Academic Divisions

Courses offered at CGCC fall under one of ten academic divisions. They include:

**Aviation**
Clarence (Mike) Hutto, Division Chair - (480) 988-8116
Aviation and Technology Center
Williams Campus
7360 East Tahoe Avenue
Mesa, AZ 85212

Courses:
- ACT  - Aircraft Construction Technologies
- AET  - Aeronautics
- AMT  - Aircraft Maintenance Technology
- AVT  - Avionics Technology

Career Programs:
- Aircraft Construction Technologies
  - Composite Technology
  - Sheet Metal Structures Technology
  - Aircraft Construction Technology
- Aircraft Flight Technology
  - Flight Technology
  - Airway Science Technology, Flight Emphasis
- Aircraft Maintenance Technology
  - Airframe Maintenance (Part 147)
  - Powerplant Maintenance (Part 147)
  - Aircraft Maintenance Technology (Part 147)
  - Aircraft Maintenance Technology
- Avionics Technology
  - Avionics Technology
  - Aviation Electronics Maintenance Technology

**Business and Computing Studies**
Dr. Lee Garza, Division Chair - (480) 732-7211

Courses:
- ACC  - Accounting
- BPC  - Business-Personal Computers
- CIS  - Computer Information Systems
- CNT  - Cisco Network Technology
- COV  - Covey
- CSC  - Computer Science
- GBS  - General Business
- ITS  - Information Technology Security
- MGT  - Management
- MKT  - Marketing
- MST  - Microsoft Technology
- OAS  - Office Automation Systems
- SBS  - Small Business Management
- SBU  - Society and Business

Career Programs:
- Business
  - General Business
  - Organizational Leadership
  - Organizational Management
  - Retail Management
- Cisco Networking
  - Networking Administration: Cisco
  - Networking Technology: Cisco
- Computer Applications
  - Microcomputer Applications:
    - Office Specialist/ Core Level
  - MICROcomputer Applications:
    - Office Specialist/ Expert Level
  - Microcomputer Business Applications
- Computer Database Administration and Development
  - Microsoft Database Administration
  - Oracle Database Operations
- Computer Hardware Maintenance
- Computer Hardware and Desktop Support
- Computer Information Technology
  - Information Technology
- Computer Programming
  - Programming and System Analysis
- Linux Networking
  - Linux Professional
  - Microsoft Networking
  - Microsoft Desktop Support Technology
  - Microsoft Product Specialist

**Communications and Fine Arts**
Kathleen O’Mara, Division Chair - (480) 732-7378

Courses:
- ARH  - Art Humanities
- ART  - Art
- COM  - Communication
- DAH  - Dance Humanities
- DAN  - Dance
- MCO  - Mass Communications
MHL  -  Music: History/Literature
MTC  -  Music: Theory/Composition
MUC  -  Music: Commercial/Business
MUP  -  Music: Performance
SLG  -  Sign Language
TCM  -  Telecommunications
THE  -  Theater
THP  -  Theater Performance/Production

Career Programs:
Art:  Computer Illustration
Media Arts:  Computer Art/Illustration
Art:  Digital Photography
Media Arts:  Digital Imaging

Music Business

Languages and Humanities
Dr. Bill Mullaney, Division Chair  -  (480) 732-7274

Courses:
CRE  -  Critical Reading
ENG  -  English
ENH  -  English Humanities
ESL  -  English as a Second Language
FRE  -  French
HUM  -  Humanities
JRN  -  Journalism
PHI  -  Philosophy
RDG  -  Reading
REL  -  Religious Studies
SPA  -  Spanish
WAC  -  Writing Across Curriculum

Library
Carol Dichtenberg, Division Chair  -  (480) 857-5133

Mathematics
Howard Speier, Division Chair  -  (480) 732-7064

Courses:
MAT  -  Mathematics

Nursing
Barbara Winckler, Division Chair  -  (480) 988-8882
Aviation and Technology Center
Williams Campus
7360 East Tahoe Avenue
Mesa, AZ  85212

Courses:
HCR  -  Health Care Related
NUR  -  Nursing Science: Basic

Career Programs:
Nursing

Science
John Dassinger, Division Chair  -  (480) 732-7359

Courses:
AMS  -  Automated Manufacturing Systems
AST  -  Astronomy
BIO  -  Biology
CAD  -  Computer-Aided Drafting
CHM  -  Chemistry
ECE  -  Engineering Science
EEE  -  Electrical Engineering
ELE  -  Electronic
ELT  -  Electronics Technology
EQU  -  Equine Science
EUT  -  Electric Utility Technology
GLG  -  Geology
GPH  -  Physical Geography
PHS  -  Physical Science
PHY  -  Physics

Career Programs:
Automated Manufacturing
Automated Manufacturing Systems
Electric Utility Technology
Social and Behavioral Sciences

Sandra Stuebner, Division Chair – (480) 732-7315

Courses:
- AJS - Administration of Justice Studies
- ASB - Anthropology
- CFS - Child/Family Studies
- CIA - Crime and Intelligence Analysis
- ECN - Economics
- EDU - Education
- HIS - History
- POS - Political Science
- PSY - Psychology
- SOC - Sociology
- WST - Women’s Studies

Career Programs:
- Administration of Justice Studies
- Crime and Intelligence Analysis
- Forensic Science
- Homeland Security
- Justice Studies
- Law Enforcement Training Academy
- Administration of Justice Studies
- Developmental Disabilities
- Developmental Disabilities Specialist

Wellness

Dr. Regina Munro, Division Chair – (480) 732-7109

Courses:
- CPD - Counseling and Personal Development
- FON - Food and Nutrition
- FSC - Fire Science Technology
- HCC - Health Core Curriculum
- HES - Health Science
- PED - Physical Education
- REC - Recreation
- WED - Wellness Education

Career Programs:
- Massage
  - Therapeutic Massage
- Nutrition
  - Dietetic Technology
- Personal Training
  - Strength and Conditioning Personal Trainer
  - Strength, Nutrition and Personal Training
All courses offered by the Maricopa Community Colleges appear in a standardized format using six common course elements. Students are encouraged to become familiar with the course elements included in a course description. Please see “How to Read Course Descriptions” below.

The courses that follow are offered at Chandler-Gilbert Community College (CGCC). Not all courses in this section will necessarily be offered during any given school year. Not all courses listed in the required courses and/or restricted elective areas of shared occupational programs are offered at CGCC. Please check the current class schedule for course availability. The intent of the Course Description section is to enable students to review courses that are available at CGCC.

How to Read Course Descriptions

All courses offered at the Maricopa Community Colleges are identified by a three-letter abbreviation of the academic subject plus a three-digit number (e.g., ENG101 identifies an English course). Course descriptions are listed alphabetically and in ascending numerical order.

Each course listing has six common elements:

1. Course Prefix: Three-letter subject code abbreviation indicating discipline or area of study (e.g., ENG for English).

2. Course Number: Three-digit number assigned to indicate sequence and academic level. Numbers range from 001-299. Courses numbered below 100 are offered for the purpose of strengthening skills and knowledge and cannot be applied toward degrees awarded by Maricopa Community Colleges. These courses cannot be transferred to four-year institutions. First-year courses are generally identified with 100-level numbers. Second-year courses are generally identified with 200-level numbers.

3. Course Title: Identifying name of the course. May also indicate course level (e.g., College Mathematics or Beginning Spanish Conversation I).

4. Course Description: Brief statement describing the content of the course. Instructor’s course syllabus gives additional information, including objectives and grading criteria.

5. Course Credit Hours: College credit hours awarded for satisfactory completion of the course.

6. Course Prerequisites and/or Corequisites: Requirements that must be met before or, in the case of corequisites, at the same time as enrollment in a course. Not all courses have prerequisites or corequisites.

EXAMPLE:

(1) = Course Prefix
(2) = Course Number
(3) = Course Title
(4) = Course Description
(5) = Course Credits
(6) = Course Prerequisites and/or Corequisites
* = Periods: Weekly time in class during a typical 16-week semester; 50 minutes = 1 period.

ENG (1) 101 (5) 3 CREDITS * 3 PERIODS

First-Year Composition
Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total.

Prerequisites: Appropriate English placement test score or (a grade of “C” or better in ENG071).
Accounting (ACC)

ACC111 3 CREDITS 3 PERIODS
Accounting Principles I
Fundamental theory of accounting principles and procedures. Prerequisites: None.

ACC115 2 CREDITS 3 PERIODS
Computerized Accounting
Mastery of a microcomputer accounting system including the general ledger, accounts receivable, accounts payable and payroll. Prerequisites: ACC107, or higher level accounting course, or permission of instructor.

ACC115AA 1 CREDIT 2 PERIODS
Computerized Accounting: Quicken-Level I
Introduction to using Quicken to automate an accounting system. Prerequisites: ACC107, or higher level accounting course, or permission of instructor.

ACC230 3 CREDITS 3 PERIODS
Uses of Accounting Information I
Introduction to the uses of accounting information for internal and external purposes with emphasis on financial statement analysis. Prerequisites: Grade of "C" or better in ACC111 or ACC211, or a grade of "C" or better in (ENG101 and MAT151 and CRE101), or equivalent, or satisfactory score on District placement exam.

ACC240 3 CREDITS 3 PERIODS
Uses of Accounting Information II
Introduction to the uses of accounting information for internal and external purposes with emphasis on analysis for use by management. Prerequisites: ACC230.

ACC296WA 1 CREDIT 5 PERIODS
Cooperative Education
Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students. Prerequisites: Completion of at least twelve (12) college credits, minimum 2.6 grade point average, and be able to obtain a position related to student’s academic or career goals (student’s present job may qualify); or permission of instructor. Corequisites: Must be concurrently enrolled in at least one class which is related to student’s major or career interest or with permission of the instructor.

Administration of Justice Studies (AJS)

AJS101 3 CREDITS 3 PERIODS
Introduction to Criminal Justice
An introduction to crime and society’s responses to it. Examines the nature and causes of crime, the criminal law, constitutional safeguards, and the organization and operation of the criminal justice system including the police, courts, jails, prisons, probation and parole departments, and community corrections agencies. Covers the history of the criminal justice system, terminology and career opportunities. Prerequisites: None.

AJS102 15 CREDITS 22 PERIODS
Peace Officer Certification I
Training program for limited authority peace officers, leading to certification by the Arizona Peace Officer Standards and Training Board (AzPOST - The statutory agency for certifying peace officers - all person with arrest powers - in Arizona.) Includes introduction to Law Enforcement, Law and legal matters, patrol procedures, traffic control, and police proficiency skills. Prerequisites: Student must comply with AzPOST employment standards for peace officers.

AJS109 3 CREDITS 3 PERIODS
Substantive Criminal Law
Covers philosophy of legal sanctions and historical development from the common law to modern American criminal law, classifications of crimes, elements of and parties to crimes, general definition of crimes, common defenses utilized. Includes specific offenses and the essential elements of each offense. Required in AJS curriculum. Prerequisites: None.

AJS119 3 CREDITS 4 PERIODS
Computer Applications in Justice Studies
Provides literacy in microcomputer applications in major areas of the criminal justice system. Examines availability and uses of current software packages in criminal justice work. Provides hands-on experience with appropriate integrated software packages pertaining to justice studies. Prerequisites: None.

AJS123 3 CREDITS 3 PERIODS
Ethics and the Administration of Justice
Introduces and explores ethical issues and the justice system. Focuses on ethics and the law, the police, courts and corrections. Reviews ethical
theory, concepts and practices as they relate to administration of justice. Encourages critical thinking and value decision making in criminal justice system situations. Prerequisites: None.

**AJS139**  
**Emergency Response to Terrorism**  
Fundamentals of emergency response to suspected terrorist events. Historical perspective of terrorist activities and methods by which responders can identify and protect themselves and the public from these threats. Coordination of responding agencies. Prerequisites: None.

**AJS147**  
**Emergency Preparedness**  
Emergency preparedness related to natural and manmade disasters. Planning concepts and the planning process; awareness and education programs and strategies for the general community as well as business and industries. Prerequisites: None.

**AJS195**  
**International and Domestic Terrorism**  
An overview of the history, structure, goals, and activities of domestic and international terrorist groups. Explores theories explaining terrorism and reviews methods used to combat it. Prerequisites: None.

**AJS200**  
**Current Issues in Criminal Justice**  
Examines current issues, techniques and trends in the Criminal Justice System. Prerequisites: None.

**AJS201**  
**Rules of Evidence**  
A practical insight into the rules of evidence to include how to recognize evidence: the general rules governing admissibility of evidence; the "hearsay" rule and its exceptions; the use of documentary evidence, written memoranda, photographs, and recordings; corpus delicti; opinion evidence, circumstantial evidence, evidential privileges. Required in AJS curriculum. Prerequisites: None.

**AJS202**  
**Peace Officer Certification II**  
A continuation of the basic, entry-level training program leading to full authority peace officer certification as required by the Arizona Peace Officer Standards and Training Board I (AzPOST). Subjects to include: Patrol Procedure, Accident Investigation, Records and Report Writing, Community Relations, Criminal Investigations, and Officer Survival. Prerequisites: Grade of “C” or better in AJS/LEO102 or AzPOST Limited Authority Peace Officer certification.

**AJS212**  
**Juvenile Justice Procedures**  
Examines the history and development of juvenile justice theories, procedures, and institutions. Prerequisites: None.

**AJS213**  
**Evidence Technology/Fingerprints**  
Fingerprint identification, interpretation, and classification. The fundamentals of fingerprinting and the problems in developing latent prints, preservation of evidence and the chain of evidence. Prerequisites: None.

**AJS215**  
**Criminalistics: Physical Evidence**  
The scientific analysis and examination of physical evidence with emphasis on scientific investigation, recognition, collection, and preservation of evidence. Topics include fingerprints, shoe prints, tool marks, firearms identification, paint chips and arson. Prerequisites: None.

**AJS216**  
**Criminalistics: Biological Evidence**  
The scientific analysis and examination of biological evidence with emphasis on collection and preservation of evidence. Topics discussed include blood, drugs, blood alcohol, hairs and fibers, and topics of special interest in criminalistics. Prerequisites: None.

**AJS225**  
**Criminology**  
Study of deviance, society’s role in defining behavior; theories of criminality and the economic, social, and psychological impact of crime; relationships between statistics and crime trends. Examines crime victimization and the various types of crime and categories of offenders. Required in the AJS curriculum. Prerequisites: None.
AJS230 3 CREDITS 3 PERIODS
The Police Function
Theories of procedures and methods of operations of public police with emphasis on discretionary powers available to the working police officer. Career opportunities and current trends in law enforcement presented. Prerequisites: None.

AJS240 3 CREDITS 3 PERIODS
The Correction Function
Examines the history and development of correctional theories and institutions. Prerequisites: None.

AJS241 3 CREDITS 3 PERIODS
Police Photography
Emphasis on proper procedure for photographing crime scenes, accident scenes, and laboratory specimens. Discussion of photographic techniques, equipment, lighting techniques, aerial photography, video and motion pictures, macro and micro photography, filters, and preparation for court presentation using selected simulations. Prerequisites: None.

AJS258 3 CREDITS 3 PERIODS
Victimology and Crisis Management
Focuses on victimology and techniques of crises intervention; and the importance of multicultural perspective. Includes coverage of sexual assault, family violence, child abuse, post-traumatic stress disorder, substance abuse, coping skills, stress management, and community resources. Prerequisites: None.

AJS260 3 CREDITS 3 PERIODS
Procedural Criminal Law
Concerned with the understanding of procedural criminal law. Examines the rationale underlying major court holdings, the procedural requirements that stem from these holdings, and their effect on the daily operations of the criminal justice system. Prerequisites: None.

AJS270 3 CREDITS 3 PERIODS
Community Relations
Examination, recognition and understanding of community problems; community action programs; methods of coping with human behavior, victimology, conflict and communication; ethnic and minority cultures and environments; the community and relationships with the criminal justice system. Prerequisites: None.

AJS275 3 CREDITS 3 PERIODS
Criminal Investigation I
Introduction to the theory of criminal investigation. Examines crime scene procedures, case preparation, interviewing, and basic investigative techniques. Prerequisites: None.

Aeronautics (AET)

AET107 5 CREDITS 5 PERIODS
Private Pilot Ground School
Ground school in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate written examination. Includes aerodynamics, airplane systems, airports, airspace, communications, Federal Air Regulations, navigation, airplane performance, flight planning, and flight physiology. Requires passing a written exam similar to the FAA Private Pilot written exam. Prerequisites: None. Corequisite: AET110.

AET110 2 CREDITS 5 PERIODS
Private Pilot Flight
Flight course in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate practical examination. Includes preflight preparation and planning, ground operations, airport operations, departures, navigation, basic instrument flight, night flight, slow flight, ground reference maneuvers, emergency operations, and arrivals. Approximately 50 hours airplane flight experience at student’s expense required. Requires passing check ride similar to the FAA Private Pilot check ride. Prerequisites: None. Corequisites: AET107.

AET115 3 CREDITS 3 PERIODS
Aviation Meteorology
Meteorology for professional pilots. Includes atmosphere, air mass circulation, cloud type identification, weather hazards, and high altitude, Arctic, and tropical weather systems. Basic forecasting, use of Direct User Access Terminal (DUAT) systems and reading and interpreting weather charts. Prerequisites: None.

AET203 2 CREDITS 2 PERIODS
Basic Airplane Systems
Initial instrument and commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Instrument rating written examinations. Includes night flight, flight instrument systems
and operation, and basic engine, airplane, and altitude systems. Prerequisites: Permission of instructor. Prerequisites or Corequisites: AET115. Corequisites: AET207 and AET210.

**AET205** 4 CREDITS 4 PERIODS  
**Aircraft Structures, Systems, and Maintenance**  
Survey of airframe structures, systems, and maintenance regulations for pilots. Includes aircraft and airfoil design and construction, and electrical, instrumentation, and automatic flight control systems. Maintenance privileges and limitations, and forms and records. Prerequisites: Private Pilot Certificate or permission of instructor.

**AET207** 2 CREDITS 2 PERIODS  
**Attitude Instruments and Navigation**  
Continuing instrument and commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Instrument rating written examinations. Includes flight physiology, theory of instrument flight, radio navigation, flight and navigation aids, and instrument charts and approach plates. Prerequisites: Permission of instructor. Prerequisites or Corequisites: AET115. Corequisites: AET203 and AET210.

**AET210** 2 CREDITS 5 PERIODS  
**Commercial Pilot Flight I**  
Initial flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate with Instrument rating practical examination. Emphasis on night and instrument operations. Student must fly approximately 60 hours at own expense. Requires passing an operational phase check. Prerequisites: Permission of instructor. Prerequisites or Corequisites: AET115. Corequisites: AET203 and AET207.

**AET213** 2 CREDITS 2 PERIODS  
**Aerodynamics and Performance**  

**AET215** 4 CREDITS 4 PERIODS  
**Aircraft Powerplants**  
Survey of engines and engine systems for pilots. Includes theory and analysis of reciprocating and turbine aircraft engines. Lubrication, ignition, fuel control, cooling, exhaust, and propellers. Prerequisites: AET205 or permission of instructor.

**AET217** 2 CREDITS 2 PERIODS  
**Instrument Procedures**  

**AET220** 2 CREDITS 5 PERIODS  
**Commercial Pilot Flight II**  
Advanced flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot with Instrument rating practical examinations. Emphasis on commercial and high performance operations. Student must fly approximately 60 hours at own expense, including high performance operations. Requires passing commercial pilot and instrument rating check rides similar to the FAA check rides. Prerequisites: AET210. Corequisites: AET213 and AET217.

**AET225** 4 CREDITS 4 PERIODS  
**Advanced Aircraft Systems**  
Advanced aircraft systems for pilots. Pressurization, cabin atmosphere, ice control, rain control, fire detection and extinguishing, hydraulic, landing gear, anti-skid systems, and weight and balance for transport category airplanes. Prerequisites: AET215 or permission of instructor.

