Internship: Anthropology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements. Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ANT299. Independent Study Anthropology (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

ART (ART)

ART110. Drawing I (3).
Perspective and visual perception studied as related to developing artistic visual growth in perceiving our environment. Emphasis on analysis of objects and their compositional placement within pictorial construction. Application of design principles. Prerequisite: Reading Proficiency. One lecture. Five lab.

ART111. Drawing II (3).
Development of technical and perceptual skills. Emphasis on composition as developed by shape, form, color and the special dynamics of plastic space. Application of design principles. Prerequisite: ART 110. Reading Proficiency. One lecture. Five lab.

ART112. Two-Dimensional Design (3).
Introduction to visual language utilized in all areas of art. Basic compositional principles and elements of two-dimensional design practiced through assigned projects. Various media explored. Application of design principles. Prerequisite: Reading Proficiency. Two lecture. Four lab.

ART113. Three-Dimensional Design (3).
Study of design principles with emphasis on three-dimensional aesthetics. Planning of sculptural, utilitarian, and environmental objects. Application of design principles. Prerequisite: Reading Proficiency. Two lecture. Four lab.

ART114. Color (3).
Principles of color theory related to the visual arts. Includes variety of media. Application of design principles. Prerequisite: Reading Proficiency. One lecture. Five lab.

AMSM03. Basic Leadership and Military Management I (1).
Interdisciplinary approach to personal management skills, values and leadership. More advanced land navigation training. Optional fitness program. One lecture. One lab.

AMSM04. Basic Leadership and Military Management II (1).
Interdisciplinary approach to leadership and management. Introduction to military drill and ceremonies. Optional fitness program. One lecture. One lab.

ARMY MILITARY SCIENCE (AMS)

AMS101. Basic Military Science I (1).
Organization and development of the United States Army. Includes military courtesy, discipline, customs and traditions of the service. Historical perspective of the different branches of the United States Army and the role they have played in national freedom. Optional fitness program. One lecture. One lab.

AMS102. Basic Military Science II (1).
Fundamentals of land navigation that includes map reading, terrain identification, intersection, resection and polar coordinates. Study of roles the active Army Forces, Army Reserve Forces and Army National Guard play in national defense. Optional fitness program. One lecture. One lab.
ART115. Color Pencil/Pastel (3).
Color pencils and pastels as medium for drawing and painting. Emphasis on development of creative expression and study of color blending. Application of design principles.
Prerequisite: ART 110. Reading Proficiency.
One lecture. Five lab.

ART120. Ceramics I (3).
Introduction to ceramics hand building techniques. Includes primary use of glazes, glaze applications, kiln firing processes and kiln atmosphere. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART121. Ceramics II (3).
Concentration on use of the potter's wheel and other clay-building methods, further development of glazing and firing. Application of design principles.
Prerequisite: ART 120. Reading Proficiency.
One lecture. Five lab.

ART122. Low Fire Ceramics (3).
Prerequisite: ART 120. Reading Proficiency.
One lecture. Five lab.

ART124. Stained Glass I (3).
Exploration of copper foil and lead came techniques of stained glass, including precision glass cutting, and creative application of these techniques in producing interior and architectural art pieces. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART125. Stained Glass II (3).
Basic lead and copper foil techniques with addition of acid etching, sand blasting and more advanced design problems. Emphasis on individual creativity. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART/WEB130. Web Site Design I (3).
Introduction to design and production of Web pages for publishing on the Internet using Adobe Creative Suite software. Application of design principles.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

ART131. Graphic Design I (4).
Creative solutions to problems of visual communication. Skill development in basic advertising layout and design. Basic typography and comprehensive roughs using Adobe Creative Suite software. Application of design principles.
Prerequisite: ART 110 and ART 112, may be taken concurrently. Reading Proficiency.
One lecture. Seven lab.

ART132. Graphic Design II (4).
Creative solutions to advanced problems of visual communication. Skill development in advertising, logos, advanced layout and packaging using Adobe Creative Suite Software. Application of design principles.
Prerequisite: ART 131. Reading Proficiency.
One lecture. Seven lab.

ART137. Adobe Photoshop I (3).
Digital image fundamentals. Technical and creative use of Adobe® Photoshop® image manipulation software. Use of peripheral commercial hardware and software for image capture. Application of design principles.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

ART139. Fundamentals of Video Editing and DVD Authoring (2).
Fundamentals of video editing, sound design and DVD production. Aesthetic and technical aspects of digital media. Nonlinear editing of visual and audio material and output for display. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

ART140. Jewelry I (3).
Introduction to jewelry fabrication techniques for non-ferrous metals and associated materials. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART141. Jewelry II (3).
Advanced jewelry techniques, surface embellishment, fabrication, forging, and joining non-ferrous metals. Application of design principles.
Prerequisite: ART 140. Reading Proficiency.
One lecture. Five lab.
ART142. Lapidary I (2).
Introduction to the tools, machinery and processes of the lapidary arts. Orientation to various geological source materials. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

ART144. Furniture and Woodworking I (3).
Introduction to furniture design, joinery, machining, hand skills, assembly and finishing techniques. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART145. Furniture and Woodworking II (3).
Advanced furniture design, joinery, jig building, and woodworking techniques. Application of design principles.
Prerequisite: ART 144. Reading Proficiency.
One lecture. Five lab.

ART 146. Traditional Southwest Furniture Making (3).
Introduction to traditional southwestern furniture design and construction. Emphasis on Spanish Colonial and Spanish Colonial revival on Ponderosa pine. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART147. Wood Turning I (3).
Study of theory and design of wood lathe-turned objects. Includes wood-turning techniques, use of wood lathe and associated tooling. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART148. Cabinetmaking I (3).
Introduction to basic cabinetmaking. Emphasis on foundation skills in basic joinery, construction and finishing. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART149. Cabinetmaking II (3).
Intermediate cabinetmaking. Emphasis on design, craftsmanship, installation and professional practices. Application of design principles.
Prerequisite: ART 148. Reading Proficiency.
One lecture. Five lab.

ART150. Photography I (3).
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART151. Photography II (3).
Prerequisite: ART 150. Reading Proficiency.
One lecture. Five lab.

ART154. Digital Photography I (3).
Creative digital camera operation. Identifying, measuring and controlling light values. Digital darkroom techniques, workflow applications and output processes. Application of design principles. Requires a digital single lens reflex (SLR) camera with manually adjustable aperture, shutter speed, and focus.
Prerequisite: ART 137. Reading Proficiency.
One lecture. Five lab.

ART156. Photographic Lighting (3).
Prerequisite: ART 150 or ART 154. Reading Proficiency.
Two lecture. Three lab.

ART157. Digital Photography II (3).
Advanced creative digital camera operation and exposure control. Advanced digital darkroom techniques, workflow applications and output processes. Application of design principles. Requires a digital single lens reflex (SLR) camera with manually adjustable aperture, shutter speed, and focus.
Prerequisite: ART 154 and either ART 237 or ART 256. Reading Proficiency.
One lecture. Five lab.

ART160. Printmaking I (3).
Introduction to printmaking techniques including monoprint, collograph, relief and elementary intaglio printing. Exploration of different methods of inking, registration, hand and press techniques. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.
ART162. Monoprint I (3).
Introduction to principles of water-base and oil-base techniques for this single print process. Techniques of registration and color overlays. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART170. Weaving I (3).
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART171. Weaving II (3).
Advanced project planning, design and drafting skills. Development of critical thinking skills related to weaving design and craftsmanship. Application of design principles.
Prerequisite: ART 170. Reading Proficiency.
One lecture. Five lab.

ART173. Fabric Structures (3).
Exploration of fiber construction using fabric building techniques. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART180. Sculpture I (3).
Introductory exploration of sculpture through fabrication, casting and carving. Use the human form and abstraction for creative problem solving. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART181. Sculpture II (3).
Advanced sculpture processes: modeling, mixed media, casting, and stone carving. Develop personal imagery and aesthetics through sculptural form. Application of design principles.
Prerequisite: ART 180. Reading Proficiency.
One lecture. Five lab.

ART182. Sculpture Welded Metal I (3).
Exploration of sculpture using Oxyacetylene torches and GMAW (wire) arc welding processes. Emphasis on welding, cutting, and shaping metal to explore sculptural forms. No prior welding experience is necessary. Application of design principles.
Prerequisite: Reading Proficiency.
One lecture. Five lab.

ART183. Sculpture Welded Metal II (3).
Continued exploration of sculpture using Oxyacetylene torches and GMAW (wire) arc welding processes. Assignments expand personal imagery in metal sculpture. Application of design principles.
Prerequisite: ART 182. Reading Proficiency.
One lecture. Five lab.

ART190. Oil/Acrylic Painting I (3).
Study and experimentation in painting techniques employed by modern and old masters. Emphasis on personal creativity and uniqueness of expression. Application of design principles.
Prerequisite: ART 110. Reading Proficiency.
One lecture. Five lab.

ART191. Oil/Acrylic Painting II (3).
Development of personal expression through study of different techniques of painting. Application of design principles.
Prerequisite: ART 190. Reading Proficiency.
One lecture. Five lab.

ART193. Plein-Air Painting (3).
Outdoor landscape painting with emphasis on fostering creative expression in visual interpretation of natural forms through the study of composition, color and perspective. Application of design principles.
Prerequisite: ART 110. Reading Proficiency.
One lecture. Five lab.

ART194. Watercolor I (3).
Exploration of transparent qualities of watercolor medium. Techniques and materials used to stimulate personal creativity and uniqueness of expression. Application of design principles.
Prerequisite: ART 110. Reading Proficiency.
One lecture. Five lab.

ART195. Watercolor II (3).
Independent development using the watercolor medium. Study of varied techniques will be utilized to meet individual needs. Application of design principles.
Prerequisite: ART 194. Reading Proficiency.
One lecture. Five lab.

ART196. Portraiture I (3).
Emphasis on portraiture techniques for individuals proficient in a specific medium. Application of design principles.
Prerequisite: ART 110 and ART 190. Reading Proficiency.
One lecture. Five lab.
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ART197. Portraiture II (3).
Advanced study of portraiture personalizing techniques and palettes. Emphasis on capturing the subject’s personality. Application of design principles.
Prerequisite: ART 196. Reading Proficiency.
One lecture. Five lab.

ART198. Art Topics: (1).
Exploration of art media. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
One lecture.

ART200. Art History I (3).
Western art from the Paleolithic period to the Middle Ages. Painting, sculpture and architecture are evaluated in historical context. Application of design principles.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136. Reading Proficiency.
Three lecture.

ART201. Art History II (3).
Western art from Renaissance period to Twentieth Century. Painting, sculpture and architecture are evaluated in historical context. Application of design principles.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136. Reading Proficiency.
Three lecture.

ART202. 20th Century Art (3).
Critical inquiry of visual arts and aesthetics of the Twentieth Century. Survey includes the history, analysis, evaluation of the fine arts, architecture, craft, product and graphic design. Application of design principles.
Prerequisite: Reading Proficiency.
Three lecture.

ART203. History of Photography (3).
Historical survey of movements in art from the origins of photography to the present. Emphasis on the medium’s impact upon society and other visual art forms. Application of design principles.
Prerequisite: ENG 101. Reading Proficiency.
Three lecture.

ART210. Life Drawing I (3).
Developing skills and expressiveness in drawing a basic form, construction and gesture of the human figure. Application of design principles.
Prerequisite: ART 110. Reading Proficiency.
One lecture. Five lab.

ART211. Life Drawing II (3).
Emphasis on drawing forms. Personal growth and individual techniques developed through projects emphasizing various media and techniques in drawing history. Application of design principles.
Prerequisite: ART 210. Reading Proficiency.
One lecture. Five lab.

ART212. Life Painting (3).
Techniques of figure painting with an emphasis on the form, construction and gesture of the figure. Application of design principles.
Prerequisite: ART 110 and ART 190. Reading Proficiency.
One lecture. Five lab.

ART220. Ceramics III (3).
Advanced study of clay building methods, glazing and firing techniques in development of individual style. Application of design principles.
Prerequisite: ART 121. Reading Proficiency.
One lecture. Five lab.

ART221. Ceramics IV (3).
Advanced study of clay building methods, glazing and firing techniques in further development of individual style. Opportunity for supervised independent work. Application of design principles.
Prerequisite: ART 220. Reading Proficiency.
One lecture. Five lab.

ART222. Advanced Projects: Ceramics (3).
Advanced study of clay building methods, glazing and firing techniques with emphasis on design and honing personal aesthetic.
Prerequisite: ART 221. Reading Proficiency.
One lecture. Five lab.

ART223. Ceramic Sculpture (3).
Exploration and experimentation of subtractive and additive clay techniques to create 3-D constructions. Use of texture, glaze and cold patina finishes. Application of design principles.
Prerequisite: ART 120. Reading Proficiency.
One lecture. Five lab.

ART224. Clay and Glaze Chemistry for the Ceramic Artist (3).
Introduction and exploration of ceramic materials and application in ceramic artwork. Application of design principles.
Prerequisite: ART 120. Reading Proficiency.
Two lecture. Three lab.
ART230. Digital Printing Technology and Applications (3).
Fundamentals of digital print technology, including color management, short run print processes, and fine art giclee printing. Application of design principles.
Prerequisite: ART 137. Reading Proficiency.
One lecture. Five lab.

ART231. Graphic Design Illustration (4).
Contemporary styles in editorial, story, and advertising illustration. Skill development in information graphics, figure illustration and product design using Adobe Creative Suite software. Application of design principles.
Prerequisite: ART 110 or ART 112. Reading Proficiency.
One lecture. Seven lab.

ART232. Portfolio Development (2).
Develop traditional and computerized graphic design and fine arts portfolios. Create resume and other career search materials. Develop advanced design and technical skills. Exhibition skills. Application of design principles.
Prerequisite: ART 132. Reading Proficiency.
One lecture. Three lab.

ART233. Adobe Illustrator (2).
Use of Adobe Illustrator software. Creation of original art and type applications, use of scanner, manipulation of existing clip art. Application of design principles.
Prerequisite: Reading Proficiency.
Two lecture.

ART234. Advanced Graphic Design Projects (3).
Advanced design projects using a combination of Adobe Creative suite programs. Skill development in corporate design, self-promotion, and advanced layout and packaging. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 131 and ART 231. Reading Proficiency.
Two lecture.

ART235. Magazine Production (2).
Design and production of "Threshold," the Yavapai College Creative Arts Magazine. Application of design principles.
Prerequisite: ART 132. Reading Proficiency.
One lecture. Two lab.

ART236. Digital Pre-Press (2).
Preparation and printing of computer files for final output using a variety of software. Emphasis on final output of type and graphics. Application of design principles.
Prerequisite: ART 132. Reading Proficiency.
Two lecture.

ART237. Adobe Photoshop II (3).
Still photography digital manipulation. Use of computer and peripheral hardware and associated commercial software with Adobe Photoshop software to alter photographic images. Production of still image files and hardcopy output. Application of design principles.
Prerequisite: ART 137. Reading Proficiency.
Two lecture. Three lab.

ART238. Web Site Design II (3).
Prerequisite: ART/WEB 130. Reading Proficiency.
Two lecture. Three lab.

ART239. Intermediate Video Editing and Sound Design (2).
Intermediate skill development in video editing, sound design and DVD authoring. Application of design principles.
Prerequisite: ART 139. Reading Proficiency.
One lecture. Two lab.

ART240. Lapidary II (2).
Advanced techniques using specialized lapidary tools to create cabochons from rare materials. Application of design principles.
Prerequisite: ART 142. Reading Proficiency.
One lecture. Two lab.

ART245. Advanced Projects Jewelry (3).
Advanced individual projects in jewelry and metalsmithing. Includes review of processes, tools, and materials. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 140 and ART 141. Reading Proficiency.
One lecture. Five lab.

ART247. Wood Turning II (3).
Use of the wood lathes for creative expression. Contemporary tools and techniques used on and off the lathes to create artistic woodturnings. Application of design principles.
Prerequisite: ART 147. Reading Proficiency.
One lecture. Five lab.

ART248. Advanced Projects in Wood (3).
Designing, fabricating functional pieces and/or making sculpture to explore the potentials of the medium. Projects are to be a unified series. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 145. Reading Proficiency.
One lecture. Five lab.
ART249. Advanced Projects in Wood Turning (3).
Emphasis on design and varied techniques to explore the potentials of three-dimensional form. Projects are to be a unified series working toward portfolio development. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 247. Reading Proficiency.
One lecture. Five lab.

ART252. Photography III (3).
Prerequisite: ART 150 and ART 151. Reading Proficiency.
One lecture. Five lab.

ART253. Photography IV (3).
Prerequisite: ART 150, ART 151 and ART 252. Reading Proficiency.
One lecture. Five lab.

ART254. Digital Photography III (2).
Prerequisite: ART 157 and ART 237 or ART 256. Reading Proficiency.
One lecture. Two lab.

ART256. Digital Imaging (3).
Still photography digital manipulation. Employing the computer and commercial hardware and software to alter photographic images for commercial art application. Production of still image files or hardcopy products. Application of design principles.
Prerequisite: ART 137 and either ART 150 or ART 154. Reading Proficiency.
Two lecture. Three lab.

ART257. Digital Photomontage (2).
Use of multiple image sources to create a single image. Elements of photomontage. Fine art digital output. Application of advanced imaging techniques in creating seamless or illusionistic aesthetic statements. Application of design principles.
Prerequisite: ART 150 or ART 154 and ART 237 or ART 256. Reading Proficiency.
One lecture. Two lab.

ART259. Advanced Projects Photography (3).
Advanced individual projects in photography. Includes review of processes, tools and materials. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 253. Reading Proficiency.
One lecture. Five lab.

ART260. Printmaking II (3).
Prerequisite: ART 160. Reading Proficiency.
One lecture. Five lab.

ART261. Printmaking III (3).
Advanced study of printmaking techniques in areas such as combined plate processes of embossment, collograph, texturing build-up techniques and multiple-plate processes of intaglio and relief printing. Application of design principles.
Prerequisite: ART 260. Reading Proficiency.
One lecture. Five lab.

ART262. Monoprint II (3).
Techniques of single-plate building for depth of color, value, texture, linear or value properties. Exploration of lift-off and other techniques in both water and oil media. Application of design principles.
Prerequisite: ART 162. Reading Proficiency.
One lecture. Five lab.

ART281. Advanced Projects in Sculpture (3).
Design and techniques for additive process, carved and/or mixed media sculpture to explore the potentials of three-dimensional form. Projects are to be a unified series of projects working toward portfolio development. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 181. Reading Proficiency.
One lecture. Five lab.
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ART283. Advanced Projects in Welded Sculpture (3).
Emphasis on design and fabrication of metal sculpture to explore the potentials of the medium. Unified series of projects working toward portfolio development. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 183. Reading Proficiency.
One lecture. Five lab.

ART292. Advanced Projects in Oil and Acrylic (3).
Advanced projects in oil and acrylic painting. Review of techniques and materials. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 191. Reading Proficiency.
One lecture. Five lab.

ART293. Advanced Projects in Watercolor (3).
Advanced projects in watercolor painting. Review of techniques and materials. Application of design principles. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: ART 195. Reading Proficiency.
One lecture. Five lab.

ART296. Internship: Art (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ART298. Workshop: (2).
Exploration and application of media techniques. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Two lecture.

ART299. Independent Study Art (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

AUT102. Diesel Service Techniques (2).
Overview of basic diesel equipment systems. Includes safety and basic operational knowledge, care, and maintenance inspection of engine, fuel, suspension, brakes, electrical, and drive train systems. Diesel shop organization structure, product line information, and use of Caterpillar’s service and repair information system.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

AUT105. Introduction to Auto Body Repair and Painting (4).
Introduction to auto body repair including basic fabrication and painting. Emphasis on nonstructural body repair, filling, sanding, primers, and spraying techniques.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

AUT106. Automotive/Motorcycle Custom Painting (2).
Professional techniques for automotive/motorcycle paint finishing. Includes color selection, mixing, masking, sanding, spraying and post-paint care.
Prerequisite: AUT 105. Reading Proficiency.
One lecture. Two lab.

Basic theory and fundamentals of automotive/motorcycle airbrushing and pinstriping.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

AUT108. Diesel Engines (4).
Theory, diagnosis and service common to all diesel engines. Includes engine rebuilding and performance testing. Preparation for the ASE Certification test on Medium/Heavy Truck Diesel Engines.
Prerequisite: AUT 102. Reading Proficiency.
Two lecture. Six lab.

AUT109. Diesel Electrical Systems Design and Diagnosis (3).
Diesel starting, charging, and accessory electrical systems and components. Emphasis on electrical system diagnosis and electrical repair. Includes industry standard diagnostic electrical equipment and testing techniques. Preparation for the ASE certification test on Electrical/Electronic Systems.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AUT101. Introduction to Automotive Mechanics (2).
Fundamentals of the automobile including the repair and maintenance of components.
Prerequisite: Reading Proficiency.
Two lecture.
AUT113. Diesel Fuel Systems (3).
Theory, diagnosis and service of hydro-mechanical and electronic diesel fuel systems. Includes analyzing fuel system components and system operational characteristics. Emphasis on testing and service procedures of Caterpillar’s mechanical and computer controlled fuel systems. Preparation for the ASE Certification test related to heavy duty diesel fuel systems.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

Theory, diagnosis and repair of selected GM, Ford and Chrysler automatic transmissions, manual transmissions, clutches, drive lines and differentials.
Prerequisite: AUT 101.  Reading Proficiency.
Four lecture. Three lab.

AUT123. Brakes (4).
General braking principles, terms, definitions, and other functions connected with the automobile braking system. Correct operation and use of brake servicing equipment for drum and disc brakes.
Prerequisite: AUT 101.  Reading Proficiency.
Three lecture. Three lab.

AUT124. Heavy Equipment Drive Train (3).
Theory, diagnosis, and service of clutches, driveline, synchro transmissions and final drives, torque converters, and automatic transmission. Includes proper repair and service of assemblies for standard and automatic transmissions. Preparation for the ASE Certification Test on Manual and Automatic Drive Trains.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

AUT125. Heating and Air Conditioning (3).
Theory of heat transfer, forms of matter, refrigeration cycle, and operating principles of automotive air conditioning systems. Fundamentals in testing, repairing, disassembling and assembling components of heating and air conditioning systems.
Prerequisite: AUT 101 or AUT 102. Reading Proficiency.
Two lecture. Three lab.

AUT126. Suspension and Steering (4).
Principles of suspension system geometry and steering systems operation. Adjustment, correction, repair and replacement components of system components.
Prerequisite: AUT 101.  Reading Proficiency.
Three lecture. Three lab.

AUT128. Diesel Heating and Air Conditioning (3).
Basic operating principles, diagnosis, and service of modern automotive and diesel heating and air conditioning systems including R12 and 134A. Includes an in-depth study of a/c system operation, diagnostic and service procedures, and environmental concerns. Preparation for ASE certification test on Heating and Air Conditioning.
Prerequisite: Reading Proficiency.
Two lecture. Two lab.

AUT131. Engine Performance (5).
Principles of operation, diagnosis and repair of engine fuel and ignition systems. Use of diagnostic oscilloscope to repair malfunctioning fuel and ignition systems.
Prerequisite: AUT 101.  Reading Proficiency.
Four lecture. Three lab.

AUT132. Electrical Systems (5).
Electrical principles and diagnosis and repair of batteries, charging systems, starting systems, ignition systems and use of diagnostic oscilloscope.
Prerequisite: AUT 101.  Reading Proficiency.
Four lecture. Three lab.

AUT135. Heavy Equipment Suspension, Steering and Brake Systems (3).
Theory, diagnosis and the repair of heavy equipment suspension, steering and brake systems. Emphasis on tires and wheels, steering components, suspension types, and hydraulic and air brake systems. Diagnostic and service techniques of suspension, steering and braking systems.
Prerequisite: MET 160.  Reading Proficiency.
Two lecture. Three lab.

AUT151. Engine Repair (5).
Theory of operation, disassembly, measurement and repair of blocks, heads, and their component parts in automotive gasoline powered engines.
Prerequisite: AUT 101.  Reading Proficiency.
Three lecture. Six lab.

AUT208. Advanced Diesel Engine Repair (3).
Advanced block, crankshaft, bearing, and cylinder head diagnosis and repair.
Prerequisite: AUT 108.  Reading Proficiency.
One lecture. Six lab.
AUT209. Diesel Machine Hydraulics (3).
Theory, diagnosis and service of the Pilot Operated Hydraulic System. Includes load sensing pressure compensated (LSPC) hydraulic system, the electro-hydraulic system and the hydrostatic system. Troubleshooting procedures and repair verifications.  
Prerequisite: Reading Proficiency.  
Two lecture. Three lab.

AUT225. Diesel Computerized System Controls (2).  
Diesel equipment power train electronic control systems and electronic engine/power train control operation, component operation, trouble shooting techniques, and proper repair of these systems.  
Prerequisite: AUT 109. Reading Proficiency.  
One lecture. Three lab.

AUT252. Advanced Engine Performance (3).  
Advanced concepts of electronic fuel injection system theory of operation, diagnosis and repair.  
Prerequisite: AUT 101. Reading Proficiency.  
Two lecture. Three lab.