**AET227** 4 CREDITS 4 PERIODS  
**Certified Flight Instructor: Airplane, Single Engine Land Ground School**  
Ground school in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor and Fundamentals of Instruction written examinations. Includes fundamentals of instruction, aerodynamics, airplane performance, systems, operations, weight and balance, weather, federal regulations, navigation, maneuvers, pilot physiology, ethics, and aeronautical decision making. Requires

AET230 1 CREDIT 3 PERIODS
Certified Flight Instructor: Airplane, Single Engine Land
Flight course in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor: Airplane practical examination. Emphasis on demonstration and analysis of flight maneuvers. Includes preflight, ground operations, airport operations, takeoffs, climbs, flight fundamentals, stalls, spins, slow flight, basic instrument operations, performance maneuvers, ground reference maneuvers, emergency operations, approaches, landings, and postflight procedures. Requires approximately 25 hours of flight that includes high performance operations at student’s expense. Also requires passing check ride similar to the FAA Certified Flight Instructor check ride. Prerequisites: AET240 or FAA Commercial Pilot Certificate with instrument rating. Corequisite: AET227.

AET237 2 CREDITS 2 PERIODS
Multiengine Airplane Pilot Ground School
Aeronautical knowledge necessary to meet requirements for a multiengine airplane rating including orientation, aerodynamics, airplane systems, airplane performance, flight planning, and emergency procedures. Prerequisites: AET220 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET240.

AET240 .5 CREDIT 1.5 PERIODS
Multiengine Airplane Pilot Flight
Flight course in preparation for the Federal Aviation Administration (FAA) Multiengine Airplane practical examination. Approximately 15 hours of flight experience at the student’s expense and passing check ride similar to the FAA Multiengine check ride are required. Prerequisites: AET220 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET237.

AET253 3 CREDITS 3 PERIODS
Avionics for Pilots
Introduction to avionics for pilots or individuals constructing personal aircraft. Includes avionics history, theory, installation and antenna considerations, autopilots, and troubleshooting. Prerequisites: Private Pilot Certificate or permission of instructor.

AET257 3 CREDITS 4 PERIODS
Readings in Aviation
Critical inquiry of a particular aviation theme from a wide variety of sources. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. International data communication facilities and equipment made available for student use. Prerequisites: ENG102 or ENG111, and permission of instructor.

AET259 2 CREDITS 2 PERIODS
Human Factors in Aviation Flight Operations
Introduction to the relationship between person and machine, the need to optimize design for better person-machine interaction, and the psychological and physiological limitations of humans in complex aviation operating environments. Prerequisites: None.

AET290 3 CREDITS 3 PERIODS
Flight Physiology
In-depth study of aeromedical factors for pilots. The causes, symptoms, prevention, and treatment of flight environment disorders, altitude effects, spatial disorientation, visual illusions, body heat imbalance, and psychological factors are included as they relate to pilot performance and survival. Two altitude chamber flights at the student’s expense are required. Prerequisites: Current FAA (Federal Aviation Administration) medical certificate.

Aircraft Construction Technologies (ACT)
ACT201 3 CREDITS 3 PERIODS
Aircraft Maintenance Forms and Documents
Maintenance documentation typical of transport category aircraft including illustrated parts catalogs, troubleshooting guides, maintenance, structural repair, wiring, and standard practices manuals. Blueprint reading and maintenance forms. Prerequisites: (AMT124 or AMT124AA, AMT128 or AMT128AA, AMT220 or AMT220AA, and AMT224 or AMT224AA) or Federal Aviation Administration Airframe Mechanic License.
ACT205 3 CREDITS 5 PERIODS
Introduction to Aircraft Structural Repair Technology
History and types of composite and sheet metal materials used in typical transport category aircraft structures. Safety practices, corrosion control, and fabrication of projects using modern aircraft structural materials. Prerequisites or Corequisites: ACT201.

ACT213 3 CREDITS 5 PERIODS
Transport Category Sheet Metal Repairs I
Use of materials common to transport category aircraft metallic structures, special fasteners, bends, shaping, routing, pressure vessel repairs, sealing, and flight control repairs. Prerequisites: ACT205.

ACT217 3 CREDITS 5 PERIODS
Transport Category Sheet Metal Repairs II
Metal shaping techniques, heat treatment, built up (step) repairs, exotic metals, and intermediate repairs including complex shapes in accordance with Structural Repair Manuals. Prerequisites: ACT213.

ACT223 3 CREDITS 5 PERIODS
Composite Structural Repairs I
Basic composite materials, construction, and repair. Manufacturing methods and equipment. Assessment and repair of composite structures using vacuum bagging and other approved procedures. Prerequisites: ACT205.

ACT227 3 CREDITS 5 PERIODS
Composite Structural Repairs II
Corrosion control, electrical bonding, materials substitutions, machining of composite components, mold fabrication. Hot bond repair of composite components including complex shapes and varied materials in accordance with the appropriate Structural Repair Manual. Prerequisites: ACT223.

ACT240 4 CREDITS 6 PERIODS
Aircraft Structural Damage Evaluation and Repair
Practical application of intermediate repair skills on aircraft structures using appropriate documentation in a simulated repair station environment. Evaluation of damage, non-destructive testing, repair process planning, and cost estimating. Actual repairs accomplished to airworthy standards. Prerequisites: ACT217 or ACT227.

Air Craft Maintenance Technology (AMT)

AMT124 5 CREDITS 9 PERIODS
Aircraft Forms and Regulations, Weight and Balance, Drawings, and Ground Operations
Federal Aviation maintenance publications, forms and records. Overview of technician’s privileges and limitations. Perform aircraft weight and balance, aircraft ground operations and fuel servicing techniques. Drawings, symbols and schematic diagrams. Prerequisites: ENG071, RDG091, (MAT091 or MAT092), and permission of the Department or Division.

AMT124AA 5 CREDITS 9 PERIODS
Aircraft Forms and Regulations, Weight and Balance, Drawings, and Ground Operations: Part 65
Federal Aviation maintenance publications, forms and records. Overview of technician’s privileges and limitations. Perform aircraft weight and balance, aircraft ground operations and fuel servicing techniques. Drawings, symbols and schematic diagrams. Prerequisites: ENG071, RDG091, (MAT091 or MAT092), and permission of the Department or Division.

AMT126 9 CREDITS 12 PERIODS
Fundamentals of Mathematics and Electricity
Mathematical computation of fundamental electrical circuit parameters. Basic definitions, laws, and concepts. Schematic, wiring, and parts placement diagrams. Test and troubleshoot electrical and electronic components and circuits. Prerequisites: ENG071, RDG091, (MAT091 or MAT092), and permission of the Department or Division.

AMT126AA 9 CREDITS 12 PERIODS
Fundamentals of Mathematics and Electricity: Part 65
Mathematical computation of fundamental electrical circuit parameters. Basic definitions, laws and concepts. Schematic, wiring and parts placement diagrams. Test and troubleshoot electrical and electronic components and circuits. Prerequisites: ENG071, RDG091, (MAT091 or MAT092), and permission of the Department or Division.
AMT128 5 CREDITS 9 PERIODS
Fundamentals of Aviation Physics, Corrosion Control, Materials and Processes, Fluid Lines and Fittings
Basic concepts of motion, fluid dynamics, heat and sound, aerodynamics, aircraft structure and theory of flight. Fluid lines and fittings, component identification, function, inspection, and installation. Cleaning and corrosion control, materials and processes, non-destructive testing, and precision measurement techniques. Prerequisites: ENG071, RDG091, (MAT091 or MAT092), and permission of the Department or Division.

AMT128AA 5 CREDITS 9 PERIODS
Fundamentals of Aviation Physics, Corrosion Control, Materials and Processes, Fluid Lines and Fittings: Part 65
Basic concepts of motion, fluid dynamics, heat and sound, aerodynamics, aircraft structure, and theory of flight. Fluid lines and fittings, component identification, function, inspection, and installation. Cleaning and corrosion control, materials and processes, non-destructive testing, and precision measurement techniques. Prerequisites: ENG071, RDG091, (MAT091 or MAT092), and permission of the Department or Division.

AMT220 3 CREDITS 6 PERIODS
Fundamentals of Aircraft Wood Structures, Covering and Finishing, and Bonded Structures

AMT220AA 3 CREDITS 6 PERIODS
Fundamentals of Aircraft Wood Structures, Covering and Finishing, and Bonded Structures: Part 65

AMT222 4 CREDITS 6 PERIODS
Atmosphere Control, Fire Detection, Ice and Rain Protection Systems
Operation and maintenance of aircraft auxiliary systems. Inspection, servicing, troubleshooting and repair of environmental control, ice and rain control, fire protection and warning systems. Prerequisites: Admission to the program.

AMT222AA 4 CREDITS 6 PERIODS
Atmosphere Control, Fire Detection, Ice and Rain Protection Systems: Part 65
Operation and maintenance of aircraft auxiliary systems. Inspection, servicing, troubleshooting and repair of environmental control, ice and rain control, fire protection and warning systems. Prerequisites: Permission of Program Director.

AMT224 5 CREDITS 11 PERIODS
Aircraft Sheet Metal
Inspection, fabrication, and repair techniques of aircraft structural and nonstructural components. Sheet metal heat-treating techniques. Prerequisites: Admission to the program.

AMT224AA 5 CREDITS 11 PERIODS
Aircraft Sheet Metal: Part 65
Inspection, fabrication, and repair techniques of aircraft structural and nonstructural components. Sheet metal heat-treating techniques. Prerequisites: Permission of Program Director.

AMT226 7 CREDITS 12 PERIODS
Aircraft Landing Gear, Hydraulic, Pneumatic, Fuel, Position and Warning Systems
Identification, inspection, repair, and troubleshooting techniques of aircraft landing gear, hydraulic, fuel, pneumatic, and position and warning system components. Prerequisites: Admission to the program.

AMT226AA 7 CREDITS 12 PERIODS
Aircraft Landing Gear, Hydraulic, Pneumatic, Fuel, Position and Warning Systems: Part 65
Identification, inspection, repair, and troubleshooting techniques of aircraft landing gear, hydraulic, fuel, pneumatic, and position and warning system components. Prerequisites: Permission of Program Director.
AMT228  7 CREDITS  12 PERIODS  
**Aircraft Electrical Systems, Instruments, Fuel Indicating, Communication and Navigation Systems**

Proper operation, inspection, servicing and troubleshooting of DC (Direct Current) and AC (Alternating Current) sources, systems, and components. Mechanical and electrical sensing and information display systems. Fuel indicator system inspections, repairs, and troubleshooting. Transmitter and receiver fundamentals. Avionics installation, inspection and testing. Prerequisites: Admission to the program.

AMT228AA  7 CREDITS  12 PERIODS  

Proper operation, inspection, servicing and troubleshooting of DC (Direct Current) and AC (Alternating Current) sources, systems, and components. Mechanical and electrical sensing and information display systems. Fuel indicator system inspections, repairs, and troubleshooting. Transmitter and receiver fundamentals. Avionics installation, inspection and testing. Prerequisites: Permission of Program Director.

AMT230  6 CREDITS  11 PERIODS  
**Airframe Assembly, Inspection and Welding**

Aircraft assembly and rigging. Flight control balancing and rigging. Airframe inspection techniques, reporting procedures, and aircraft jacking. Welding techniques, theory, and materials identification. Prerequisites: Admission to the program.

AMT230AA  6 CREDITS  11 PERIODS  
**Airframe Assembly, Inspection and Welding: Part 65**

Aircraft assembly and rigging. Flight control balancing and rigging. Airframe inspection techniques, reporting procedures, and aircraft jacking. Welding techniques, theory, and materials identification. Prerequisites: Permission of Program Director.

AMT263  5 CREDITS  9 PERIODS  
**Aircraft Turbine Engines**

Historical development and application of turbine engines. Theory of thrust and the design and environmental factors which influence thrust. Turbine engine troubleshooting, inspection, service, repair and overhaul. Operational characteristics and engine test techniques on the aircraft and in test cells. Prerequisites: Admission to the program.

AMT263AA  5 CREDITS  9 PERIODS  
**Aircraft Turbine Engines: Part 65**

Historical development and application of turbine engines. Theory of thrust and the design and environmental factors which influence thrust. Turbine engine troubleshooting, inspection, service, repair and overhaul. Operational characteristics and engine test techniques on the aircraft and in test cells. Prerequisites: Permission of Program Director.

AMT264  7 CREDITS  11 PERIODS  
**Aircraft Reciprocating Engines**

Historical development and application of reciprocating engines, theory, design, and operations. Techniques used in troubleshooting, overhaul, inspection, and repair of opposed and radial engines. Prerequisites: Admission to the program.

AMT264AA  7 CREDITS  11 PERIODS  
**Aircraft Reciprocating Engines: Part 65**

Historical development and application of reciprocating engines, theory, design, and operations. Techniques used in troubleshooting, overhaul, inspection, and repair of opposed and radial engines. Prerequisites: Permission of Program Director.

AMT266  6 CREDITS  9 PERIODS  
**Engine Fuel Systems, Fuel Metering and Induction System**

Inspection, servicing, troubleshooting, overhaul, and repair of aircraft fuel systems and components, fuel metering devices, injection systems, turbochargers, and superchargers. Induction system principles of operation and design. Prerequisites: Admission to the program.

AMT266AA  6 CREDITS  9 PERIODS  
**Engine Fuel Systems, Fuel Metering and Induction System: Part 65**

Inspection, servicing, troubleshooting, overhaul, and repair of aircraft fuel systems and components, fuel metering devices, injection systems, turbochargers, and superchargers. Induction system principles of operation and design. Prerequisites: Permission of Program Director.
AMT268 6 CREDITS 12 PERIODS
Engine Electrical, Ignition and Starter Systems
Inspect, service, troubleshoot, overhaul, and repair of engine electrical, ignition, starter systems, and components. Prerequisites: Admission to the program.

AMT268AA 6 CREDITS 12 PERIODS
Engine Electrical, Ignition and Starter Systems: Part 65
Inspect, service, troubleshoot, overhaul, and repair of engine electrical, ignition, starter systems, and components. Prerequisites: Permission of Program Director.

AMT270 5 CREDITS 8 PERIODS
Engine Instruments, Fire Protection and Lubrication, Cooling and Exhaust Systems
Operation, maintenance, servicing, inspection, repair, and troubleshooting of engine instruments, fire detection and extinguishing, engine lubrication, cooling, and exhaust systems. Prerequisites: Admission to the program.

AMT270AA 5 CREDITS 8 PERIODS
Engine Instruments, Fire Protection and Lubrication, Cooling and Exhaust Systems: Part 65
Operation, maintenance, servicing, inspection, repair, and troubleshooting of engine instruments, fire detection and extinguishing, engine lubrication, cooling, and exhaust systems. Prerequisites: Permission of Program Director.

AMT272 4 CREDITS 8 PERIODS
Propeller Systems and Engine Inspections
Historical development, operation, disassembly, inspection, repair, and maintenance of propellers. Reciprocating and turbine engine inspection and documentation. Prerequisites: Admission to the program.

AMT272AA 4 CREDITS 8 PERIODS
Propeller Systems and Engine Inspections: Part 65
Historical development, operation, disassembly, inspection, repair, and maintenance of propellers. Reciprocating and turbine engine inspection and documentation. Prerequisites: Permission of Program Director.

Anthropology (ASB)

ASB102 3 CREDITS 3 PERIODS
Introduction to Cultural and Social Anthropology
Principles of cultural and social anthropology, with illustrative materials from a variety of cultures. The nature of culture; social, political, and economic systems; religion, aesthetics and language. Prerequisites: None.

ASB214 3 CREDITS 3 PERIODS
Magic, Witchcraft, and Healing: An Introduction to Comparative Religion
Origins, elements, and forms of religion; a comparative survey of religious beliefs, myths, rituals and symbolism including magic, witchcraft and healing as practiced in selected regions of the world; the place of religion in the total culture. Prerequisites: None.

ASB222 3 CREDITS 3 PERIODS
Buried Cities and Lost Tribes: Old World
Introduction to archaeology through discoveries and the researchers who made them. Emphasis on methods of archaeological fieldwork and what these discoveries reveal about humanity, including the nature of archaeological inquiry, the development of human social groups, the changing role of religion in evolving societies, the origins of agriculture, the origins of settled lifeways, the rise of cities and complex societies, political strife across different cultures and the forces which tend to fragment societies. Examples drawn from Africa, Asia, Europe, the Pacific Islands, and Australia. Prerequisites: None.

ASB223 3 CREDITS 3 PERIODS
Buried Cities and Lost Tribes: New World
Introduction to archaeology through discoveries and the researchers who made them. Emphasis on methods of archaeological fieldwork and what these discoveries reveal about humanity, including the nature of archaeological inquiry, the development of human social groups, the changing role of religion in evolving societies, the origins of agriculture, the origins of settled lifeways, the rise of cities and complex societies, political strife across different cultures and the forces which tend to fragment societies. Examples drawn from North American, Central America, and South America. Prerequisites: None.
**COURSE DESCRIPTIONS**

**ASB245 3 CREDITS 3 PERIODS**
**Indians of the Southwest**  
Comparative study of the cultures, including the histories and present status, of Indians of the Southwest. Prerequisites: None.

**Arabic (ARB)**

**ARB101 4 CREDITS 5 PERIODS**  
**Elementary Arabic I**  
Introduction to the basic alphabet, grammar, pronunciation and vocabulary of the Arabic language. Listening, speaking, reading and writing skills. Prerequisites: None.

**ARB102 4 CREDITS 5 PERIODS**  
**Elementary Arabic II**  
A continuation of ARB101. Continued study of grammar and vocabulary, with emphasis on pronunciation and speaking skills. Prerequisites: ARB101 or equivalent.

**Art (ART)**

**ART100 1 CREDIT 2 PERIODS**  
**Introduction to Computer Graphic Art**  
Conceptualization, visualization, and production of art using the computer. Prerequisites: None.

**ART111 3 CREDITS 6 PERIODS**  
**Drawing I**  
Fundamental principles of drawing. Emphasis on composition and facility in objective and expressive representation, using variety of drawing media. Prerequisites: None.

**ART112 3 CREDITS 6 PERIODS**  
**Two-Dimensional Design**  
Study of fundamental elements and principles of two-dimensional design. Prerequisites: None.

**ART113 3 CREDITS 6 PERIODS**  
**Color**  
Investigation seeking visual solutions to a variety of problems concerning color in two and three dimensions and modes of color appearances, including light and effects in design and theory of design. Prerequisites: ART112.

**ART116 3 CREDITS 6 PERIODS**  
**Life Drawing I**  
Use of form, structure and anatomy of draped and undraped human figure to develop basic principles of sound draftsmanship. Prerequisites: None.

**ART117 3 CREDITS 6 PERIODS**  
**Life Drawing II**  
Further study of form, structure, and anatomy of the draped and undraped human figure with emphasis on composition. Prerequisites: ART116.

**ART131 3 CREDITS 6 PERIODS**  
**Photography I**  
Basic black and white photographic principles and techniques. Camera functions and controls. Darkroom experience in film processing and printmaking. Camera required. Prerequisites: None.

**ART132 3 CREDITS 6 PERIODS**  
**Photography II**  
Advanced camera and darkroom techniques. Aesthetic awareness with personal expression. Prerequisites: ART131 or permission of instructor.

**ART142 3 CREDITS 6 PERIODS**  
**Introduction to Digital Photography**  
Fundamentals of digital photography. Includes camera operations, exposure techniques, introduction to digital output, and theory of digital photography. Prerequisites: None. Course Note: Digital camera required.

**ART143 3 CREDITS 6 PERIODS**  
**Intermediate Digital Photography**  
Intermediate theory and techniques of digital photography. Aesthetic awareness and personal expression from image capture through intermediate techniques in the digital darkroom. Introduction to high-resolution digital output. Prerequisites: ART142 or permission of instructor.

**ART161 3 CREDITS 6 PERIODS**  
**Ceramics I**  
Introduction to ceramic materials and techniques of hand construction, decorating, glazing and throwing on potters’ wheel. Prerequisites: None.

**ART162 3 CREDITS 6 PERIODS**  
**Ceramics II**  
Major emphasis on wheel throwing, glaze making and decorating techniques. Prerequisites: ART161.
ART165 3 CREDITS 6 PERIODS
Watercolor Painting I
Transparent and Gouache watercolor painting. Prerequisites: (ART111 and ART112), or permission of instructor.

ART167 3 CREDITS 6 PERIODS
Painting I
Exploration of technical and expressive possibilities of various painting media in easel painting. Prerequisites: (ART111 and ART112), or permission of instructor.

ART168 3 CREDITS 6 PERIODS
Painting II
Continued refinement of painting skills and investigation of new possibilities in painting. Prerequisites: ART167 or permission of instructor.

ART169 3 CREDITS 6 PERIODS
Two-Dimensional Computer Design
Generation of electronic two-dimensional images and traditional methods of visual problem solving. Understanding of computer techniques and art presentation methods. Prerequisites or Corequisites: ART100 or permission of instructor.

ART173 3 CREDITS 6 PERIODS
Computer Art
Introduction to the multiple elements of paint software programs using the microcomputer. Basic foundation in the use of computer techniques including color paint programs for the production of computer images. Use of electronic input and output devices. Prerequisites: ART100, or permission of instructor.

ART177 3 CREDITS 6 PERIODS
Computer-Photographic Imaging
Introduction to the multiple elements of microcomputer-photographic imaging. Basic foundation in the use of the photographic manipulation of images using software programs. Special attention to aesthetic foundations underlying photographic composition. Prerequisites or Corequisites: ART100 or permission of instructor.

ART190 3 CREDITS 6 PERIODS
Art of Web Site Design
Print vocabulary, relationships, and typographic style for HTML (HyperText Markup Language) and World Wide Web publication. Discussion of color, proportion, and design emphasis. Producing Web sites using HyperText Markup Language (HTML), digital text, and graphics to produce artistic form and content for the Web. Prerequisites: ART180AB, or ART180AC, or ART180AE, or permission of instructor.

ART255AB 1 CREDIT 1 PERIOD
The Portfolio
Choosing the right pieces to include, presenting art work, developing the portfolio. Prerequisites: ART255AA or permission of instructor.

ART270 3 CREDITS 6 PERIODS
Intermediate Computer Photographic Imaging
Intermediate microcomputer-based photographic imaging techniques. Refinement of aesthetic awareness and personal expression. Prerequisites: ART177 or (ART177AA and ART177AB).

ART274 3 CREDITS 6 PERIODS
Advanced Computer Photographic Imaging
Advanced microcomputer-based photographic imaging techniques. Advanced manipulation techniques of photographic images. Continued development of aesthetic awareness and personal expression. Prerequisites: ART270.

ART289 3 CREDITS 6 PERIODS
Computer Illustration
Introduction to the multiple elements of commercial illustration using the microcomputer. Basic foundation in the use of computer techniques including color paint and draw programs for the production of commercial illustrations for publications and printed matter. Use of input and output devices. Prerequisites or Corequisites: ART100 or permission of instructor.

ART290AC 3 CREDITS 6 PERIODS
Studio Art
Studio course for art majors allowing continuation in a subject field. Prerequisites: Permission of instructor. Course Notes: ART290AC students must have completed advanced courses in the subject field.
**ART295HA**  
1 CREDIT  
2 PERIODS  
Art Workshop/Seminar: Mixed Media  
Advanced level workshop seminar in art disciplines. Prerequisites: Minimum of three (3) credits introductory and three (3) credits intermediate level courses in specific field, or permission of Department/Division Chair.

**Art Humanities (ARH)**  
**ARH100**  
3 CREDITS  
3 PERIODS  
Introduction to Art  
Understanding and enjoyment of art through study of painting, sculpture, architecture design, photography, and decorative arts. Emphasis on contemporary topics and cultural diversity in the arts. Prerequisites: None.

**ARH101**  
3 CREDITS  
3 PERIODS  
Prehistoric Through Gothic Art  
History of art from prehistoric through medieval period. Prerequisites: None.

**ARH102**  
3 CREDITS  
3 PERIODS  
Renaissance Through Contemporary Art  
History of art from around the world from the Renaissance through contemporary period. Prerequisites: None.

**ARH109**  
3 CREDITS  
3 PERIODS  
History of American Art  
Development and variety of American Art. Presentation of architecture, sculpture, painting and decorative objects. Prerequisites: None.

**ARH110**  
3 CREDITS  
3 PERIODS  
History of Modern Art  
Development and significant aspects of modern art, including comparisons of relationships in expressionism, abstractions, fantasy, and art since mid-century. Prerequisites: None.

**ARH203**  
3 CREDITS  
3 PERIODS  
Art of Ancient Egypt  
The art and culture of ancient Egypt from prehistoric through the Greco-Roman period. Prerequisites: None.

**Astronomy (AST)**  
**AST111**  
3 CREDITS  
3 PERIODS  
Introduction to Astronomy I  
Introduction to astronomy for the non-science major. History of astronomy, properties of light, instruments, the solar system and nearby stars. Prerequisites: MAT092 or equivalent.

**AST112**  
3 CREDITS  
3 PERIODS  
Introduction to Astronomy II  
Introduction to astronomy for the non-science major. Structure and evolution of stars; star clusters; galaxies; cosmology. Prerequisites: MAT092 or equivalent.

**AST113**  
1 CREDIT  
3 PERIODS  
Astronomy I Laboratory  
Astronomical observations and exercises to supplement AST111. Prerequisites or Corequisites: AST111.

**AST114**  
3 CREDITS  
6 PERIODS  
Astronomy II Laboratory  
Astronomical observations and exercises to supplement AST112. Prerequisites or Corequisites: AST112.

**Automated Manufacturing Systems (AMS)**  
**AMS101**  
2.5 CREDITS  
2.5 PERIODS  
Introduction to Automated Manufacturing  
An introduction to automated manufacturing and the role of the manufacturing technician. Includes general manufacturing techniques, industry standards, and statistical process control. Prerequisites: None.

**AMS110**  
3 CREDITS  
6 PERIODS  
Programming Automated Equipment  
Automated equipment uses, characteristics, geometric movement, and performance measures. Programming, troubleshooting, operating, and maintaining an automated (robotic) equipment system. Prerequisites: ELE111.

**AMS125**  
4 CREDITS  
6 PERIODS  
Fluid Power and Vacuum Systems  
Fundamental fluid power and vacuum for industry. Pneumatic, hydraulic, and vacuum system technologies with emphasis on assembly, integration, and measurement. Prerequisites: ELE111.
AMS150  4 CREDITS  6 PERIODS
Digital Systems and Microprocessors
Fundamentals of digital systems and microprocessors with Boolean Algebra and combinational logic. Microprocessor programming and applications. Prerequisites: ELE111.

AMS160  3.5 CREDITS  6.5 PERIODS
Linear Circuits
Linear circuit fundamentals. Includes diodes, bipolar transistors, field effect transistors, and an operational amplifier. Prerequisites: ELE111.

AMS210  3 CREDITS  7 PERIODS
Electro-Mechanical Devices
Electro-mechanical devices including physics of simple machines. Gear and sensor assembly and troubleshooting. Designing, constructing, and troubleshooting power transmission and stepper motor drives. Prerequisites: ELE111.

AMS220  3 CREDITS  6.75 PERIODS
Automated Manufacturing Processes
Automated manufacturing including inventory management, computer aided processes, work-cell operation, advanced programmable logic controller (PLC) programming, and statistical methods and calculations. Prerequisites: AMS110 and AMS125.

AMS282AA  1 CREDIT  6 PERIODS
AMS282AB  2 CREDITS  12 PERIODS
AMS282AC  3 CREDITS  18 PERIODS
Automated Manufacturing Systems Internship
Automated Manufacturing Systems work experience in a business or industry. Prerequisites: Permission of instructor or program director. Course Notes: 80 hours of designated work per credit for a total of 80 hours for AMS282AA; 160 hours for AMS282AB; 240 hours for AMS282AC. Maximum of 3 credits allowed.

AVT115  7 CREDITS  8 PERIODS
Communication and Navigation Basic Circuits
Theory of operation and circuitry of all transmitter and receiver circuitry including interfacing and troubleshooting of amplitude and frequency modulation transmitters and receivers, antennas, high and very high frequency communication and interphone systems. Prerequisites: Permission of Department or Division.

AVT120  6 CREDITS  8 PERIODS
Avionics: Airframe Systems Interfacing I
Theory of operation, interfacing, and troubleshooting of systems and components related to aircraft lighting, fire protection and extinguishing, electrical power systems, and instrument and warning systems for all types of aircraft. Theory of operation, interfacing, and adjustment of landing gear systems, hydraulic systems, and doors. Prerequisites: Permission of Department or Division.

AVT128  5 CREDITS  7 PERIODS
Advanced Electrical and Electronics
Advanced electronics theory and application of diodes, bipolar transistors, field effect transistors, AC (Alternating current) power control devices, transistor amplifiers, sine wave oscillators, square wave generators, bistable circuits, operation amplifiers, and power supply and voltage regulators. Prerequisites: AMT126, or AMT126AA, or permission of the Department or Division.

AVT155  6 CREDITS  8 PERIODS
Avionics: Airframe and Engine Systems Interfacing II
Theory of operation, interfacing, and troubleshooting of pneumatic, air-conditioning, ice and rain protection, engine, and fuel systems. Prerequisites: AVT120 or permission of Department or Division.

AVT225  6 CREDITS  6 PERIODS
Navigation Systems: Basic
Theory of operation, interfacing, and troubleshooting of instrument, flight environment data, air data pressure, altitude and direction, clocks, stall warning, cockpit voice recorder, static discharge, and audio and video monitoring systems. Prerequisites: Permission of Department or Division.
**AVT250  6 CREDITS  8 PERIODS**

**Navigation Systems: Advanced**
Theory of operation, interfacing, and troubleshooting of automatic directional finder, very high frequency range, instrument landing, microwave landing, air traffic control, traffic alert, and collision avoidance, distance measurement equipment, radio altimeter, altitude alert, and ground proximity warning systems. Prerequisites: AVT225 or permission of Department or Division.

**AVT260  6 CREDITS  8 PERIODS**

**Navigation Systems: Long Range**
Theory of operation, interfacing, and troubleshooting of long range navigational, weather radar, and airborne data integrated, weight and balance computations, and flight control systems. Prerequisites: AVT250 or permission of Department or Division.

**Biology (BIO)**

**BIO080  1-4 CREDITS  3-6 PERIODS**

**Fundamentals of Life Science (Modules AA-AO)**
Consists of modules corresponding to biology courses offered in Maricopa Community College District. If student performance inadequate for currently enrolled biology course, enrollment may be changed to appropriate BIO080 module. Change only allowed if prerequisite met for currently enrolled course. Prerequisites: None.

**BIO100  4 CREDITS  6 PERIODS**

**Biology Concepts**
A one-semester introductory course covering basic principles and concepts of biology. Methods of scientific inquiry and behavior of matter and energy in biological systems are explored. Field trips may be required at students’ expense. Prerequisites: None.

**BIO105  4 CREDITS  6 PERIODS**

**Environmental Biology**
Fundamentals of ecology and their relevance to human impact on natural ecosystems. Field trips may be required at students’ expense. Prerequisites: None.

**BIO107  4 CREDITS  6 PERIODS**

**Introduction to Biotechnology**
Introduction to biotechnology and its global impact on society. Covers applications, laboratory techniques, limitations and the international economic benefits, risks, and legal and moral issues associated with biotechnology. Prerequisites: None.

**BIO108  4 CREDITS  6 PERIODS**

**Plants and Society**
A global study of plants in relation to humans; as a source of food, fiber, drugs, and other products; for aesthetic value, survival, and energy. Prerequisites: None.

**BIO109  4 CREDITS  6 PERIODS**

**Natural History of the Southwest**
Study of the common plants and animals of the Southwest including their distribution, adaptation, behavior, and ecology. Introduction to basic field and laboratory techniques used in the study of natural history. Specific field problems presented dealing with plant and animal analysis and ecological interrelationships. Prerequisites: None.

**BIO160  4 CREDITS  6 PERIODS**

**Introduction to Human Anatomy and Physiology**
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. Prerequisites: None.

**BIO162  2 CREDITS  3 PERIODS**

**Microbiology Concepts for Allied Health**
Types of microorganisms. Principles of growth and reproduction for specific types of microorganisms. Chain of disease transmission and defense mechanisms. Use of compound microscope. Safe handling and culturing of specific microbes. Methods of sterilization and use of disinfectants and chemotherapeutic agents. Prerequisites: None.

**BIO181  4 CREDITS  6 PERIODS**

**General Biology (Majors) I**
The study and principles of structure and function of organisms at the molecular and cellular levels. A detailed exploration of the chemistry of life, the cell, and genetics. Prerequisites: None. One year of high school or one semester of college-level biology and chemistry is strongly recommended.

**BIO182  4 CREDITS  6 PERIODS**

**General Biology (Majors) II**
The study and principles of structure and function of living things at cellular, organismic, and higher levels of organization. A detailed exploration of the mechanisms of evolution, biological diversity, biology of organisms, and ecology. Prerequisites: A grade of C or better in BIO181.
COURSE DESCRIPTIONS

BIO201  4 CREDITS  6 PERIODS
Human Anatomy and Physiology I
Study of structure and function of the human body. Topics include cells, tissues, integumentary system, skeletal system, muscular system, and nervous system. Prerequisites: (BIO156 or BIO181 with a grade of “C” or better) or (one year high school biology course with a grade of “C” or better). (CHM130 or higher numbered CHM prefixed course) or (one year of high school chemistry) suggested but not required.

BIO202  4 CREDITS  6 PERIODS
Human Anatomy and Physiology II
Continuation of structure and function of the human body. Topics include endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems; and fluid and electrolyte balance. Prerequisites: A grade of “C” or better in BIO201.

BIO205  4 CREDITS  6 PERIODS
Microbiology
Study of microorganisms and their relationship to health, ecology, and related fields. Prerequisites: (BIO156 or BIO181 with a grade of “C” or better) or (one year high school biology with a grade of “C” or better). (CHM130 or higher numbered CHM prefixed course) or (one year of high school chemistry) suggested but not required.

BIO211AA  1 CREDIT  1 PERIOD
Biotechnology Seminar: Biomedical Applications
Special topics in biotechnology with an emphasis on current issues not covered in other life science courses. Prerequisites: None.

BIO247  4 CREDITS  6 PERIODS
Applied Biosciences: Biotechnology
Applies concepts of molecular and cellular biology of bacteria, animals, and plants to real-world problems. Prerequisites: A grade of “C” or better in BIO181. One semester of college- level chemistry or equivalent recommended.

Business-Personal Computers (BPC)

BPC101AA  1 CREDIT  2 PERIODS
Introduction to Computers I
Computer software applications for the personal computer, including electronic spreadsheet and word processing, keyboarding review, and a desktop environment. Prerequisites: None.

BPC101BA  1 CREDIT  1 PERIOD
Introduction to Computers II
Computer software applications for the personal computer, including database management, computer graphics, electronic spreadsheet, and word processing, and operating system commands. Prerequisites: BPC101AA.

BPC102AD .5 CREDIT .5 PERIOD
Using Windows: Level I
Basic commands and methods associated with the Windows operating system. Prerequisites: None.

BPC102BD .5 CREDIT .5 PERIOD
Using Windows: Level II
Advanced commands and methods of the Windows operating system. Prerequisites: BPC102AD or permission of instructor.

BPC106AH .5 CREDIT .5 PERIOD
MS Outlook: Level I
Messaging and word processing functions of a Microsoft Outlook electronic work state. Prerequisites: None.

BPC106BH .5 CREDIT .5 PERIOD
Microsoft Outlook: Level II
Microsoft Outlook features including sort, filter and group items; templates and forms; information sharing by public folders and Net Folders; share and fax contacts; and record activities in the Journal. Outlook environment customization also covered. Prerequisites: BPC106AH or permission of instructor.

BPC110  3 CREDITS  4 PERIODS
Computer Usage and Applications
Introduction to business and personal computer operations and usage. Software applications for analyzing and solving business problems including word processing, spreadsheet, database, and presentation graphics. Prerequisites: None.
BPC111AA  1 CREDIT  1.7 PERIODS
**Computer Keyboarding I**
Mastery of essential microcomputer keyboarding skills. Emphasis on touch typing of alphabetic and numeric keys and symbols. Prerequisites: None.

BPC111AB  1 CREDIT  1.7 PERIODS
**Computer Keyboarding II**
Further development of microcomputer keyboard speed and accuracy. Emphasis on touch typing with speed and accuracy development of numerals as related to preparation and handling of documents. Prerequisites: BPC/OAS111AA or permission of instructor.

BPC114AE  1 CREDIT  2 PERIODS
**Excel Level I**
Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, and projections. Prerequisites: None.

BPC114BE  1 CREDIT  2 PERIODS
**Excel Level II**
Additional Excel spreadsheet techniques, including macro programming, database searching, extraction, and linking to obtain prescribed reports and graphs. Prerequisites: BPC/CIS114AE or permission of instructor.

BPC114CE  1 CREDIT  1 PERIOD
**Excel: Level III**
Additional Excel spreadsheet techniques, including complex macros, statistics, and matrix manipulation. Project design using multiple, integrated spreadsheets. Prerequisites: BPC/CIS114BE or permission of instructor.

BPC114DE  3 CREDITS  5 PERIODS
**Excel Spreadsheet**
Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, projections, macro programming, database searching, extraction, linking, statistics, and matrix manipulation. Production of graphs and reports. Project design using multiple, integrated spreadsheets. Prerequisites: None.

BPC115AA  1 CREDIT  2 PERIODS
**Personal Finance Software: Quicken - Level I**
Introduction to the basic features of Quicken, a computerized personal finances software program. Prerequisites: None.

BPC117AM  1 CREDIT  2 PERIODS
**Database Management: Microsoft Access - Level I**
Introduction to the basic elements of a current version of the Microsoft Access database management program, for casual and beginning users. Prerequisites: None.

BPC117BM  1 CREDIT  2 PERIODS
**Database Management: Microsoft Access - Level II**
Exploration of additional components of the Microsoft Access database management program. Prerequisites: BPC117AM or CIS117AM or permission of instructor.

BPC117CM  1 CREDIT  1 PERIOD
**Database Management: Microsoft Access - Level III**
Application of the features of the Microsoft Access program to some common database management problems. Prerequisites: BPC117BM or CIS117BM.

BPC118AB  1 CREDIT  2 PERIODS
**PowerPoint: Level I**
Use of PowerPoint software to produce professional-quality presentation visuals. Prerequisites: None.

BPC118BB  1 CREDIT  2 PERIODS
**PowerPoint: Level II**
Use of PowerPoint software add movement and sound to desktop presentations to enhance audience attention. Prerequisites: BPC/CIS118AB.

BPC120AF  1 CREDIT  2 PERIODS
**Computer Graphics: Adobe Photoshop: Level I**
Provides students with the capability to use Adobe Photoshop graphics software on a computer. Basic foundation course in the use of electronic techniques to select, manipulate, and edit images, for graphic design and image correction. Prerequisites: None.

BPC121AB  1 CREDIT  2 PERIODS
**Microsoft Command Line Operations**
Use of the Microsoft command line interface: basic concepts, internal and external commands, subdirectories, and editor. Prerequisites: None.
BPC121AE 1 CREDIT 2 PERIODS  
Windows Operating System: Level I  
Specific topics include booting and shutting down the computer, navigating the desktop, start button features, taskbar status, and receiving on-line help support. Exploring and managing folders and files, running programs, and learning about Wordpad and Paint application programs. Prerequisites: None.

BPC128 1 CREDIT 2 PERIODS  
Introduction to Desktop Publishing  
Prepares basic concepts of commercially prepared software used to do desktop publishing. Incorporates a combination of narrative and pictorial/graphic creation and presentation, including set-up, text entry, graphic generation, text and graphic merging, and other computer-based functions. Prerequisites: None.