AUT253. Advanced Engine Repair (3).  
Advanced block, crankshaft, bearing, and cylinder head diagnosis and repair.  
Prerequisite: AUT 151. Reading Proficiency.  
Two lecture. Two lab.

AUT255. Shop Management (3).  
Use and interpret a parts order form, repair order form and weekly profit/loss statement. Customer relations, sales promotion and work order management.  
Prerequisite: Reading Proficiency.  
Three lecture.

AUT275. Basic Automotive Upholstery (2).  
Introduction to automotive and motorcycle upholstery. Includes power sewing machines, tools, and new coverings for bucket, bench and motorcycle seats.  
Prerequisite: Reading Proficiency.  
One lecture. Two lab.

AUT295. Apprenticeship: Diesel (3).  
Supervised field experience. Repeatable for a total of twelve credit hours towards degree/certificate requirements.

AUT296. Internship: Automotive (3).  
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.  
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

AUT299. Independent Study Automotive (1-6).  
Supervised special project in this field of study. Approval of supervising Division Dean is required.

AVIATION (AVT)

AVT101. Private Helicopter Pilot Ground School (3).  
Fundamentals of aerodynamics, helicopter operation and performance. Includes navigation, instruments, weather systems and hazards.  
Prerequisite: Reading Proficiency.  
Three lecture.

AVT102. Instrument Helicopter Pilot Ground School (3).  
Instrument navigation, Instrument Flight Rule (IFR) traffic system and procedures, dead reckoning, IFR Radio navigation, use of various instrumentation systems, IFR charts, weather reports and forecasts, transponders, radars, radio aids, anti-icing/deicing systems, preflight checks, aeronautical decision making.  
Prerequisite: AVT 101. Reading Proficiency.  
Three lecture.

AVT131. Private Pilot Ground School (3).  
Fundamentals of aerodynamics, airplane operation and performance, earth’s atmosphere and weather systems, radio communications and navigation (aeronautical chart reading and course plotting). Use of aeronautical information manual, Federal Aviation regulations and other publications. Preparation for Federal Aviation Administration private pilot computer test, oral portion of private pilot practical test, and/or the oral portion of a biennial flight review.  
Prerequisite: Reading Proficiency.  
Three lecture.
AVT132. Instrument Ground School (3).
Instrument navigation and the instrument environment, departure, enroute and approach procedures, instrument federal aviation regulations. Emergency and lost communications procedures and weather and other related topics. Preparation for Federal Aviation Administration instrument rating computer test, oral portion of instrument rating practical test, and/or the oral portion of an instrument proficiency check.
Prerequisite: AVT 131. Reading Proficiency.
Three lecture.

AVT210. Commercial Helicopter Pilot Ground School (3).
Designed for students who are both private pilot and instrument flight rated for helicopter flight and are seeking commercial pilot rating. Includes advanced helicopter components, advanced aerodynamics, high altitude meteorology, cross country flight, and commercial FAA regulations.
Prerequisite: AVT 101 and AVT 102. Reading Proficiency.
Three lecture.

AVT220. Certified Flight Instructor Ground School (3).
Instructional strategies and planning, communications, student evaluation, the learning process and flight instructor responsibilities.
Prerequisite: AVT 101 and AVT 102. Reading Proficiency.
Three lecture.

AVT299. Independent Study Aviation (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

BIO/AGS103. Plant Biology (4).
Introduction to the growth, development, reproduction, and structure of vascular plants. Fundamental activities of plants including photosynthesis and respiration. Emphasis on agricultural and horticultural crops of Arizona.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

Introduction to ecological systems, natural resources, and applications to environmental issues. Includes population, community, and ecosystem analysis. Emphasis on field, laboratory, and writing activities.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

Principles of plant biology with an emphasis on human relevance including plants as a source of food, fiber, medicine, and other commercially important uses. Not for majors in the biological or preprofessional sciences.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

BIO109. Natural History of the Southwest (4).
Biological history of plants and animals of major biotic communities in the Southwest with special emphasis on Arizona.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

BIO117. Birds of the Region I (3).
Study of local birds including identification, behavior and ecology.
Two lecture. Three lab.

BIO118. Birds of the Region II (3).
Expanded study of local birds with emphasis on behavior, the life cycle, including growth, development, and reproduction.
Prerequisite: BIO 117.
Two lecture. Three lab.
BIO119. Field Study of Southwestern Birds (2).
Study of birdlife in selected areas of the southwestern United States. Emphasis on vegetative communities, bird habitats, and avian specialties.
Prerequisite: BIO 117.
One lecture. Three lab.

BIO156. Human Biology for Allied Health (4).
An introductory biology course for allied health majors with an emphasis on humans. Topics include fundamental concepts of cell history, histology, microbiology, and genetics. Duplicate credit for BIO 100 and BIO 156 will not be awarded.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

BIO160. Introduction to Human Anatomy & Physiology (4).
Principles of scientific method. Structural organization, homeostasis and control mechanisms of the body. Specific chemistry concepts. Structure and function of the major systems of the body.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

BIO181. General Biology I (4).
Biological principles emphasizing structure and function at the molecular, cellular, and organismal levels of biological systems. Secondary school chemistry strongly recommended. Primarily for biology majors and preprofessional students in health-related fields.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

BIO182. General Biology II (4).
Principles of plant and animal structure, function, diversity, evolution, and ecology of populations and communities emphasizing biotic interactions. Primarily designed for biology and pre-professional majors.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

BIO201. Human Anatomy and Physiology I (4).
Structure and function of the human body. Topics include cells, tissues, integumentary, muscular, skeletal, and nervous systems.
Prerequisite: BIO 156 (Preferred), or BIO 100 or BIO 181.
Reading Proficiency.
Three lecture. Three lab.

Structure and function of the human body. Topics include reproductive, endocrine, circulatory, respiratory, urinary, and digestive systems.
Prerequisite: BIO 201. Reading Proficiency.
Three lecture. Three lab.

BIO205. Microbiology (4).
Introduction to microorganisms and viruses of medical importance. Chemical and physical methods of microbial control, bacterial, fungal, protozoal, and viral drug therapy. The immune system response to infection, transmission of human disease and common clinical presentation of various diseases.
Prerequisite: BIO 156 (Preferred), or BIO 100 or BIO 181, and CHM 138 (Preferred), or CHM 130 or CHM 151.
Reading Proficiency.
Three lecture. Three lab.

BIO296. Internship: Biology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

BIO299. Independent Study Biology (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

■ BUSINESS ADMINISTRATION (BSA)

BSA100. Workplace Dynamics (1).
One lecture.

BSA101. Career Connections (1).
Techniques to enhance job search and employment success. Emphasis on creating the tools to make connections in the world of work. Topics include job search skills, workplace communication, ethics and critical thinking.
Prerequisite: Reading Proficiency.
One lecture.
BSA105. Business English (3).
Developing or reviewing good language skills for occupational purposes. Covers spelling, punctuation, capitalization, sentence structure and word usage. Utilizes business-oriented materials.
Prerequisite: Reading Proficiency.
Three lecture.

BSA110. Personal Finance (3).
Information for making personal and family financial decisions. Includes budgeting, saving, credit, installment buying, insurance, buying vs. renting a home, investment, and estate disposal through will and trust.
Three lecture.

BSA111. Creative Leadership (1).
Lead, motivate and inspire your team with creative leadership.
One lecture.

BSA112. Leadership: Juggling Multiple Priorities (1).
Basic techniques to increase team collaboration. How effective leaders spend their time.
One lecture.

BSA113. Leadership Communication: Leading Out Loud (1).
Speaking skills and communication techniques for leaders.
One lecture.

BSA120. Principles of Supervision (3).
Supervisory principles and skill building. Includes decision making, problem solving, time management, leadership models, and communication process. Emphasis on selecting, motivating and evaluating employees.
Three lecture.

BSA130. Business Financial Applications (3).
Foundation and experience in evaluating inventory, preparing financial statements, determining taxes, reconciling bank statements, preparing payroll and solving other financial problems necessary in business fields, including administrative management, accounting, office administration, and finance.
Three lecture.

BSA131. Introduction to Business (3).
Prerequisite: Reading Proficiency.
Three lecture.

BSA132. Ethics in Business (3).
Techniques of moral reasoning and argumentation used to analyze and resolve modern business issues: legal issues, corporate responsibility, workers' rights and responsibilities, technological issues, information, and advertising.
Prerequisite: Reading Proficiency.
Three lecture.

BSA140. Human Relations in Business (3).
Study of basic business behavior patterns. Human aspects of business, as distinguished from economic and technical aspects, and how they influence efficiency, morale, and management practice.
Prerequisite: Reading Proficiency.
Three lecture.

BSA141. Principles of Investment (3).
Fundamentals of corporate finance and elementary accounting with emphasis on operation of the security market, security analysis, and planning an investment program from viewpoint of individual investor.
Three lecture.

BSA150. Business Leadership (1).
Development of leadership qualities in business. Emphasis on character, self-confidence, scholarship, and establishment of career goals. Lab includes field trips, state, regional and national conferences.
Prerequisite: Reading Proficiency.
One lecture. One lab.

BSA162. Executive Transcription (3).
Executive transcription to develop familiarity with business English and document formatting. Speed and accuracy in transcription is emphasized.
Prerequisite: CSA 130 or CSA 140. Reading Proficiency.
One lecture. Four lab.

BSA163. Legal Transcription (3).
Legal correspondence and documents dictated and transcribed from machine transcription. Techniques in preparing legal documents and forms. Production standards of legal office emphasized.
Prerequisite: CSA 130 or CSA 140. Reading Proficiency.
One lecture. Four lab.

BSA165. Innovations in Business Technology (1).
Analysis of traditional and automated office structures and designs. Emphasis on current software, hardware, and office ergonomics.
Prerequisite: Reading Proficiency.
One lecture.
BSA210. International Business (3).
Business principles pertaining to international markets and trade. Global perspective of investments, finances, operations, and monetary systems.
Prerequisite: Reading Proficiency.
Three lecture.

BSA220. Principles of Management (3).
Principles of management that have general applicability to all types of enterprise. Basic management philosophy and decision making principles involved in planning, directing and controlling. Recent concepts in management.
Prerequisite: Reading Proficiency.
Three lecture.

BSA221. Entrepreneurship (3).
Introduction to economic, social and human factors necessary to opening and operating a business. Emphasis on writing and analyzing business plans, developing marketing strategies and raising capital to start a new business.
Prerequisite: Reading Proficiency.
Three lecture.

BSA223. Human Resource Management (3).
Human resource theory and practice, planning, recruitment, placement, employee development, evaluation, benefits and services, health and safety, and employee relations.
Prerequisite: Reading Proficiency.
Three lecture.

BSA224. Records and Database Management (3).
Study of the comprehensive field of records management emphasizing the principles and practices of effective records management for manual and automated records systems.
Prerequisite: Reading Proficiency.
Three lecture.

BSA225. Administrative Office Management (3).
Office management techniques, technology, and work organization in the electronic office. Time management, work organization, problem-solving and planning needs in the contemporary office. Emphasis on recruiting, training and supervising a diverse workforce.
Prerequisite: Reading Proficiency.
Three lecture. One lab.

BSA229. Management Problems (3).
Examination of how the business organization constructs, organizes, extends, maintains, and renews its competitive advantage in the marketplace.
Prerequisite: Reading Proficiency.
Three lecture.

BSA230. Principles of Marketing (3).
Survey of marketing problems and possible solutions. Retail and wholesale areas with emphasis on the consumer's needs and relationship to marketing practices.
Prerequisite: Reading Proficiency.
Three lecture.

Survey of standard tools of statistical analysis. Topics include descriptive measures, probability, discrete probability distributions, continuous probability distributions, confidence intervals, hypothesis testing, and regression analysis.
Prerequisite: MAT 122. Reading Proficiency.
Three lecture.

BSA233. Business Communications (3).
Communication theory, verbal and nonverbal, written and oral. Effective letters relative to inquiry, complaint, sales, credit and collection, application, and goodwill. Business reports in letter, memo, short and long form relative to types of business data.
Prerequisite: ENG 101 or COM 135 or BSA 105; CSA 111. Reading Proficiency.
Three lecture.

BSA234. Quantitative Methods (3).
Exploration of basic models of statistical decision making, linear programming, inventory management, CPM and simulation with emphasis on model building. Use of standard computer programs.
Prerequisite: BSA 232. Reading Proficiency.
Three lecture.

An analysis of the national economy. Topics include macroeconomics problems, policy, standard analyses, international economics, and current thought.
Prerequisite: Reading Proficiency.
Three lecture.

An analysis of markets. Topics include consumer choice, demand and supply, analyses of market structures, market failures, and current thought.
Prerequisite: Reading Proficiency.
Three lecture.

BSA237. Legal Environment of Business (3).
Examination of legal framework governing rules of conduct among businesses and impact on establishing business policy.
Prerequisite: Reading Proficiency.
Three lecture.
BSA268. Retail Management and Merchandising (3).
Explanation of consumer markets and retailing as key forces in business development and expansion. Emphasis on behavior and ideas in a business environment. Includes retail establishments, technological impact on retail and merchandise, and globalization of retail enterprise.
Prerequisite: Reading Proficiency.
Three lecture.

BSA296. Internship: Business Administration (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

BSA299. Independent Study Business (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

CHEMISTRY (CHM)

CHM/ENV121. Environmental Chemistry (4).
Atomic structure, the Periodic Table, chemical bonding and reactions with emphasis on environmental applications: the atmosphere and air pollution, water and water pollution, pesticides, food additives, and nuclear wastes.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

CHM130. Fundamental Chemistry (4).
Introduction to the study of chemistry as a basis for understanding our complicated world. Overview of classification, structure, and chemical behavior, including inorganic, organic, and biological materials.
Prerequisite: MAT 092 or one year of high school algebra or satisfactory score on mathematics skills assessment.
Reading Proficiency.
Three lecture. Three lab.

CHM138. Chemistry for Allied Health (5).
Elements of general, organic and biochemistry. A study of the chemical behavior of matter for Nursing and allied health applications.
Prerequisite: MAT 092 or MAT 122 or MAT 142 or MAT 152. Reading Proficiency.
Four lecture. Three lab.

CHM151. General Chemistry I (5).
Exploration of chemical measurement, classification, stoichiometry, and structure/function relationships for inorganic, organic and biological materials. Chemical principles are presented at a level appropriate for science majors and pre-professional students.
Prerequisite: MAT 122 or higher or two years of high school algebra. Reading Proficiency.
Four lecture. Three lab.

CHM152. General Chemistry II (5).
Advanced topics in general chemistry including chemical kinetics, equilibrium, acid-base and electrochemistry. Chemical principles are presented at a level appropriate for science majors and pre-professional students.
Prerequisite: CHM 151. Reading Proficiency.
Four lecture. Three lab.

Chemistry of organic compounds with emphasis on reaction mechanisms, stereo-chemistry, and structure. Chemical principles are presented at a level appropriate for science majors, and pre-professional students. Concurrent registration in CHM 235L recommended.
Prerequisite: CHM 151. Reading Proficiency.
Four lecture.

CHM235L. General Organic Chemistry I Lab (1).
Basic laboratory techniques in organic chemistry: preparation, separation and identification of organic compounds.
Prerequisite: CHM 235 (may be taken concurrently).
Reading Proficiency.
Three lab.
Advanced topics in organic chemistry including the synthesis and reactions of aromatic and carbonyl compounds. Chemical principles are presented at a level appropriate for science majors and pre-professional students. Concurrent registration in CHM 236L recommended.
Prerequisite: CHM 235. Reading Proficiency.
Four lecture.

CHM236L. General Organic Chemistry II Lab (1).
Additional techniques in organic chemistry: preparation, separation and identification of organic compounds.
Prerequisite: CHM 235L. Reading Proficiency.
Three lab.

CHM296. Internship: Chemistry (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

CHM299. Independent Study Chemistry (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

■ COLLEGE HONORS PROGRAM (CHP)

CHP181. Honors Colloquium I (1).
Special topics for College Honors Program participants in their first semester of college study. Admission to College Honors Program.
Prerequisite: Reading Proficiency.
One lecture.

CHP182. Honors Colloquium II (1).
Special topics for College Honors Program participants in their second semester of college study. Admission to College Honors Program.
Prerequisite: Reading Proficiency.
One lecture.

CHP281. Honors Colloquium III (1).
Special topics for College Honors Program participants in their third semester of college study. Admission to College Honors Program.
Prerequisite: Reading Proficiency.
One lecture.

CHP282. Honors Colloquium IV (1).
Special topics for College Honors Program participants in their fourth semester of college study. Admission to College Honors Program.
Prerequisite: Reading Proficiency.
One lecture.

CHP296. Internship: College Honors (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

CHP299. Independent Study College Honors (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

■ COMMUNICATIONS (COM)

COM100. Introduction to Human Communication (3).
Introduction to the essential elements of human communication and behavior, with emphasis on intrapersonal, interpersonal, group, public communication, and oral communication skills important to personal and professional settings.
Prerequisite: Reading Proficiency.
Three lecture.

COM131. Fundamentals of Speech Communication (3).
Study of the essential elements of oral communication, with major emphasis on public speaking. Includes use of multimedia technologies for presentations.
Prerequisite: Reading Proficiency.
Three lecture.

COM134. Interpersonal Communication (3).
Build healthy personal and professional relationships. Includes listening, coping with criticism, resolving conflicts, managing emotions, nonverbal communication, and developing empathy for gender and cultural differences.
Prerequisite: Reading Proficiency.
Three lecture.

COM135. Workplace Communication Skills (3).
Oral and written workplace communication skills. Application of individual and group communication strategies to secure and maintain employment.
Prerequisite: Reading Proficiency.
Three lecture.
COURSE DESCRIPTIONS

COM217. Introduction to Argumentation and Debate (3).
Basic concepts and theories of argumentation. Emphasis on basic argumentation skills and their application to a variety of communication environments.
Prerequisite: Reading Proficiency.
Three lecture.

COM296. Internship: Communication (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

COM299. Independent Study Communication (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

■ COMPUTER NETWORKING TECHNOLOGIES (CNT)

CNT100. Introduction to Networking Technology (3).
Introduction to technologies, terminology, and skills used in the world of data networking. Emphasis on practical applications of networking and computer technology to real-world problems, including home and small-business network setup.
Three lecture.

CNT101. Maintain and Protect Your Computer (2).
Strategies to protect personal computers from viruses, spyware and intruders. Perform critical maintenance tasks for optimal computer performance. Focus is on computers running the Windows operating system.
Two lecture.

Install, configure, support, and troubleshoot personal computers. Emphasis on PC hardware, and installation, operation, and upgrade procedures. Focus on practical networking in a PC environment along with server hardware maintenance and troubleshooting. Preparation for the Comp TIA A+ Certification exam. This course, with CNT 120, prepares the learner for the Comp/TIA Server+ Certification Exam.
Prerequisite: CNT 115 or CNT 120 or CNT121 or CNT122.
Three lecture. Three lab.

A broad range of networking technologies is examined. Topics include network media, topologies, protocols, operating systems, network management, and security. Preparation for the Comp TIA Network+ certification exam.
Three lecture. Three lab.

CNT120. Exploring Network Operating Environments (3).
Intensive introduction to multi-user, multi-tasking network operating environments. Characteristics of the Linux, Windows 2000, NT, and XP network operating systems will be discussed. Includes networking concepts, services, installation procedures, security issues, back up procedures and remote access.
Preparedness recommendations: Basic experience using Microsoft Windows.
Two lecture. Three lab.

CNT121. Windows Client Operating System (3).
Discussion of the characteristics of the Linux, Windows 2000, NT, and XP network operating systems. Includes networking concepts, services, installation procedures, security issues, back up procedures and remote access.
Preparedness recommendations: Basic experience using Microsoft Windows.
Two lecture. Three lab.

CNT122. Windows Server I (4).
Configuration of a Windows Server operating system. Topics include Active Directory services, group policy, DNS, and certificate services. Preparation for the Microsoft Windows MCTS certification exam.
Prerequisite: CNT 115 or CNT 120 or CNT121 or CNT123.
Three lecture. Three lab.

CNT123. Windows Server II (3).
Configuration and management of a Windows Server network infrastructure. Topics include TCP/IP, DHCP, DNS, file and printer sharing, security, and network policy and access services. Preparation for the Windows Server MCTS certification exam.
Prerequisite: CNT 115 or CNT 120 or CNT121 or CNT122.
Two lecture. Three lab.

CNT130. Linux+:Linux Operating System Certification (4).
Installation, management, and support of the Linux operating system. Advanced topics including disk management, configuration of network services, and security. Preparation for the CompTIA Linux+ certification requirements.
Prerequisite: CNT 115 or CNT 120 or CNT 121.
Three lecture. Three lab.
COURSE DESCRIPTIONS

Network security concepts, communication security, network infrastructure security, basics of cryptography and operational/organizational security. Emphasis on network authentication and authorization, securing network devices and services, virus remedies, preventing network attacks, and securing remote access. Prepares students for the Comp/TIA Security+ certification.
Prerequisite: CNT 115 or CNT 120 or CNT 140.
Two lecture. Three lab.

CNT140. Cisco Networking Fundamentals (4).
Introduction to computer networking standards and operation. Includes network topologies, network addressing, basic network design, and cable installation. First of four courses to prepare students to pass the Cisco Certified Network Associate (CCNA) certification examination.
Prerequisite: CNT 115 or CNT 120.
Three lecture. Three lab.

CNT150. Cisco Networking Router Technologies (3).
Introduction to network routing and router configuration. Includes routing protocols, Cisco IOS commands and operation, and network design using routers. Second of four courses to prepare students to pass the Cisco Certified Network Associate (CCNA) certification examination.
Prerequisite: CNT 140.
One lecture. Three lab.

CNT155. Wireless Networking Fundamentals (3).
Wireless networking technologies, wireless security, and wireless LAN design best practices. Emphasis on hands-on skills. Helps prepare students for industry wireless certifications.
Prerequisite: CNT 115 or CNT 120 or CNT 140.
Two lecture. Three lab.

CNT160. Cisco Advanced Routing and Switching (3).
Intermediate routing concepts and configurations. Configure and install Local Area Networks (LANs) with an emphasis on LAN switching. Design and management of advanced networks. Third of four courses to prepare students to pass the Cisco Certified Network Associate (CCNA) certification examination.
Prerequisite: CNT 150.
Two lecture. Three lab.

Introduction to the design and configuration of wide area networks (WANs). Includes terminology and concepts of Integrated Services Digital Network (ISDN); Frame Relay and Point-to-Point Protocol (PPP). Cisco threaded case study project and CCNA exam review. Fourth of four courses to prepare students to pass the Cisco Certified Network Associate (CCNA) certification examination.
Prerequisite: CNT 160.
Two lecture. Three lab.

CNT/WEB180. Managing a Remote Web Server (3).
Initiate and organize a remote business Web server. Install and configure Web applications and email server operations. Introduction to e-commerce, content management and basic server applications.
Three lecture.

CNT189. Computer Networking Topics (2).
Topics include network security (including firewall implementation), personal wireless devices, Voice-over-IP (VOIP) integration, Network Attached Storage (NAS), and network performance monitoring tools.
Prerequisite: CNT 115 or CNT 120.
One lecture. Three lab.

CNT295. Networking Special Topics: (1).
New or emerging networking technologies. Includes updated and new operating systems versions, updated certification requirements and introductions to new technologies. Students must have completed at least one CNT course. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
One lecture.

CNT296. Internship: Computer Networking Technology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree or certificate requirements as required by the program; and have completed the internship application process.

- COMPUTER NUMERICAL CONTROL (CNC)

CNC 101. CNC Machine Operator (2).
Basic principles and applied skills in the operation of CNC milling machine and lathes.
Prerequisite: Reading Proficiency.
One lecture. Three lab.
CNC 102. CNC Machine Setup (4).
Basic principles and operative skills to set up and operate through 1st article part CNC mills and lathes.
Prerequisite: CNC 101. Reading Proficiency.
Three lecture. Three lab.

CSA 100. Getting to Know Your PC (1).
Practical course for new owners or first-time users of personal computers. Basic introduction to setting up your computer equipment, understanding terminology, and installation of software and hardware. Emphasis on basic skills required to operate a personal computer.
Three lab.

CSA 101. Windows Essentials (1).
Introduction to Microsoft Windows. Emphasis on personal computer operations, accessing and storing of information, and desktop management.
Three lab.

CSA 102. Fundamentals of Personal Computing (1).
Introduction to computer software applications and basics of computer hardware. Includes computer related vocabulary and computer operations.
Three lab.

CSA 103. Using Computers in the Workplace (1).
Introduction to essential computer concepts, vocabulary, keyboarding and word processing skills. Emphasis on entry-level employability skills.
Three lab.

CSA/WEB 104. Internet Essentials (1).
Introduction to the world of the Internet. Includes surfing the World Wide Web, using e-mail, search engine and downloading files.
Three lab.

CSA 105. Meet the Macintosh Using Appleworks (2).
Introduction to the Macintosh computer and computing concepts. Exploration of integrated applications software including word processing, data base, spreadsheets and graphics.
One lecture. Three lab.

Introduction to the Microsoft Windows operating system environment.
One-half lecture.

Working with programs, files, and folders within the Windows operating system environment.
One-half lecture.

CSA 108C. Workshop: Microsoft Word Basics (.5).
Introduction to word processing concepts and the Microsoft Word software program.
One-half lecture.

Formatting features, graphics and templates in Microsoft Word.
One-half lecture.

CSA 108E. Workshop: Microsoft Word Advanced (.5).
Microsoft Word Advanced Features: Forms, Mail Merge, Master Documents, and Macros.
One-half lecture.

CSA 108F. Workshop: Microsoft Excel Basics (.5).
Introduction to spreadsheet concepts and features of the Microsoft Excel program.
One-half lecture.

Using charting, formatting, list management, and audit features in Microsoft Excel spreadsheet software.
One-half lecture.

CSA 108H. Workshop: Microsoft Excel Advanced (.5).
Advanced features of Microsoft Excel including PivotTables, Analytical options, and macros.
One-half lecture.

CSA 108I. Workshop: Microsoft PowerPoint Basics (.5).
Introduction to Microsoft PowerPoint and creating, organizing and delivering an effective presentation.
One-half lecture.

CSA 108J. Workshop: Microsoft PowerPoint Advanced (.5).
Advanced features of PowerPoint including adding movies, sound and advanced animation techniques for sophisticated image presentations.
One-half lecture.

Introduction to Microsoft Outlook, an integrated software program designed to manage email, appointments, notes, and address/contact lists.
One-half lecture.
COURSE DESCRIPTIONS

Introduction to database concepts and features of Microsoft Access.
One-half lecture.

Using features of the Microsoft Access program including validation rules and chart functions.
One-half lecture.

CSA108O. Workshop: Microsoft Access Advanced (.5).
Using advanced features of the Microsoft Access database program including macros, SQL statements, and security features.
Prerequisite: Reading Proficiency.
One-half lecture.

Introduction to use of a digital camera, including methods of transferring photos, media storage options, printing and sharing photos.
One-half lecture.

CSA110. Introduction to Computer Information Systems (3).
Computer hardware, software, and information-processing systems including analysis, development and implementation of computer systems.
Prerequisite: Reading Proficiency.
Three lecture.

CSA111. Keyboarding (1).
Presentation of the keyboard including the 10-key pad by touch. Development of correct techniques for a variety of applications including word processing, computer programming, data entry, and computer interaction.
Three lab.

CSA112. Keyboarding Skill Building (1).
Improving keyboarding speed and accuracy. Emphasis on techniques and strategies for job-related keyboarding proficiency.
Prerequisite: CSA 111.
Three lab.

CSA113. Document Formatting (3).
Basic formatting skills for document processing. Includes basic business documents, correspondence, reports, tables, and employment documents.
Prerequisite: CSA 111.
Two lecture. Three lab.

CSA114. Document Production (2).
Creation and production of professional-looking business documents using advanced formatting elements. Reports, tables, electronic forms, correspondence, tables, medical/legal office applications, and office forms are the focus.
Prerequisite: CSA 113.
One lecture. Three lab.

CSA115. Ten-Key Mastery on the Computer (1).
Touch system of numeric keys on ten-key pads with speed and accuracy using industry standards for data entry.
Three lab.

Practical application of Adobe LiveCycle Designer and Acrobat. Emphasis on use of Designer to create attractive forms that are interactive and dynamic for distribution as .pdf documents and/or use in web pages.
Two lecture.

CSA126. Microsoft Office (3).
Introductory concepts and techniques of Microsoft Office including Word, Excel, Access, PowerPoint, and Outlook.
Two lecture. Three lab.

CSA127. Advanced Microsoft Office (3).
Advanced concepts of Microsoft Office (Word, Excel, Access, and PowerPoint).
Prerequisite: CSA 126.
Two lecture. Three lab.

CSA130. WordPerfect (1).
Various functions and operations of WordPerfect software.
Prerequisite: CSA 111.
Three lab.

CSA131. Advanced WordPerfect (1).
Advanced use of WordPerfect software on a microcomputer. Emphasis on advanced character, line, and font formatting, graphics, tables, merging and sorting.
Prerequisite: CSA 130.
Three lab.

CSA132. Adobe Photoshop Elements for the Home Photographer (3).
Digital imaging for the home photographer using Adobe Photoshop Elements. Use of digital cameras, scanning software and equipment.
Two lecture. Three lab.
CSA133. Microsoft Publisher (2).
Design and production of professional quality documents that incorporate text, graphics and illustrations. Emphasis on newsletters, brochures, flyers, logos, catalogs and forms.
Two lecture.

CSA134. Microsoft Word Desktop Publishing (2).
Desktop Publishing using advanced Microsoft Word feature to plan, define, and incorporate desktop publishing concepts and the design and creation of business and personal documents.
Prerequisite: CSA 140.
One lecture. Three lab.

Use PageMaker software to create specific business documents including newsletters, multiple-page reports, flyers and catalog pages.
Prerequisite: CSA 130 or CSA 140.
One lecture. Three lab.

CSA138. Microsoft Excel (2).
Practical application on the basic functions of Microsoft Office Excel. Emphasis on creating worksheets for data input and analysis.
Two lecture.

CSA139. Microsoft Access (2).
Practical application of Microsoft Access. Emphasis on relational databases and query design to summarize and analyze information.
Two lecture.

CSA140. Microsoft Word (2).
Practical application of Microsoft Office Word. Emphasis on creating and formatting content, working with visual content and organizing documents.
Two lecture.

CSA141. Advanced Microsoft Word (1).
Advanced theory and practical application of Microsoft Word software. Emphasis on planning, designing, and formatting formal business, web page and personal documents.
Prerequisite: CSA 140.
Three lab.

CSA142. Microsoft PowerPoint (2).
Practical application of Microsoft PowerPoint. Emphasis on creating and formatting slide presentations, working with multimedia, and slide show delivery options.
Two lecture.

CSA/WEB144. Creating Web Pages Using Dreamweaver (3).
Create website using Dreamweaver software. Emphasis on creating, publishing to the web and maintaining website.
Three lecture.

CSA/WEB145. Creating Web Pages Using Expression Web (3).
Create and publish websites using Expression Web software.
Three lecture.

CSA147. Interactive 2D Game Animation Using Adobe Flash (3).
Creating animation and interactive multimedia using Adobe Flash. Creative process of designing interactive animated games, the intended output for computers, mobile devices and websites.
Three lecture.

CSA149. Second Life Virtual World (3).
Introduction to the use of the virtual 3D world of Second Life. Basic skills, inventory organization, basic building, personalization of the avatar, overall navigation and communication of the virtual environment.
Three lecture.

CSA/WEB150. HTML: Introductory Concepts and Techniques (1).
Fundamentals of developing Web pages. HTML language and creating Web pages for course work, professional purposes, and personal use.
One lecture.

CSA/WEB151. Buying and Selling on Ebay (.5).
How to buy and sell on eBay.
One-half lecture.

CSA152. Using Google Documents (2).
Introduction to creating and sharing Google documents. Creation of text documents, spreadsheets, forms, and presentations. Storing, sharing, and uploading of documents.
Two lecture.

CSA161. Introduction to Computer Science (2).
Introduction to modern computer science including programming languages, structured and object oriented design and logic tools.
Prerequisite: Reading Proficiency.
Two lecture.
COURSE DESCRIPTIONS

CSA164. C# Programming Fundamentals (3).
Introduction to C# language. Includes Visual Studio, form applications, debugging programs, object oriented programming, and database programming.
Prerequisite: CSA 160. Reading Proficiency.
Three lecture.

CSA165. Programming in C++ (3).
Theory and practice in programming using the language C++. Emphasis upon syntax of the language and creating application programs.
Prerequisite: CSA 160. Reading Proficiency.
Two lecture. Three lab.

CSA/WEB167. PHP and MySQL Programming (3).
Principles and techniques of developing small to medium scale database applications, and creating web databases that are accessed by Web pages.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

CSA168. Java Programming (3).
An introductory course exploring programming in the Java language. Emphasis will be based upon development of control statements and object oriented program design.
Prerequisite: CSA 160. Reading Proficiency.
Two lecture. Three lab.

Object oriented programming within the Windows and WEB browser environment with emphasis on Visual Basic.NET, projects and simple Windows interfaces. Includes writing, applications, debugging programs, defining loops, and using data management techniques.
Prerequisite: CSA 160 and CSA 172. Reading Proficiency.
Three lecture. Three lab.

CSA170. PC Architecture (3).
Introduction to hardware components of a microcomputer. Emphasis on equipment comparisons, hardware requirements, and operating systems.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

CSA172. Microsoft Windows (2).
Personal computer operations using the Microsoft Windows operating environment. Customizing, optimizing and maintenance of desktops, folders, and documents.
One lecture. Two lab.

CSA/WEB177. Surfing the Internet (2).
Basic to intermediate techniques of using the full features of the INTERNET and its resources. Emphasis on accessing the information of the rapidly expanding and ever changing “Information Superhighway.”
Preparedness recommendation: Basic windows skills and general computer literacy.
One lecture. Three lab.

A survey of the operating systems used today with the purpose of preparing technicians to install and maintain operating systems.
Prerequisite: Reading Proficiency.
Three lecture.

CSA184. PC Installation, Diagnostics and Repair (3).
Practical course for owners of personal computers. Introduction to troubleshooting a computer that is malfunctioning. Emphasis on diagnosis and removal of faculty modules and installation of hardware and related software.
Prerequisite: CSA 100. Reading Proficiency.
Two lecture. Three lab.

CSA201. Software Maintenance and Troubleshooting (3).
Differentiating between hardware and software errors. Diagnosing and correcting software problems that are interfering with the operation of the computer.
Prerequisite: CSA 172. Reading Proficiency.
Two lecture. Three lab.

CSA/EDU204. Computers in the Classroom (3).
Introduces general personal computer applications, teacher utility programs, internet searching, and evaluation of educational software. Includes procedures for using various applications in the classroom and review of major software programs currently in use in schools on both the Windows and Macintosh platforms.
Prerequisite: Reading Proficiency.
Three lecture.

CSA220. Microsoft Project (2).
Fundamentals of project management using the application program Microsoft Project.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

CSA230. Flash Graphic Effects (2).
Using Macromedia FlashTM software to create graphics, animations and controls to be used as tutorials, demonstrations, or web pages. Emphasis on vector graphic creation and frame animation. Application of animation theory and principles of vector and raster image use.
One lecture. Three lab.
CSA238. Advanced Excel for Windows (1).
Advanced theory and application of the Microsoft Excel spreadsheet software application.
Prerequisite: CSA 138.
Three lab.

CSA265. Programming in Advanced C++ (3).
Theory and practice in programming using the language C++. Emphasis on syntax of the language and creation of application programs using Object Oriented Programming (OOP) principles.
Prerequisite: CSA 165. Reading Proficiency.
Two lecture. Three lab.

CSA/WEB266. Advanced Web Enhancement AJAX (3).
Create AJAX web applications that utilize JavaScript, PHP, Document Object Model (DOM), and Extensible Markup Language (XML). Includes XHTML language, Cascading Style Sheet (CSS) and XMLHttpRequest Object.
Prerequisite: CSA 161. Reading Proficiency.
Two lecture. Three lab.

Prerequisite: CSA 172. Reading Proficiency.
One lecture. Three lab.

CSA281. Systems Analysis and Design (3).
Advanced analysis of users' needs, available equipment, manpower and financial feasibility. Emphasis on procedures and program analysis in design and implementation of the total system. Individual and team approach to problem solving.
Prerequisite: CSA 110 and CSA 160. Reading Proficiency.
Three lecture.

CSA282. Microcomputer Databases (3).
Concepts, design, implementation, evaluation, and maintenance techniques of databases. Includes fundamentals of data model, data structure and data management.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

CSA294. CSA Project (1-6). This Capstone course incorporates project design, project system analysis, and technology applications. Approval of Division Dean.
Prerequisite: CSA 126, CSA 165, CSA 179, CSA 281, and CSA 282.
One - six lecture.

CSA296. Internship: Computer Systems and Applications (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

CSA299. Independent Study Computer Systems and Applications (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

CREATIVE WRITING (CRW)

CRW139. Introduction to Creative Writing (3).
Techniques in writing, evaluating, and critiquing poetry, fiction and creative non-fiction.
Prerequisite: Reading Proficiency.
Three lecture.

CRW140. Short Story Writing (3).
Beginning techniques used in writing fiction, focusing on the short story.
Prerequisite: Reading Proficiency.
Three lecture.

CRW141. Introduction to Poetry Writing (3).
Beginning techniques used for writing poetry.
Prerequisite: Reading Proficiency.
Three lecture.

CRW142. Creative Nonfiction Writing (3).
Techniques in writing creative nonfiction, focusing on the personal essay and memoir.
Prerequisite: Reading Proficiency.
Three lecture.

CRW143. Memoir Writing (3).
Introduction to memoir writing, focusing on prewriting, analysis, evaluation, and revision of memoir.
Prerequisite: Reading Proficiency.
Three lecture.
CRW144. Writing and Healing (3).
Writing to explore and heal the relationship to one’s self and the outside world; emphasis on journal writing as a source and foundation for public writing.
Prerequisite: Reading Proficiency.
Three lecture.

CRW249. Topics in Creative Writing: (3).
Analysis, writing, and revision of genre or element within fiction. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Three lecture.

CRW250. Advanced Creative Writing: Poetry (3).
Advanced techniques used for writing poetry.
Prerequisite: CRW 139 or CRW 141. Reading Proficiency.
Three lecture.

CRW251. Advanced Creative Writing: Creative Non-Fiction (3).
Advanced techniques in writing creative nonfiction, with emphasis on personal essay and memoir.
Prerequisite: CRW 139 or CRW 142. Reading Proficiency.
Three lecture.

CRW252. Advanced Creative Writing: Fiction (3).
Advanced techniques used in writing fiction with emphasis on the short story.
Prerequisite: CRW 139 or CRW 140. Reading Proficiency.
Three lecture.

CRW254. Novel Writing I (3).
Planning, structuring and beginning a novel; prewriting, writing, analysis, evaluation and revision of novel plans and excerpts.
Prerequisite: Reading Proficiency.
Three lecture.

CRW255. Novel Writing II (3).
Principles and practices for writing the contemporary novel. Focus on writing new work, critiquing, and analysis of published and student novel excerpts.
Prerequisite: CRW 254. Reading Proficiency.
Three lecture.

CRW256. Novel Writing III (3).
Advanced novel writing course focusing on revision, polishing and marketing.
Prerequisite: CRW 255. Reading Proficiency.
Three lecture.

CRW295. Writers Workshop: (3).
Intensive study and application of effective strategies used by selected authors in various genres to promote, explore, raise questions about, or provide insight into specified themes. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Three lecture.

DANCE (DAN)
DAN130. Ballet (1).
The elements of classical ballet technique. Emphasis on movement quality and artistic expression.
Two lab.

DAN131. Modern Dance (1).
The elements of modern dance technique. Emphasis on movement quality and artistic expression.
Two lab.

DAN132. Jazz Dance (1).
The fundamentals of jazz dance techniques.
Two lab.

DAN133. Ballroom Dance (1).
Basic steps of the Fox Trot, Waltz, Rumba, Cha Cha, Tango and Swing. Includes movement, music and rhythm.
Two lab.

DAN140. Dance Choreography (1).
Introduction to various choreography and dance themes. Includes kinesthetic awareness, floor exercises, dance movements, and music integration.
Two lab.
COURSE DESCRIPTIONS

DAN198. Dance Topics: (1).
Exploration of partner dance styles.
One lecture.

Intermediate ballroom dance including: American Style Waltz, Foxtrot, Tango, Swing, Rumba and Cha-cha.
Prerequisite: DAN 133
Two lab.

DIGITAL FILMMAKING (DFM)

DFM101. Film Analysis: (2).
Analytical sequence of various disparate film types. Includes story and structure analysis, artistic design, and character development. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

DFM102. Image and Sound: (3).
Analysis and creation of visual and auditory experiences. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

DFM103. Storytelling: (2).
Contemporary and mythical story patterns. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

DFM104. Screenwriting: (2).
Professional feature length screenwriting for narrative and documentary films. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

DFM105. Directing Actors (1).
Professional directing techniques.
Prerequisite: Reading Proficiency.
Three lab.

DFM106. Camera Coverage: (1).
Professional cinematography processes from script to film. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
Three lab.

DFM107. Editing: (2).
Feature film editing from analysis to final cut. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

DFM108. Guerilla Filmmaking: (1).
Producing low-budget professional independent films. License and rights administrator. Distribution executive. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture.

DFM109. Managing Post-Production: (1).
Professional post-production issues and responsibilities. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture.

DFM110. Thesis Film Pre-Production: (2).
Pre-production of thesis film. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

DFM111. Interview Techniques (1).
Introduction to interviewing techniques. Professional use of lights, sound and camera for interviews. Questioning to elicit a useful response.
Prerequisite: Prospective students must apply to be accepted in the Zaki Gordon Institute for Independent Filmmaking documentary program by submitting a competitive 1000 word essay and successfully completing a personal interview. Reading Proficiency.
Three lab.

DFM201. Thesis Film Production: (6).
Production and post-production of a 15-minute digital film. Repeatable for a total of 12 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
Two lecture. Nine lab.

DFM202. Feature Pre-Production (5).
Preparation of schedules and materials for $50,000+ feature film production.
Prerequisite: Reading Proficiency.
Fifteen lab.
DFM203. Feature Film Directing (2).
Work with actors to achieve desired camera presence. Emphasis on actor relationships, camera placement, script breakdown and performance.
Prerequisite: Reading Proficiency.
Two lecture.

DFM204. Feature Film Screenwriting: (5).
Complete second draft of feature length script. Repeatable for a total of 10 credit hours towards degree/certificate requirements.
Prerequisite: Reading Proficiency.
Two lecture. Nine lab.

Various software and photographic techniques to create the effects of visual elusion in filmmaking.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

DFM206. Advanced Cinematography (2).
Single and multi camera lighting techniques. Emphasis on selecting visual style for a script and visual storytelling.
Prerequisite: Reading Proficiency.
One lecture. Three lab.

DFM207. Feature Sound Design (3).
Listening, designing, recording and mixing a film’s audible experience to create a full film-going experience.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

DFM208. Feature Film Business Plan (4).
Design and write a business plan for a feature film.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

DFM209. Feature Film Legal Issues (3).
Contractual agreements between filmmaker, Unions, Guilds, vendors and investors.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

DFM210. Feature Production Design (2).
Conceptualize and implement a visual style for a film.
Prerequisite: Reading Proficiency.
Two lecture.

DFM211. Feature Film Production (4).
Production of a 35mm or high definition short film.
Prerequisite: Reading Proficiency.
Two lecture. Six lab.

DFM212. Feature Post Production (3).
Edit and manage the post-production process of a film that meets distribution standard for theatrical release.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

DFM213. Feature Post Sound Design (3).
Edit and manage the post sound that meets distribution standard for theatrical release.
Prerequisite: Reading Proficiency.
One lecture. Six lab.

Visual effects techniques on 35mm or high definition film.
Prerequisite: Reading Proficiency.
One lecture. Six lab.

DFM215. Feature Distribution and Marketing (3).
Target and effectively market a feature film to a desired audience.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

DFM295. Master Workshops (1-6).
Workshops in digital film production processes and techniques. Analysis of successful and unsuccessful production methods. Professional relationships and networking.

DFM296. Internship: Digital Filmmaking (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

DFM299. Independent Study Digital Filmmaking (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
EARLY CHILDHOOD EDUCATION (ECE)

ECE120. Contemporary Issues in Child Care (1).
Exploration of the cultural, economic, historical, political and social issues in contemporary child care programs. Emphasis on critically examining current trends and their effects upon members of society.
Prerequisite: Reading Proficiency.
One lecture.

ECE190. Child Development Associate (CDA) Assessment Preparation (3).
Preparation for CDA assessment. Development of a professional resource file that includes parent questionnaires, autobiography and essays. Successful completion of course qualifies student to apply for national certification.
Prerequisite: ECE200, ECE/PSY234, and ECE240. Reading Proficiency.
Three lecture.

Head Start mandates and performance standards for program administration and classroom implementation. Emphasizes strategies for working with children (infants, toddlers and preschoolers), legal issues, health and safety standards, nutrition and working with families.
Prerequisite: Reading Proficiency.
One lecture.

ECE200. Introduction to Early Childhood Education (3).
Introduction to the field of Early Childhood Education including history, philosophy, and the application of child development techniques. Includes techniques for observing and recording behaviors, communication and guidance skills, developmentally appropriate practices and the role of the teacher in early childhood settings. Observation and participation hours in an early childhood setting required.
Prerequisite: Reading Proficiency.
Three lecture.

ECE201. Introduction to the Child Care Profession (3).
Introduction to the child care profession, focusing on child development and appropriate learning environments for children birth through age five. Includes child care licensing and developmentally appropriate curriculum in early childhood settings.
Three lecture.

ECE202. Early Childhood Curriculum (3).
Introduction to methods and materials to assist young children in the learning process. Emphasis on art, music and movement, math, science, social studies, dramatic play, technology, sensory activities and transitions, all within the context of creativity. Locating, planning, implementing and evaluating developmentally appropriate learning activities using a variety of methods and materials.
Prerequisite: Reading Proficiency.
Three lecture.

ECE210. Infant and Toddler Development (3).
Principles of development in children from birth through 36 months. Emphasis on individuality of child and the adult role in providing a safe and stimulating environment for the development of the young child. Observation and participation hours in infant/toddler setting required.
Prerequisite: ECE 200 and ECE/PSY 234. Reading Proficiency.
Three lecture.

ECE216. Play Education (3).
Development of play in children birth through age eight. Includes methods to enhance learning experiences through play, role of play in a child’s development, and developmentally appropriate play activities.
Prerequisite: ECE 200 and ECE 202. Reading Proficiency.
Three lecture.

ECE220. School Age Children (3).
Development of children ages 6-12 who may be in child care or groups. Interests, attitudes, abilities, behavior and guidance of children with an emphasis on types of programs, literacy development and tutoring techniques for this age group. Observation and participation hours required.
Prerequisite: Reading Proficiency.
Three lecture.
ECE/EDU222. Introduction to the Exceptional Learner (3).
Introduction to educating children with special needs or abilities including students with physical, mental, or emotional disabilities and students who are gifted or talented. Emphasis on current educational practices and related educational theories, including identification, causes, and characteristics of exceptional learners. Overview of history, assessment, intervention, curriculum implications, and research issues in special education. Observation and participation hours in a special education setting required.
Prerequisite: Reading Proficiency.
Three lecture.

ECE/EDU230. Language and Literacy Experiences (3).
Language and literacy processes and the way in which literature enriches a child's development. Review of children's literature and methods of enhancing literacy experiences.
Prerequisite: Reading Proficiency.
Three lecture.

ECE/PSY234. Child Growth and Development (3).
Development of the child. Includes genetic, prenatal, birth and postnatal influences. Emphasis on physical, cognitive and social-emotional development and theories. Includes positive communication with children.
Prerequisite: Reading Proficiency.
Three lecture.

ECE240. Family and Community Partnerships (3).
School and family relationships with a focus on communication, ethics, professionalism and problem-solving. Impact of the community and its resources and referral systems. Emphasis on families, diversity, multicultural issues and parent involvement.
Prerequisite: Reading Proficiency.
Three lecture.

ECE250. Leadership and Management in Early Childhood Programs (3).
Overview of responsibilities and tasks involved in managing a quality early childhood program. Includes administrative duties related to licensing, enrollment, funding, policies, facility, equipment, parent relationships and staffing. Emphasis on effective leadership, evaluation and planning, shared vision and a professional climate of collaboration.
Prerequisite: ECE 200, ECE 202, and ECE/PSY 234.
Reading Proficiency.
Three lecture.

ECE270. Health, Safety and Nutrition (3).
Nutrition education, menu planning, childhood diseases and illness, and sanitation and safety in group settings. Protecting the health and safety of young children and promoting the development of lifelong health habits. Communication with health professionals and parents on health, safety, and nutrition issues.
Prerequisite: Reading Proficiency.
Three lecture.

ECE290. Practicum: Directed Field Experience Birth-Preschool (3).
Supervised experience in the education, guidance, and care of young children. Begins with opportunity to observe appropriate curriculum, then to plan and implement age-appropriate activities under careful supervision. Application required. Students must show evidence of successful completion of first aid, CPR and proof of fingerprint clearance application process when applying for placement in ECE290.
Prerequisite: ECE 200, ECE 202, ECE/EDU 222, ECE/EDU 230, ECE/PSY 234 and ECE 270. Reading Proficiency.
One lecture. Six lab.

Supervised student-teaching in a birth-preschool setting. Includes application of knowledge and skills in planning and implementing curriculum under the supervision of a classroom teacher and college supervisor. Must complete application process prior to registration.
One lecture. Nine lab.

ECE295. Special Topics: Early Childhood Education (1).
Introduction to special topics in Early Childhood Education. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
One lecture.

ECE296. Internship: Early Childhood Education (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ECE299. Independent Study Early Childhood Education (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
EDUCATION (EDU)

EDU110. Introduction to Substitute Teaching (1).
Role of the substitute teacher in public and private schools from kindergarten through high school. Emphasis on teaching techniques, classroom management, educational issues, policies, procedures.
Prerequisite: Reading Proficiency.
One lecture.