BPC128AF 1 CREDIT 2 PERIODS  
Introduction to Desktop Publishing: MS Publisher  
Prepares basic concepts of commercially prepared software used to do desktop publishing. Incorporates a combination of narrative and pictorial/graphic creation and presentation, including set-up, text entry, graphic generation, text and graphic merging, and other computer-based functions. Prerequisites: None.

BPC130DK 1 CREDIT 2 PERIODS  
Beginning Word  
Using Word for Windows to create, edit, and print documents. Prerequisites: Ability to keyboard a minimum of 20 wpm or permission of instructor.

BPC131DK 1 CREDIT 1 PERIOD  
Intermediate Word  
Intermediate concepts in using Word for Windows. Prerequisites: BPC130DK or permission of instructor.

BPC135DK 2 CREDITS 2 PERIODS  
Word: Level I  
Using Word word processing software to create and name files, edit text, format, and print a variety of documents. Prerequisites: The ability to use a keyboard at a minimum of 24 wpm or permission of instructor.

BPC170 3 CREDITS 4 PERIODS  
Computer Maintenance I: A+ Prep  
Technical aspects of the microcomputer, including system setup (hardware and software) and basic troubleshooting. Emphasis on basic troubleshooting, use of tools, hardware components and hardware/software interfacing. Prerequisites: CIS105 and BPC121AB or permission of instructor.

BPC171 1 CREDIT 2 PERIODS  
Recycling Used Computer Technology  
Use of hardware maintenance knowledge and skills to refurbish used computers. May be repeated for a total of three (3) credits. Prerequisites or Corequisites: BPC170 or permission of instructor.

BPC235DK 2 CREDITS 2 PERIODS  
Word: Level II  
Using Word word processing software features such as math, columns, macros, styles, graphics, sort, outlines, and table of contents. Prerequisites: BPC/OAS135DK or permission of instructor.

BPC270 3 CREDITS 4 PERIODS  
Microcomputer Maintenance II  
Advanced technical aspects of maintaining and servicing microcomputers. Emphasis placed on installation, periodic maintenance, diagnosis, and/or problem resolution of power system, motherboard, memory, storage devices, and network interface cards. Extensive use of software diagnostic and utility tools. Prerequisites: BPC170 with grade of C or better, or permission of instructor.

Chemistry (CHM)  
CHM107 3 CREDITS 3 PERIODS  
Chemistry and Society  
A survey of chemistry and its impact on the environment. Completion of CHM107LL required to meet the Natural Science requirement. Prerequisites: None.

CHM107LL 1 CREDIT 3 PERIODS  
Chemistry and Society Laboratory  
Laboratory experience in support of CHM107. Prerequisites or Corequisites: CHM107.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Credits</th>
<th>Periods</th>
<th>Course Description</th>
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</table>
| CHM130      | 3       | 3       | Fundamental Chemistry  
Elements of general chemistry for all students. Serves to prepare the student for CHM151, or CHM230. Prerequisites: Grade of “C” or better in CHM090, or MAT091, or MAT092, or MAT102, or satisfactory score on math placement exam. Course Note: Course content designed to meet the needs of students in such areas as agriculture, home economics, nursing, and physical education among others. |
| CHM130LL    | 1       | 3       | Fundamental Chemistry Laboratory  
Laboratory experience in support of CHM130. Prerequisites or Corequisites: CHM130. |
| CHM138      | 3       | 3       | Chemistry for Allied Health  
Elements of fundamental and organic chemistry. Includes the general chemical behavior of inorganic matter and the structure of organic and biochemical systems. Course designed for specific allied health programs at MCCD. May not be applicable to other allied health programs or transferable. Prerequisites: Grade of “C” or better in CHM090; or one year of high school chemistry with a grade of "C" or better; or MAT092 or MAT102 or satisfactory score on placement exam. |
| CHM138LL    | 1       | 3       | Chemistry for Allied Health Lab  
Laboratory experience in support of CHM138, Chemistry for Allied Health. Prerequisites: None. Corequisites: CHM138. |
| CHM151      | 3       | 3       | General Chemistry I  
Detailed study of principles of chemistry for science majors and students in pre-professional curricula. Prerequisites: (CHM130 and CHM130LL), or (one year of high school chemistry with a grade of C or better taken within the last five years), and completion of intermediate algebra or equivalent. Completion of all prerequisites within the last two years is recommended. Course Note: Students may receive credit for only one of the following: CHM150 or CHM151. |
| CHM151LL    | 1       | 3       | General Chemistry I Laboratory  
Laboratory experience in support of CHM151. Prerequisites: CHM130LL or permission of instructor. Prerequisites or Corequisites: CHM150 or CHM151. |
| CHM152      | 3       | 3       | General Chemistry II  
A study of the chemical properties of the major groups of elements, equilibrium theory, thermodynamics, electrochemistry, and other selected topics. Completion of CHM152LL required to meet the Natural Science requirement. Prerequisites: CHM151 and CHM151LL. Completion of CHM151 and CHM151LL within the last two years recommended. |
| CHM152LL    | 1       | 3       | General Chemistry II Laboratory  
Laboratory experience in support of CHM152. Prerequisites: CHM151LL or equivalent. Prerequisites or Corequisites: CHM152. |
| CHM230      | 3       | 3       | Fundamental Organic Chemistry  
Chemistry of representative groups of organic compounds, emphasizing biological applications. Prerequisites: (CHM130 and CHM130LL), or (CHM151 and CHM151LL). Completion of (CHM130 and CHM130LL) or (CHM151 and CHM151LL) within the last two years recommended. Course Note: Course content designed to meet the needs of students in agriculture home economics, nursing, pre-physician assistant, and physical education among others. |
| CHM230LL    | 1       | 3       | Fundamental Organic Chemistry Laboratory  
Laboratory experience in support of CHM230. Prerequisites: CHM130LL, or CHM151LL, or equivalent. Prerequisites or Corequisites: CHM230. |
| CHM235      | 3       | 3       | General Organic Chemistry I  
Rigorous introduction to chemistry of carbon-containing compounds. Reaction mechanisms and recent methods of synthesis emphasized. Prerequisites: CHM152 and CHM152LL, or CHM154 and CHM154LL. Completion of (CHM152 and CHM152LL) or (CHM154 and CHM154LL) within the last two years recommended. |
| CHM235LL    | 1       | 4       | General Organic Chemistry I Laboratory  
Laboratory experience in support of CHM235. Prerequisites: CHM152LL, or CHM154LL, or equivalent. Prerequisites or Corequisites: CHM235. |
CHM236  3 CREDITS  3 PERIODS
General Organic Chemistry IIA
Study of chemistry of carbon-containing compounds continued. Structural determination and additional reaction mechanisms and modern methods of synthesis emphasized. Prerequisites: CHM235 and CHM235LL. Completion of CHM235 and CHM235LL within the last two years recommended.

CHM236LL  1 CREDIT  4 PERIODS
General Organic Chemistry IIA Laboratory
Laboratory experience in support of CHM236. Prerequisites: CHM235LL or equivalent. Prerequisites or Corequisites: CHM236.

Child/Family Studies (CFS)

CFS176  3 CREDITS  3 PERIODS
Child Development
Study of the science of human development from conception through adolescence. Includes observation skills, parent and adult roles in the lives of children, and contemporary issues. Prerequisites: None.

Chinese (CHI)

CHI101  5 CREDITS  6 PERIODS
Elementary Chinese (Mandarin) I
Introduction to the basic grammar, pronunciation and vocabulary of the Mandarin Chinese language. Includes the study of Chinese culture, practice of listening, speaking, reading, and writing skills. Prerequisites: None.

Cisco Network Technology (CNT)

CNT140AA  4 CREDITS  6 PERIODS
Cisco Networking Fundamentals
Introduction to the computer networking field. Covers network terminology and protocols, communication fundamentals in Data networks and the Internet. Includes study of the Open Systems Interconnection (OSI) model, using a top down approach, cabling and cabling tools, basic Cisco router, configuration, Ethernet technologies, Internet Protocol (IP) addressing, and overview of Internet Protocol version 6 (IPv6), basic configuring and testing of the network, and network standards. Preparation for the Cisco Certified Network Associate (CCNA) examination. Prerequisites: None.

CNT150AA  4 CREDITS  6 PERIODS
Cisco Routing Protocols and Concepts
Knowledge of skills to install, configure, maintain and troubleshoot Cisco routers utilizing Advanced Internet Protocol (IP) addressing techniques, Variable Length Subnet Masking (VLSM), distance vectored and Link State dynamic routing protocols, Routing Internet Protocol version 1 (RIPv1) and version 2 (RIPv2), Enhanced Interior Gateway Routing Protocol (EIGRP), Single-area Open Shortest Path First (OSPF), and understanding the structure and behavior of routing tables. Preparation for Cisco certification examination. Prerequisites: CNT140 or permission of instructor.

CNT160AA  4 CREDITS  6 PERIODS
Cisco Local Area Networking (LAN) Switching and Wireless
Comprehensive, theoretical, and practical approach to learning the technologies and protocols needed to design and implement a converged switched network. Learn about the hierarchical network design model and how to select devices for each layer. Configure a switch for basic functionality and implement Virtual Local Area Networks (VLAN), VLAN Trunking Protocol (VTP), and Inter-VLAN routing in a converged network. Implementation of Spanning Tree Protocol (STP) in a converged network and a Wireless LAN (WLAN) in a small to medium network. Comprehensive hands-on labs. Preparation for Cisco certification examination. Prerequisites: CNT140AA or permission of instructor.

CNT170AA  4 CREDITS  6 PERIODS
Cisco Accessing the Wide-Area Network (WAN)
Wide-Area Network (WAN) technologies and network services required by converged applications in Enterprise Networks. Cisco Enterprise Composite model (ECM) to introduce integrated network services and selection of appropriate devices and technologies to meet ECM requirements. Implement and configure common data link protocols and apply WAN security concepts, principles of traffic management, access control and addressing services. Detect, troubleshoot, and correct common enterprise network implementation issues. Includes comprehensive hands-on labs. Preparation for Cisco certification examination. Prerequisites: CNT140AA, CNT150AA, and CNT160AA or permission of instructor.
CNT182  3 CREDITS  4 PERIODS
Cisco Secure PIX Firewall Configuration
Applications of Cisco Networking technologies in designing and implementing security solutions to reduce risk of revenue loss and vulnerability. Hands-on experience and skills in security policy design and management, security technologies, products and solutions, secure firewall design, installation, configuration and maintenance, AAA (Authentication, Authorization, and Accounting) and VPN (Virtual Private Network) implementation using firewalls. Preparation for the CSPFA (Cisco Secure PIX Firewall Advanced) exam, which applies toward the CCSP (Cisco Certified Security Professional) and the Cisco Firewall Specialist Certifications. Prerequisites: CNT170 or permission of instructor.

CNT185  4 CREDITS  5 PERIODS
Cisco Network Security
Applications of Cisco Networking technologies in designing and implementing security solutions to reduce risk of revenue loss and vulnerability. Hands-on experience and skills in security policy design and management, security technologies, products and solutions, firewall and secure router design, installation, configuration and maintenance, AAA (Authentication, Authorization, and Accounting) and VPN (Virtual Private Network) implementation using firewalls and routers. Preparation for the MCNS (Managing Cisco Network Security) and CSPFA (Cisco Secure PIX Firewall Advanced) exams toward certification as a Cisco Firewall Specialist. Exams also apply to CCSP (Cisco Certified Security Professional) certification. Prerequisites: CNT170, or permission of instructor.

CNT186  4 CREDITS  5 PERIODS
Fundamentals of Wireless LANs
Design, planning, implementation, operation, and troubleshooting of wireless networks. Overview of technologies, security, and design best practices with emphasis on hands-on skills in wireless LAN (local area network) setup and troubleshooting, 802.11a & 802.11b technologies, products and solutions, site surveys, resilient WLAN design, installation and configuration, WLAN Security - 802.1x, EAP (Extensible Authentication Protocol), LEAP (Light Extensible Authentication Protocol), WEP (Wired Equivalent Privacy), SSID (Service Set Identifier), and vendor interoperability strategies. Prepare students to earn Cisco Wireless LAN Support Specialist designation and to take the Certified Wireless Network Administrator (CWNA) exam. Prerequisites: CNT170, or permission of instructor.

CNT200  4 CREDITS  6 PERIODS
Cisco Networking Advanced Routing
Development of knowledge and skills needed to manage Internet Protocol (IP) traffic and access, design Wide Area Networks (WANs), understand scalable internetworks and Quality of Service (QoS), configure advanced routing protocols (Routing Internet Protocol version 2 [RIPv2], Border Gateway Protocol [BGP], Intermediate System to Intermediate System [IS-IS], Enhanced Interior Gateway Routing Protocol [EIGRP], Open Shortest Path First [OSPF]), and perform advanced IP addressing (Network Address Translation [NAT], Variable Length Subnet Masking [VLSM]). Preparation for Cisco Certified Network Professional (CCNP) exam. Prerequisites: CNT170 or CCNA industry certification, or permission of instructor. Corequisites: CNT210 and CNT220.

CNT210  4 CREDITS  6 PERIODS
Cisco Networking Remote-Access Networks
Emphasis on development of knowledge and skills to build, configure and troubleshoot a remote-access network to interconnect central sites of branch offices, home offices and control access to the central site plus maximize bandwidth over remote links. Preparation for Cisco Certified Network Professional (CCNP) exam. Prerequisites: CNT170, or CCNA industry certification, or permission of instructor. Corequisites: CNT200 and CNT220.

CNT220  4 CREDITS  6 PERIODS
Cisco Networking Multi-Layer Switching
Development of knowledge and skills in building campus networks using advanced and multi-layer switching technologies. Preparation for Cisco Certified Network Professional (CCNP) exam. Prerequisites: CNT170 or CCNA industry certification, or permission of instructor. Corequisites: CNT200 and CNT210.
**COURSE DESCRIPTIONS**

**CNT230 4 CREDITS 6 PERIODS**

Cisco Network Troubleshooting

Emphasis on troubleshooting complex network problems by focusing on documenting and baselining a network, utilizing troubleshooting methodologies and tools, and learning effective skills in Layer 1 to 7 troubleshooting. Preparation for the last of four exams leading to the Cisco Certified Network Professional (CCNP) certification. Prerequisites: CNT200, CNT210 and CNT220, or CCNP Advanced Routing, Remote Access, and Multi-Layer Switching Certification, or permission of instructor.

**Communication (COM)**

**COM095 3 CREDITS 3 PERIODS**

Basic Oral Communication Skills

Listening, speaking, and related academic performance skills, including note taking. Emphasis on activities designed to improve and synthesize these skills. Prerequisites: None.

**COM100 3 CREDITS 3 PERIODS**

Introduction to Human Communication

Theory and practice of communication skills in public, small group, and interpersonal settings. Includes study of the speech communication process. Prerequisites: None.

**COM110 3 CREDITS 3 PERIODS**

Interpersonal Communication

Theory and practice of communication skills which affect day-to-day interactions with other persons. Topics may include using verbal and nonverbal symbols, interactive listening, resolving interpersonal conflict, developing and maintaining personal and professional relationships. Prerequisites: None.

**COM120 3 CREDITS 3 PERIODS**

Pronunciation of American Speech

Analysis of American speech production problems due to accents produced by another language, correction of misarticulated American speech sounds, critical listening to sound production, understanding American English speech patterns, practicing American idioms and expressions, and preparing and delivering group and individual speech presentations. Prerequisites: None.

**COM207 3 CREDITS 3 PERIODS**

Introduction to Communication Inquiry

Overview of theory and methodological practice in communication with particular attention to scholarly writing skills. Emphasis on development of critical thinking skills through active participation in the research process. Prerequisites: ENG101 or ENG107 or equivalent, and COM100 or equivalent, or permission of instructor. Course Note: Recommended for the communication major.

**COM225 3 CREDITS 3 PERIODS**

Public Speaking

Designed to enhance the student’s ability to present public speeches confidently and competently. Also designed to improve information literacy and critical thinking skills. Prerequisites: ENG101 or ENG107, or equivalent.

**COM230 3 CREDITS 3 PERIODS**

Small Group Communication

Principles and processes of small groups and development of skills for participation and leadership in small group settings. Practice in problem solving, decision making, and information sharing. Prerequisites: ENG101, or ENG107, or equivalent.

**COM241 3 CREDITS 3 PERIODS**

Performance of Literature

The study, analysis, and preparation for performance of prose, poetry, and dramatic literature. Preparation of material for public audiences. Prerequisites: ENG101, or ENG107, or equivalent.

**COM250 3 CREDITS 3 PERIODS**

Introduction to Organizational Communication

Introduction to the study of communication in organizations including identification of variables, roles and patterns influencing communication in organizations. Prerequisites: None.

**COM259 3 CREDITS 3 PERIODS**

Communication in Business and Professions

Interpersonal, group, and public communication in business and professional organizations. Emphasis on oral communication. Prerequisites: ENG101, or ENG107, or equivalent.
COM263 3 CREDITS 3 PERIODS
Elements of Intercultural Communication
Basic concepts, principles, and skills for improving oral communication between persons from different minority, racial, ethnic, and cultural backgrounds. Prerequisites: None.

COM275 3 CREDITS 3 PERIODS
Nonverbal Communication
Effects of space, time, body movements, environment, objects, and voice quality on human communication and interaction. Prerequisites: None.

Computer-Aided Drafting (CAD)
CAD103AA 1 CREDIT 1 PERIOD
Basic Print Reading for Manufacturing
Basic print reading knowledge and skills necessary for workers in the manufacturing field. Visualization, interpretation and analysis of common manufacturing drawings, and other design documentation. Prerequisites: None.

Computer Information Systems (CIS)
CIS102 1 CREDIT 1 PERIOD
Interpersonal and Customer Service Skills for IT Professionals
Examines behaviors necessary to develop and support an effective client service organization. Focuses on methods of increasing the effectiveness of help-desk professionals when responding to a range of customer conditions. Prerequisites: None.

CIS105 3 CREDITS 4 PERIODS
Survey of Computer Information Systems
Overview of computer technology, concepts, terminology, and the role of computers in society. Discussion of social and ethical issues related to computers. Use of word processing, spreadsheet, database, and presentation software. Includes programming and use of the Internet. Exploration of relevant emerging technologies. Prerequisites: None.

CIS108 1 CREDIT 2 PERIODS
Electronic Portfolio Development
Compile, reflect on, and select prior learning experiences and artifacts. Design, produce, and publish an online portfolio that documents prior learning. Includes techniques for presenting the electronic portfolio for evaluation. Prerequisites: (CIS105 or BPC110), or permission of instructor.

CIS110AE 1 CREDIT 2 PERIODS
Excel: Level I
Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, and projections. Prerequisites: None.

CIS110DE 3 CREDITS 5 PERIODS
Excel Spreadsheet
Computer spreadsheet skills for solving business problems using Excel, including calculations, forecasting, projections, macro programming, database searching, extraction, linking, statistics, and matrix manipulation. Production of graphs and reports. Project design using multiple, integrated spreadsheets. Prerequisites: None.

CIS111AM 1 CREDIT 2 PERIODS
Database Management: Microsoft Access - Level I
Introduction to the basic elements of a current version of the Microsoft Access database management program, for casual and beginning users. Prerequisites: None.

CIS111AB 1 CREDIT 2 PERIODS
PowerPoint: Level I
Use of PowerPoint software to produce professional-quality presentation visuals. Prerequisites: None.

CIS111BB 1 CREDIT 2 PERIODS
PowerPoint: Level II
Use of PowerPoint software add movement and sound to desktop presentations to enhance audience attention. Prerequisites: BPC/CIS111AB.