EDU/SPA120. Spanish for Educators (3).
Conversational Spanish for the student who needs a practical speaking and writing knowledge of common terminology used in the school setting.
Prerequisite: Reading Proficiency.
Three lecture.

EDU150A. Syllabus Creation and Writing (.25).
Syllabus development and writing. Use of web-based resources and college templates, checklists, and required institutional elements to create a course syllabus. Develop and write a comprehensive student work guide or assignment schedule in various formats.
Prerequisite: Reading Proficiency.
One-quarter lecture.

EDU150B. Teaching and Learning Styles (.25).
Instructional design to enhance classroom experiences for all students. Identify student learning styles and present information to improve student learning. Includes class diversity, creating a managed, supportive learning community in the classroom, and integrating technology in instruction.
Prerequisite: Reading Proficiency.
One-quarter lecture.

EDU150C. Student Learning and Outcomes Assessment (.25).
Learning concepts, outcomes and assessment. Rubrics and techniques to assess student learning.
Prerequisite: Reading Proficiency.
One-quarter lecture.

EDU150D. Legal Issues (.25).
Legal issues and their impact on students, instruction, and the college as a whole. Includes copyright, harassment and ethics, Family Educational Rights Privacy Act (FERPA - Privacy), and Americans with Disabilities Act (ADA).
One-quarter lecture.

EDU200. Introduction to Education (3).
Overview of education profession and U.S. educational system, historical development and foundations of education and educational institutions. Includes theories of teaching, the student as learner, current issues and trends in education, the school and community, and roles and responsibilities of the teacher. Includes a field and observation practicum.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

EDU/CSA204. Computers in the Classroom (3).
Introduces general personal computer applications, teacher utility programs, internet searching, and evaluation of educational software. Includes procedures for using various applications in the classroom and review of major software programs currently in use in schools on both the Windows and Macintosh platforms.
Prerequisite: Reading Proficiency.
Three lecture.

EDU210. Cultural Diversity in Education (3).
Prepares potential teachers to examine how race, ethnicity, and cultural differences influence students’ experiences in school. Assists teachers in implementing a multicultural approach to teaching by identifying effective teaching styles and practices for a diverse student population.
Prerequisite: Reading Proficiency.
Three lecture.

EDU/ECE222. Introduction to the Exceptional Learner (3).
Introduction to educating children with special needs or abilities including students with physical, mental, or emotional disabilities and students who are gifted or talented. Emphasis on current educational practices and related educational theories, including identification, causes, and characteristics of exceptional learners. Overview of history, assessment, intervention, curriculum implications, and research issues in special education. Observation and participation hours in a special education setting required.
Prerequisite: Reading Proficiency.
Three lecture.

EDU/ECE230. Language and Literacy Experiences (3).
Language and literacy processes and the way in which literature enriches a child’s development. Review of children’s literature and methods of enhancing literacy experiences.
Prerequisite: Reading Proficiency.
Three lecture.
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EDU239. Structured English Immersion Provisional Endorsement (3).
Prepares certified teachers and administrators who were trained in states other than Arizona or were certified after August 2006 to meet the academic needs of English Language Learner populations and qualifies them for the Provisional SEI Endorsement as required by the Arizona Department of Education.
Prerequisite: Reading Proficiency.
Three lecture.

EDU240. Provisional Structured English Immersion Endorsement (1).
Provide classroom teachers, principals, supervisors, and superintendents with the Provisional SEI endorsement as defined by the Arizona Department of Education. Emphasis on meeting the academic needs of English Language Learner populations.
Prerequisite: Reading Proficiency.
One lecture.

EDU241. Full Structured English Immersion Endorsement (3).
Structured English Immersion (SEI). Theory, methods, and strategies as defined by the Arizona Department of Education. Along with EDU240 meets requirements for the SEI full endorsement.
Prerequisite: Reading Proficiency.
Three lecture.

EDU250. The Community College (3).
Overview of the community college in the United States including its development, mission and role. Comparison of the community college system in Arizona with selected community college systems of other states.
Prerequisite: Reading Proficiency.
Three lecture.

EDU255. Fundamentals of Educational Technology (3).
Designed for educators in diverse settings (e.g. public and private sectors, pre-K to grade 12, and higher education). Emphasis on systematic processes for designing, developing, evaluating and implementing technology effectively into instruction and the impact emerging technologies have on the educational environment. Aligned with International Society for Technology in Education, National Educational Technology Standards for Teachers (NETS-T).
Prerequisite: Reading Proficiency.
Three lecture.

EDU296. Internship: Education (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours toward degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

EDU299. Independent Study Education (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

ELECTRICAL TECHNICIAN (ELT)

ELT110. Electricity and Electronics (3).
Basic concepts and properties of electricity, its general applications and related terminology. Introduction to reading electrical blueprints and wiring diagrams, and defines additional electronics concepts and components. Includes semiconductors, power supplies, amplifiers, rectifiers, and oscillators.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

ELT111. DC Electrical Systems (3).
Operation and maintenance of direct-current systems and controls, electrical measuring instruments, electrical safety, short-circuit analysis and troubleshooting.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

ELT112. AC Electrical Systems (3).
Operation and maintenance of alternating-direct-current systems and controls, single-phase motors, three-phase systems, energy conservation, short-circuit analysis and troubleshooting.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

ELT115. Conduits and Raceways (1).
Layout, bending and assembly of conduit systems.
Prerequisite: Reading Proficiency.
One-half lecture. One lab.

ELT161. Microprocessors and Programmable Controllers (3).
Use of computers in industrial process control, including programmable logic controllers, control loops, data transmission, basic robotics, and application of these technologies to specific systems.
Prerequisite: Reading Proficiency.
One lecture. Four lab.
COURSE DESCRIPTIONS

ELT171. Process Control Instrumentation (3).
Instrumentation associated with industrial process control, including measurements of pressure, force, weight, motion, flow, level, and temperature; analytical measurement and procedures for safety, calibration and testing.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

Advanced process control systems including: single-loop, multi-loop, cascade, ratio, feedforward and Distributed Control Systems (DCS). Calibrate, adjust, tune, test and maintain various control systems.
Prerequisite: ELT 171. Reading Proficiency.
Three lecture. Three lab.

ELT272. Motors and Motor Controls (3).
Characteristics, performance and control of rotating electrical machinery, transformers and associated equipment.
Prerequisite: ELT 111 and ELT 112. Reading Proficiency.
Two lecture. Three lab.

ELT295. Apprenticeship: Electrical Instrumentation (3).
Supervised field experience. Repeatable for a total of twelve credit hours towards degree/certificate requirements.

ELT296. Internship: Electrical Technician (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

EMT121. Pediatric First Aid, CPR and Automated External Defibrillator (AED) (.5).
Pediatric first aid, cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use. Recognize injury and medical emergencies and their treatment in the first few minutes until professional help arrives. Meets the requirements of the Heartsaver Pediatric AED/First Aid by the American Heart Association.
One-half lecture.

EMS123. Cardiopulmonary Resuscitation (CPR) for the Health Care Provider (.5).
CPR for victims of all ages. Includes ventilation with a barrier device, a bag-valve-mask device and oxygen, and use of an automated external defibrillator (AED). Meets the requirements of Healthcare Provider CPR & AED by the American Heart Association.
One-half lecture.

EMS126. Wilderness First Responder (3).
Principles and skills to make critical medical and evacuation decisions and take appropriate action in remote locations where advanced medical assistance is more than one hour away.
Prerequisite: EMS 123. Reading Proficiency.
Three lecture.

EMS130. Emergency Medical Responder (2).
Knowledge and skills for assisting ill or injured in home, industry or highway emergencies. Fundamentals of life support and emergency medical care while awaiting arrival of advanced emergency medical personnel. Certificate of completion.
Prerequisite: EMS 123 or proof of a current (1 year or less) “C” class CPR certification through the American Heart Association or the American Red Cross. Reading Proficiency.
One lecture. Two lab.

EMS131. Emergency Medical Technician Basic (6).
Principles and techniques of emergency medical care as performed by the EMT Basic in accordance with national and state curriculum. Preparation for the National Registry of EMT Certification Examination.
Prerequisite: EMS 123 or proof of a current (one year or less)”C” class CPR certification by the American Heart Association, Professional Rescuer CPR by the American Red Cross or CPR Pro for the Professional Rescuer by the American Safety & Health Institute. Reading placement test with a 9th grade reading level is required. Must be 17.5 years of age at the start of class. Must produce a vaccine record for Measles, Mumps, and Rubella. Must produce a negative TB test (less than six months old) or negative chest x-ray.
Reading Proficiency.
Five lecture. Three lab.
COURSE DESCRIPTIONS

EMS140. Basic Trauma Management (1).
Management of traumatized individuals including sequence of assessment and techniques of resuscitation, stabilization and transport. Organized approach to trauma care for EMTs and nurses who evaluate and stabilize the trauma victim. Stresses conditions which cannot be stabilized in pre-hospital environment and require immediate transport. Emphasis on practical usage and experience. Award of completion.
Prerequisite: EMS 131. Reading Proficiency.
One lecture.

EMS211. Emergency Medical Technician Refresher (2).
Updates Basic EMT graduates on new techniques and reviews principles in client care, basic life support and transportation of sick and injured. Emphasizes practical usage and experience in all phases.
Prerequisite: EMS 131 or equivalency. Meets Arizona Department of Health Services refresher training requirements. EMS 123 or proof of a current (one year or less) “C” class CPR certification by the American Heart Association or the American Red Cross. Reading Proficiency.
Two lecture.

EMS220. Interpretation and Management of Cardiac Dysrhythmias (3).
Concepts of anatomy and physiology of cardiac tissues and electrical conduction. ECG patterns, diseases and cardiac response to medications. Preparation for Advanced Cardiac Life Support (ACLS) certification course.
Prerequisite: A current EMT, IEMT, or Paramedic certificate, or RN with current license, or NSG 131. Must have proof of current healthcare provider CPR certification through the American Heart Association. Reading Proficiency.
Three lecture.

Advanced assessment, medication administration, intubation techniques and IV insertions. Emphasis on human anatomy and physiology, pharmacology, dysrhythmia interpretation, trauma and medical treatments. Pathophysiology related to the management of cardiovascular, respiratory, endocrine, neurological, reproductive, musculoskeletal, obstetric and pediatric emergencies.
Prerequisite: Current EMT certificate issued by ADHS that must remain current until graduation, a current Healthcare Provider or equivalent level CPR card. Must pass a written test, practical exam, have an interview and be approved by the selection committee and medical director. Reading Proficiency.
Twelve lecture. Eighteen lab.

EMS240. Paramedic Anatomy and Physiology (4).
Human anatomy and physiology. An overview of the body's organs and tissue function.
Prerequisite: EMS 131 and FSC 104. Reading Proficiency.
Four lecture.

EMS241. Paramedic I (12).
Introduction to Paramedicine including overview of rules and regulations, paramedic attributes, pharmacology, medication administration, airway, ventilation, patient assessment and trauma.
Prerequisite: EMS 240. Reading Proficiency.
Ten lecture. Six lab.

EMS242. Paramedic II (10).
Introduction to Paramedicine including extensive overview of the National Highway Safety and Traffic Administration's modules in Medical and Special Considerations.
Prerequisite: EMS 241. Reading Proficiency.
Nine lecture. Three lab.

EMS243. Paramedic III (5).
Introduction to Paramedicine including extensive overview of the National Highway Safety and Traffic Administration's modules in Assessment Based Management Operations.
Prerequisite: EMS 241. Reading Proficiency.
Three lecture. Six lab.

EMS244. Paramedic IV (12).
Clinical and vehicular practicum. Extensive hands on application including emergency patient care of sick and injured under direct supervision of an authorized preceptor.
Prerequisite: EMS 240. Reading Proficiency.
Thirty Six lab.

EMS255. Paramedic Refresher (3).
Review of advanced skills applied by certified emergency paramedics. Study of the anatomy, physiology, pathophysiology, and management of medical, obstetrical, pediatric emergencies, neurological injuries and specific chronic diseases related to the central nervous system, behavioral emergencies, respiratory emergencies, and shock.
Prerequisite: Student must be currently certified emergency paramedic. Current Advanced Cardiac Life Support. Also Base Hospital Review and vehicular experience as required by agency. Reading Proficiency.
Three lecture.
EMS296. Internship: Emergency Medical Services (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

EMS299. Independent Study Emergency Medical Services (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

ENGLISH (ENG)

ENG021. Vocabulary Development Module (1).
Increasing personal vocabulary with emphasis on using dictionary features, word parts, and context clues to understand and learn word meanings.
Prerequisite: Satisfactory score on the skills assessment.
Three lab.

ENG022. Spelling Improvement Module (1).
Overcoming spelling difficulties. Emphasis on general rules and strategies and commonly confused and misspelled words.
Prerequisite: Satisfactory score on the skills assessment.
Three lab.

ENG023. Basic Sentence Structure and Grammar Module (1).
English grammar and sentence structure. Recognizing sentence grammar that affects communication and constructing sentences.
Prerequisite: Satisfactory score on the skills assessment.
Three lab.

ENG026. Punctuation Skills Module (1).
Standard use of punctuation.
Prerequisite: Satisfactory score on the skills assessment.
Three lab.

ENG032. English for Speakers of Other Languages: Beginning English I, II and III (3).
Development of the fundamentals of speaking, writing, listening, and reading of English for speakers of other languages at the novice low/novice mid level. Introduction to the culture of the English speaking world.
Three lecture.

ENG032A. English for Speakers of Other Languages: Beginning English I (1).
Introduction to the fundamentals of speaking, writing, listening, and reading of English for speakers of other languages. Introduction to the culture of the English speaking world.
One lecture.

ENG032B. English for Speakers of Other Languages: Beginning English II (1).
Development of the fundamentals of speaking, writing, listening, and reading of English for speakers of other languages at the novice low level. Introduction to the culture of the English speaking world.
Prerequisite: ENG 032A.
One lecture.

ENG032C. English for Speakers of Other Languages: Beginning English III (1).
Development of the fundamentals of speaking, writing, listening, and reading of English for speakers of other languages at the novice low/novice mid level. Introduction to the culture of the English speaking world.
Prerequisite: ENG 032B.
One lecture.

ENG035. English as a Second Language: Conversational English and American Culture (1).
Introduction to English pronunciation, grammar and usage. Emphasis on basic conversational skill and understanding American culture. Field trips required.
One lecture.

ENG042. English for Speakers of Other Languages: Intermediate English I, II and III (3).
Development of speaking, writing, listening, and reading proficiency in English at the novice mid/novice high level. Culture of the English-speaking world.
Prerequisite: ENG 032 or ENG 032C.
Three lecture.

ENG042A. English for Speakers of Other Languages: Intermediate English I (1).
Development of speaking, writing, listening, and reading proficiency in English at the novice mid level. Culture of the English-speaking world.
Prerequisite: ENG 032 or ENG 032C.
One lecture.
Eng042b. English for Speakers of Other Languages: Intermediate English II (1).
Development of speaking, writing, listening, and reading proficiency in English at the novice mid/novice high level. Culture of the English-speaking world.
Prerequisite: ENG 042a.
One lecture.

Eng042c. English for Speakers of Other Languages: Intermediate English III (1).
Development of speaking, writing, listening, and reading proficiency in English at the novice high level. Culture of the English-speaking world.
Prerequisite: ENG 042b.
One lecture.

Eng045. English for Speakers of Other Languages: Beginning Reading and Writing (2).
Introduction to basic skills in reading and writing the English language.
Two lecture.

Eng060. Writing Fundamentals I (3).
Sentence and paragraph construction.
Prerequisite: Satisfactory score on the skills assessment.
Three lecture.

Eng061. Writing Fundamentals II (3).
Building writing skills, sentences, paragraphs, multi-paragraph writing, introductory research strategies.
Prerequisite: ENG 060 or satisfactory score on the skills assessment.
Three lecture.

Eng063. Paragraph Construction Module (1).
Composing basic expository paragraphs.
Prerequisite: Satisfactory score on the skills assessment.
Three lab.

Eng064. Writing Skill-Building Module (1).
Basics of essay writing, including selecting a topic, developing a thesis, organizing paragraphs and ideas, drafting, revising, and editing.
Prerequisite: Satisfactory score on the skills assessment.
One lecture.

Eng065. Advanced Writing Module (1).
Refining writing skills. Emphasis on writing to communicate clearly and correctly.
Prerequisite: Satisfactory score on the skills assessment.
Three lab.

Eng070. Reading Basics Module (1).
Instruction and practice in basic knowledge and skills needed for reading.
Prerequisite: Satisfactory score on the skills assessment.
One lecture.

Eng071. Reading Skill Building Module (1).
Instruction and practice in building reading skills. Focus on using basic skills to build vocabulary and increase reading rate and comprehension.
Prerequisite: Satisfactory score on the skills assessment.
One lecture.

Eng072. Advanced Reading Module (.5).
Instruction and practice in advanced reading skills, including making inferences, predicting outcomes, and reading critically.
Prerequisite: Satisfactory score on the skills assessment.
One-half lecture.

Eng078. Speeding Your Reading Module (.5).
Instruction and practice in increasing reading rate. Introduction of previewing, skimming, and scanning strategies. Emphasis on increasing reading rate while maintaining good comprehension. Practice in vocabulary and word recognition.
Prerequisite: Satisfactory score on the skills assessment.
One and one-half lab.

Eng082. Read Faster/Understand More I (3).
Basic reading skills with emphasis on building vocabulary, using word identification strategies, increasing reading rate, and improving comprehension of meaning.
Prerequisite: Satisfactory score on the reading skills assessment.
Three lecture.

Eng083. Read Faster/Understand More II (3).
Evaluation, extension, and mastery of intermediate reading skills with primary emphasis on developing vocabulary, reading efficiently, recognizing organizational patterns, identifying main ideas and details, and using critical reading strategies.
Prerequisite: ENG 082 or satisfactory score on the reading skills assessment.
Three lecture.

Eng100. Introductory Composition (3).
Introduction to basic writing and reading skills required for success in college.
Prerequisite: ENG 061 or satisfactory score on the skills assessment. Reading Proficiency.
Three lecture.
ENG101. College Composition I (3).
Composing expository and argumentative essays for specific audiences. Emphasis on the processes of writing, reading and critical thinking. Introduction to research and documentation.
Prerequisite: Satisfactory score on the English skills assessment or a grade of “C” or better in ENG 100. Reading Proficiency.
Three lecture.

ENG102. College Composition II (3).
Extensive critical reading and writing about texts, including literature. Emphasis on fluency in critical writing. Includes research skills and writing a critical, documented essay.
Prerequisite: ENG 101. Reading Proficiency.
Three lecture.

ENG103. College Composition I - Honors (3).
Composing expository and argumentative essays for specific audiences. Emphasis on the processes of writing, reading, and critical thinking. Advanced English 101 content and learning activities. Introduction to research and documentation.
Prerequisite: Placement by English skills assessment. Reading Proficiency.
Three lecture.

ENG104. College Composition II - Honors (3).
Extensive critical reading and writing about texts, including literature. Emphasis on fluency in critical writing. Expanded 102 content. Includes research skills and writing a critical, documented essay.
Prerequisite: ENG 103. Reading Proficiency.
Three lecture.

ENG118. Living Through Literature (2).
Literature and film as a means to self examination and personal growth. Emphasis on the use of literature and film to analyze personal experience and to develop values.
Prerequisite: Reading Proficiency.
Two lecture.

ENG136. Technical Writing (3).
Practical writing for the world of work, from business correspondence to technical reports.
Prerequisite: ENG 100 or COM 135 or a minimum score of 80 on the skills assessment. Reading Proficiency.
Three lecture.

ENG140. Academic Reading and Critical Thinking (3).
Academic reading and critical thinking strategies. Focus on improving reading comprehension, information literacy, and vocabulary.
Prerequisite: ENG 061 or ENG 100 or ENG 101 or ENG 136. Reading Proficiency.
Three lecture.

ENG200. College Composition III (3).
Extensive practice in academic writing. Emphasis on research methods and documentation conventions.
Prerequisite: ENG 102. Reading Proficiency.
Three lecture.

ENG211. Major Issues in British Literature I (3).
Exploration of major artistic, historical, cultural, philosophical, gender, and genre issues represented in selected works from Medieval, Renaissance, 17th and 18th century British literature.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG212. Major Issues in British Literature II (3).
Exploration of major artistic, historical, cultural, philosophical, gender, and genre issues represented in selected works of British literature from the Romantics to the present.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG216. Major Issues in Ancient Literature (3).
Investigation of major artistic, historical, cultural, and philosophical issues represented in selected works from Greek, Roman, and Hebrew literature.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG217. Major Issues in World Literature (3).
Investigation of major artistic, historical, ethnic, race, gender and philosophical issues in representative works of great literature.
Prerequisite: ENG 101 or ENG 103.
Three lecture.

ENG219. Major Issues in Modern Drama (3).
Investigation of important works of world drama from 1870 to the present. Approaches that include reading and production awareness. Critical analysis of cultural, social, and political issues that have shaped and been shaped by modern plays.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG236. Advanced Technical Writing (3).
Management-level problems in business and technical communications. Includes internal communications and public relations.
Prerequisite: ENG 136. Reading Proficiency.
Three lecture.
ENG237. Women in Literature (3).
Survey of women in literature from ancient Greece to present with emphasis on images of female protagonists as portrayed by male and female authors.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG238. Literature of the Southwest (3).
A study, through literature, of the land and peoples of the American Southwest, with emphasis on the influence and interaction of Native American, Spanish-Mexican and Anglo cultures.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG239. Images of the Southwest (3).
Studies of varying individual and cultural images of the Southwest. Emphasis on literature, but including other disciplines as appropriate. Each section of Images focuses on a special topic: a writer or group of writers, a theme, an issue, or a specific locale.
Prerequisite: Reading Proficiency.
Three lecture.

ENG240. American Literature to 1865 (3).
Exploration of major artistic, historical, philosophical, cultural and gender issues represented in selected works from the Colonial era to the Civil War.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG241. American Literature 1865 to Present (3).
Exploration of major artistic, historical, philosophical, cultural and gender issues represented in selected works from the Civil War to the present.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG242. Introduction to Shakespeare (3).
An examination, through close reading, critical analysis and research, of six to eight Shakespearean plays, selected sonnets and poems as well as an investigation into the cultural and historical settings from which his work emerged.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG260. Literature and Film (3).
Examination of storytelling in both literature and film. Study how prose is translated into visual images. Critical work on the language/methods of literature and film. Study of avant garde art and how it has influenced both literature and film. Brief history of literature and film.
Prerequisite: Reading Proficiency.
Three lecture.

ENG265. Studies in Film and Literature: (3).
Focus on a different special topic or cinematic genre. Emphasis on the history and evolution of the genre as well as the critical analysis of representative films. Examination of the relationships between films and their literary counterparts.
Prerequisite: Reading Proficiency.
Three lecture.

ENG296. Internship: English (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ENG298. Special Topics in Literature (3).
Investigation of major artistic, historical and philosophical issues in representative works of literature within topic or genre.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

ENG299. Independent Study English (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

ENVIRONMENTAL STUDIES (ENV)

Introduction to ecological systems, natural resources, and applications to environmental issues. Includes population, community, and ecosystem analysis. Emphasis on field, laboratory, and writing activities.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

Introduction to geologic studies and their application to environmental problems, causes and possible solutions. Includes geologic processes, geohazards, and geologic natural resources.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

ENV/CHM121. Environmental Chemistry (4).
Atomic structure, the Periodic Table, chemical bonding and reactions with emphasis on environmental applications: the atmosphere and air pollution, water and water pollution, pesticides, food additives, and nuclear wastes.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.
ENV296. Internship: Environmental Studies (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ENV299. Independent Study Environmental Studies (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

FIRE SCIENCE (FSC)

FSC100. Fire Service Introduction and Orientation (3).
Introduction to fire service, history and evaluation of fire department organization. Role of fire service in community. Includes departmental functions, management, techniques of firefighting, laws and ordinances and private fire protection. Essentials of firefighting including fire department operations, firefighting equipment and safety. Emphasis on the chemistry of fire, and techniques of firefighting.
Three lecture.

Introduction to the major categories of hazardous materials. Includes detection, identification, scene management, basic training, equipment planning, strategy and tactics in the management of hazardous materials incidents. Preparation for Department of Emergency Services certificate.
Two lecture.

FSC105. Firefighter Certification Academy (10).
Essentials of firefighting including fire department operations, firefighting equipment, and safety. Emphasis on the chemistry of fire, techniques of firefighting, and utilization of equipment in fire suppression. Preparation for State Fire Marshal Fire Fighter I and II certification.
Prerequisite: FSC 104.
Eight lecture. Six lab.

FSC115. Firefighter Recruit Academy (4).
Role and functions of the entry-level firefighter. Emphasis on practical aspects of fire suppression and operations.
Three lecture. Two lab.

Role and functions of fire prevention. Emphasis on practical rather than theoretical aspects of fire prevention.
Three lecture.