CIS111CB 1 CREDIT 1 PERIOD
PowerPoint: Level III
Use of PowerPoint software for advanced desktop presentation techniques, including advanced animation and sound sequences. Prerequisites: BPC/CIS111BB.
**CIS119DO**  
3 CREDITS  
4 PERIODS  
**Introduction to Oracle: SQL**  
Use of Oracle tools and methodologies to fulfill real-world business information requirements. Hands-on exercises for designing, creating, and maintaining database structures to store, retrieve, update, and display data in a relational database using the SQL programming language. Creating and maintaining database objects. Advanced retrieval techniques. Prerequisites: CIS105 or permission of instructor.

**CIS119DP**  
3 CREDITS  
4 PERIODS  
**Oracle: Database Administration**  
Basic administrative tasks performed by a database administrator (DBA). Conceptual understanding and hands-on applications of the Oracle database architecture and interaction of its components. Prerequisites: (CIS19DO, and CIS164AB), or CIS126++, or permission of instructor.

**CIS121AB**  
1 CREDIT  
2 PERIODS  
**Microsoft Command Line Operations**  
Use of the Microsoft command line interface: basic concepts, internal and external commands, subdirectories, and editor. Prerequisites: None.

**CIS121AE**  
1 CREDIT  
2 PERIODS  
**Windows Operating System: Level I**  
Specific topics include booting and shutting down the computer, navigating the desktop, start button features, taskbar status, and receiving on-line help support. Exploring and managing folders and files, running programs, and learning about Wordpad and Paint application programs. Prerequisites: None.

**CIS126DL**  
3 CREDITS  
4 PERIODS  
**Linux Operating System**  
Introduction to the Linux Operating system. Develop knowledge and skills required to install, configure and troubleshoot a Linux-based workstation including basic network functions. Learn basic command line and Graphical User Interface (GUI) desktop environment utilities and applications. Fundamental abilities to achieve the entry-level industry certification covered. Prerequisites: None.

**CIS131AA**  
1 CREDIT  
1 PERIOD  
**Doing Business on the Internet**  
Overview of different ways businesses are taking advantage of and using the Internet. Includes how companies are selling items and services over the Internet; techniques used to expand customer contacts; marketing strategies; availability of government and financial information; future potential and disadvantages; using the Internet for customer service; establishing a World Wide Web site. Some previous computer experience preferred. Prerequisites: None.

**CIS133AA**  
1 CREDIT  
2 PERIODS  
**Internet/Web Development Level I-A**  
Overview of the Internet and its resources. Hands-on experience with various Internet communication tools. Prerequisites: None.

**CIS133BA**  
1 CREDIT  
1 PERIOD  
**Internet/Web Development Level I-B**  
Exploration of additional Internet resources. Hands-on experience with a variety of resource discovery and information retrieval tools as well as enhancement of Web pages. Prerequisites: BPC/CIS133AA.

**CIS133CA**  
1 CREDIT  
1 PERIOD  
**Internet/Web Development Level I-C**  
Web site development using enhancement codes. Includes frames, style sheets and javascript as well as design principles and typography. Prerequisites: BPC/CIS133BA.

**CIS150AB**  
3 CREDITS  
4 PERIODS  
**Object-Oriented Programming Fundamentals**  
Structured and Object-Oriented design and logic tools. Use of computer problems to demonstrate and teach concepts using appropriate programming language. Prerequisites: CIS105, or permission of instructor.

**CIS159**  
3 CREDITS  
4 PERIODS  
**Visual Basic Programming I**  
Use of the Visual Basic programming language to solve problems using suitable examples from business or other disciplines. Prerequisites: CIS105, or permission of instructor.

**CIS162AB**  
3 CREDITS  
4 PERIODS  
**C++: Level I**  
Introduction to C++ programming including general concepts, program design, development, data types, operators, expressions, flow control, functions, classes, input and output operations, debugging, structured programming, and object-oriented programming. Prerequisites: CIS105, or permission of instructor.
CIS162AD 3 CREDITS 4 PERIODS
C#: Level I
Introduction to C# programming including general concepts, program design, development, data types, operators, expressions, flow control, functions, classes, input and output operations, debugging, structured programming, and object-oriented programming. Prerequisites: CIS105, or permission of instructor.

CIS163AA 3 CREDITS 4 PERIODS
Java Programming: Level I
Introduction to Java programming. Includes features needed to construct Java Applets, Java Applications, control structures, methods, arrays, character and string manipulation, graphics, and object-oriented programming. Prerequisites: CIS105.

CIS164AB 3 CREDITS 4 PERIODS
Oracle: PL/SQL Programming
Writing PL/SQL procedures, functions, and packages. Creating and managing PL/SQL program units and database triggers in Oracle development environment. Managing dependencies and manipulating large objects. Prerequisites: CIS119DO, or permission of the instructor.

CIS164AC 3 CREDITS 4 PERIODS
Oracle: Developer Forms I
Building and testing interactive applications consisting of one or more Developer forms modules. Building a complete forms application using Oracle Developer. Customizing forms with graphical user input items, such as check boxes, list items and radio groups. Modifying data access by creating event-related triggers. Prerequisites: CIS164AB, or permission of instructor.

CIS164AG 2 CREDITS 3 PERIODS
Oracle: Data Modeling and Relational Database Design
Top-down, systematic approach to developing a relational database and defining requirements as entities, attributes, and relationships. Developing an entity-relationship (ER) diagram that accurately reflects the business. Mapping the ER diagram to an initial database design. Prerequisites: CIS105 or permission of instructor.

CIS166 3 CREDITS 4 PERIODS
Web Scripting/Programming
Software development for Web sites, including client-side script and Common Gateway Interface (CGI) scripting. Covers Web-based transaction processing and use of databases in conjunction with the Web. Includes security issues. Prerequisites: CIS133CA or CIS133DA or permission of instructor.

CIS190 3 CREDITS 4 PERIODS
Introduction to Local Area Networks
Overview of local area networks. Emphasis on the elements of a local area network, current issues and products, and use of a local area network. Includes terminology, hardware and software components, connectivity, resource monitoring and sharing, electronic mail and messaging, and security issues. Prerequisites: CIS105, or permission of instructor.

CIS225AB 3 CREDITS 3 PERIODS
Object-Oriented Analysis and Design
Methodologies and notations for fundamental object-oriented analysis and design including use cases, objects, classes, stereotypes, and relationships. Object-oriented iterative process for system development. A continuous application development exercise for applying the analysis and design concepts. Prerequisites: Any program language, or permission of instructor.

CIS233AA 1 CREDIT 1 PERIOD
Internet/Web Development Level II-A
Design and creation of pages on the Internet’s World Wide Web using hypertext markup language (HTML). Hands-on experience authoring HTML and preparing sophisticated web documents. Prerequisites: BPC/CIS133BA or permission of instructor.

CIS233BA 1 CREDIT 1 PERIOD
Internet/Web Development Level II-B
Hands-on experience designing Web presentations using advanced markup languages, programming languages, scripts and multimedia. Prerequisites: CIS233AA or permission of instructor.

CIS233BB 1 CREDIT 2 PERIODS
Internet Web Publishing: FrontPage Level II
Advanced hypertext markup language (HTML) using FrontPage. Covers tables, forms, image maps, gateway scripts, and multimedia. Hands-on experience of designed advanced Web presentations. Prerequisites: CIS233AB or permission of instructor.
CIS233DA 3 CREDITS 4 PERIODS
Internet/Web Development Level II
Design and create pages on the World Wide Web with a variety of markup languages, programming languages, scripts, and multimedia. Hands-on experience authoring and preparing sophisticated web documents. Exploration of best practices/issues for web design and publishing and careers in web development and e-commerce. Prerequisites: BPC/CIS133CA or BPC/CIS133DA or permission of instructor.

CIS235 3 CREDITS 4 PERIODS
e-Commerce
Introduction to Electronic Commerce on the Internet. Designing an electronic storefront including web page content and development, e-commerce site marketing, advertisement, legal and security considerations, credit card and other debit transaction covered. Also includes current issues in e-commerce. Prerequisites: CIS133CA, or CIS133DA, or permission of instructor.

CIS238DL 3 CREDITS 4 PERIODS
Linux System Administration
Managing Linux Operating Systems including sophisticated manipulation of file structures, backup systems, printing processes, troubleshooting, user account management, hard disk maintenance and configuration, process monitoring and prioritizing, kernel customization, and system resource control. Preparation for industry certifications such as the SAIR/GNU LCP and LCA certificates, CompTIA’s Linux+, RHCT, RHCE, and LPIC. Prerequisites: CIS126AL, CIS126BL and CIS126CL; or CIS126DL or Permission of instructor.

CIS239DL 3 CREDITS 4 PERIODS
Linux Shell Scripting
Linux Shell Scripting syntax and methods including the automation of system tasks as well as interpreted user-level programming. Course includes the Linux Borne Again Shell (BASH) as well as a variety of industry competitors. Prerequisites: CIS238DL or permission of instructor.

CIS240DL 3 CREDITS 4 PERIODS
Linux Network Administration
In-depth networking based on Linux servers and the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite. Integrating Linux servers and workstations into a network environment with multi-platform network operating systems including a variety of open-standard and proprietary protocols. Preparation for industry certifications such as the SAIR/GNU LCP and LCA certificates, CompTIA’s Linux+, RHCT, RHCE, and LPIC. Prerequisites: CIS126AL, CIS126BL and CIS126CL; or CIS126DL or instructor approval.

CIS250 3 CREDITS 4 PERIODS
Management of Information Systems
The study of business information systems and its management, communication, e-business strategies, emerging technologies, database concepts, and project management. Overview of systems analysis and design. Learn about the competitive and strategic uses of information systems and how they are transforming organizations and their management. Prerequisites: CIS105.

CIS259 3 CREDITS 4 PERIODS
Visual Basic Programming II
Use of the Visual Basic programming language to identify and solve advanced problems using suitable examples from business or other disciplines. Prerequisites: CIS159 or permission of instructor.

CIS263AA 3 CREDITS 4 PERIODS
Java Programming: Level II
Intermediate Java programming. Includes features needed to construct object-oriented programming, multithreading, multimedia, files, streams and data structure. Prerequisites: CIS163AA or permission of the instructor.

CIS271DL 3 CREDITS 4 PERIODS
Linux Security
Implementing in-depth security methods and techniques in a Linux-based network environment. Utilize programs, utilities and configuration techniques to provide user-level, file system, and network security. Gain knowledge in a variety of security cracking techniques and how to guard against them. In all aspects of security, the standard of practicing professional ethics seriously emphasized. Preparation for industry certifications such as the SAIR/GNU LCP and LCA certificates, CompTIA’s Linux+, RHCT, RHCE, and LPIC. Prerequisites: CIS240DL or Permission of Instructor.

CIS280 3 CREDITS 4 PERIODS
Current Topics in Computing
Critical inquiry of current topics in computing. Application of industry trends to solve problems and/or investigate issues. Prerequisites: None.
CIS290AA 1 CREDIT 6 PERIODS
CIS290AB 2 CREDITS 12 PERIODS
CIS290AC 3 CREDITS 18 PERIODS

Computer Information Systems Internship
Work experience in business or industry.
Prerequisites: Permission of instructor.

Computer Science (CSC)

CSC100 3 CREDITS 3 PERIODS
Introduction to Computer Science for Non-Computer Majors
Concepts of problem solving, structured programming in C++, fundamental algorithms and techniques, and computer system concepts. Social and ethical responsibilities. Intended for majors other than Computer Science. Prerequisites: MAT120, or MAT121, or MAT122.

CSC100AA 3 CREDITS 4 PERIODS
Introduction to Computer Science for Non-Computer Majors
Concepts of problem solving, structured programming in C++, fundamental algorithms and techniques, and computer system concepts. Social and ethical responsibilities. Intended for majors other than Computer Science. Prerequisites: MAT120, or MAT121, or MAT122.

CSC110AA 3 CREDITS 4 PERIODS
Introduction to Computer Science for Majors
Concepts of problem solving, structured and object-oriented programming in Java, fundamental algorithms and techniques and computer system concepts. Social and ethical responsibilities. Intended for Computer Science and Computer Systems Engineering Majors. Prerequisites: MAT120, or MAT121, or MAT122.

CSC120 4 CREDITS 6 PERIODS
Digital Design Fundamentals
Number systems, conversion methods, binary and complement arithmetic, Boolean switching algebra and circuit minimization techniques. Analysis and design of combinational logic, flip-flops, simple counters, registers, ROMs, PLDs, synchronous and asynchronous sequential circuits, and state reduction techniques. Building physical circuits. Prerequisites: CSC100, or CSC110, or CSC181, or ELE181, or NET181, or equivalent, or permission of instructor.

CSC181 3 CREDITS 3 PERIODS
Applied Problem Solving with Visual BASIC
Introduction to systematic definition of problems, solution formulation, and testing. Visual BASIC programming language applied to problems in mathematics, science, and business. Prerequisites: None.

CSC181AA 3 CREDITS 4 PERIODS
Applied Problem Solving with Visual BASIC
Introduction to systematic definition of problems, solution formulation, and testing. Visual BASIC programming language applied to problems in mathematics, science, and business. Prerequisites: None.

CSC182AA 3 CREDITS 4 PERIODS
Principles of Programming with C#.NET
Introduction to object-oriented program analysis, design, and development using Visual C#.NET. Includes general concepts, data types, expressions, flow control, methods, classes, arrays, event-driven models, Windows applications, and Web applications. Prerequisites: None.

CSC200AA 3 CREDITS 4 PERIODS
Principles of Computer Science (Java)
Introduction to computer science. Issues and concepts throughout the field, including software development, data organization, machine architecture, algorithmic machines, and ethics in computing. Programming in Java. Prerequisites: CSC110 or (CSC100 or equivalent) and permission of instructor.

CSC210AA 3 CREDITS 4 PERIODS
Data Structures and Algorithms (Java)
Static and dynamic data structures and associated applications; recursive and iterative sorting and searching algorithms; introduction to object oriented design and programming techniques; software engineering methods including design models and implementation/testing strategies; professional responsibilities; Java language. Prerequisites: CSC200.

CSC225 4 CREDITS 5 PERIODS
Assembly Language Programming on Motorola Microprocessors
Assembly language programming including input/output programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Macintosh-based assignments. Prerequisites: [(CSC100 or CSC110 or CSC180) and CSC/EEE120] or permission of instructor.
CSC230 4 CREDITS 5 PERIODS

Computer Organization and Assembly Language
Assembly language programming including input/output (I/O) programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Processor organization and design, data path, control, pipelining, and input/output. Memory organization with cache and virtual memory. Prerequisites: [(CSC100 or CSC110) and CSC/EEE120], or permission of instructor.

CSC240 3 CREDITS 5 PERIODS

Introduction to Different Programming Languages
Introduction to procedural (C/C++), applicative (LISP), and declarative (Prolog) languages. Prerequisites: CSC210 or permission of instructor.

Counseling and Personal Development (CPD)

CPD102AB 2 CREDITS 2 PERIODS

Career Exploration
Designed to assist students making career choices. Focuses on self-assessment in terms of educational and career opportunities and reasonable possibilities in the world of work. Includes assessment for personal/career interests, values, needs, attitudes, skills, and other potential, and exploration of occupational information to establish career and educational goals. Prerequisites: None.

CPD102AF 2 CREDITS 2 PERIODS

Human Sexuality
Enables students to view their own sexuality as a normal aspect of personal development. Examination of masculine and feminine differences and/or conflicts in social roles, emotions, and physical development. Prerequisites: None.

CPD102AH 2 CREDITS 2 PERIODS

Stress Management
Reviews the sources of stress, the physiological effects and the psychological impact of stress on the individual. Provides strategies to reduce stress. Prerequisites: None.

CPD102AJ 2 CREDITS 2 PERIODS

Personal Spiritual Development
Designed to encourage exploration of human spirituality. Focus on personal values and individual belief systems. Emphasis on developing an integrated concept of spirituality and applying it to one’s own life. Prerequisites: None.

CPD103BA 2 CREDITS 2 PERIODS

Women in Transition
Designed to assist and support women who are experiencing life transitions. Emphasis on assessing self-potential, increasing self-confidence, managing life change, and exploring education/career/life options in terms of the realities of roles for women today. Prerequisites: None.

CPD103BH 2 CREDITS 2 PERIODS

Male-Female Communication
Designed to provide students with a better understanding of male-female characteristics and how that along with a renewed emphasis on basic communication skills will improve communication between the sexes. Prerequisites: None.

CPD104 3 CREDITS 3 PERIODS

Career and Personal Development
An overview of the process of career/life planning through self-awareness and understanding. Focus on specific skill development such as dealing with change, decision making, goal setting and understanding lifestyles. Provides opportunity to evaluate interests, skills and values. Emphasis on the development of a comprehensive career search process which includes current occupational information, specific tools for researching the job market and acquiring employment. Prerequisites: None.

CPD150 3 CREDITS 3 PERIODS

Strategies for College Success
Focus on increasing student success through college orientation and personal growth, study skills development, and educational and career planning. Prerequisites: None.

CPD150AA 1 CREDIT 1 PERIOD

College Orientation & Personal Growth
Emphasis on increasing student success through college orientation, identification of learning style and the use of time management, goal-setting, and interpersonal communication strategies. Prerequisites: None.
CPD150AB 1 CREDIT 1 PERIOD
Study Skills Development
Emphasis on increasing student success through the use of study strategies including materials organization, note-taking, reading, test-taking, memory, and critical and creative thinking.
Prerequisites: None.

CPD150AC 1 CREDIT 1 PERIOD
Educational and Career Planning
Emphasis on increasing student success through educational and career planning. Prerequisites: None.

CPD160 3 CREDITS 3 PERIODS
Introduction to Multiculturalism
Examination of the multiple cultures and subcultures within the contemporary United States. Personal exploration of awareness and appreciation of multiculturalism. Activities for experiencing diverse cultural perspectives. Skills for recognizing, analyzing, and mediating cultural and psychological factors impacting conflict and accord between diverse cultures. Credit (P) or no credit (Z).
Standard grading available according to procedures outlined in catalog. Prerequisites: None.

Covey (COV)

COV110 2 CREDITS 2 PERIODS
The Seven Habits of Highly Effective People
Development of interpersonal habits that are used by successful people in their personal and professional lives. Seven Habits of Highly Effective People. Video-based lecture course. Prerequisites: None.

Crime and Intelligence Analysis (CIA)

CIA210 2 CREDITS 2 PERIODS
Introduction to Crime and Intelligence Analysis I
Basic crime analysis and intelligence analysis methodologies and functions in the law enforcement environment. Intelligence analysis includes types of intelligence, the intelligence process, intelligence cycle, and analytical charting. Crime analysis includes types of crime analysis, administration of crime analysis, data collection and data integrity, research methodology, statistics, spatial analysis, and tactical analysis. Information presentations and employment overview.
Prerequisites: None.

CIA220 3 CREDITS 3 PERIODS
Link Analysis, Visual Investigative Analysis (VIA), and Time Event Charting (TEC)
Use of link analysis, visual investigative analysis (VIA), and time event charting (TEC) as analytical tools in a criminal justice environment. Includes analysis techniques, chart development, and an overview of commonly used software applications.
Prerequisites: CIA210 or permission of instructor.

CIA230 3 CREDITS 3 PERIODS
Telephone Toll and Flow Analysis
Use of telephone toll analysis and flow charting as analytical tools in a criminal justice environment. Includes analysis techniques, chart development, and an overview of commonly used software applications.
Prerequisites: CIA220 or permission of instructor.

CIA240 3 CREDITS 3 PERIODS
Crime Analysis
Basics of crime analysis and skills needed to predict future crime occurrences and create crime bulletins by using information to analyze crimes and crime trends. Includes crime analysis types and how they are used in the criminal justice environment, the crime analysis process, crime mapping, and computer software applications used in crime analysis.
Prerequisites: Demonstrate sufficient knowledge and skills by passing the basic Microsoft Word word processing and basic Microsoft Excel spreadsheets sections within the Crime and Intelligence Analysis Course Prerequisite Assessment test, or permission of instructor.
CIA250  3 CREDITS  3 PERIODS

Statistics for Crime Analysis
Introduction to the use of statistics in crime analysis. Includes an overview of inferential and descriptive statistics, computing the types of statistics that are most frequently utilized in crime analysis, and using software tools to conduct statistical analysis. Prerequisites: Demonstrate sufficient knowledge and skills by passing the basic Microsoft Word word processing and basic Microsoft Excel spreadsheets sections within the Crime and Intelligence Analysis Course Prerequisite Assessment test, or permission of instructor.