FSC136. Fire Apparatus and Hydraulics (4).
Principles of care, maintenance and operation of fire apparatus and pumps. Includes pump construction, pumping and pump accessories, power development and transmission, driving, trouble shooting and producing effective fire streams. Review of basic math hydraulic laws and formulas as applied to the fire service. Application of formulas and mental calculations to hydraulic problems, water supply variables and discharge requirements for pumphers.
Prerequisite: FSC 100 or FSC 105 or FSC 115 and any math course 100 level or higher.
Three lecture. Three lab.

FSC150. Uniform Fire Code (3).
Essentials and principles of the Uniform Fire Code as published by the International Fire Code Institute.
Prerequisite: FSC 100 or FSC 105 or FSC 115.
Three lecture.

FSC155. Wildland Fire Suppression (3).
Introduction to wildland fire prevention, including fire behavior, suppression methods, equipment considerations, safety, and incident command.
Three lecture.

Fundamentals of chemicals encountered in fire service. Chemistry of flammable materials, containers used to store and transport hazardous materials, and equipment and materials used to control emergencies involving hazardous materials. Includes tactics for hazardous materials emergencies, federal and state laws, and disposal of hazardous materials.
Prerequisite: FSC 104.
Four lecture.
**COURSE DESCRIPTIONS**

**FSC234. Fire Investigation (3).**
Methods of determining point of fire origin and fire cause and detection of incendiary fires. Includes simplified physics and chemistry necessary to analyze fire behavior.
*Prerequisite: FSC 100 or FSC 105 or FSC 115.*
*Three lecture.*

**FSC235. Fire Protection Systems (3).**
The required standard for water supply; protection systems; automatic sprinklers and special extinguishing systems, including analysis of various automatic signaling and detection systems.
*Prerequisite: FSC 100 or FSC 105 or FSC 115.*
*Three lecture.*

**FSC236. Firefighter Occupational Safety (3).**
Emphasis on awareness, training and research of equipment to develop a safety program meeting needs of the fire service to reduce injuries.
*Prerequisite: FSC 100 or FSC 105 or FSC 115.*
*Three lecture.*

**FSC238. Emergency Scene Management (3).**
Effective methods of managing emergency incidents including multiple alarm fires, high rise fires, brush fires, hazardous materials incidents and multi-casualty medical incidents. Includes effective interaction among numerous agencies to achieve control.
*Prerequisite: FSC 100 or FSC 105 or FSC 115.*
*Three lecture.*

**FSC239. Fire Department Company Officer (3).**
Supervisory methods for the fire service in fire safety, fire department organization and personnel supervision. Elements of management for the first-level Company officer Supervisor. Includes principles of organization, communication, leadership and emergency incident management.
*Prerequisite: FSC 100 or FSC 105 or FSC 115.*
*Three lecture.*

**FSC240. Management in the Fire Service (3).**
Advanced administrative methods for modern fire departments and public organizations. Community planning, data analysis, legal issues, budgeting, planning, professional development and labor relations.
*Prerequisite: FSC 239.*
*Three lecture.*

**FSC241. Firefighter Safety and Building Construction (3).**
Instruction in safety for firefighters on the fire ground. Effects of fire and heat on various types of building construction resulting in the loss of structure. Includes signs and symptoms of structural damage.
*Prerequisite: FSC 100 or FSC 105 or FSC 115.*
*Three lecture.*

**FSC242. Hazardous Materials Technician Tactics (3).**
Behavior and dangers of hazardous materials. Emphasis on commonly encountered chemicals and factors which impact a responder’s decisions at the scene. Field identification of unknown chemicals.
*Prerequisite: FSC 200.*
*Three lecture.*

**FSC243. Internship: Fire Science (3).**
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
*Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.*

**FSC299. Independent Study Fire Science (1-6).**
Supervised special project in this field of study. Approval of supervising Division Dean is required.

### FRENCH (FRE)

**FRE101. Beginning French I (4).**
Fundamentals of speaking, writing, listening, and reading of French. Introduction to the culture of the French-speaking world.
*Prerequisite: Reading Proficiency.*
*Four lecture.*

**FRE102. Beginning French II (4).**
Development of speaking, writing, listening, and reading proficiency in French at the novice mid/novice high level. Culture of the French-speaking world.
*Prerequisite: FRE 101. Reading Proficiency.*
*Four lecture.*

**FRE131. Conversational French I (3).**
Fundamentals of speaking and listening skills in French. Introduction to the culture of the French-speaking world.
*Prerequisite: Reading Proficiency.*
*Three lecture.*
FRE 132. Conversational French II (3).
Speaking and listening skills in French at the novice level. Culture of the French-speaking world.
Prerequisite: FRE 131. Reading Proficiency.
Three lecture.

Development of speaking, writing, listening, and reading proficiency in French at the novice high level. Culture of the French-speaking world.
Prerequisite: FRE 102 or score of 70% on the recommended FRE 201 skills assessment exam. Reading Proficiency.
Four lecture.

Development of speaking, writing, listening, and reading proficiency in French at the intermediate low level. Culture of the French-speaking world.
Prerequisite: FRE 201 or score of 70% on the recommended FRE 202 skills assessment exam. Reading Proficiency.
Four lecture.

FRE 296. Internship: French (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

FRE 299. Independent Study French (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

- GEOGRAPHY (GEO)

GEO 101. World Geography - West (3).
A geographical exploration of the people, places, and landscapes of North America, South America, Europe and Russia.
Prerequisite: Reading Proficiency.
Three lecture.

GEO 102. World Geography - East (3).
A geographical exploration of the people, places, and landscapes of Africa, Asia and Australia/Pacific Islands.
Prerequisite: Reading Proficiency.
Three lecture.

GEO 103. Introduction to Physical Geography (4).
A geographic introduction to the physical processes and land forms of the earth.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

GEO 105. Introduction to Cultural Geography (3).
An geographical exploration of the human landscape, examining aspects of culture such as language, religion, political organization and economics.
Prerequisite: Reading Proficiency.
Three lecture.

GEO 296. Internship: Geography (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

GEO 299. Independent Study Geography (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
**GEOLOGY (GLG)**

**GLG100. Concepts in Basic Geology (2).**
Fundamental principles of geology, including rocks and minerals, internal and external earth processes and plate tectonics.
*Prerequisite: Reading Proficiency.*
Two lecture.

**GLG101. Introduction to Geology I (4).**
Geologic principles emphasizing the structure and composition of the earth, internal and external earth processes and plate tectonics.
*Prerequisite: Reading Proficiency.*
Three lecture. Three lab.

**GLG102. Introduction to Geology II (4).**
Earth’s origin and history, including plate tectonics and the consequent movement and distribution of lands and seas through time; basic concepts of age-dating, stratigraphy, and the study of fossils. The geologic time scale and development of life on earth.
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
Three lecture. Three lab.

**GLG104. Cave Geology (2).**
Studies of ground water, karst, and cavern development. Field trip(s).
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG105. Geology of Canyon Lands (2).**
Geologic investigation of the slick rock canyon country of northern Arizona and southern Utah, with emphasis on stratigraphic relationships and depositional environments. Field trip.
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG106. Geology of Bryce and Zion (2).**
Stratigraphy and landforms of Bryce and Zion national parks. Study of Earth’s history starting where the Grand Canyon story ends. Field trip.
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG107. Geology of Death Valley (2).**
Land form and sediments characteristic of arid regions. Geologic history and plate tectonic setting of the Death Valley area. Field trip.
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG108. Volcanoes and Earthquakes of Northern Arizona (2).**
Volcanism and seismicity of northern Arizona. One or more field trips, including Sunset Crater and the San Francisco volcanic field.
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG109. Geology of the Prescott Region (2).**
Rocks, land forms, and geologic history of region around Prescott. Field trips.
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG/ENV110. Environmental Geology (4).**
Introduction to geologic studies and their application to environmental problems, causes and possible solutions. Includes geologic processes, geohazards, and geologic natural resources.
*Prerequisite: Reading Proficiency.*
Three lecture. Three lab.

**GLG112. Geology of Northern Arizona (2).**
Stratigraphy, volcanology, geomorphology, glacial, and structural geology applied to specific localities in northern Arizona. Field trip(s).
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG113. Geology of Grand Canyon (2).**
Geology, geography, stratigraphy, structure, history, and paleontology of the Canyon. Field trip(s).
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG114. Evolution of the Basin and Range (2).**
Geologic history of the Basin and Range physiographic province, emphasizing the relationship between current geology/geomorphology and plate tectonics. Field trip(s).
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.

**GLG115. Implications of Plate Tectonics (2).**
Plate tectonics-oriented approach to many facets of basic geology, including seafloor spreading, continental drift, volcanism and the development of characteristic geologic structures and ore deposits. Field trip(s).
*Prerequisite: GLG 100 or GLG 101. Reading Proficiency.*
One lecture. Three lab.
GLG116. Geology of the Verde Valley (2).
Rocks, landforms and geologic history of the region immediately surrounding and including the Verde Valley. Field trip(s).
Prerequisite: GLG 100 or GLG 101. Reading Proficiency.
One lecture. Three lab.

GLG130. Water in Arizona (2).
Surface and ground water resources of Arizona. History of development, use and misuse.
One lecture. Three lab.

GLG132. Topics in Regional Geology (2).
Basic geology, geography, and geologic formation of selected regions. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
One lecture. Three lab.

GLG296. Internship: Geology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

GLG299. Independent Study Geology (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

GER101. Beginning German I (4).
Fundamentals of speaking, writing, listening, and reading of German. Introduction to the culture of the German-speaking world.
Prerequisite: Reading Proficiency.
Three lecture.

GER102. Beginning German II (4).
Development of speaking, writing, listening, and reading proficiency in German at the novice mid/novice high level. Culture of the German-speaking world.
Prerequisite: GER 101 or score of 70% on the recommended GER 102 skills assessment exam. Reading Proficiency.
Four lecture.

GER131. Conversational German I (3).
Fundamentals of speaking and listening skills in German. Introduction to the culture of the German-speaking world.
Prerequisite: Reading Proficiency.
Three lecture.

GER201. Intermediate German I (4).
Development of speaking, writing, listening, and reading proficiency in German at the novice high level. Culture of the German-speaking world.
Prerequisite: GER 102 or score of 70% on the recommended GER 201 skills assessment exam. Reading Proficiency.
Four lecture.

GER296. Internship: German (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

GER299. Independent Student German (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

GERONTOLOGY (GRN)

GRN100. Introduction to Social Gerontology (3).
Gerontology is a multi-disciplinary field of study. Emphasis on psychology, sociology, economics, ethics, health care, legal issues related to working with older adults.
Prerequisite: Reading Proficiency.
Three lecture.

GRN101. Psychology of Aging (3).
Study of the adult aging process. Focus on developmental psychology. Explore physiological, sociological and psychological issues affecting cognition, personality, and mental health in later years.
Prerequisite: Reading Proficiency.
Three lecture.

GRN102. Health and Aging (3).
Designed for students working with older adults. Emphasis on normal changes of aging and preventative measures for maintaining optimal functioning. Focus on health problems, symptoms and treatments.
Prerequisite: Reading Proficiency.
Three lecture.
GRN103. Economics of Aging (3).
Examine the micro and macro influences on the economics of aging. Emphasis on public and private sources of income for older adults, relationships between retirement and work, and social and public policy.
Prerequisite: Reading Proficiency.
Three lecture.

GRN294. Practices in Gerontology (3).
Development of skills such as interviewing, narrative writing, the casework process, intake and assessment, intervention and termination. The values associated with practice in the helping fields will be explored.
Prerequisite: GRN 100 and GRN 102. Reading Proficiency.
Three lecture.

GRN295. Practicum in Gerontology (2).
Field experience to apply gerontological theory in a practice setting. Supervision by “on site” supervisor and instructor.
Prerequisite: GRN 294. Reading Proficiency.
Six lab.

■ GUNSMITHING (GST)

GST100. Apprentice Gunsmithing (10).
Basic gunsmithing skills including shop and general firearms safety, machine tool skills, stockmaking, metal refinishing and ballistics. Integration of computer applications.
Prerequisite: Admission to the Gunsmithing program.
Reading Proficiency.

GST150. Journeyman Gunsmithing (10).
Intermediate study of machine tool use and firearms applications. Milling, turning, precision grinding, advanced stockmaking procedures. Pistol and revolver design and function. Shotgun design, application and function.
Prerequisite: GST 100. Reading Proficiency.

GST190. Basic Engraving (4).
Practice in the art of engraving, primarily on steels used in the manufacturing of firearms. Operations and setups performed on a variety of projects and exercises.
Prerequisite: Reading Proficiency.
One lecture. Nine lab.

GST191. Advanced Engraving (4).
Design and layout on flat and cylindrical surfaces. Emphasis on balance, selecting tools and fixtures, manipulation of the engraver's vise, and all components familiar to the trade.
Prerequisite: GST 191. Reading Proficiency.
One lecture. Nine lab.

GST192. Gunstock Checkering (2).
Checkering wooden stocks using manual checkering tools. Emphasis on construction of templates, flat and curved surface layout, checkering cradle manipulation, repair of damaged checkering, and conversion of impressed checkered stocks.
Two lecture.

GST193. Gunstock Checkering (2).
Checkering wooden stocks using manual checkering tools. Emphasis on construction of templates, flat and curved surface layout, checkering cradle manipulation, repair of damaged checkering, and conversion of impressed checkered stocks.
Two lecture.

GST194. Gunsmithing Practicum (3).
Laboratory and extended shop experience for students to develop skills in project planning, drawing and craftsmanship.
Prerequisite: Concurrent enrollment in one or more of the 100-level gunsmithing courses. Reading Proficiency.
Eight lab.

GST200. Professional Gunsmithing (10).
Advanced gunsmithing techniques and applications of existing skills. Studies in precision barreling of rifles. Major pistol and revolver modifications. Study of break action shotguns, and machining of major firearm components.
Prerequisite: GST 150. Reading Proficiency.

GST210. Caustic Bluing (2).
Use of caustic bluing to finish metals in the firearms industry. Includes metal identification, preparation and application.
Two lecture.

GST215. Rust Bluing (2).
Use of rust bluing to finish metals in the firearms industry. Includes metal identification, preparation and application.
Two lecture.

GST220. Rifle Barreling (2).
Principles of fitting a barrel to a variety of bolt action rifles. Includes measurements, threading, chambering, crowning and contouring.
Two lecture.

GST225. Accurizing Bolt Action Rifles (3).
Introduction to the tools, techniques and components necessary for the best possible accuracy from your action, barrel, stock combination.
Three lecture.

GST250. Master Gunsmithing (10).
Mastery of Gunsmithing skills and metal skills. Capstone course to build the student portfolio. Construction of a business plan.
Prerequisite: GST 200. Reading Proficiency.
GST291. Professional Firearms Engraving (4).
Individualized instruction in advanced methods and techniques employed by professional firearms engravers. Student must provide pistol or rifle to be engraved.
Prerequisite: GST 192  Reading Proficiency.
One lecture. Nine lab.

GST295. Advanced Gunsmithing Practicum (3).
Advanced gunsmithing laboratory and practice for students concurrently enrolled in one or more of the 200-level gunsmithing courses. Emphasis on development of a project plan, application of tooling and craftsman skills, and use of quality control standards.
Prerequisite: Concurrent enrollment in a 200-level gunsmithing course.  Reading Proficiency.
Eight lab.

GST296. Internship: Gunsmithing (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

GST299. Independent Study Gunsmithing (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

### HEALTH INFORMATION MANAGEMENT

**HIM**

**HIM100. Introduction to Health Information Management (3)**
Introduction to the various functions performed in a health record department with emphasis on maintaining confidentiality of patient data. Content, structure, analyses, storage methods, and retrieving patient record and data elements within the health information system.
Prerequisite:  Reading Proficiency.
Three lecture.

**HIM140. Disease Process (4)**
Examination of the most common diseases of each body system, with normal anatomy and physiology compared to pathologic anatomy and physiologic malfunctioning due to disease process. Diagnostic methods, etiology, management, treatment, modalities, pharmacology and prognosis are discussed.
Prerequisite: BIO 160.  Reading Proficiency.
Four lecture.

**HIM141. Healthcare Delivery Systems (2)**
Overview of the healthcare delivery systems at the national, state and local levels. Current trends in healthcare delivery including health facilities, medical staff organization and functions, the changing roles of healthcare professional and patterns of financing healthcare.
Prerequisite: HIM 100.  Reading Proficiency.
Two lecture.

**HIM142. Healthcare Reimbursement Methodology (3)**
Major reimbursement systems used for professional and institutional reimbursement in various healthcare settings with an emphasis on health data collection and classification implications.
Prerequisite: AHS 170.  Reading Proficiency.
Three lecture.

**HIM170. ICD-9 Medical Coding (4).**
Principles of coding and classification using the ICD-9 (International Coding of Diseases) manual in the assignment of valid diagnostic and/or procedure codes. Includes: medical necessity, coding issues for specific body systems, and for general conditions.
Prerequisite: HIM 100; BIO 160; AHS 131 & AHS 132.  Reading Proficiency.
Four lecture.

**HIM171. CPT Medical Coding (3).**
Prerequisite: HIM 170.  Reading Proficiency.
Three lecture.
HIS172. Legal and Ethical Aspects of Health Information Management (2).
Legislation and regulations related to health information management with an emphasis on privacy and confidentiality, access, HIPAA directives, ethical guidelines and decision making.
Prerequisite: Reading Proficiency.
Two lecture.

HISTORY (HIS)

HIS131. United States History I (3).
Survey of social, economic, political, and cultural history from pre-Contact through the Civil War. Emphasis on conflicting interpretations of historical events and evidence. Examination of the continental approach to the development of the United States. Interpretation of the diversity of the American people and their various contributions to America’s shared past.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136.
Reading Proficiency.
Three lecture.

HIS132. United States History II (3).
Survey of social, economic, political and cultural history from 1865 through the 1980s. Explore diversity of the American people. Examine continued development of racism, social movements of reform, industrial America and the growth of labor and its concerns. Examine American imperialism and its impact on the world.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136.
Reading Proficiency.
Three lecture.

HIS135. History of Arizona (3).
Survey of Arizona history from Pre-Columbian times to the present: The Spanish, Mexican, and Anglo-American periods.
Prerequisite: Reading Proficiency.
Three lecture.

HIS201. Western Civilization I (3).
Exploration of the major developments in Western Civilization to 1688. Exploration of the social, intellectual, political, economical, religious, and cultural components that form the core of the modern western world.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136.
Reading Proficiency.
Three lecture.

HIS202. Western Civilization II (3).
Exploration of the formation of major developments in Western Civilization from 1650 to the present. Exploration of the social, intellectual, political, economical, religious, and cultural components that form the core of the modern western world.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136.
Reading Proficiency.
Three lecture.

HIS205. World History (3).
Exploration of major societies of the world from 1750 to the present. Examination of societies in Asia, Europe, African, the Americas, and Oceania. Includes forces of change in the world such as industrialization, nationalism, imperialism, decolonization, urbanization, technology, and political revolutions.
Prerequisite: ENG 101 or ENG 103; or COM 135 and ENG 136.
Reading Proficiency.
Three lecture.

HIS230. Islamic Civilization: Traditional and Modern Middle East (3).
Traditional and contemporary social, political, economic, and gender institutions of Islamic societies. Emphasis on problems associated with modernization, colonization, and imperialism.
Prerequisite: Reading Proficiency.
Three lecture.

HIS253. History of Women in the United States (3).
Roles and contributions of women in history of the United States, with emphasis on social and cultural aspects of the feminist movements in 19th and 20th centuries. How woman’s roles and the family have been affected by the modernization process.
Prerequisite: Reading Proficiency.
Three lecture.

HIS260. History of Native Americans in the United States (3).
Survey of social, economic, political, and cultural history of indigenous peoples of the continental United States from the fifteenth century to present. Emphasis on Native American actions and responses to contact with European-Americans. Growth and development of federal Indian policy.
Prerequisite: Reading Proficiency.
Three lecture.
HIS296. Internship: History (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

HIS299. Independent Study History (1-6). Supervised special project in this field of study. Approval of supervising Division Dean is required.

HUMANITIES (HUM)

HUM101. Society and Technology (3).
Analyzing and evaluating the relationships among technological innovation, business practices and ethical questions. Application of critical thinking skills to assess issues, identify influencing factors, and make informed decisions.
Prerequisite: Reading Proficiency.
Three lecture.

HUM205. Technology and Human Values (3).
Explores the relationship between technological development and individual and social values in the Western World from ancient times through the present. Includes technologies connected with a variety of areas, such as medicine, the military, architecture, food and agricultural production, and labor relations.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

HUM236. American Arts and Ideas II (3).
Cultural development of the United States from the Civil War to present, as reflected in its literature, arts, and history.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

HUM241. Humanities in the Western World I (3).
Humanities in the Western World I. Study of relationships among literature, history, philosophy, visual arts, and performing arts from classical Greece through the Middle Ages.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

HUM242. Humanities in the Western World II (3).
Study of relationships among literature, history, philosophy, visual arts, and performing arts from the Renaissance to late 20th century.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

HUM/THR243. Development of the Film (3).
Historical and critical survey of the development of film as an art form, as a system of representation and communication, and as an industry from its invention to the present day. How films work technically, aesthetically, and culturally to create and reinforce social norms.
Prerequisite: Reading Proficiency.
Three lecture.

HUM296. Internship: Humanities (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

HUM299. Independent Study Humanities (1-6). Supervised special project in this field of study. Approval of supervising Division Dean is required.
INDUSTRIAL PLANT TECHNICIAN (IPT)

IPT110. Industrial Shop Practices (3).
Basic skills needed to work in industrial repair and maintenance shops, emphasizing safe and efficient use of hand and power tools, fine measurement, tool maintenance and sharpening.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

IPT120. Industrial Pump Maintenance and Repair (3).
Types of pumps and their associated piping systems as applied in industrial settings.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

IPT130. Industrial Valve Maintenance and Repair (3).
Valves and their associated piping systems as applied in industrial settings.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

IPT140. Bulk Materials Handling (3).
Operation, maintenance, and repair of industrial materials handling machinery including conveyors, feed and discharge devices, screens, and crushers.
Prerequisite: Reading Proficiency.
One lecture. Four lab.

IPT160. Machinery Maintenance and Troubleshooting (3).
Systematic methods of identifying causes of mechanical failure and using predictive methods to prevent mechanical failure.
Prerequisite: IPT 140. Reading Proficiency.
One lecture. Four lab.

IPT260. Advanced Machinery Maintenance (3).
Advanced maintenance procedures of heavy industrial machinery.
Prerequisite: IPT 160. Reading Proficiency.
Two lecture. Three lab.

Theory and practice in history, concepts, safety and job planning in the machine shop.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

IPT295. Apprenticeship: Industrial Plant (3).
Supervised field experience. Repeatable for a total of twelve credit hours towards degree/certificate.

IPT296. Internship: Industrial Plant Technician (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

INTERIOR DESIGN (INT)

INT101. Introduction to Interior Design (3).
Introduction to the interior design profession. Includes the design process, space planning, color and lighting. Emphasis on design principles for residential interiors.
Prerequisite: Reading Proficiency.
Three lecture.

ITALIAN (ITA)

ITA101. Beginning Italian I (4).
Fundamentals of speaking, writing, listening, and reading of Italian. Introduction to the culture of the Italian-speaking world.
Prerequisite: Reading Proficiency.
Four lecture.
ITA102. Beginning Italian II (4).
Development of speaking, writing, listening, and reading proficiency in Italian at the novice mid/novice high level. Culture of the Italian-speaking world.
Prerequisite: ITA 101 or score of 70% on the recommended ITA 102 skills assessment exam. Reading Proficiency.
Four lecture.

ITA296. Internship: Italian (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

ITA299. Independent Study Italian (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

JRN296. Internship: Journalism (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

JRN299. Independent Study Journalism (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

JRN131. Mass Media in American Society (3).
Critical examination of mass media and its social, historical, economic and political impact on American society.
Prerequisite: Reading Proficiency.
Three lecture.

JRN150. Newswriting and Reporting (3).
Instruction and practice in reporting and news writing for the print media. Analysis of news writing—language, style, organization, and leads. Practice in editorial, feature, and interpretive writing. Study of legal and ethical aspects of the profession. Development of news gathering and interviewing skills.
Prerequisite: ENG 100 or skills assessment into ENG 101. Reading Proficiency.
Three lecture.

JRN250. Advanced Newswriting and Reporting (3).
Writing, organizational and research skills, especially as adapted to journalistic style. Emphasis on reading, rewriting and research, with focus on writing with accuracy, brevity and clarity.
Prerequisite: JRN 150. Reading Proficiency.
Three lecture.

JRN296. Internship: Journalism (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

JRN299. Independent Study Journalism (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

MANUFACTURING ENGINEERING TECHNOLOGY (MET)

MET100. Introduction to Manufacturing Technology (4).
Introduction to Manufacturing Technology including safe practices, tools and measurement devices and applied mathematics. Emphasis on problem solving, computer-aided design, blueprint reading, fabrication, assembly, and control systems.
Preparedness recommendations: Two years of high school math and general computer literacy.
Prerequisite: Reading Proficiency.
Two lecture. Six lab.