CIA260  2 CREDITS  3.6 PERIODS

Analysis Using Geographic Information Systems (GIS)
Using Geographic Information Systems (GIS) ArcView software in the performance of intelligence analysis and the three phases of crime analysis: administrative, strategic, and tactical. Various types of maps, hot spot identification, crime patterns, crime reports, and spatial analysis are introduced. Extensions and other tools to support the three phases of crime analysis implementation. Prerequisites: Demonstrate sufficient knowledge and skills by passing the basic Microsoft Word word processing and basic Microsoft Excel spreadsheets sections within the Crime and Intelligence Analysis Course Prerequisite Assessment test, or permission of instructor. CIA250 suggested but not required.

Critical Reading (CRE)

Critical and Evaluative Reading I
Emphasis on applying critical inquiry skills to varied and challenging reading materials. Includes analysis, synthesis, and evaluation through written discourse. Prerequisites: ENG101 and (reading placement test score of 41 or higher (ASSET), or grade of "C" or better in RDG091, or permission of instructor.)

Also see Reading Education (RDG).

Dance (DAN)

DAN115  1 CREDIT  3 PERIODS

Contemporary Dance Trends
Theory and practice of current social dance trends. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN115AA  1 CREDIT  3 PERIODS

Contemporary Dance Trends: Hip Hop
Theory and practice of Hip Hop dance. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN120AB  1 CREDIT  3 PERIODS

World Dance: Flamenco
Theory and practice of Flamenco. Development of movement quality and performance skills, individually or in a group setting. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN120AE  1 CREDIT  3 PERIODS

World Dance: Middle Eastern Dance
Theory and practice of Middle Eastern dance. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.
DAN120AG 1 CREDIT 3 PERIODS  
**World Dance: East Indian Dance**  
Theory and practice of East Indian dance. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN120AH 1 CREDIT 3 PERIODS  
**World Dance: Native American Dance**  
Theory and practice of Native American dance. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN120AI 1 CREDIT 3 PERIODS  
**World Dance: European Folk Dance**  
Theory and practice of European Folk dance. Development of movement quality and performance skills individually or in a group setting. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN120AJ 1 CREDIT 3 PERIODS  
**World Dance: Asian Dance Forms**  
Theory and practice of Asian Dance Forms. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN120AK 1 CREDIT 3 PERIODS  
**World Dance: Capoeira**  
Theory and practice of Capoeira. Development of movement quality and performance skills. Prerequisites: None. Course Note: May be repeated for a total of two (2) credits.

DAN125 1 CREDIT 2 PERIODS  
**Social Dance**  
Theory and practice of social dance. Development of movement quality and performance skills individually, with a partner or in a group setting. May include Salsa, Mambo, Cha Cha Cha, Merengue, Rumba, Bachata, International Latin Ballroom, or Latin Ballroom Performance. Prerequisites: None. Course Note: May be repeated for a total of four (4) credits.

DAN125AA 1 CREDIT 2 PERIODS  
**Social Dance: Ballroom**  
Theory and practice of ballroom dance. Development of movement quality and performance skills individually, with a partner or in a group setting. May include Salsa, Mambo, Cha Cha Cha, Merengue, Rumba, East Coast Swing, Lindy Hop, West Coast Swing, Foxtrot, Waltz, American Tango, International Ballroom, or Ballroom Performance. Prerequisites: None. Course Note: May be repeated for a total of four (4) credits.

DAN125AB 1 CREDIT 2 PERIODS  
**Social Dance: Swing**  
Theory and practice of swing dance. Development of movement quality and performance skills individually, with a partner or in a group setting. May include East Coast Swing, Lindy Hop, West Coast Swing, or Foxtrot. Prerequisites: None. Course Note: May be repeated for a total of four (4) credits.

DAN125AC 1 CREDIT 2 PERIODS  
**Social Dance: Latin**  
Theory and practice of Latin dance. Development of movement quality and performance skills individually, with a partner or in a group setting. May include Salsa, Mambo, Cha Cha Cha, Merengue, Rumba, Bachata, International Latin Ballroom, or Latin Ballroom Performance. Prerequisites: None. Course Note: May be repeated for a total of four (4) credits.

DAN125AD 1 CREDIT 2 PERIODS  
**Social Dance: Country**  
Theory and practice of country dance. Development of movement quality and performance skills individually, with a partner or in a group setting. May include Two-Step, Cha Cha Cha, Swing, West Coast Swing, East Coast Swing, Waltz, Rhythm Two-Step, or Night Club and Line Dance. Prerequisites: None. Course Note: May be repeated for a total of four (4) credits.

DAN125AE 1 CREDIT 2 PERIODS  
**Social Dance: Tango**  
Theory and practice of tango dance. Development of movement quality and performance skills individually, with a partner or in a group setting. May include Argentine Tango, American Tango or International Style Tango. Prerequisites: None. Course Note: May be repeated for a total of four (4) credits.

DAN129 1 CREDIT 3 PERIODS  
**Musical Theatre Dance I**  
Introduction to the theory and practice of musical theatre dance at the beginning level. Development of movement quality and performance skills. Prerequisites: None.
<table>
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<tr>
<th>COURSE DESCRIPTIONS</th>
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<tbody>
<tr>
<td><strong>DAN131</strong> 1 CREDIT 3 PERIODS</td>
</tr>
<tr>
<td>Ballet I</td>
</tr>
<tr>
<td>Introduction to the theory and practice of ballet at the beginning level. Development of movement quality and performance skills. Prerequisites: None.</td>
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<tr>
<td><strong>DAN132</strong> 1 CREDIT 3 PERIODS</td>
</tr>
<tr>
<td>Modern Dance I</td>
</tr>
<tr>
<td>Introduction to the theory and practice of modern dance at the beginning level. Development of movement quality and performance skills. Prerequisites: None.</td>
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<tr>
<td><strong>DAN133</strong> 1 CREDIT 3 PERIODS</td>
</tr>
<tr>
<td>Modern Jazz Dance I</td>
</tr>
<tr>
<td>Introduction to the theory and practice of modern jazz dance at the beginning level. Development of movement quality and performance skills. Prerequisites: None.</td>
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<tr>
<td><strong>DAN134</strong> 1 CREDIT 3 PERIODS</td>
</tr>
<tr>
<td>Ballet II</td>
</tr>
<tr>
<td>Theory and practice of ballet at the advanced beginning level. Development of movement quality and performance skills. Prerequisites: DAN131 or permission of instructor.</td>
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<tr>
<td><strong>DAN135</strong> 1 CREDIT 3 PERIODS</td>
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<tr>
<td>Modern Dance II</td>
</tr>
<tr>
<td>Theory and practice of modern dance at the advanced beginning level. Development of movement quality and performance skills. Prerequisites: DAN132 or permission of instructor.</td>
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<tr>
<td><strong>DAN136</strong> 1 CREDIT 3 PERIODS</td>
</tr>
<tr>
<td>Modern Jazz Dance II</td>
</tr>
<tr>
<td>Theory and practice of modern jazz dance at the advanced beginning level. Development of movement quality and performance skills. Prerequisites: DAN133 or permission of instructor.</td>
</tr>
<tr>
<td><strong>DAN138</strong> 1 CREDIT 1 PERIOD</td>
</tr>
<tr>
<td>Dance Seminar I</td>
</tr>
<tr>
<td>Level I scientific evaluation and in-depth discussion of the theory and practice of work done in dance technique class. Prerequisites: None. Corequisites: Any ballet, modern dance, or modern jazz dance technique course.</td>
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<tr>
<td><strong>DAN140</strong> 1 CREDIT 3 PERIODS</td>
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<tr>
<td>Tap Dance I</td>
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<tr>
<td>An introduction to the theory and practice of tap dance. May be repeated for a total of two (2) semester credit hours. Prerequisites: None.</td>
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<td>Course Code</td>
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<tr>
<td>DAN232</td>
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<tr>
<td>Modern Dance III</td>
</tr>
<tr>
<td>Theory and practice of modern dance at the beginning intermediate level. Development of movement quality and performance skills. Prerequisites: DAN135 or permission of instructor.</td>
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<tr>
<th>Course Code</th>
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<tr>
<td>DAN233</td>
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<tr>
<td>Modern Jazz Dance III</td>
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<tr>
<td>Theory and practice of modern jazz dance at the beginning intermediate level. Development of movement quality and performance skills. Prerequisites: DAN136 or permission of instructor.</td>
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<tr>
<td>DAN234</td>
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<tr>
<td>Ballet IV</td>
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<tr>
<td>Theory and practice of ballet at the intermediate level. Development of movement quality and performance skills. Prerequisites: DAN231 or permission of instructor.</td>
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<td>DAN235</td>
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<tr>
<td>Modern Dance IV</td>
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<tr>
<td>Theory and practice of modern dance at the intermediate level. Development of movement quality and performance skills. Prerequisites: DAN232 or permission of instructor.</td>
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<td>DAN236</td>
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<tr>
<td>Modern Jazz Dance IV</td>
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<tr>
<td>Theory and practice of modern jazz dance at the intermediate level. Development of movement quality and performance skills. Prerequisites: DAN233 or permission of instructor.</td>
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<tr>
<td>DAN238</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Dance Seminar II</td>
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<tr>
<td>Level II scientific evaluation and in-depth discussion of the theory and practice of work done in dance technique class. Prerequisites: DAN138 or permission of instructor. Corequisites: Any ballet, modern dance, or modern jazz dance technique course.</td>
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<tr>
<td>DAN264</td>
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<tr>
<td>Choreography I</td>
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<tr>
<td>Study of basic dance choreography to include construction of a phrase, structure and form in a composition, and the basic elements of time, space and energy. Prerequisites: None.</td>
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<td>DAN265</td>
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<tr>
<td>Choreography II</td>
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<tr>
<td>Exploration of the craft of choreography at the intermediate level. Experimentation with the various approaches to contemporary choreography as established by 20th century artists. Prerequisites: DAN264.</td>
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<tr>
<td>DAN267</td>
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<td>3</td>
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<tr>
<td>Dance for Children</td>
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<tr>
<td>Theory and practice of teaching creative, folk, square and other dance forms for children. Includes field experience. Prerequisites: None.</td>
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<tr>
<td>DAN280</td>
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<tr>
<td>Dance Practicum</td>
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<tr>
<td>A culmination of coursework for the dance major requiring completion of an extended choreographic work from conception to performance. Also requires a final evaluative paper on the successes and challenges encountered throughout the project. Prerequisites: Permission of instructor.</td>
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<tr>
<td>DAN290AA</td>
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<tr>
<td>DAN290AB</td>
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<td>6</td>
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<tr>
<td>DAN290AC</td>
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<td>9</td>
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<tr>
<td>Dance Conservatory I</td>
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<tr>
<td>An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the beginning level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills. Prerequisites: None. Course Notes: DAN290AA may be repeated for a total of three (3) credit hours; DAN290AB may be repeated for a total of six (6) credit hours; DAN290AC may be repeated for a total of nine (9) credit hours.</td>
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<tr>
<td>DAN291AA</td>
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<td>DAN291AB</td>
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<tr>
<td>DAN291AC</td>
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<td>9</td>
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<tr>
<td>Dance Conservatory II</td>
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<tr>
<td>An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the intermediate level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills. Prerequisites: (DAN131 and DAN132) or permission of</td>
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instructor. Course Notes: DAN291AA may be repeated for a total of three (3) credit hours; DAN291AB may be repeated for a total of six (6) credit hours; DAN291AC may be repeated for a total of nine (9) credit hours.

DAN292AA 1 CREDIT 3 PERIODS
DAN292AB 2 CREDITS 6 PERIODS
DAN292AC 3 CREDITS 9 PERIODS

**Dance Conservatory III**

An intensive course focusing on the theory and practice of dance technique including, but not limited to, ballet, modern dance, modern jazz, pilates, yoga and dance performance at the advanced level. Study of repertory and development of movement quality and performance skills. Includes an informal public showing of dance technique and performance skills. Prerequisites: (DAN134 and DAN135) or permission of instructor. Course Notes: DAN292AA may be repeated for a total of three (3) credit hours; DAN292AB may be repeated for a total of six (6) credit hours; DAN292AC may be repeated for a total of nine (9) credit hours.

**Economics (ECN)**

**ECN111/’211 3 CREDITS 3 PERIODS**

**Macroeconomic Principles**

A descriptive analysis of the structure and functioning of the American economy. Emphasis on basic economic institutions and factors that determine national income and employment levels. Consideration given to the macroeconomic topics of national income, unemployment, inflation and monetary and fiscal policies. Prerequisites: None. *Note: Course number changes to ECN211 spring semester 2007.

**ECN112/’212 3 CREDITS 3 PERIODS**

**Microeconomic Principles**

Microeconomic analysis including the theory of consumer choice, price determination, resource allocation and income distribution. Includes non-competitive market structures such as monopoly and oligopoly; and the effects of government regulation. Prerequisites: None. *Note: Course number changes to ECN212 spring semester 2007.

**ECN212/’213 3 CREDITS 3 PERIODS**

**The World Economy**

An analysis of the economic interdependence among nations, with emphasis on international trade and finance. Consideration given to the role and function of the multinational enterprise. Prerequisites: ECN112 or permission of instructor. *Note: Course number changes to ECN213 spring semester 2007.

**ECN263 3 CREDITS 3 PERIODS**

**The Economics of Natural Resources, Population and the Environment**

Applies economic analysis to both the causes and possible remedies of the problems of environmental deterioration and natural resource depletion. Includes discussion of the economic problems of urban communities and the relationship between population and economic growth and the depletion of natural resources and environmental pollution. Prerequisites: ECN100, or ECN111, or ECN112.
Education (EDU)

EDU160 3 CREDITS 3 PERIODS
Introduction to Developmental Disabilities
Basic overview of causation, prevention and habilitation of developmentally disabled individuals. Historical development and influences affecting remediation and treatment of developmentally delayed or disabled individuals. Prerequisites: None.

EDU161 3 CREDITS 3 PERIODS
Family Centered Services
Specific techniques and strategies available to families that enhance interactions with a special needs child. An overview of dynamics of family-child and parent-child relations. Legislation affecting children with special needs. Prerequisites: None.

EDU205 3 CREDITS 3 PERIODS
Self-Assessment for Teaching
An exploratory course for students considering a teaching career. Examination of the field of education in the United States through field experiences, self-assessment activities and career information. Prerequisites: None.

EDU221 3 CREDITS 3 PERIODS
Introduction to Education
Overview of the historical, political, economic, social, and philosophical factors that influence education and make it so complex. Opportunity for students to assess their interest and suitability for teaching. Prerequisites: None. Course Note: Requires minimum of 30 hours of field experience in elementary or secondary classroom environment.

EDU222 3 CREDITS 3 PERIODS
Introduction to the Exceptional Learner
Overview of the exceptional learner, one who differs from the average or normal, with emphasis on factors relating to current practices, identification, characteristics, and educational adaptations. Issues related to mildly disabled, severely disabled, emotionally and behaviorally disordered, mentally retarded, and gifted students. Prerequisites: None. Course Note: May include approved school-based practicum.

EDU230 3 CREDITS 3 PERIODS
Cultural Diversity in Education
Examination of the relationship of cultural values to the formation of self-concept and learning styles. Examination of the role of prejudice, stereotyping and cultural incompatibilities in education. Emphasis on teacher preparation (preservice and/or inservice) to offer an equal educational opportunity to students of all cultural groups. Prerequisites: None.

EDU236 3 CREDITS 3 PERIODS
Introduction to Relationships in a Classroom Setting
Analysis of K-12 classroom interactions, classroom environment, and classroom management skills from a teacher’s point of view. Focus on classroom as a multidimensional environment in which principles of classroom design, communication, management, and resources determine effectiveness. Prerequisites: None. EDU221 suggested but not required. Course Note: Requires a 20-hour field experience in a K-12 classroom.

EDU250 3 CREDITS 3 PERIODS
Overview of the Community Colleges
The history, functions, organization and current issues in the community/junior college with emphasis on the Arizona community colleges. Prerequisites: None.

EDU270AA 3 CREDITS 3 PERIODS
Elementary Reading and Decoding
Focus on the theories, methods and models of the teaching and learning processes of reading in the elementary grades. Approved school-based practicum required. Prerequisites: None.

EDU291 3 CREDITS 3 PERIODS
Children’s Literature
Review of folk and modern literature from a variety of world cultures, including application of literary criteria to folk and modern literature for children. Prerequisites: None.
### Electric Utility Technology (EUT)

**EUT110**  
**2 Credits**  
**2 Periods**  
**Line Work I**
Overview of line work industry including its history, technological developments and current practices. Examines industry equipment and tools. Focuses on safety practices and procedures used in utility line work industry. Prerequisites: None.

**EUT111**  
**4 Credits**  
**4 Periods**  
**Meter Technology I**
Provide students an entry level explanation of the fundamentals of meter technology as it relates to electrical metering. Prerequisites: None. Corequisites: EUT116.

**EUT112**  
**4 Credits**  
**4 Periods**  
**Basic Electricity: AC and DC**
Reviews the basic principles of Alternating Current (AC) and Direct Current (DC) electricity. Examines the structure and function of AC and DC circuits including series, parallel and series-parallel circuits. Includes an overview of electric systems and their applications in the utility industry. Prerequisites: None. Corequisites: EUT110 and EUT115.

**EUT115**  
**6 Credits**  
**18 Periods**  
**Field Training I**
Practice in the basics of climbing and working on utility poles. Focuses on apparatus and equipment, using ropes and rigging equipment, installations of single and double cross arms, pole framing and setting, use of hand line and building single-phase lines. Prerequisites: None. Corequisites: EUT110, EUT112.

**EUT116**  
**6 Credits**  
**18 Periods**  
**Meter Technology Lab I**
Provide students an entry level explanation of the fundamentals of meter technology as it relates to electrical metering. Introduction to basic installation, safety procedures, preventative maintenance, and testing of the self-contained watt-hour meter. Prerequisites: None. Corequisites: EUT111.

**EUT210**  
**2 Credits**  
**2 Periods**  
**Line Work II**
Overview of line work industry including its history, technological developments and current practices. Examines industry equipment and tools. Focuses on hot sticking, tag out and lock out procedures with emphasis on industry safety practices and procedures. Prerequisites: EUT110.

**EUT211**  
**4 Credits**  
**4 Periods**  
**Electrical Apparatus**
Overview of transformers and how they operate. Reviews single and three-phase theory. Focuses on construction and hook-up of single-phase, three-phase, open Y and Delta transformer connections. Presents an overview of surge arresters, including applications and installation. Prerequisites: EUT110, EUT112 and EUT115. Corequisites: EUT215.

**EUT212**  
**4 Credits**  
**4 Periods**  
**Meter Technology II**
Provide students an in depth level of understanding the fundamentals of meter technology as it relates to installation, testing, troubleshooting and maintenance of electrical metering. Prerequisites: EUT110, EUT112, and EUT116. Corequisites: EUT210 and EUT216.

**EUT215**  
**6 Credits**  
**18 Periods**  
**Field Training II**
Practice in the installation of electrical lines including transformers, reclosers, and service loops. Teaches rubber gloving, hot sticking techniques, and trenching of underground lines. Practice in the safe set-up and operation of equipment used in the line industry with a focus on the development of entry-level skills as drivers and operators. Includes procedures and practice in pole-top and bucket-truck rescues. Prerequisites: EUT110, EUT112, and EUT115. Corequisites: EUT211.

**EUT216**  
**6 Credits**  
**18 Periods**  
**Meter Technology Lab II**
Advanced procedures in the physical aspects of the watt-hour and poly phase meters as used in the test lab. Installation, safety procedures, preventative maintenance, testing, troubleshooting procedures and repairs of the self-contained watt-hour meter. Prerequisites EUT110, EUT111, and EUT116. Corequisites: EUT210 and EUT212.
Electrical Engineering (EEE)

EEE120 4 CREDITS 6 PERIODS
Digital Design Fundamentals
Number systems, conversion methods, binary and complement arithmetic, Boolean switching algebra and circuit minimization techniques. Analysis and design of combinational logic, flip-flops, simple counters, registers, ROMs, PLDs, synchronous and asynchronous sequential circuits, and state reduction techniques. Building physical circuits. Prerequisites: CSC100, or CSC110 or CSC181, or ELE181, or NET181, or equivalent, or permission of instructor.

EEE202 5 CREDITS 7 PERIODS
Circuits and Devices
Introduction to circuits and devices. Component models, transient analysis, steady state analysis, Laplace transform, and active and passive filter networks. Prerequisites: ECE103 or ECE103AB. Prerequisites or Corequisites: (MAT261 or MAT262) and (PHY116 or PHY117).

EEE225 4 CREDITS 5 PERIODS
Assembly Language Programming on Motorola Microprocessors
Assembly language programming including input/output programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Macintosh-based assignments. Prerequisites: (CSC100 or CSC110 or CSC200) and CSC/EEE120, or permission of instructor.

EEE230 4 CREDITS 5 PERIODS
Computer Organization and Assembly Language
Assembly language programming including input/output (I/O) programming and exception/interrupt handling. Register-level computer organization, I/O interfaces, assemblers, and linkers. Processor organization and design, data path, control, pipelining, and input/output. Memory organization with cache and virtual memory. Prerequisites: [(CSC100 or CSC110) and CSC/EEE120], or permission of instructor.

Electronic (ELE)

ELE111 4 CREDITS 6 PERIODS
Circuit Analysis I
Direct current (DC) and Alternating current (AC) electric circuits. Ohm’s law, Kirchoff’s laws, series, parallel and series-parallel circuits, fundamentals of inductance and capacitance, and the transient behavior of circuits containing resistance and capacitance or resistance and inductance. Prerequisites: None. Corequisites: ELE105 or MAT120 or MAT121 or MAT122, or equivalent.

Electronics Technology (ELT)

ELT100 3 CREDITS 3 PERIODS
Survey of Electronics
An introduction to the field of electronics for those who may not intend to specialize in electronics. Essentially nonmathematical in nature; includes familiarization with a wide range of electronic components. Application to electronic systems, such as radio transmitters and receivers - both AM (amplitude modulation) and FM (frequency modulation), television transmitters and receivers, logic control, and computers. Application also to automotive electronics. Prerequisites: None.

Engineering Science (ECE)

ECE102 2 CREDITS 4 PERIODS
Engineering Analysis Tools and Techniques
Learning culture of engineering, engineering use of computer tools, and computer modeling as applied to engineering analysis and design. Prerequisites: Two years of high school algebra or MAT122 or departmental approval. Corequisites: MAT151 or MAT182 or MAT187.

ECE102AA 2 CREDITS 4 PERIODS
Engineering Analysis Tools and Techniques
Learning culture of engineering, engineering use of computer tools, and computer modeling as applied to engineering analysis and design. Prerequisites: Two years of high school algebra or MAT122 or departmental approval. Corequisites: MAT151 or MAT182 or MAT187.
ECE103 2 CREDITS 4 PERIODS
Engineering Problem Solving and Design
Fundamentals of the design process: engineering modeling, communication and problem-solving skills in a team environment. Emphasis on process-based improvements to the design process. Introduction to engineering as a profession.
Prerequisites: ECE102 and (high school physics or PHY111).

ECE103AB 2 CREDITS 4 PERIODS
Engineering Problem Solving and Design
Fundamentals of the design process: engineering modeling, communication and problem-solving skills in a team environment. Emphasis on process-based improvements to the design process. Introduction to engineering as a profession.
Prerequisites: ECE102 and (high school physics or PHY111).

ECE111 3 CREDITS 5 PERIODS
Bioengineering Systems
Introduction to biological concepts and application of engineering to biological and earth systems. Analysis of materials, structures, fluid mechanics, bioelectricity, and dynamics as applied to biological and environmental systems.
Prerequisites: None.

ECE211 3 CREDITS 5 PERIODS
Engineering Mechanics-Statics
Mathematical treatment of the basic physical principles of statics. Methods of vector algebra and vector calculus. Prerequisites: ECE103, (MAT230 or MAT231), and (PHY115 or PHY121).
Corequisites: MAT241.

ECE212 3 CREDITS 5 PERIODS
Engineering Mechanics-Dynamics
Kinematics and kinetics of particles, translating and rotating coordinate systems, rigid body kinematics, dynamics of systems of particles and rigid bodies, and energy and momentum principles.
Prerequisites: ECE211 and MAT241.

ECE214 4 CREDITS 6 PERIODS
Engineering Mechanics
Foundations of engineering mechanics, including force systems, resultants, equilibrium of particles and rigid bodies, centroids and centers of mass, area and mass moments of inertia, friction, internal forces in structures, kinematics and kinetics of particles, kinematics and kinetics of rigid bodies, energy and momentum principles.
Prerequisites: (ECE103 or ECE103AB), (MAT230 or MAT231), and (PHY115 or PHY121).
Corequisites: MAT240 or MAT241.

English (ENG)

ENG061 3 CREDITS 3 PERIODS
Basic Writing Skills
Emphasis on preparation for college-level composition with a focus on foundational skills. Establishing effective writing strategies through six or more writing projects comprising at least 1500 words in total. Prerequisites: Appropriate English placement test score or permission of department/division chair.
Course Note: Through six or more writing projects comprising at least 1500 words (final drafts), the student will demonstrate an understanding of writing as a process through the ability to complete the ENG061 competencies.

ENG071 3 CREDITS 3 PERIODS
Fundamentals of Writing
Emphasis on preparation for college-level composition with a focus on organizational skills. Developing effective writing strategies through five or more writing projects comprising at least 2000 words in total. Prerequisites: Appropriate English placement test score or permission of department/division chair.
Course Note: Through five or more writing projects comprising at least 2000 words (final drafts), the student will demonstrate an understanding of writing as a process through the ability to complete the ENG071 competencies.

ENG101 3 CREDITS 3 PERIODS
First-Year Composition
Standard English writing skills. Emphasis on expository composition. Prerequisites: Appropriate English placement test score or (a grade of “C” or better in ENG071).

ENG102 3 CREDITS 3 PERIODS
First-Year Composition
Continued development of standard English writing skills. Emphasis on research, note taking, organization, and documentation in the preparation and writing of a research paper. Prerequisites: ENG101 with a grade of “C” or better.

ENG107 3 CREDITS 3 PERIODS
First-Year Composition for ESL
Description: Equivalent of ENG 101 for students of English as a Second Language (ESL). Emphasis on rhetoric and composition with a focus on expository writing and understanding writing as a process. Establishing effective college-level writing strategies through four or more writing projects comprising at least 3,000 words in total. Prerequisites: Appropriate ASSET/COMPASS placement test score, or a grade
of “C” or better in ENG071 or ESL077. Course Note: Through four or more writing projects comprising at least 3,000 words in total, the student will demonstrate an understanding of writing as a process per the course competencies.

**ENG108 3 CREDITS 3 PERIODS**

*First-Year Composition for ESL*

Equivalent of ENG102 for students of English as a Second Language (ESL). Emphasis on rhetoric and composition with a focus on persuasive, research-based writing and understanding writing as a process. Developing advanced college-level writing strategies through three or more writing projects comprising at least 4,000 words in total. Prerequisites: Grade of C, or better, in ENG107. Course Note: Through three or more writing projects comprising at least 4,000 words in total, the student will demonstrate an understanding of writing as a process per the course competencies. Not open to students who have completed ENG101.

**ENG111 3 CREDITS 3 PERIODS**

*Technical Writing*

Analysis, planning, organization, research, and writing of technical reports and oral presentations for specific job-related audiences. Preparation of recommendation and feasibility reports, proposals, and applications of graphics in documents and oral presentations. Prerequisites: ENG101 with a grade of “C”, or better, or permission of instructor.

**ENG210 3 CREDITS 3 PERIODS**

*Creative Writing*

Skills and techniques used in the production of marketable materials for contemporary publications that buy prose fiction, poetry, and expository articles. May be repeated for a total of six (6) credit hours with departmental approval. Prerequisites: ENG102 with a grade of “C”, or better, or permission of department.

**ENG216 3 CREDITS 3 PERIODS**

*Persuasive Writing on Public Issues*

Advanced course in techniques of analyzing and writing persuasive arguments addressing topics of current public interest. Papers research based. Prerequisites: ENG102.

**ENG217 3 CREDITS 3 PERIODS**

*Personal and Exploratory Writing*

Using writing to explore one’s self and the world one lives in; emphasis on journal writing as a source and inspiration for public writing. Prerequisites: ENG101 or ENG107 or equivalent.

**English as a Second Language (ESL)**

**ESL001 6 CREDITS 6 PERIODS**

*Basic English as a Second Language I*

Listening, speaking, reading, and writing in English at a basic level. Focus on survival skills related to life in the United States. Introduction to elementary grammatical patterns. Prerequisites: None.

**ESL001BA 2 CREDITS 2 PERIODS**

*Basic ESL I: Personal Health & Safety*

Listening, speaking, reading and writing in English at a basic level. Focus on survival skills related to personal health and safety when living in the United States. Introduction to elementary grammatical patterns. Prerequisites: None.

**ESL001BB 2 CREDITS 2 PERIODS**

*Basic ESL I: Services & Employment*

Listening, speaking, reading and writing in English at a basic level. Focus on survival skills related to services and employment when living in the United States. Introduction to elementary grammatical patterns. Prerequisites: ESL001BA or permission of instructor.

**ESL001BC 2 CREDITS 2 PERIODS**

*Basic ESL I: Shopping & Everyday Life*

Listening, speaking, reading and writing in English at a basic level. Focus on survival skills related to shopping and everyday life when living in the United States. Introduction to elementary grammatical patterns. Prerequisites: ESL001BB or permission of instructor.

**ESL010 3 CREDITS 3 PERIODS**

*English as a Second Language I: Grammar*

First level of English as a Second Language (ESL). Emphasis on basic conversational skills, pronunciation, vocabulary building and grammar. Some reading and sentence level writing. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL placement test score.
ESL011 3 CREDITS 3 PERIODS
English as a Second Language I: Listening and Speaking
Emphasis on listening and speaking skills involving survival skills. Asking and answering questions related to work, shopping, and personal safety. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL placement test score or ESL002.

ESL013 1 CREDIT 1 PERIOD
Vocabulary for ESL I
Emphasis on the acquisition of basic English vocabulary including identifying and pronouncing words related to people, medical/dental care, occupations and other activities. May be repeated for a maximum of two (2) credits. Prerequisites: Appropriate ESL placement test score or permission of instructor.

ESL020 3 CREDITS 3 PERIODS
English as a Second Language II: Grammar
Second level of English as a Second Language (ESL). Continued emphasis on conversational skills, pronunciation, vocabulary building and grammar with some reading and sentence level writing. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL placement test score or a grade of "P" or "C" or better in ESL010, or (ESL010AA, ESL010AB, and ESL010AC).

ESL021 3 CREDITS 3 PERIODS
English as a Second Language II - Listening and Speaking
Emphasis on listening and speaking skills involving social exchange. Asking and answering questions, using tag questions. Practice with question and answer patterns. Polite questions and responses. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL placement test score or ESL010 or ESL011 or ESL012 or RDG010.

ESL022 3 CREDITS 3 PERIODS
ESL II-Writing with Oral Practice
Emphasis on basic writing skills, accompanied by recitation of short writings. Sentence patterns and introduction of paragraph writing. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL course placement score, or a grade of C or better in ESL012, or permission of instructor.

ESL030 3 CREDITS 3 PERIODS
English as a Second Language III: Grammar
Third-level of English as a Second Language (ESL). Emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL placement test score, or a grade of "P" or "C" or better in ESL020, or (ESL020AA, ESL020AB, and ESL020AC).

ESL031 3 CREDITS 3 PERIODS
English as a Second Language III - Listening and Speaking
Emphasis on listening and speaking skills related primarily to the academic environment. Asking questions, working in small groups, using college resources, informal oral presentation. May be repeated for a maximum of six credits. Prerequisites: Appropriate ESL course placement score or ESL020 or ESL021 or ESL022 or RDG020.

ESL032 3 CREDITS 3 PERIODS
ESL III-Writing with Oral Practice
Emphasis on complex sentence patterns in writing and speech. Introduction to the prewriting and writing process in a college setting. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL course placement score, or a grade of C or better in ESL022, or permission of instructor.

ESL040 3 CREDITS 3 PERIODS
English as a Second Language IV: Grammar
Fourth-level of English as a Second Language (ESL). Continued emphasis on sentence structure and paragraph building. Extensive grammar study and writing practice. Credit (P) or no credit (Z). Standard grading available according to procedures outlined in catalog. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL placement test score, or a grade of "P" or "C" or better in ESL030, or (ESL030AA, ESL030AB, and ESL030AC).

ESL041 3 CREDITS 3 PERIODS
English as a Second Language IV: Listening and Speaking
Emphasis on academic skills. Listening to lectures, notetaking, peer interaction, accessing and using media resources, formal oral presentations. May be repeated for a maximum of six (6) credits.
Prerequisites: Appropriate ESL placement test score or ESL030 or ESL031 or ESL032 or RDG030.

**ESL042** 3 CREDITS 3 PERIODS  
**ESL IV-Writing with Oral Practice**  
Emphasis on paragraph writing and oral recitation of complex sentences and paragraphs. Introduction to the prewriting and writing process for short essays. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL course placement score, or a grade of "C" or better in ESL032, or permission of instructor.

**ESL050** 3 CREDITS 3 PERIODS  
**Review Grammar For ESL**  
Review of grammatical concepts for ESL (English as a Second Language) students who have some previous experience in reading and writing English. Appropriate for students who want to practice sentence skills in English. May be repeated for a total of six (6) credits. Prerequisites: Appropriate ESL course placement score, or a grade of "C" or better in ESL040, or permission of instructor.

**ESL051** 3 CREDITS 3 PERIODS  
**Pronunciation Improvement for ESL Speakers**  
Individualized pronunciation practice and drills for English as a second language (ESL) speakers. May be repeated for a maximum of six (6) credits. Prerequisites: Appropriate ESL course placement score, or a grade of "C" or better in (ESL020 or ESL021 or ESL022 or RDG020), or permission of instructor.

**ESL054** 3 CREDITS 3 PERIODS  
**American Culture**  
Reading and writing about American culture including history, institutions and sports, and entertainment. Prerequisites: Appropriate ESL placement test score, or a grade of C or better in ESL040, or (ESL040AA, ESL040AB, and ESL040AC), or RDG040, or permission of instructor.

**ESL067** 3 CREDITS 3 PERIODS  
**Basic Writing Skills for English as a Second Language**  
Emphasis on basic writing skills in sentences and short paragraphs using correct, clear, and idiomatic English. Prerequisites: Appropriate English or ESL placement score, or ESL040, or ESL042, or permission of department chair.

**ESL071** 3 CREDITS 3 PERIODS  
**Advanced Pronunciation and Oral Reading for ESL**  
Pronunciation practice and review, spelling of English sounds, and oral reading for stress and intonation patterns in English. Prerequisites: A grade of C or better in ESL051, or permission of instructor.

**English Humanities (ENH)**

**ENH110** 3 CREDITS 3 PERIODS  
**Introduction to Literature**  
Introduction to international literature through various forms of literary expression; e.g., poetry, drama, essay, biography, autobiography, short story, and novel. Provides a global overview of literature with special emphasis on diverse cultural contributions of women, African Americans, Asian Americans, Hispanic Americans, and Native Americans. Prerequisites: None.

**ENH114** 3 CREDITS 3 PERIODS  
**African-American Literature**  
Survey of major African-American writers from Colonial period through the present; analysis of trends and movements within African-American literary history; analysis of literary types and selected works. Prerequisites: None.

**ENH201** 3 CREDITS 3 PERIODS  
**World Literature Through the Renaissance**  
Examines a selection of the world’s literary masterpieces within their cultural contexts from ancient times through the Renaissance. Analyzes the influences of major literary philosophies, themes, genre, and styles. Assesses the contributions of major writers. Introduces the terminology of literary analysis. Prerequisites: None.

**ENH202** 3 CREDITS 3 PERIODS  
**World Literature After the Renaissance**  
Includes a selection of the world’s literary masterpieces from the Renaissance to modern times. Prerequisites: None.

**ENH221** 3 CREDITS 3 PERIODS  
**Survey of English Literature Before 1800**  
Emphasizes the social and political backgrounds as well as the form and content of English literature from Anglo-Saxon times to the end of the eighteenth century. Prerequisites: (ENG101 or ENG107) or equivalent.
ENH222 3 CREDITS 3 PERIODS
Survey of English Literature After 1800
Emphasizes the social and political backgrounds as well as the form and content of English literature in the nineteenth and twentieth centuries. Prerequisites: (ENG101 or ENG107) or equivalent.

ENH241 3 CREDITS 3 PERIODS
American Literature Before 1860
Includes literature written prior to 1860 in the United States. Prerequisites: None.

ENH242 3 CREDITS 3 PERIODS
American Literature After 1860
Includes literature written after 1860 in the United States. Prerequisites: None.

ENH251 3 CREDITS 3 PERIODS
Mythology
Deals with the myths and legends of civilizations with the greatest influence upon the development of the literature and culture of the English speaking people, and compares those myths with myths from other cultures. Prerequisites: None.

ENH253 3 CREDITS 3 PERIODS
Contemporary Global Literature and Film
Characteristics of literary and cinematic mediums. Challenges of adapting literature to film. Global examination of historical, religious, socio-economic, political, and colonial/post colonial themes depicted in Western and non-Western literature and film (e.g., Africa, Asia, and Latin America) outside the United States. Use of narrative in each medium and how it translates various global/international perspectives and cultural assumptions. Specific genres present in literature and film. Cultural metaphors and symbols used in literature and film. Prerequisites: ENG101.

ENH254 3 CREDITS 3 PERIODS
Literature and Film
Presents works of literature and their film versions and analyzes distinguishing techniques of each medium. Prerequisites: ENG101, or ENG107, or equivalent.

ENH255 3 CREDITS 3 PERIODS
Contemporary U.S. Literature and Film
Strengths and weaknesses of literature and film. Challenges of adapting literature to film. Addressing racial, ethnic, gender, class and religious differences between cultures and mediums. Use of narrative in each medium and how it translates various cultural values and assumptions. Specific genres present in literature and film. Cultural metaphors and symbols used in literature and film. Prerequisites: ENG101.

ENH259 3 CREDITS 3 PERIODS
American Indian Literature
Contemporary American Indian forms of literary expression. Selected oral traditions of American Indians. Trends and movements within American Indian literary history. Prerequisites: None.

ENH260 3 CREDITS 3 PERIODS
Literature of the Southwest
Investigates major themes in Southwestern American literature including the Western myth, minority roles in the region’s literature, control of nature versus primacy of nature, and growth. Both prose and poetry are examined with an emphasis on contemporary Southwestern writing. Prerequisites: None.

ENH284 3 CREDITS 3 PERIODS
19th Century Women Writers
Investigates major themes in literature by women writing in the 19th century including the nature of women’s lives in the family, in work situations, and in society. Poetry, prose, essays and drama are examined with an emphasis on common themes. Prerequisites: None.

ENH285 3 CREDITS 3 PERIODS
Contemporary Women Writers
Explores twentieth century literature (short stories, essays, plays, and poetry) written by women and about women. Focus on themes relevant to women’s lives regardless of age, creed, or ethnic background. Prerequisites: None.