MET116. Rigging (1).
Basic rigging techniques, hitch configurations, safe loading practices, load inspection and American National Standards Institute (ANSI) approved hand signals. Use of slings and common rigging hardware.
Prerequisite: Reading Proficiency.
One lecture.
MET150. Surface Mine Safety Training (1).
U.S. Mine Safety and Health Administration requirements for new miner training for individuals, contractors, and mine employees. 
Prerequisite: Reading Proficiency.
One lecture.

MET160. Basic Machine Hydraulics and Pneumatics (2).
Operational theory and testing techniques related to hydraulic and pneumatic components and circuits on mobile diesel equipment. Includes fluid power principles and investigates the functional characteristic of hydraulic pumps, flow valves, pressure valves, directional valves, motors, cylinders and accumulators. Emphasis on the student’s ability to test, service, and repair diesel equipment hydraulic systems and system components.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

MET296. Internship: Manufacturing Engineering Technology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

MET299. Independent Study Industrial Technology/Manufacturing (1-6)
Supervised special projects in this field of study. Approval of supervising Division Dean is required.

MATHEMATICS (MAT)

MAT032. Math Made Easy (1).
Theory and practice in performing multiplication problems, in solving more difficult addition, subtraction, multiplication, and division problems without the use of a calculator, and in estimating the answer to an arithmetic problem of the type encountered in business and personal finance.
One lecture.

MAT082. Fundamentals of Mathematics (3).
Review of basic arithmetic skills, introduction to geometric shapes and formulae, ratio and proportion, percents, measurement, and signed numbers.
Three lecture.

MAT092. Beginning Algebra (3).
Review of real number operations, solving linear equations, working with formulae and dimensional analysis, solving linear inequalities, graphs of linear equations, systems of linear equations and inequalities, exponents, basic operations on polynomials, and an introduction to mathematics technology. A graphing calculator is required for this course (TI - 83/84 recommended).
Prerequisite: MAT 082, or one year of high school algebra completed within the last 4 years, or a satisfactory score on the mathematics skills assessment.
Three lecture.

MAT100. Technical Mathematics (3).
Review of arithmetic skills, proportions, percentages, exponents, algebraic equations of the first degree, basic geometry, and literal equations with applications designed for the student’s own field of study.
Prerequisite: MAT 082, or one year of high school algebra completed within the last 4 years, or a satisfactory score on the mathematics skills assessment.
Reading Proficiency.
Three lecture.

MAT122. Intermediate Algebra (3).
Simplifying polynomial, rational and radical expressions; solving quadratic, rational and radical equations; introducing functions and their representations; applying mathematics in real-world contexts; and using appropriate technology.
Prerequisite: MAT 092, or two years of high school algebra completed within the last 4 years, or a satisfactory score on the mathematics skills assessment.
Reading Proficiency.
Three lecture.

MAT142. College Mathematics (3).
Survey of mathematical topics and applications. Includes statistics, probability, exponential functions, finance, dimensional analysis and other selected discrete math topics.
Prerequisite: MAT 122, or two years of high school algebra and one year of geometry completed within the last 4 years, or an ACT Math score of at least 22, or an SAT Math score of at least 530, or a satisfactory score on the mathematics skills assessment.
Reading Proficiency.
Three lecture.

MAT152. College Algebra (3).
Modeling of applications using linear, quadratic, exponential and logarithmic functions. Introduction to solving systems of equations using matrices. Duplicate credit for MAT 152 and/or MAT 183 and MAT 187 will not be awarded.
Prerequisite: MAT 122, or two years of high school algebra and one year of geometry completed within the last 4 years, or an ACT Math score of at least 22, or an SAT Math score of at least 530, or a satisfactory score on the mathematics skills assessment.
Reading Proficiency.
Three lecture.
MAT156. Mathematics for Elementary Teachers I (3).
Mathematical principles and processes specifically for elementary teachers. Includes problem solving, set theory, properties and operations with number systems.
Prerequisite: MAT 142 or MAT 152 or satisfactory score on mathematics skills assessment. Reading Proficiency.
Three lecture.

MAT157. Mathematics for Elementary Teachers II (3).
Mathematical principles and processes specifically for elementary teachers. Includes geometry, measurement, statistics, and probability.
Prerequisite: MAT 142 or MAT 152 or satisfactory score on mathematics skills assessment. Reading Proficiency.
Three lecture.

MAT167. Elementary Statistics (3).
Statistical tools and techniques used in research and general applications. Description of sample data, probability and probability distributions, point and interval estimates of population parameters, hypothesis testing, and correlation and regression.
Prerequisite: MAT 142 or MAT 152 or satisfactory score on mathematics skills assessment. Reading Proficiency.
Three lecture.

MAT183. Trigonometry (2).
Trigonometric functions, radian measure, right and oblique triangle solutions, trigonometric identities and equations, and inverse trigonometric functions. Duplicate credit for MAT 152 and/or MAT 183 and MAT 187 will not be awarded.
Prerequisite: MAT 152 or satisfactory score on mathematics skills assessment. Reading Proficiency.
Two lecture.

MAT187. Precalculus (5).
Topics from college algebra and trigonometry essential to the study of calculus and analytic geometry. Includes linear, quadratic, polynomial, rational, exponential, circular, and trigonometric functions. Trigonometry, systems and equations and matrices. Duplicate credit for MAT 152 and/or MAT 183 and MAT 187 will not be awarded.
Prerequisite: MAT 122, or two years of high school algebra and one year of geometry completed within the last 4 years, or an ACT Math score of at least 22, or an SAT Math score of at least 530, or a satisfactory score on the mathematics skills assessment. Reading Proficiency.
Five lecture.

MAT212. Survey of Calculus (3).
Introduction to the theory, techniques and applications of the differential and integral calculus of elementary functions with emphasis on applications in business, life, and social sciences.
Prerequisite: MAT 152 or satisfactory score on mathematics skills assessment. Reading Proficiency.
Three lecture.

MAT220. Calculus and Analytic Geometry I (5).
Introduction to calculus of single variable functions. Includes limits, the fundamental principles of differentiation and integration, techniques for finding derivatives of algebraic and trigonometric functions and applications of derivatives.
Prerequisite: MAT 187 or MAT 152 and MAT 183 or equivalent or satisfactory score on mathematics skills assessment. Reading Proficiency.
Five lecture.

MAT230. Calculus and Analytic Geometry II (5).
Concepts, techniques and applications of integration, infinite series, and introduction to differential equations.
Prerequisite: MAT 220. Reading Proficiency.
Five lecture.

Multivariable calculus. Includes multiple integration, partial differentiation, optimization, vector calculus, line integrals, and parametric curves.
Prerequisite: MAT 230. Reading Proficiency.
Four lecture.

MAT262. Elementary Differential Equations (3).
Introduction to ordinary differential equations. Includes first order linear equations, higher order linear equations, applications of first and second order equations, Laplace transforms, and systems of linear differential equations.
Prerequisite: MAT 241. Reading Proficiency.
Three lecture.
MAT296. Internship: Math (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

MAT299. Independent Study Mathematics (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

MOTORCYCLE TECHNOLOGY (MTC)
MTC105. Introduction to Motorcycle Technology (3).
Basic theory and fundamentals of motorcycle maintenance and minor repair. Includes two- and four-stroke theory, brakes, frames, drivetrains, electrical, suspension, fuel systems, and wheels.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

MTC110. Motorcycle Brakes, Suspension, Wheels and Tires (3).
Theory and fundamentals of basic motorcycle brakes, suspension systems, wheels and tires.
Prerequisite: Reading Proficiency.
Two lecture. Two lab.

MTC140. Introduction to Motorcycle Electrical Systems (2).
Basic motorcycle electrical theory, system maintenance, testing and diagnostic methods for repairing ignition, charging and starting systems.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

Procedures and techniques of regular service intervals for the American motorcycle enthusiast, with emphasis on Harley Davidson and aftermarket brands. Includes diagnosis and service of motorcycles.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

MUSIC (MUS)
MUS100. Elements of Music (2).
Basic elements of music. Study of the staff, clefs, signatures, notes, rhythms, definitions, ear training, sight singing and dictation. Designed for those with little or no knowledge of music.
Prerequisite: Reading Proficiency.
Two lecture.

MUS101. Private Music I (1).
Individual, self-paced instruction in piano, organ, voice, guitar, band or orchestra instruments. Open to all students in the college. One 30 minute lesson each week; see current schedule of charges for fee information.
One lab.

MUS102. Private Music II (1).
Individual, self-paced instruction in piano, organ, voice, guitar, band or orchestra instruments. Open to all students in the college. One 30 minute lesson each week.
Prerequisite: MUS 101.
One lab.

MUS103. Piano Class I (1).
A skill-building piano lab with an emphasis on piano playing and music reading.
Prerequisite: Reading Proficiency.
Three lab.

MUS104. Piano Class II (1).
Skill-building piano lab for students with limited piano experience. Emphasis on piano playing, music reading, and music theory.
Prerequisite: MUS 103. Reading Proficiency.
Three lab.

MUS105. Voice Class I (1).
Fundamentals of singing. Includes breath support and articulation while singing and introductory-level music reading.
Prerequisite: Reading Proficiency.
Three lab.

MUS106. Voice Class II (1).
Intermediate voice class designed to advance individual singing skills by study and training in singing technique, musicianship, diction, performance and in repertoire.
Prerequisite: MUS 105. Reading Proficiency.
Three lab.
MUS107. Guitar Class I (1).
Beginning instruction on acoustic guitar. Chords and chord strumming, note reading, finger styles and basic music theory. Opportunities to explore classical, folk, and blues styles of playing. No guitars provided. 
Prerequisite: Reading Proficiency.
Two lab.

MUS108. Guitar Class II (1).
Emphasis on bar chords, note reading through the ninth position, double notes, and solos from classical, flamenco, or folk styles of playing.
Prerequisite: MUS 107. Reading Proficiency.
Two lab.

MUS109. Guitar Class III (1).
Emphasis on repertoire, ensemble, sight reading, and performance.
Prerequisite: MUS 108. Reading Proficiency.
Two lab.

MUS111. Symphonic Band (1).
Open to all students in the College. Attendance at all rehearsals and participation in all public performances is required. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS112. Jazz/Rock Ensemble (1).
Study and performance of a wide range of jazz, rock, and popular music. Audition required.
Three lab.

MUS113. Big Band (1).
Jazz instrumental group rehearsal and performance. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS115. Instrumental Ensemble (1).
Music reading skills, playing techniques, ensemble playing. Performance participation required. Audition required.
Three lab.

MUS116. Jazz Combo (1).
Jazz music reading skills, playing techniques, ensemble playing. Performance participation required. Audition required.
Three lab.

MUS117. Symphony Orchestra (1).
Symphony orchestra rehearsal and performance. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS129. Theory Preparation (2).
Review and the extensive drilling of the basic elements of music: reading, notation, rhythm, scales, intervals, triads, sight singing, and dictation. Preparation for enrollment in MUS 131.
Prerequisite: Reading Proficiency.
Two lecture.

MUS131. Basic Integrated Theory I (4).
Basic theory of music including part writing, ear training, sight singing, dictation and keyboard harmony. Review of musical notation, intervals, triads and scales. Part writing skills for root position, first and second inversion triads. Sight singing and dictation skills through scale passages including intervals of 3rd and 4ths and simple beat divisions. Required of music majors.
Prerequisite: MUS 129. Reading Proficiency.
Four lecture. One lab.

MUS132. Basic Integrated Theory II (4).
Correlating part writing, ear training, sight singing, dictation and keyboard harmony. Part writing skills in phrase structure and cadences, harmony progression, harmonization techniques and use of non-harmonic tones; sight singing and dictation skills through minor scale passages, intervals of 5ths through the octave and 16th note beat divisions. Required of music majors.
Prerequisite: MUS 131. Reading Proficiency.
Four lecture. One lab.

MUS151. Applied Music I (2).
Individual instruction in piano, organ, voice, guitar, band or orchestra instruments for music majors. One 60 minute private lesson each week.
One lab.

MUS152. Applied Music II (2).
Individual instruction in piano, organ, voice, guitar, band or orchestra instruments for music majors. One 60 minute private lesson each week.
Prerequisite: MUS 151.
One lab.

MUS190. Oratorio: Handel’s Messiah (1).
Rehearsal and performance of selected choral selections from Handel’s Messiah.
Three lab.
MUS198. Music Topics: (1).
Exploration of music techniques and expression.
One lecture.

MUS201. Private Music III (1).
Individual, self-paced instruction in piano, organ, guitar, voice, band or orchestra instruments. Open to all students in the college. One 30 minute lesson each week.
Prerequisite: MUS 102.
One lab.

MUS202. Private Music IV (1).
Individual, self-paced instruction in piano, organ, guitar, voice, band or orchestral instruments. Open to all students in the college. One 30 minute lesson each week.
Prerequisite: MUS 201.
One lab.

MUS203. Piano Class III (1).
Designed for students with some piano experience. Emphasis on advanced accompaniment skills.
Prerequisite: MUS 104. Reading Proficiency.
Three lab.

MUS204. Piano Class IV (1).
Designed for students with some piano experience. Emphasis on interpretation.
Prerequisite: MUS 203. Reading Proficiency.
Three lab.

MUS222. Chamber Singers (1).
Rehearsal and performance of selected choral literature. Membership by audition. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS223. Vocal Ensemble (1).
Rehearsal and performance of selected choral literature. No audition required. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS224. Master Chorale (1).
Rehearsal and performance of selected major choral literature. Membership by audition. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS225. Community Chorale (1).
Rehearsal and performance of selected choral literature. No audition required. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS226. Chamber Choir (1).
Rehearsal and performance of selected choral literature. Membership by audition. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS227. Women’s Chorale (1).
Rehearsal and performance of selected choral literature. Audition required. Repeatable for a total of 2 credit hours towards degree/certificate requirements.
Three lab.

MUS231. Advanced Integrated Theory I (4).
Advanced theory of music correlating concepts of part writing, sight singing, ear training, dictation and keyboard harmony. Part writing skills using 7th chords, secondary dominants and altered non-harmonic tones, modulation and borrowed chords; sight singing and dictation skills through altered intervals and syncopated rhythms; keyboard skills realizing a figured bass. Required of music majors.
Prerequisite: MUS 132. Reading Proficiency.
Four lecture. One lab.

MUS232. Advanced Integrated Theory II (4).
Correlating advanced concepts of part writing, sight singing, ear training, dictation and keyboard harmony. Part writing skills using augmented 6th chords, chromatic mediant and modulations to foreign keys; sight singing and dictation skills through two, three and four parts; keyboard skills realizing a figured bass. Required of music majors.
Prerequisite: MUS 231. Reading Proficiency.
Four lecture. One lab.

MUS240. Music Appreciation (3).
Explores the common elements of rhythm, melody, harmony, and form as they connect with the heritage of human understanding. Examines issues of universal human concern that are reflected in all styles of music from folk to classical.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

MUS245. Music of World Cultures (3).
Cultural and historical ethnic music contributions throughout the world. Social, cultural and spiritual factors affecting music. Emphasis on listening skills, style characteristics, properties of sound and elements of music on various instruments.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.
MUS251. Applied Music III (2).
Individual instruction in piano, organ, voice, guitar, band or orchestra instruments. For music majors. One 60 minute lesson each week.
Prerequisite: MUS 152.
One lab.

MUS252. Applied Music IV (2).
Individual instruction in piano, organ, voice, guitar, band or orchestra instruments. For music majors. One 60 minute lesson each week.
Prerequisite: MUS 251.
One lab.

MUS296. Internship: Music (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

MUS299. Independent Study Music (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

NURSING (NSG)
NSG114. Nursing Assistant (5).
Preparation for the role of a nursing assistant in a long term care facility. Basic nursing skills and emergency procedures, clients’ needs and rights, communication, and ethical/legal aspects of care. Includes classroom and clinical instruction.
Application required with the following documentation: Skin test or chest x-ray negative for TB or equivalent within 12 months; fingerprint clearance card and Health Care Provider CPR card. Must be at least 16 years old.
Prerequisite: Reading Proficiency.
Three lecture. Six lab.

NSG124. Intravenous Therapy and Medication Administration for LPNs (3).
Meets Arizona State Board of Nursing requirements for preparing a Licensed Practical Nurse to initiate, maintain, and discontinue intravenous therapy and administer selected medications by the IV route within the scope of LPN practice in Arizona. Includes legal aspects, complications of IV therapy, age-specific modifications, and nursing implications for administration of selected IV fluids and medications
Prerequisite: NSG 132, Active license as Licensed Practical Nurse or Registered Nurse. Reading Proficiency.
Three lecture.

NSG130. Basic Nutrition for Nurses (1).
Introduction to the basic concepts of nutrition. Includes a healthy balanced diet, factors that influence nutrition, and diet therapy for certain disease states.
Prerequisite: Reading Proficiency.
One lecture.

NSG131. Foundations in Nursing I (8).
Introduction to concepts of nursing roles, holistic approach to care, critical thinking and nursing process, pharmacology, nursing skill development, effective communication techniques, learning/teaching and legal, ethical, spiritual, and diversity/culture concepts. Physiological and psychological needs in health and illness including loss, grief and dying, and peri-operative care. Clinical experiences focus on holistic assessment and other selected skills in well defined practice settings.
Prerequisite: Admission to the Nursing Program. Reading Proficiency.
Five lecture. Nine lab.

NSG132. Concepts in Nursing II (9).
Prerequisite: NSG 131; BIO 202; and NTR 130 or NTR 135. Reading Proficiency.
Five lecture. Twelve lab.
COURSE DESCRIPTIONS

NSG133. Practical Nurse Completion Course (2).
Scope of practice issues for the Practical Nurse, including care of individuals and families experiencing selected psychosocial adaptation and acute health-illness problems. Includes some Practical Nurse level concepts of management and supervision.
Prerequisite: NSG 231 and NSG 233. Reading Proficiency.
Two lecture.

NSG210. Pharmacology and Nursing Practice (3).
Overview of pharmacological concepts and their relationship to nursing practice. Survey of selected drug classifications including drug actions, effects in maintaining or restoring homeostasis, side effects, adverse reactions, and application of critical thinking, including the nursing process, in the administration of medication and client teaching. Basic knowledge of chemistry, physiology and nursing recommended.
Prerequisite: NSG 131. Reading Proficiency.
Three lecture.

NSG231. Concepts in Nursing III (7).
Concepts of nursing care for clients with commonly occurring health care concerns with an emphasis on the developmental periods of infancy through adolescence. Advanced intravenous therapy. Uses nursing process format and integrates learning/teaching, psychosocial, diversity/cultural, spiritual, nutritional, pharmacological, legal, and ethical aspects. Clinical practicum includes management experience in well defined practice settings.
Prerequisite: NSG 132, ENG102, PSY245. Reading Proficiency.
Corequisite: NSG 233.
Three lecture. Twelve lab.

NSG232. Concepts in Nursing IV (5).
Prerequisite: NSG 231, NSG233, BIO205. Reading Proficiency.
Corequisite: NSG 233.
Two lecture. Nine lab.

NSG233. Perinatal and Women’s Health Nursing (2).
Concepts of nursing care for the preconception, perinatal and postpartum family and neonate. Includes sexually transmitted diseases and women’s health issues.
Prerequisite: NSG 132. Reading Proficiency.
Two lecture.

NSG234. Psychiatric/Mental Health Nursing (3).
Concepts of nursing care for clients throughout the life span with maladaptive psychosocial and physiological responses related to mental disorders. Uses nursing process format and integrates complex communication techniques, learning/teaching, psychosocial, diversity/cultural, spiritual, nutritional, pharmacological, legal and ethical aspects. Clinical practicum occurs in well-defined settings.
Prerequisite: NSG 231. Reading Proficiency.
Two lecture. Three lab.

Prerequisite: NSG 231. Reading Proficiency.
Two lecture.

NSG236. Clinical Refresher (2).
Clinical practicum including management experience in well-defined practice settings.
Prerequisite: NSG 231, NSG233, BIO205. Reading Proficiency.
Six lab.

NSG296. Internship: Nursing (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours toward degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

NSG299. Independent Study Nursing (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

NUTRITION (NTR)

NTR135. Human Nutrition (3).
Principles of human nutrition including nutrient sources and physiological needs throughout the life cycle. Emphasis on role of nutrition in health and disease.
Prerequisite: Reading Proficiency.
Three lecture.
NTR296. Internship: Human Nutrition (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

NTR299. Independent Study Human Nutrition (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

PARALEGAL (LAW)

LAW100. Introduction to Paralegal Studies (3).
Introduction to role of the paralegal in the legal system, including the federal and state court systems, ethics, regulation and professional responsibility, legal analysis, research and basic legal concepts. Includes professional development and job search strategies.
Prerequisite: Reading Proficiency.
Three lecture.

LAW101. Legal Ethics and Professional Responsibility (1).
State and national ethical codes and rules of professional responsibility, ethical dilemmas and methods for researching answers, professionalism, and the unauthorized practice of law.
Prerequisite: Reading Proficiency.
One lecture.

LAW104. Wills, Trusts and Probate (3).
Critical issues, roles, and legal requirements in estate administration and pleadings.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Three lecture.

LAW105. Legal Computer Applications (2).
Introduction to computer software and software applications used in a law office and the business community. Includes computer research tools, e-mail, application of general office management software to the legal environment, ethical considerations, and law office practice concepts.
Prerequisite: CSA 130 or CSA 140 and LAW 100 (may be taken concurrently). Reading Proficiency.
Two lecture.

LAW106. Advanced Legal Computer Applications (2).
Advanced application of computer software used in the law office and the business community. Includes time and billing, calendaring and docket control, case management, document management, litigation support, computer research tools, and ethical considerations.
Prerequisite: LAW 105. Reading Proficiency.
Two lecture.

LAW107. Law Office Management (3).
Processes and standards of law office management including record keeping, timekeeping, billing, calendaring, and docket control. Emphasis on the principles and practices of law office management for manual and automated systems.
Prerequisite: LAW100 (may be taken concurrently), CSA140 (may be taken concurrently). Reading Proficiency.
Three lecture.

LAW201. Criminal Law and Procedure (2).
Fundamentals of criminal law and examination of the criminal court system, criminal investigation and prosecution, rules of evidence, and trial preparation and procedures.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Two lecture.

LAW203. Family Law (3).
Legal aspects of domestic matters and family relationships. Emphasis on dissolution of marriage, community property, child custody, child support and support calculations, adoptions, guardianships, state involvement in family and parent-child relationships, and statutes relating to families and family relationships.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Three lecture.
COURSE DESCRIPTIONS

LAW206. Contracts (2).
Legal requirements of corporations, partnerships, LLCs, and sole proprietorships.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Two lecture.

LAW207. Introduction to Legal Nurse Practice and Ethics (3).
A survey of legal nurse practice and a study of the most important ethical issues facing the medical and legal professions as defined by organizations such as the American Bar Association, the American Medical Association, the American Nurses Association and the American Association of Legal Nurse Consultants. Application of ethical principles to case studies. Analysis of issues including informed consent, euthanasia, assisted suicide, and standards of care. An overview of the legal nurse profession, issues, marketing strategies, and the role of the legal nurse in the litigation process.
Prerequisite: Reading Proficiency.
Three lecture.

LAW208. Business Organizations (2).
General principles of the law of contracts, negotiable instruments, and sales.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Two lecture.

LAW209. Administrative Law (2).
Laws and procedures relating to powers and controls of agencies which administer governmental services. Agency purposes, procedures, enabling acts, and rights of private parties.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Two lecture.

Procedures for individual and business bankruptcy proceedings. Preparation of basic bankruptcy documents and review of creditor/debtor remedies under the bankruptcy laws.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Two lecture.

LAW215. Legal Research and Writing I (4).
Principles and techniques for conducting legal research. Emphasis on sources of law, utilization of primary and secondary sources, and case briefing. Extensive practice in writing research memoranda.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Four lecture.

LAW216. Legal Research and Writing II (4).
Application of research and writing skills in responding to complex legal issues and preparing complex legal documents.
Prerequisite: ENG 101 or ENG 103; LAW 215. Reading Proficiency.
Four lecture.

LAW220. Civil Tort Litigation I (3).
Principles and procedures of civil litigation. Jurisdiction and venue, parties to action, and pleadings. Introduction to drafting of documents required from inception of civil action through the pleading stage, up to trial.
Prerequisite: ENG 101 or ENG 103; CSA 130; LAW 100. Reading Proficiency.
Two lecture. Two lab.

LAW221. Civil Tort Litigation II (3).
Study of the civil litigation process. Includes trial preparation, trial, evidence, and appeal.
Prerequisite: ENG 101 or ENG 103; LAW 220. Reading Proficiency.
Two lecture. Two lab.

LAW295. Special Legal Topics (2).
Introduction to a special legal topic and the role of the paralegal in the critical issues and requirements of the legal specialty area. The legal topic will change each semester. Repeatable for a total of 4 credit hours towards degree/certificate requirements.
Prerequisite: ENG 101 or ENG 103; LAW 100. Reading Proficiency.
Two lecture.

LAW 296. Internship: Paralegal Studies (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; have completed specific degree requirements as required by the program; and have completed the internship application process.

LAW299. Independent Study Paralegal Studies (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

PHARMACY TECHNICIAN (PHT)

PHT130. Introduction to Pharmacy Technology (3).
Overview of pharmacy history, pharmacy law and ethics, and the role of the pharmacist and pharmacy technician. Includes interpersonal communication skills and customer service skills.
Prerequisite: HCE 100 and HCE 110. Reading Proficiency.
Three lecture.
PHT131. Pharmaceutical Calculations (1).
Fundamentals of mathematical calculation, measurement systems, mathematical conversions, calculating drug dosages, reconstitution of solutions, and interpretation of prescription or medication order.
Prerequisite: HCE 100 and MAT 100 or higher or satisfactory score on mathematics skills assessment. Reading Proficiency.
One lecture.

PHT132. Pharmacology I (3).
Explores relationship between anatomy and physiology, disease states, and drugs affecting the respiratory, integumentary, nervous, cardiovascular and renal systems.
Prerequisite: PHT 130 and PHT 131. Reading Proficiency.
Corequisite: PHT 134.
Three lecture.

PHT133. Pharmacology II (3).
Explores the relationship between anatomy and physiology, disease states, and drugs affecting the endocrine, gastrointestinal, reproductive and immune systems, and the eyes, ears, nose and throat.
Prerequisite: PHT 132 and PHT 134. Reading Proficiency.
Corequisite: PHT 135.
Three lecture.

PHT134. Pharmacy Practice I (3).
Technical procedures for preparing and dispensing drugs in hospital and retail settings. Includes drug packaging and labeling, controlled substance procedures, unit-dose dispensing, out-patient dispensing, hospital dispensing, non-sterile compounding aseptic techniques.
Prerequisite: PHT 130 and PHT 131. Reading Proficiency.
Corequisite: PHT 132.
Three lecture.

PHT135. Pharmacy Practice II (3).
Technical procedures for preparing and dispensing drugs in the hospital and retail setting. Includes: an introduction to intravenous admixture preparation, laminar flow hoods, total parenteral nutrition, chemotherapy and incompatibilities, inventory control, materials management and quality control, third party payments, and pharmacy computer systems.
Prerequisite: PHT 132 and PHT 134. Reading Proficiency.
Corequisite: PHT 133.
Three lecture.

PHT296. Internship: Pharmacy Technician (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

PHILOSOPHY (PHI)

PHI101. Introduction to Philosophy (3).
Introduction to major philosophical concerns in the history of Western thought, including ethics, social philosophy, logic, epistemology, and philosophy of religion.
Prerequisite: Reading Proficiency.
Three lecture.

PHI103. Introduction to Logic (3).
Examination of connotative and denotative meaning and of the nature, structure and classification of arguments. Exercises in deductive techniques. Knowledge of informal and formal fallacies, validity, deductive and inductive inferences, syllogisms, scientific methodology (reasoning in the physical and social sciences).
Prerequisite: ENG 101 or ENG 103. Reading Proficiency.
Three lecture.

PHI110. Introduction to Critical Thinking (3).
Fundamentals of critical thinking, including logic, argument, biases, and assumptions. Application of critical thinking strategies to contemporary issues and practical problem solving.
Prerequisite: Reading Proficiency.
Three lecture.

PHI111. Introduction to Moral and Social Philosophy (3).
Key concepts and problems in ethics and social/political philosophy. Historic and contemporary readings with application to modern concerns.
Prerequisite: Reading Proficiency.
Three lecture.

PHI122. Science, Religion, and Philosophy (3).
Exploration of science, religion, and philosophy through historic and contemporary times. Examination of the goals and methods of these disciplines with special emphasis on their interactions and mutual influences. Accent on the Western traditions, with references to others as appropriate.
Prerequisite: Reading Proficiency.
Three lecture.
PHI201. Comparative Religions (3).
The world’s religions from East and West, both old and new. Focus on differing religious/philosophical conceptual frameworks. Nonliterate and primal religions, Hinduism, Buddhism, Confucianism, Taoism, Japanese religions, Judaism, Christianity, Islam, Baha’i and more recent religions.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

PHI202. Introduction to Mythology (3).
Examination of religious/philosophical questions through European and Non-Western mythologies. Issues include: creation of the world, cosmology, fertility/sexuality, human nature, the problem of evil, death, nature of gods/goddesses/God, and the natural world.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

PHI204. Ethical Issues in Health Care (3).
Study of selected moral theories and principles with emphasis on application to ethical issues in health care. Integrates values exploration and moral reasoning and decision making.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

PHI210. Environmental Ethics and Philosophy (3).
Examination of key thinkers, issues, and various philosophic perspectives about the appropriate relationship of humans to the natural environment through Western history and modern times. Introduction to theoretical and practical dimensions of ecophilosophy.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

PHI245. Introduction to Eastern Philosophy (3).
Examination of fundamental theories of Indian, Chinese, and Japanese metaphysics, epistemology, ethics, and aesthetics.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

PHI273. Introduction to Jewish Studies (3).
Dimensions and concerns of Jewish civilization historically and in contemporary times. Continuities and discontinuities, secular and religious expressions of Jewish culture, concepts, and ideals; sense of human place, purpose, communal and personal life; influence of Jewish thought on other religious and secular cultures; modern concepts and challenges.
Prerequisite: ENG 101 or ENG 103. Reading Proficiency. Three lecture.

PHI296. Internship: Philosophy (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

PHI299. Independent Study Philosophy (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

PHYSICAL EDUCATION (PHE)

PHE100A. Aikido (1).
Two lab.

PHE100B. Karate (1).
Fundamentals of karate. Emphasis on self defense techniques and fitness and wellness. Includes individualized progression through degrees/belts.
Two lab.

PHE100C. Tae Kwon Do (1).
Fundamental techniques and philosophy of Korean martial art.
Two lab.

PHE100D. T’ai Chi Chih (1).
Theory and practice of Tai Chi Chih. Series of slowly performed movements suitable for all ages and fitness levels.
Two lab.

PHE100E. T’ai Chi Ch’uan (1).
Two lab.

PHE100F. Hatha Yoga (1).
Introduction to Yoga and Meditation. Explore Hatha Yoga, practice breathing exercises, yoga poses and relaxation techniques.
Two lab.
COURSE DESCRIPTIONS

PHE100G. Intermediate Yoga (1).
Hatha Yoga to increase strength, flexibility, focusing ability, balance and relaxation.
Two lab.

PHE100J. Hapkido (1).
Modern Korean martial art incorporating many styles of martial art techniques. Emphasis on kicks, strikes, joint locks, throws, ground fighting, and weapon techniques.
Two lab.

PHE 102. Back to Basics (1).
Fitness training and health-related principles with emphasis on cardio endurance and strength training.
Two lab.

PHE105. Fitness Workshop (.5).
Fitness Workshop. Application of fitness principles, adherence strategies and safety principles.
One lab.

PHE110A. Stretch and Flex (1).
Flexibility and stretching exercises to improve posture, increase joint flexibility, and reduce stress reactions.
Two lab.

PHE110C. Pilates, Mat Flex and Ball (1).
Group exercise activities using stability and medicine balls, flat bands, body bars, mat and floor exercises and Pilates movements. Emphasis on improving core stabilization, strengthening major muscle groups and increasing flexibility.
Two lab.

PHE110D. Aerobic Kickboxing (1).
High intensity cardio and muscular strengthening workout. Combination of martial art style Tae Kwon Do with kicking and boxing moves.
Two lab.

PHE110E. Cardio Mix (1).
Aerobic program for all fitness components. Emphasis on cross training activities.
Two lab.

PHE110G. Soft Aerobics: Low Impact (1).
Aerobic conditioning program using impact reduction exercises and activities. Emphasis on low intensity cardiorespiratory training, muscular strength and endurance development, flexibility training, balance and functional training.
Two lab.

PHE110H. Step Aerobics (1).
Aerobic conditioning using steps. Resistance training for upper-body toning.
Two lab.

PHE110I. Total Body Conditioning (1).
Ultimate training program using resistive and balance tools: bars, balls, and bosu balls. Emphasis on core stabilization, muscle sculpting, and flexibility.
Two lab.

PHE110K. Indoor Cycling (1).
High intensity cardio training using interval and cross training principles. Emphasis on increasing aerobic capacity and muscular endurance.
Two lab.

PHE110L. Neuromuscular Integrative Action (NIA) (1).
Cardiovascular workout blending dynamic power, creative expression, and inner awareness. Emphasis on integrative body movements and play.
Two lab.

PHE110Q. Zumba (1).
High energy Latin dance inspired exercise utilizing principles of aerobic, interval and resistance training. No dance experience required.
Two lab.

PHE120A. Aqua Fit (1).
Water training program, works all fitness components: Cardiovascular endurance, muscular strength and endurance, and flexibility. All fitness levels, swimmers, and non-swimmers.
Two lab.

PHE120B. Water Cross Training (1).
Using water to intensify and diversify fitness training. Variable training methods developing strength and aerobic capacity. Use of water training equipment enhancing range of motion, muscular endurance/strength and aerobic capacity. For all fitness levels, swimmer, and non-swimmers.
Two lab.

PHE120C. Swimming Fitness (1).
Swim activities using fitness principles. Emphasis on improving fitness level.
Two lab.

PHE120D. Beginning Swimming (1).
Fundamentals of swimming. Emphasis on fundamental stroke techniques, personal life saving skills and water as a conditioning medium. Designed for non-swimmers.
Two lab.
PHE120F. Warm Water Exercise (1).
Water exercise for students with conditions requiring warm water.
Two lab.

PHE130A. Fitness, Machine and Free Weight Training (1).
Introduction to cardiorespiratory fitness, strength training exercises, and flexibility training.
Two lab.

PHE130C. Senior Fitness/Weight Training (1).
Senior fitness with emphasis on principles and techniques of cardiorespiratory, muscular strength and endurance and flexibility training.
Two lab.

PHE130E. Sport Enhancement and Conditioning (2).
Training program targeting athletic performance. Designed for athletes.
One lecture. Two lab.

PHE130H. Weight Management (2).
Weight control through exercise and nutrition. Apply principles of nutrition, intuitive eating, cardiorespiratory training and muscular strength/endurance training.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

PHE130J. Weight Loss, Nutrition and Health (2).
Weight loss and health benefits through lifestyle improvements in nutrition and exercise. Emphasis on whole grains, legumes, fruits and vegetables versus the rich American diet. Includes techniques in food preparation and cooking.
Prerequisite: Reading Proficiency.
Two lecture.

PHE140A. Beginning Volleyball (1).
Fundamentals of volleyball. Emphasis on rules, basic offensive and defensive techniques, and tactics.
Two lab.

PHE140B. Basketball (1).
Fundamentals of basketball. Emphasis on basic rules, offensive and defensive techniques and tactics and sportsmanship.
Two lab.

PHE140C. Softball (1).
Fundamentals of softball. Emphasis on rules, offensive and defensive techniques and tactics.
Two lab.

PHE140D. Bowling (1).
Fundamentals of bowling. Emphasis on techniques, scoring, etiquette and handicapping.
Two lab.

PHE140E. Badminton (1).
Fundamentals of badminton. Emphasis on footwork, stroke production, rules and tactics.
Two lab.

PHE140F. Golf (1).
Fundamentals of golf. Emphasis on pre-swing routine, stroke production and course management.
Two lab.

PHE140G. Tennis (1).
Fundamentals of tennis. Emphasis on basic stroke production, rules and tactics.
Two lab.

PHE140H. Racquetball (1).
Two lab.

PHE140K. Squash (The Game) (1).
Fundamentals of squash. Emphasis on skills, tactics, shots, rules, history and exercise.
Two lab.

PHE140L. Cardio Tennis (1).
Active cardio program using tennis as a medium.
Two lab.

PHE140M. Beginning Jogging (1).
Jogging styles and exercise programs. Includes equipment selection and injury prevention.
Two lab.

PHE150. Prevention of Athletic Injuries and Emergency Care (3).
Introduction to prevention of athletic injuries and conditions. Includes use of protective equipment, taping, nutrition, exercise, First Aid principles, legal implications, research and practical considerations.
Prerequisite: Reading Proficiency.
Three lecture.
PHE151. Introduction to Exercise Science and Physical Education (3).
The disciplines and professions associated with exercise science and physical education including an overview of historical philosophical foundations.
Prerequisite: Reading Proficiency.
Three lecture.

PHE152. Personal Health and Wellness (3).
Issues of personal health emphasizing current scientific information essential to wellness promotion and maintenance.
Prerequisite: Reading Proficiency.
Three lecture.

PHE153. First Aid/CPR/AED and Safety (2).
Instruction, theory and practice in first aid/CPR/AED and safety. Upon successful completion, students receive certification from the American Heart Association.
Prerequisite: Reading Proficiency.
Two lecture.

PHE153A. American Red Cross CPR (1).
Basic Cardiopulmonary Resuscitation CPR. Emphasis on skills for adult, child and infant CPR including Automatic External Defibrillator. Preparation for the American Red Cross Certification requirements.
Prerequisite: Reading Proficiency.
One lecture.

PHE154. Theory of Coaching (3).
Theory and techniques of coaching competitive sports.
Prerequisite: Reading Proficiency.
Three lecture.

PHE155. Sport Safety Training (2).
Principles of First Aid and Safety specific to injuries and conditions resulting from sports participation. Emphasis on recognition and basic care of common sport injuries.
Prerequisite: Reading Proficiency.
Two lecture.

PHE200F. The Path of Yoga (3).
Introduction to Yoga philosophy, history, Ayurveda, and meditation. Asana practice to complement mind-body emphasis.
Two lecture. Two lab.

PHE200G. Ayurveda and Yoga (2).
Introduction to Ayurveda (Science of Life) and relationship to Hatha Yoga practice.
One lecture. Two lab.

PHE220E. Competitive Swimming (1).
Fundamentals of competitive swimming. Emphasis on training for competition.
Two lab.

PHE228. Lifeguard Training (2).
Lifeguarding techniques. Meets American Red Cross standards.
Prerequisite: Reading Proficiency.
Two lecture.

PHE229. Water Safety Instructor (2).
Training to teach courses in the American Red Cross Swimming and Water Safety Program.
Prerequisite: Minimum of 16 years old and pass swim test.
Reading Proficiency.
One lecture. Two lab.

PHE230B. Advanced Weight Training (1).
Resistive exercises for specific muscles and muscle groups. Emphasis on program design, implementation and evaluation.
Prerequisite: PHE 130A.
Two lab.

PHE240A. Advanced Volleyball (1).
Advanced and fundamentals of volleyball. Emphasis on advanced tactics and skills.
Prerequisite: PHE 140.
Two lab.

PHE251B. Integrated and Applied Exercise Sciences (2).
Study of Exercise Sciences and related topics as they impact exercise. Emphasis on anatomy, physiology, kinesiology, and nutrition. Designed for students preparing to become personal trainers, fitness instructors, coaches or Physical Education majors.
Prerequisite: Reading Proficiency.
Two lecture.

PHE296. Internship: Physical Education (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.
PHE299. Independent Study Physical Education (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

**PHYSICS (PHY)**

PHY100. Introduction to Astronomy (4).
Cycles of the sky, astronomical observations, history of astronomy, gravitation, light, optical instruments, stellar evolution and classification, galaxies, cosmological theories, survey of the solar system, and life in the universe.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

PHY140. The Physical World (4).
Prerequisite: A grade of "C" or above in high school algebra or MAT 092 or MAT 100. Reading Proficiency.
Three lecture. Three lab.

PHY141. General Physics I (4).
Topics include: time and motion studies, forces on stationary and moving objects, waves and sound, heat and energy. Designed for architecture, forestry, pre-med, pre-vet, pharmacy and education students.
Prerequisite: MAT 187 (Preferred) or MAT 152 and MAT 183. Reading Proficiency.
Three lecture. Three lab.

PHY142. General Physics II (4).
Electricity, magnetism, light, physical optics, geometric optics, and atomic structure. Designed for pre-med, pre-vet, and pharmacy students.
Prerequisite: PHY 141. Reading Proficiency.
Three lecture. Three lab.

PHY150. Physics for Scientists and Engineers I (4).
Principles of mechanics. Kinematics, dynamics, systems of particles, equilibrium, fluids, gravitation, and oscillations, with calculus applications. For engineering and physics majors.
Prerequisite: MAT 220. One year of high school physics or PHY 141 /142 is strongly recommended. Reading Proficiency.
Three lecture. Three lab.

PHY151. Physics for Scientists and Engineers II (4).
Waves and sound, electromagnetism, circuits, electromagnetic waves, and Maxwell's equations, with calculus applications. For engineering and physics majors.
Prerequisite: MAT 230 and PHY 150. Reading Proficiency.
Three lecture. Three lab.

PHY250. Physics for Scientists and Engineers III (4).
Thermodynamics, physical and geometrical optics, relativity, atomic and nuclear structure, basic concepts of quantum mechanics, with calculus applications. For engineers and physics majors.
Prerequisite: MAT 241 and PHY 151. Reading Proficiency.
Three lecture. Three lab.

PHY296. Internship: Physics (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

PHY299. Independent Study Physics (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

**POLICE CERTIFICATION PROGRAM (PCP)**

PCP255. Intensive Police Certification (36).
Study of criminal investigations, police community relations, traffic accident investigation, introduction to administration of justice, law, legal principles, patrol procedures, vehicle operations, report and technical writing, physical conditioning, defense tactics, impact weapons, firearm proficiency and safety, first aid, fundamentals of hazardous materials, stress management and use of force. This course contains all of the Arizona Peace Officers Standards and Training curriculum required for peace officer certification.
Prerequisite: Student must be appointed by an Arizona law enforcement agency.
Thirty-Two lecture. Twelve lab.

PCP296. Internship: Police Certification Program (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.
PCP299. Independent Study Police Certification Program (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

POLITICAL SCIENCE (POS)

Prerequisite: Reading Proficiency.
Three lecture.

POS221. Arizona Constitution and Government (1).
Survey of Arizona Government and Constitution designed to meet the requirements for teaching certification.
Prerequisite: Reading Proficiency.
One lecture.

Examine the United States Constitution and government. Designed to meet requirements for teacher certification.
Prerequisite: Reading Proficiency.
Two lecture.

POS240. Indian Law and Government (3).
Traces the evolution of traditional and modern Indian systems of law and government from colonial times to present. Modern tribal government and major problems faced by Indian governments today are studied.
Prerequisite: Reading Proficiency.
Three lecture.

POS296. Internship: Political Science (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

POS299. Independent Study Political Science (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

PSYCHOLOGY (PSY)

PSY101. Introductory Psychology (3).
Introduction to psychology through such topics as the scientific method in psychology, survey of different fields in psychology, heredity and environment, intelligence, emotions, motivation, nervous system, and learning processes.
Prerequisite: Reading Proficiency.
Three lecture.

PSY132. Cross Cultural Psychology (3).
Impact of culture on the study of psychology. The role of culture in perceptual and cognition processes, human development, and social behavior. Includes issues such as intergroup relations, ethnocentrism, gender, personality, emotion, language, and communication.
Prerequisite: Reading Proficiency.
Three lecture.

PSY156. End of Life Issues and Options (1).
Examination of issues about death and dying in relation to community resources and the current health care system. Considers legal, ethical, cultural and spiritual issues; communication; symptom and pain management; grief and bereavement.
Prerequisite: Reading Proficiency.
One lecture.

PSY172. Introduction to Parenting (3).
Study of development and maintenance of healthy parent-child relationships. Emphasis on fostering a child’s emotional maturity through positive development in areas of awareness, relating, competence and integrity.
Prerequisite: Reading Proficiency.
Three lecture.

PSY175. Counseling Skills (3).
Principles and practices which underlie the effective and ethical use of the helping relationship in human services.
Prerequisite: Reading Proficiency.
Three lecture.

PSY210. Brain and Behavior (3).
Investigation of the human brain and how it affects our behavior. Includes optical illusions, hallucinations, phantom limb, biological drives and the ability to remember and forget. Observable behavior in mental disorders such as schizophrenia and anxiety, the chemical processes in the brain, and the effects of illegal and prescription drugs on the human body and its various systems.
Prerequisite: PSY 101. Reading Proficiency.
Three lecture.
PSY220. Social Service Case Management (3).
Fundamental principles and mechanics of case management. Includes various models, processes and functions, and historical context. Emphasis on development of interpersonal skills.
Prerequisite: PSY101 or PSY175. Reading Proficiency.
Three lecture.

PSY232. Psychology of Personal Growth (3).
Principles and practices of mental health and personal adjustment as they relate to personality development, growth and deterioration.
Prerequisite: Reading Proficiency.
Three lecture.

PSY/ECE234. Child Growth and Development (3).
Development of the child. Includes genetic, prenatal, birth and postnatal influences. Emphasis on physical, cognitive and social-emotional development and theories. Includes positive communication with children.
Prerequisite: Reading Proficiency.
Three lecture.

PSY236. Psychology of Women (3).
A developmental and topical approach to the impact of gender on women’s lives, personalities, abilities, relationships, sexuality, physical and mental health.
Prerequisite: Reading Proficiency.
Three lecture.

PSY240. Personality Development (3).
Study of normal personality development with emphasis on the analysis of classic and contemporary theories of personality structure and dynamics.
Prerequisite: PSY 101 or PSY 232. Reading Proficiency.
Three lecture.

PSY241. Substance Abuse (3).
Study of the physical, social, and psychological effects of substance abuse. The effects of substance abuse on the criminal justice system.
Prerequisite: Reading Proficiency.
Three lecture.

PSY245. Human Growth and Development (3).
Study of physical, intellectual, moral, emotional, personality, and social development of the human being, beginning with conception and continuing through childhood, adolescence, adulthood, old age, and dying. Emphasis on quantitative and qualitative ways people change throughout the life span and factors which contribute to human diversity as well as to individual uniqueness. Research methods appropriate to the study of human development are also considered.
Prerequisite: Reading Proficiency.
Three lecture.

PSY250. Social Psychology (3).
The study of how our thoughts, feelings, and actions are affected by our social environment. Emphasis on prejudice, conformity, altruism, interpersonal interaction, and the influence of the media.
Prerequisite: PSY 101. Reading Proficiency.
Three lecture.

PSY262. Crisis and Trauma Intervention (3).
Impact of critical and traumatic events on daily and long-term psychological and physical functioning. Emphasis on intervention strategies.
Prerequisite: PSY101 or PSY175. Reading Proficiency.
Three lecture.

PSY266. Abnormal Psychology (3).
Behavioral disorders including current terminology, theories, and research. Emphasis on the characteristics, causes and treatment of abnormal behavior.
Prerequisite: PSY 101. Reading Proficiency.
Three lecture.

PSY270. Dream Interpretation (3).
Introduction to use of dream interpretation as a means to explore internal psychological processes. Examination of theories and the application of each theory as a therapeutic tool. Comprehension of the dream as a personal message that can be interpreted through understanding and application of dream symbolism.
Prerequisite: Reading Proficiency.
Three lecture.

PSY275. Group Skills and Processes (3)
Application of concepts and techniques appropriate to the stages of a group's development. Emphasis on a group process in action.
Prerequisite: PSY175. Reading Proficiency.
Three lecture.

PSY/SOC277. Human Sexuality (3).
Examination of the physical, social and cultural contributions to human sexuality. Examination of the facts and myths, current literature, and changing mores regarding human sexuality.
Prerequisite: PSY 101 or SOC 101. Reading Proficiency.
Three lecture.

PSY/SOC290. Research Methods (4).
Planning, execution, analysis, and written reporting of psychological research. Surveys the literature, procedures, and instruments in representative areas of psychological research.
Prerequisite: PSY 101. Reading Proficiency.
Four lecture.
PSY296. Internship: Psychology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

PSY299. Independent Study Psychology (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

REAL ESTATE (RES)
RES100. Rental Property Management (2).
Property management policies, leases, rental agreements, evictions, court proceedings, landlord/tenant laws, city/state taxes, security/utility deposits and furnished/unfurnished premises.
Prerequisite: Reading Proficiency.
Two lecture.

RES101. Real Estate Assistant (1).
Licensed and unlicensed requirements and the knowledge necessary in the selection and functions of a qualified assistant.
Prerequisite: Reading Proficiency.
One lecture.

RES103. Principles of Real Estate (6).
Introduction to real estate principles and the real estate industry. Includes Arizona Real Estate Code, government restrictions, contracts, financing, environmental considerations, property management, agency law, and ethics. The Arizona Department of Real Estate accepts this course as satisfying the 90 hour pre-licensing educational requirement.
Prerequisite: Reading Proficiency.
Six lecture.

RES110. E-Real Estate (1).
Use of up-to-date technology in the real estate office. Emphasis on use of Multiple Listing Service (MLS) software, E-mail, and web-based resources.
Prerequisite: Must have Real Estate License. Reading Proficiency.
One lecture.

RES131. Contract Writing (.5).
Line by line review of the Arizona Department of Real Estate approved residential real estate purchase contract. Focus on contract law, accounting, contingency time frames, requirements for a valid contract, and contract management.
Prerequisite: RES 103. Reading Proficiency.
One-half lecture.

RES150. Basic Real Estate Appraising (3).
Theory and practical application of the appraisal process. Forces and factors affecting value, the concept of highest and best use, how to write short form and narrative reports, and how to support and defend appraisal reports are included. Prepares students for the NAIFA Member Examination.
Prerequisite: Reading Proficiency.
Three lecture.

The Uniform Standards of Professional Appraisal Practice as defined by the Appraisal Foundation and mandated by the State of Arizona for certified professional appraisers. Prepares students for the NAIFA Examination.
Prerequisite: RES 150. Reading Proficiency.
Three lecture.

RES201. Real Estate Law (3).
Overview of legal requirements and the documents and forms relating to real property transactions. Real estate purchase and sale, various methods of holding title to real property, mortgages, lease agreements, liens and declarations of homestead.
Prerequisite: Reading Proficiency.
Three lecture.
RES296. Internship: Real Estate (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

RES299. Independent Study Real Estate (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

RECREATION MANAGEMENT (REC)

REC102. Introduction to Wildlife Tracking (1).
Introduction to wildlife tracking in various geographic zones. Emphasis on track identification.
Two lab.

REC110. Backcountry Skills (2).
Introduction to outdoor skills related to camping and hiking. Four lab.

REC111. Backcountry Navigation and Orienteering (1).
Introduction to orienteering. Interpret different scales of maps and use of compasses and GPS.
One lecture.

REC112. Hiking Fitness (1).
Hiking to develop and maintain physical fitness.
Two lab.

REC113. Backpacking (1).
Techniques for efficient backcountry hiking. Skills for the beginning backpacker; includes packing and travel tactics, safety and low impact camping. Must possess adequate physical abilities for backcountry travel with a backpack. Overnight trips required.
Two lab.

REC114. Mountain Biking (1).
Principles and practice of mountain biking in the local area. Emphasis on recreational and fitness components. Basic ability to ride a bicycle. Mountain bike and helmet required.
Two lab.

REC115. Introduction to Rock Climbing (1).
Principles and practice of rock climbing in the local area. Emphasis on climbing equipment, tying knots, climbing technique, rappelling and belaying.
Prerequisite: Must be at least 16 years of age to enroll.
Two lab.

REC120. Introduction to Recreation Management (3).
History, philosophy, and value of recreation and leisure in the quality of life. Explore the foundations of recreation, leisure, and play from social, psychological, cultural, political and economic perspectives.
Prerequisite: Reading Proficiency.
Three lecture.

REC130. Scuba Diving (1).
Fundamentals of scuba diving. Emphasis on dive theory, confined water and open water diving.
Two lab.

REC131. Beginning Kayaking (1).
Fundamentals of kayaking. Emphasis on safe entry and exit, paddle strokes, self and assisted rescue and rolling. Must possess physical fitness level for sustained periods of immersion and strong swimming ability.
Two lab.

REC140. Aboriginal Living Skills (2).
Introduction to Southwestern primitive skills. Exploring fire creating with sticks, making and using basic stone tools, building primitive shelters, using plant fibers for rope and other utilitarian utensils.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

REC141. Winter Survival Skills (2).
Adapting to cold weather emergencies using winter survival kits, cold weather clothing systems, fire lighting techniques, shelter building and signaling for rescue.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

REC142. Outdoor Survival Skills (2).
Adapting to outdoor emergencies using modern fire lighting techniques, natural shelter construction, locating and disinfecting water and signaling for rescue.
Prerequisite: Reading Proficiency.
One lecture. Two lab.

REC143. Outdoor Adventure Preparation (2).
Fundamentals of adventure travel preparation.
Two lecture.
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REC145. Wilderness Advanced First Aid (2).
Principles and skills to make critical first aid and evacuation decisions and take appropriate action in remote locations where medical assistance is more than one hour away.
Prerequisite: Reading Proficiency.
Two lecture.

REC213. Intermediate Backpacking (2).
Application of techniques and skills for extended backpacking travel. Must possess adequate physical abilities for carrying a backpack over rough terrain.
Prerequisite: Reading Proficiency.
Four lab.

RESIDENTIAL BUILDING TECHNOLOGY (RBT)

RBT103. Basic Home Remodeling (3).
Basic remodeling from design to completion. Everything to design, permit, contract, manage and construct small, residential remodels. Field trips required.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

RBT105. Be Your Own Contractor (3).
Maximize your building experience while minimizing your anguish. From permitting to completion, including site and house selections, choosing subs and suppliers, estimating and scheduling the entire project.
Prerequisite: Reading Proficiency.
Three lecture.

RBT110. Residential Building I (9).
Progressive and innovative residential building for the 21st century. Includes the use of building materials, systems, and technologies to build healthy, safe, durable, comfortable, environmentally responsive houses.
Prerequisite: Reading Proficiency.
Three lecture. Eighteen lab.

RBT111. Residential Technology I (4).
Layout a building, rough-in utilities, and select building materials, systems and technologies using the whole systems approach.
Prerequisite: Reading Proficiency.
Four lecture.

RBT112. Construction Drawings and Documents (3).
Reading and understanding of residential construction documents including architectural plans, specifications, and construction working drawings.
Three lecture.

Fundamentals of residential architectural drafting, including introduction to equipment, lettering, basic drawing concepts, minimum code requirements and structural design criteria. Emphasis on producing a partial working set of two-dimensional drawings for a single family dwelling, including site, floor and foundation plans.
Prerequisite: Reading Proficiency.
Three lecture. Three lab.

RBT114. AutoCAD I (3).
Introduction to theory and application of computer-aided drafting for production of residential working drawings.
Two lecture. Three lab.

RBT121. Residential Building II (9).
Progressive and innovative residential building for the 21st century. Includes the use of building materials, systems and technologies to build healthy, safe, durable, comfortable, environmentally responsive houses from dry-in to commission/certification.
Prerequisite: Reading Proficiency.
Three lecture. Eighteen lab.

RBT122. Residential Technology II (4).
Interior and exterior residential building finish processes beyond rough framing and dry-in. Emphasis on the construction process and the responsibilities of each building trade/subcontractor. Integration of current building-science principles into mainstream residential construction practices.
Prerequisite: Reading Proficiency.
Four lecture.

RBT123. Estimating and Bidding (3).
Fundamental principles and practices of residential construction estimating and bidding. Includes reading working drawings and written specifications to produce material quantity take-offs, estimate labor time and costs, and assess overhead costs and profit margins. Emphasis is on computer-assisted cost estimating.
Prerequisite: RBT 112. Reading Proficiency.
Three lecture.

RBT125. Residential Graphics II (4).
Advanced drafting skills to complete a set of working drawings for a single-family dwelling. Included is a project to design a new residence and draft preliminary working drawings.
Prerequisite: RBT 113. Reading Proficiency.
Three lecture. Three lab.
RBT126. AutoCAD II (3).
Advanced theory and application of computer-aided drafting for production of residential working drawings. Emphasis on using AutoCAD for advanced 2-dimensional design of site, foundation, floor and roof plans, elevations, building sections, and other working drawing details.
Prerequisite: RBT 114
Two lecture. Three lab.

RBT131. International Residential Code (3).
Overview of the regulations that govern the safety of residential construction. Using the International Residential Code and the International Energy Code (2006) as the basis for understanding building safety requirements. Includes the design, construction, use, occupancy, and location of residential dwellings.
Prerequisite: Reading Proficiency.
Three lecture.

RBT151. Construction Contracting and Company Management (3).
Residential construction business techniques, skills, and conceptual tools for running an efficient and profitable construction business. Intended for future contractors, construction foremen, job supervisors, and project managers in residential construction.
Prerequisite: Reading Proficiency.
Three lecture.

RBT152. Project Management and Scheduling (3).
Project management to achieve consistent construction project success. Includes challenges of tight budgets, contracted deadlines, defined resources, and personnel management on residential construction projects. Use of computer project scheduling tools to create bar charts and schedules.
Prerequisite: RBT 151 or 161. Reading Proficiency.
Three lecture.

RBT161. Construction Business Management (3).
Fundamentals of business management for Arizona contractor license applicants. Preparation for the Arizona Registrar of Contractor's business management examination, including contract law, business ownership types, accounting fundamentals, employer obligations and business math.
Prerequisite: Reading Proficiency.
Three lecture.

RBT231. Solar and Renewable Energy (3).
Integration of solar and renewable energy into a “whole house system” design. Passive solar design including how to conserve energy and utilize renewable energy sources by responding to the local climate. Incorporating active solar, wind and geothermal technologies to generate power and improve energy efficiency.
Prerequisite: Reading Proficiency.
Three lecture.

RBT232. Sustainable Design/Green Building (3).
Merging sustainable design principles and green building technologies into mainstream residential construction practices. Principles and practices to reduce negative environmental impacts on local and global scales while simultaneously improving building performance, health and comfort of the occupants.
Prerequisite: Reading Proficiency.
Three lecture.

RBT233. Alternative Building Materials and Design (3).
Survey of alternative designs, products, and methods of construction with an emphasis on efficient use of space, materials, and energy. Mainstream building designs, materials, systems, technologies, and methods of residential construction. Includes environmentally responsive design and building practices.
Prerequisite: Reading Proficiency.
Three lecture.

Optimizing energy efficiency using the “systems approach” to residential building and design. Includes air leakage and building-envelope tightness, insulation, ventilation, indoor air quality, energy efficiency, and comfort.
Prerequisite: Reading Proficiency.
Three lecture.

RBT242. Weatherization for New and Existing Buildings (3).
Improving the energy efficiency, health, comfort and safety of new and existing homes. Includes energy audits, diagnostics, commissioning, certification, computerized energy modeling, and weatherization strategies.
Prerequisite: Reading Proficiency.
Three lecture.

RBT296. Internship: Construction and Building Technology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

RBT299. Independent Study Construction and Building Technology (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
**RUSSIAN (RUS)**

**RUS131. Conversational Russian (3).**
Fundamentals of speaking and listening skills in Russian. Introduction to the culture of the Russian-speaking world. 
Prerequisite: Reading Proficiency. 
Three lecture.

**SMALL BUSINESS ENTREPRENEURSHIP (SBE)**

**SBE201. Small Business Entrepreneurship (1).**
Analysis of the practical aspects of creating and maintaining a small business. Emphasis on the functions of management, leadership, and entrepreneurship, and the necessity of all three skill sets in order to achieve sustained market success. 
One lecture.

**SBE202. Small Business Marketing (1).**
Analysis of modern marketing techniques as applied to a small business environment. 
One lecture.

**SBE203. Small Business Accounting Principles (1).**
Interpretation of accounting statements and significance to the success or failure of business. How to read financial statements and what they mean in regard to the income statement, balance sheet, profit and loss statement, cash flow and inventory. 
One lecture.

**SBE204. Small Business Accounting Systems (1).**
Review of manual and computer assisted accounting system options for small business management. Identify small business accounting needs and select an appropriate computer-assisted accounting software solution. 
Prerequisite: SBE 203. 
One lecture.

**SBE205. Small Business Finance (1).**
Methods to raise capital for an existing or start-up entrepreneurial business. 
Prerequisite: SBE 203. 
One lecture.

**SBE206. Small Business Advertising and Sales (1).**
Explore the role of advertising and sales in small business management, and their role in the implementation of a comprehensive marketing plan. 
Prerequisite: SBE 202. 
One lecture.

**SBE207. Internet Marketing for Small Business (1).**
Entrepreneurial exploration of Internet marketing opportunities. 
One lecture.

**SBE208. Small Business Legal Issues (1).**
Review and analysis of laws applicable to small business operations. 
One lecture.

**SBE209. Small Business Tax Issues (1).**
What new and existing small business owners need to know about business taxes; tax return requirements; business expenses and other deductions; record keeping; employment taxes; sources of tax information and strategies for minimizing tax liabilities. 
One lecture.

**SBE210. Retail Customer Service for Small Business (1).**
Analysis of techniques related to success in small business retail and service management. Includes customer service, pricing, inventory control, and continuous improvement processes. 
One lecture.

**SBE211. Human Resources and Small Business (1).**
Recruiting and employment guidelines, orientation and training techniques for small business managers. Employee compensation, employment laws, employee benefits, performance evaluations, drug abuse, and records administration. Entrepreneurial work ethics and the small business. 
One lecture.

**SBE212. The Business Plan for Small Business (1).**
How to write detailed professional business plan, reason for the plan and how the plan should be implemented. 
One lecture.
SBE230. Owning and Operating a Small Business (3).
Organization and principles of business operation; study and discussion of the problems associated with establishing a business.
Three lecture.

**SOCIOLOGY (SOC)**

SOC101. Introduction to Sociology (3).
Study of human behavior from the sociological perspective. Areas of emphasis include society, culture, social structure, social institutions, socialization, and forms of social stratification.
Prerequisite: Reading Proficiency.
Three lecture.

SOC120. Aids-A Modern Plague. (1).
Examination of humanistic and scientific perspectives on the etiology and consequences of AIDS. Historical and ecological understanding of venereal and epidemic disease.
Prerequisite: Reading Proficiency.
One lecture.

SOC125. Domestic Violence (3).
Prerequisite: Reading Proficiency.
Three lecture.

SOC140. Sociology of Intimate Relationships and Family (3).
Study of relationships and family life, interpersonal attraction, dating and committed partnerships, relationships and household dynamics, parenting decisions, relationship longevity or dissolution.
Prerequisite: Reading Proficiency.
Three lecture.

SOC142. Race and Ethnic Relations (3).
Contemporary racial and ethnic intergroup relations emphasizing cultural origins, developments, and problems of minority groups in the United States.
Prerequisite: Reading Proficiency.
Three lecture.

SOC142. Gender and Society (3).
Examine the ways society shapes and defines the positions and roles of both men and women. Emphasis on the sociological theories and research methods used to study how femininities and masculinities are constructed within the following social institutions: the family, education, work, healthcare, and the mass media.
Prerequisite: Reading Proficiency.
Three lecture.

SOC214. Sports and Society (3).
The impact of sports on various parts of society, such as the economy, men and women, the family, and media. Includes an examination on how society shapes sports participation and the popularity of sports.
Prerequisite: Reading Proficiency.
Three lecture.

SOC220. Introduction to Social Work (3).
Survey of social work as a profession and social welfare as an institution. Social work: historical development, principles, philosophy, and practices.
Prerequisite: Reading Proficiency.
Three lecture.

SOC250. Social Problems (3).
A sociological exploration of selected social problems. Emphasis on social issues.
Prerequisite: Reading Proficiency.
Three lecture.

SOC251. Cultural Diversity (3).
An interdisciplinary course exploring the dynamics of cultural diversity from psychological, sociological, and historical perspectives. Emphasis on intercultural and intracultural communication.
Prerequisite: Reading Proficiency.
Three lecture.

SOC/PSY277. Human Sexuality (3).
Examination of the physical, social and cultural contributions to human sexuality. Examination of the facts and myths, current literature, and changing mores regarding human sexuality. Opportunities to understand the sexuality of males and females in contemporary society.
Prerequisite: SOC 101 or PSY 101. Reading Proficiency.
Three lecture.

SOC/PSY290. Research Methods (4).
Planning, execution, analysis, and written reporting of psychological research. Surveys the literature, procedures, and instruments in representative areas of psychological research.
Prerequisite: SOC 101. Reading Proficiency.
Four lecture.
SOC296. Internship: Sociology (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

SOC299. Independent Study Sociology (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

■ SPANISH (SPA)

SPA101. Beginning Spanish I (4).
Fundamentals of speaking, writing, listening, and reading of Spanish. Introduction to the culture of the Spanish-speaking world.
Prerequisite: Reading Proficiency.
Four lecture.

SPA102. Beginning Spanish II (4).
Development of speaking, writing, listening, and reading proficiency in Spanish at the novice mid/novice high level. Culture of the Spanish-speaking world.
Prerequisite: SPA 101. Reading Proficiency.
Four lecture.

SPA/EDU120. Spanish for Educators (3).
Conversational Spanish for the student who needs a practical speaking and writing knowledge of common terminology used in the school setting.
Prerequisite: Reading Proficiency.
Three lecture.

SPA125. Spanish for Health Professionals (2).
Conversational Spanish for the student who needs a practical speaking knowledge of common medical terms used in a variety of health care settings.
Prerequisite: Reading Proficiency.
Two lecture.

SPA131. Conversational Spanish I (3).
Fundamentals of speaking and listening skills in Spanish. Introduction to the culture of the Spanish-speaking world.
Prerequisite: Reading Proficiency.
Three lecture.

SPA132. Conversational Spanish II (3).
Development of speaking and listening skills in Spanish at the novice level. Culture of the Spanish-speaking world.
Prerequisite: SPA 131. Reading Proficiency.
Three lecture.

SPA140. Spanish for Special Occupational Groups (1).
Basic principles of Spanish pronunciation and the use of fixed expressions specific to workplace situations.
Prerequisite: Reading Proficiency.
One lecture.

SPA201. Intermediate Spanish I (4).
Development of speaking, writing, listening, and reading proficiency in Spanish at the novice high level. Culture of the Spanish-speaking world.
Prerequisite: SPA 102. Reading Proficiency.
Four lecture.

Development of speaking, writing, listening, and reading proficiency in Spanish at the intermediate low level. Culture of the Spanish-speaking world.
Prerequisite: SPA 201. Reading Proficiency.
Four lecture.

SPA296. Internship: Spanish (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

SPA299. Independent Study Spanish (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
STUDENT SUCCESS SKILLS (STU)

STU110. Career Directions (1).
Vocational assessments and research techniques for college major and career decision making. Emphasis on identifying potential occupational directions.
Prerequisite: Reading Proficiency.
One lecture.

STU111. Career and Life Planning (2).
Exploration of the career decision-making processes, including personal assessment, career exploration, and goal setting. Emphasis on developing career planning strategies. Introduction to job search techniques.
Prerequisite: Reading Proficiency.
Two lecture.

STU150. Becoming a Master Student (3).
Academic and personal skills to promote a successful college experience.
Prerequisite: Reading Proficiency.
Three lecture.

STU296. Internship: Life Management Skills (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

STU299. Independent Study Life Management Skills (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

THEATER (THR)

THR131. Acting I (3).
Introduction to performance techniques with emphasis on movement and voice skills, and the performer’s relationship to all parts of the play’s production. Incorporates creative movement, character analysis, improvisation, stage arts, and the contribution of various types of theater to theater arts.
Prerequisite: Reading Proficiency.
Three lecture.

THR132. Acting II (3).
Study of performance techniques with emphasis on character development and analysis. Introduction to directing and technical theater as they influence development of acting skills.
Prerequisite: THR 131. Reading Proficiency.
Three lecture.

THR135. Introduction to the Theater (3).
Development of theatre in Europe and America from ancient Greece to present. Integrated approach to theatre including playwriting, architecture, acting, production and criticism, particularly in historical settings.
Prerequisite: Reading Proficiency.
Three lecture.

THR150. Shakespeare Scene Study (3).
Study of Shakespeare’s texts with an emphasis on challenges of structured language, distinction between prose and verse, scene structure and the demands of the soliloquy. Includes basic acting principles within the context of Shakespeare’s plays.
Prerequisite: Reading Proficiency.
Three lecture.

THR242. American Cinema (3).
Survey of American film as an art form, an industry, and a system of representation and communication. Technical, aesthetic, and cultural aspects of American cinema and their role in reinforcing and challenging America’s national self-image.
Three lecture.
THR/HUM243. Development of the Film (3).
Historical and critical survey of the development of film as an art form, as a system of representation and communication, and as an industry from its invention to the present day. How films work technically, aesthetically, and culturally to create and reinforce social norms.
Prerequisite: Reading Proficiency.
Three lecture.

THR296. Internship: Theater (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

THR299. Independent Study Theater (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.

VIT 100. Introduction to Viticulture (3).
An introduction to viticulture. Includes world-wide history of grapes and their production. Emphasis on the varieties of grapes, grapevine biology and physiology, vineyard management, and harvest and post-harvest operations.
Prerequisite: Reading Proficiency.
Three lecture.

WEB/ART130. Web Site Design (3).
Introduction to design and production of Web pages for publishing on the Internet using Adobe Creative Suite software. Application of design principles.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

WEB/CSA144. Creating Web Pages Using Dreamweaver (3).
Create website using Dreamweaver software. Emphasis on creating, publishing to the web and maintaining website.
Three lecture.

WEB/CSA145. Creating Web Pages Using Expression Web (3).
Create and publish websites using Expression Web software.
Three lecture.

Fundamentals of developing Web pages. HTML language and creating Web pages for course work, professional purposes, and personal use.
One lecture.

WEB/CSA151. Buying and Selling on eBay (.5).
How to buy and sell on Ebay.
One-half lecture.

WEB/CSA167. PHP and MySQL Programming (3).
Principles and techniques of developing small to medium scale database applications, and creating web databases that are accessed by Web pages.
Prerequisite: Reading Proficiency.
Two lecture. Three lab.

WEB/CSA177. Surfing the Internet (2).
Basic to intermediate techniques of using the full features of the Internet and its resources. Emphasis on accessing the information of the rapidly expanding and ever changing “Information Superhighway.”
Preparedness recommendation: Basic windows skills and general computer literacy.
One lecture. Three lab.
Initiate and organize a remote business Web server. Install and configure Web applications and email server operations. Introduction to e-commerce, content management and basic server applications. Three lecture.

WEB/ART238. Web Site Design II (3).

WEB/CSA266. Advanced Web Enhancement-AJAX (3).
Create AJAX web applications that utilize JavaScript, PHP, Document Object Model (DOM), and Extensible Markup Language (XML). Includes XHTML language, Cascading Style Sheet (CSS) and XMLHttpRequest Object. Prerequisite: CSA 161. Reading Proficiency. Two lecture. Three lab.

**WELDING (WLD)**

WLD110. Welding for Artists-Sculpture (2).
Application of oxyacetylene, shielded metal arc, and gas metal arc welding to metal sculpture. Emphasis on safety, welding technology, equipment use and basic welding skills. Prerequisite: Reading Proficiency. One lecture. Three lab.

WLD112. Basic Welding I (2).
A basic course in oxyacetylene welding including safety, welding techniques, basic metallurgy and welding gases. Prerequisite: Reading Proficiency. One lecture. Three lab.

WLD113. Basic Welding II (2).
A basic course in electric arc welding, welding equipment, and gas-shielded arc welds. Prerequisite: Reading Proficiency. One lecture. Three lab.

WLD130. Oxyacetylene (4).
Instruction in safety, oxyacetylene welding, flame cutting, brazing fundamentals and fuel gases. Competency mastery required. Prerequisite: Reading Proficiency.

WLD140. Arc I (4).
Fundamentals of basic arc welding procedures, equipment and safety. Prerequisite: Reading Proficiency.

WLD145. Arc II (4).
Instruction in advanced arc welding procedures, equipment and safety and cutting procedures. Prerequisite: WLD 140. Reading Proficiency.

WLD156. Blueprint Reading (2).
Fundamentals of reading and interpreting blueprints and the welding symbols as they apply to welding trade. Competency mastery required. Prerequisite: Reading Proficiency. One lecture. Three lab.

WLD200. Tig I (4).
Selection of electrode, gas, cups and filler rod for inert-gas-tungsten arc (Tig) welding. Techniques and practice in welding butt-joint, t-joint, lap and corner joints in various positions. Prerequisite: WLD 140. Reading Proficiency.

WLD210. Gas Metal Arc Welding MIG (3).
Setup and safe operation of MIG welding equipment. MIG welding of carbon steel plate, stainless steel plate and sheet metal. Prerequisite: WLD 140. Reading Proficiency.

WLD240. Welding Test and Inspection (3).
Study of techniques used in industry to test welds. Emphasis on preparing and testing plates. Includes destructive and non-destructive testing of welds. Prerequisite: WLD 145. Reading Proficiency.

WLD250. Welded Metal Fabrication (4).
Metal used in manufacturing fabrication and welding techniques. Emphasis on project planning, layout and blueprint reading. Prerequisite: WLD 130, WLD 140, WLD 156 and WLD 210. Reading Proficiency. Two lecture. Six lab.

WLD255. Advanced Projects in Welded Metal Fabrication (3).
Design, layout and fabrication of larger metal projects. Emphasis on structural design and welding techniques. Prerequisite: WLD 130, WLD 140, WLD 156 and WLD 210. Reading Proficiency. Two lecture. Three lab.

WLD282. Pipe Welding I (4).
Welding of pipe in cross-country pipe lines in industry: chemical, petroleum, salt water, fresh water, fuel system, hydraulic systems, mining and others. Prerequisite: WLD 145, WLD 200 and WLD 210. Reading Proficiency.
WLD296. Internship: Welding (3).
Supervised field experience with businesses, corporations, government agencies, schools and community organizations to expand career interests and apply subject knowledge relevant to the workplace. Individualized internship placements to develop personal and professional skills, including professional ethics, leadership, and civic responsibility. Repeatable for a total of 6 credit hours towards degree/certificate requirements.
Prerequisite: Student must have a GPA of 2.0; and have completed specific degree requirements as required by the program; and have completed the internship application process.

WLD299. Independent Study Welding (1-6).
Supervised special project in this field of study. Approval of supervising Division Dean is required.
Reading Proficiency
All students enrolling in courses numbered 100 and above (unless otherwise exempted) must demonstrate proficiency in reading by scoring at least 70 on the COMPASS reading placement assessment, scoring at least 17 on the ACT reading assessment, or at least 400 on the SAT critical reading assessment. Students scoring below these levels will be required to complete ENG 083 before enrolling in college-level courses. It is strongly recommended that students enroll in ENG 140 if they score between 70 and 84 on the COMPASS reading placement assessment.