ENH291 3 CREDITS 3 PERIODS
Children’s Literature
Review of folk and modern literature from a variety of world cultures, including application of literary criteria to folk and modern literature for children. Prerequisites: None.

EQS105 3 CREDITS 3 PERIODS
Principles of Equine Science
Breeds, colors and markings; horse selection; basic conformation; form to function; structures of the hoof; footfall sequences; vision, managed health program; nutrition principles and management practices. Prerequisites: None.
EQS120  3 CREDITS  3 PERIODS
Equine Anatomy and Physiology
Study of structure and function of the equine. Includes cell structure and anatomy and physiology of major systems with emphasis on skeletal, muscular, and digestive systems. Prerequisites: None.

EQS130  3 CREDITS  3 PERIODS
Equine Business and Law
Practices and records used in the equine business. Includes record keeping systems and basic accounting principles; taxes; personnel management practices; computer programs for record keeping and operations management. Addresses legal aspects and laws unique to equine businesses. Prerequisite: None.

EQS145  3 CREDITS  6 PERIODS
Basic Horsemanship
Rudimentary knowledge concerning horse handling safety, basic riding equipment, grooming techniques, saddling, bridling, mounting, dismounting, and basic control of the horse at the walk and trot. English or western equipment used. Emphasis on position of rider as it relates to basic control of the horse. Prerequisites: None.

EQS150  4 CREDITS  4 PERIODS
Equine Management
Hands-on practice sessions devoted to good horsekeeping skills. Includes assessment of vital signs, methods of restraint, intermuscular injections, oral medications, leg wraps, leg sweats and poultice applications, body clipping and fitting sheets and blankets. Prerequisites: (EQS105 and EQS145), or permission of department.

EQS160  3 CREDITS  3 PERIODS
English Horsemanship I
Basic ground work and safety procedures; control of the horse at the walk, trot, and canter; rider position and use of fundamental aids. Prerequisites: None.

EQS165  3 CREDITS  3 PERIODS
Western Horsemanship I
Basic ground work and safety procedures; control of the horse at the walk, jog, and lope; rider position and use of fundamental aids. Prerequisites: None.

EQS215  3 CREDITS  3 PERIODS
Feeding Programs for Production and Performance
Explores the feeding and care of the equine in various stages of production, growth and performance. Identifies specific nutritional needs of each class of equine and formulates feeding programs based on these specific needs. Prerequisites: EQS200 or permission of department.

EQS220  3 CREDITS  3 PERIODS
Equine Reproduction
Reproductive anatomy and physiology; care and management of the breeding stallion; breeding procedures and artificial insemination. Care of pregnant mare; foaling procedures. Prerequisites: EQS105, EQS120 or permission of department.

EQS225  3 CREDITS  3 PERIODS
Equine Health and Disease Management
Aspects of equine health and disease prevention. Emphasis on preventive maintenance. Preventive medicine and necessary managerial practices needed to keep the equine athlete, broodmare, or family horse in good health. Prerequisites: (EQS105 and EQS120) or department approval.

Fire Science Technology (FSC)
FSC134  3 CREDITS  4.6 PERIODS
Fitness & Conditioning/Firefighters
Overview of all aspects of fitness for current and prospective firefighters. Includes physical and mental aspects of performance for optimal achievement on fire department agility tests and fire fighting tasks; individual conditioning strategies, nutritional guidelines, protective clothing concepts, and basic exercise principles. Pre-employment, evaluation, and lifelong fitness and conditioning. Prerequisites: None.

Food and Nutrition (FON)
FON100  3 CREDITS  3 PERIODS
Introductory Nutrition
Basic nutrition concepts for health and fitness. Emphasizes current dietary recommendations for maximizing well-being and minimizing risk of chronic disease. Focuses on use of tables, food guides, and guidelines for making healthy food choices. Includes unique nutrition needs for selected
stages of the lifecycle, methods for evaluating creditability of nutrition claims, principles of vegetarian nutrition, safe and economic use of supplements, principles of energy balance, basic elements of food safety, diet for exercise and sports, and personal dietary evaluation techniques. Not for predietetics or selected other preprofessional majors. May not be taken for credit if credit has been earned in FON100AA and/or FON100AC. Prerequisites: None.

FON100AD 1 CREDIT 1 PERIOD
Nutrition Sports and Physical Activity
Principles of nutrition applied to fitness, exercise, and sports. Dietary fundamentals as applied to body fuels, hydration, and other unique needs for exercise and sports. Includes dietary guidelines for weight or endurance training, glycogen loading, the pregame meal, and glycogen recovery. Emphasis on maximizing fitness, performance, and safety. Prerequisites: FON100AA, or equivalent, or permission of instructor.

FON104 1 CREDIT 1 PERIOD
Certification in Food Service Safety and Sanitation
Preparation for and certification in a national food sanitation and safety program. Emphasis on food from purchasing, receiving, and storing to preparation, holding, and serving. Focuses on safe and sanitary food service facilities and equipment, employee habits and personal hygiene, and role of management in safety and sanitation. Includes time-temperature principles, foodborne illnesses, pest control, accident prevention, standards for cleaning and sanitizing, and regional regulations and standards. Prerequisites: None.

FON125 1 CREDIT 1 PERIOD
Introduction to Professions in Nutrition and Dietetics
Introduction to professions in nutrition and dietetics, including history, current practice, and future trends. Emphasis on the integration of nutrition and dietetics within health care systems and public policy. Highlights professional ethics, standards of practice, education requirements and areas of practice. Prerequisites: None.

FON137 2 CREDITS 2 PERIODS
Nutrition Supplements
Discussion of supplements and their effects on metabolic enhancement. The course will be divided into three major sections: anabolic, catabolic, and energy-producing agents. Addresses current supplements on the market in order to advise the general public. Prerequisites: FON100 or permission of instructor.

FON140AS 1 CREDIT 1 PERIOD
Nutrition for Senior Adults
Managing the nutritional needs of the senior adult; emphasis on solutions to routine dietary problems resulting from the aging process. Prerequisites: None.

FON140BD 1 CREDIT 1 PERIOD
Weight Control
Principles of and participation in weight management. Emphasis on low-fat eating, nutrition, exercise, and evaluation of weight management programs. Prerequisites: None.

FON142AB 3 CREDITS 5 PERIODS
Applied Food Principles
Exploration and applications of scientific principles involved in food preparation; experiences with basic cooking methods; emphasis on the rationale of cooking techniques. Prerequisites: None.

FON143 3 CREDITS 3 PERIODS
Food and Culture
Understanding diet in the context of culture. Historical, religious, and socio-cultural influences on the development of cuisine, meal patterns, eating customs, cooking methods, and nutritional status of various ethnic groups. Traditional and contemporary food habits. Health and social impact of changes in diet. Preparation and serving of foods from many cultures. Prerequisites: None.

FON207 3 CREDITS 3 PERIODS
Introduction to Nutrition Services Management
Principles, knowledge, and techniques required for effective nutrition services management. Includes nutrition service issues in relation to health care trends, leadership skills, management theories and styles, food service manager responsibilities, and laws which pertain to nutrition service operations. Prerequisites: MAT092 or equivalent, or satisfactory score on district placement exam.

FON225 3 CREDITS 3 PERIODS
Research in Complementary and Alternative Nutrition Therapies
Introduction to basic research methods and statistics as applied to complementary and
alternative nutrition therapies. Emphasis on the analysis and interpretation of health-related research. Prerequisites: MAT092 or equivalent, or satisfactory score on district placement exam.

**FON230**  
**3 CREDITS  3 PERIODS**  
**Nutrition for Special Populations**  
Managing and understanding the nutrition needs of special populations. These populations include people who are diagnosed with heart disease, diabetes, women who are pregnant, children who are suffering from obesity, and senior adults. Prerequisites: FON100 or permission of instructor.

**FON241**  
**3 CREDITS  3 PERIODS**  
**Principles of Human Nutrition**  
Scientific principles of human nutrition. Emphasis on health promotion and concepts for conveying accurate nutrition information in a professional setting. Addresses therapeutic nutrition principles for treatment of common health conditions. Includes exploration of food sources of nutrients, basic metabolism of nutrients in the human body, relationship between diet and other lifestyle factors, use of supplements, current recommendations for food selection throughout the life cycle, and use of nutrition tools for planning food intake or assessment of nutritional status. Prerequisites or Corequisites: One year high school chemistry with grade of C or better, or CHM130 and CHM130LL, or approval of instructor.

**FON246**  
**1 CREDIT  3 PERIODS**  
**Principles of Human Nutrition Laboratory**  
Self-evaluative laboratory experience to complement FON241, Principles of Human Nutrition using anthropometric, biochemical, and dietary analysis. Includes the use of qualitative and quantitative methodology to determine nutritional status and evaluate methodological applications. Prerequisites or Corequisites: FON241.

**FON244AA**  
**2 CREDITS  2 PERIODS**  
**Practicum I: Food Service Management Lecture**  
Classroom preparation and training, under the instruction and supervision of a registered dietitian. Understanding of principles, knowledge, and skills required for the delivery of medical nutrition therapy. Comprehension of nutritional screening, assessment, monitoring, and evaluation for common and complex medical conditions, medical documentation, patient interviewing and counseling, and education in health promotion and disease prevention. Competencies in the classroom met prior to their application in supervised practice settings during the practicum lab (FON245AB). Prerequisites: FON125, FON242, HCE103 or equivalent, and MAT092 or equivalent, or satisfactory score on district placement exam. Corequisite: FON245AB.

**FON244AB**  
**3 CREDITS  15 PERIODS**  
**Practicum I: Food Service Management Lab**  
Practicum experience under the supervision of a registered dietitian. Application of principles, knowledge, and skills required in the delivery of nutrition services for food service management including food service operations, quantity food production, procurement, organizing and management principles, facility design and equipment, financial management, food safety and sanitation, menu planning, and marketing. Competencies in the classroom met prior to their application in supervised practice settings during the practicum lab (FON244AB). Prerequisites: FON104, FON125, FON142AB, FON207 and FON242. Corequisite: FON244AA.

**FON245AA**  
**2 CREDITS  2 PERIODS**  
**Practicum II: Medical Nutrition Therapy Lecture**  
Classroom preparation and training, under the instruction and supervision of a registered dietitian. Understanding of principles, knowledge, and skills required for the delivery of medical nutrition therapy. Comprehension of nutritional screening, assessment, monitoring, and evaluation for common and complex medical conditions, medical documentation, patient interviewing and counseling, and education in health promotion and disease prevention. Competencies in the classroom met prior to their application in supervised practice settings during the practicum lab (FON245AB). Prerequisites: FON125, FON242, HCE103 or equivalent, and MAT092 or equivalent, or satisfactory score on district placement exam. Corequisite: FON245AB.
FON245AB 2 CREDITS 10 PERIODS
Practicum II: Medical Nutrition Therapy Lab
Practicum experience under the supervision of a registered dietitian. Application of principles, knowledge, and skills required for the delivery of medical nutrition therapy. Perform nutritional screening, assessment, monitoring, and evaluation for common and complex medical conditions, medical documentation, patient interviewing and counseling, and education in health promotion and disease prevention. Competencies in the classroom met prior to their application in supervised practice settings during the practicum lab (FON245AB). Prerequisites: FON125, FON242, HCE103 or equivalent, and MAT092 or equivalent, or satisfactory score on district placement exam. Corequisite: FON245AA.

FON246AA 2 CREDITS 2 PERIODS
Practicum III: Community Nutrition Lecture
Classroom preparation and training, under the instruction of a registered dietitian. Understanding of principles, knowledge and skills required in the delivery of nutrition services in community-based agencies, outpatient health care settings, and social service agencies. Includes knowledge and understanding of nutrition intervention and wellness promotion for individuals and groups across the lifespan, i.e. infants through geriatrics with a diversity of cultural, religious and social backgrounds. Competencies in the classroom met prior to their application in supervised practice settings during the practicum lab (FON246AB). Prerequisites: FON125 and FON242. Corequisite: FON246AB.

FON246AB 2 CREDITS 10 PERIODS
Practicum III: Community Nutrition Lab
Practicum experience under the supervision of a registered dietitian. Application of principles, knowledge and skills required in the delivery of nutrition services in community-based agencies, outpatient health care settings, and social service agencies. Includes nutrition intervention and wellness promotion for individuals and groups across the lifespan, i.e. infants through geriatrics with a diversity of cultural, religious and social backgrounds. Prerequisites: FON125 and FON242. Corequisite: FON246AA.

FON247 3 CREDITS 3 PERIODS
Weight Management Theory
Comprehensive study of genetic, physiological, psychological, metabolic, and environmental influences on body weight. In-depth study of the theories of body weight with emphasis on distinguishing between behavioral and biological approaches. Focus on discovering successful healthful long-term weight management strategies. Prerequisites: FON100 or FON241 or permission of instructor.

French (FRE)

FRE101 4 CREDITS 4 PERIODS
Elementary French I
Basic grammar, pronunciation and vocabulary of the French language. Includes the study of French culture, practice of listening, speaking, reading and writing skills. Prerequisites: None.

FRE102 4 CREDITS 4 PERIODS
Elementary French II
Continued study of grammar and vocabulary of the French language along with the study of French culture. Emphasis on speaking, listening, reading and writing skills. Prerequisites: FRE101 or equivalent.

FRE201 4 CREDITS 4 PERIODS
Intermediate French I
Review of essential grammar of the French language and study of French culture. Continued practice and development of reading, writing, and speaking skills. Prerequisites: FRE102 with a grade of "C" or better, two years of high school French with an average of "C" or better, or departmental approval.

FRE202 4 CREDITS 4 PERIODS
Intermediate French II
Review of grammar, continued development of French language skills, and continued study of the French culture. Prerequisites: FRE201 with a grade of "C" or better or three years of high school French with an average of "C" or better.
General Business (GBS)

GBS131 3 CREDITS 3 PERIODS
Business Calculations
Review of basic arithmetic and application of mathematics to business problems, includes percentage, interest, discount, and markups. Prerequisites: None.

GBS151 3 CREDITS 3 PERIODS
Introduction to Business
Characteristics and activities of current local, national, and international business. An overview of economics, marketing, management and finance. Prerequisites: None.

GBS205 3 CREDITS 3 PERIODS
Legal, Ethical, and Regulatory Issues in Business
Legal theories, ethical issues and regulatory climate affecting business policies and decisions. Prerequisites: None.

GBS220 3 CREDITS 3 PERIODS
Quantitative Methods in Business
Business applications of quantitative optimization methods in operations management decisions. Prerequisites: (Grade of "C" or better in MAT150, or MAT151, or MAT152) or equivalent, or satisfactory score on district placement exam.

GBS221 3 CREDITS 3 PERIODS
Business Statistics
Business applications of descriptive and inferential statistics, measurement of relationships, and statistical process management. Includes the use of spreadsheet software for business statistical analysis. Prerequisites: Grade of C or better in GBS220.

GBS233 3 CREDITS 3 PERIODS
Business Communication
Internal and external business communications, including verbal and nonverbal techniques. Prerequisites: ENG101 or ENG107 with grade of "C" or better, or permission of department/division.

Geology (GLG)

GLG101 3 CREDITS 3 PERIODS
Introduction to Geology I - Physical Lecture
A study of the kind and arrangement of materials composing the earth’s crust and the geological processes at work on and within the earth’s surface. Prerequisites: None.

GLG102 3 CREDITS 3 PERIODS
Introduction to Geology II - Historical Lecture
Outlines the origin and history of the earth with emphasis on North America--its dynamic, geographic, and climatic changes; animals and plants of the past; the evolution of life. Prerequisites: None.

GLG103 1 CREDIT 3 PERIODS
Introduction to Geology I - Physical Lab
May accompany GLG101. Study of common rock-forming minerals, rocks, and maps. Prerequisites: None.

GLG104 1 CREDIT 3 PERIODS
Introduction to Geology II - Historical Lab
May accompany GLG102. Study of geological structures and rocks, fossils, and geologic maps. May require field trips. Prerequisites: None.

GLG110 3 CREDITS 3 PERIODS
Geologic Disasters and the Environment
Acquaints students with the use and importance of geological studies as they apply to the interactions between people and the earth. Includes geological processes and hazards such as floods, earthquakes, and landslides; use of fossil fuels; mining of raw materials. Prerequisites: None.

GLG111 1 CREDIT 3 PERIODS
Geological Disasters and the Environment Lab
May accompany GLG110. Basic geological processes and concepts. Emphasis on geology-related environmental problems concerning Arizona. Case histories and field studies. May require field trips. Prerequisites: None.

GLG229AA 1 CREDIT 5 PERIODS
Field Studies for Educators
Field trips to selected geological areas in Arizona in order to collect and/or observe geological phenomena. Designed for pre-college teachers. Prerequisites: None.
COURSE DESCRIPTIONS

GLG230AA  1 CREDIT  5 PERIODS
Field Geology of the Southwest
Field trips to selected areas in the Southwest, such as Arizona, Utah, California, and Sonora) to observe and interpret various geological features and phenomena. Prerequisites: None.

Health Care Related (HCR)

HCR210  3 CREDITS  3 PERIODS
Clinical Health Care Ethics
An introduction to health care ethics with emphasis on analysis and ethical decision making at both the clinical and health policy levels for health care professionals. Theoretical foundation of bioethics reviewed within historical and contemporary contexts. Prerequisites: ENG102.

HCR220  3 CREDITS  3 PERIODS
Health Care Organizations
Overview of United States health care delivery systems; financing, health policy, impact of managed care, and basic principles of budgeting, cost-benefit analysis, and resource management. Prerequisites: ENG102.

HCR230  3 CREDITS  3 PERIODS
Culture and Health
Relation between cultures of diverse groups and health/illness. Emphasis on cross-cultural communication, including awareness of own cultural influences and indigenous and complementary healing practices. Prerequisites: None.

HCR240  4 CREDITS  4 PERIODS
Human Pathophysiology
Chemical, biological, biochemical, and psychological processes as a foundation for the understanding of alterations in health. The structural and functional pathophysiology of alterations in health; selected therapeutics considered. Prerequisites: BIO202 or BIO205 or equivalent.

Health Core Curriculum (HCC)

HCC130  3 CREDITS  3 PERIODS
Fundamentals in Health Care Delivery
Overview of current health care professions including career and labor market information. Health care delivery systems, third party payers, and facility ownership. Health organization structure, patient rights and quality care. Health care and life values. Definition and importance of values, ethics, and essential behaviors in the workplace. Worker rights and responsibilities. Healthful living practices to include nutrition, stress management and exercise. Occupational Safety and Health Administration (OSHA) standard precautions and facility safety. Use of principles of body mechanics in daily living activities. Basic communication skills which facilitate teamwork in the health care setting. Focus on development of personal communication skills and an understanding of how effective communication skills promote teamwork. Focus on intercultural communication strategies. Prerequisites: None.

HCC145AA  1 CREDIT  1 PERIOD
Medical Terminology for Health Care Workers I
Introduction to medical terms used in health care. Body systems approach to selected terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using basic word parts. Selected medical abbreviations and symbols and term spelling. Prerequisites: None.

HCC145AB  1 CREDIT  1 PERIOD
Medical Terminology for Health Care Workers II
Additional medical terms used in health care. Body systems approach to more detailed terms related to structures, functions, diseases, procedures, and diagnostic tests. Building and analyzing terms using standard word parts. Common abbreviations and symbols and term spelling. Prerequisites: HCC145AA.

Health Science (HES)

HES100  3 CREDITS  3 PERIODS
Healthful Living
Health and wellness and their application to an optimal life style. Explores current topics of interest such as stress management, nutrition, fitness, and environmental health. Evaluates common risk factors associated with modern lifestyles. Prerequisites: None.
HES271 3 CREDITS 3 PERIODS
Prevention and Treatment of Athletic Injuries
Prevention and care of athletic injuries, emphasizing use of modern training techniques and support materials. Utilization of preventive taping, strapping, bandaging, cardiopulmonary resuscitation, massage, cryotherapy, hydrotherapy, and practical application of muscle reconditioning. Prerequisites: None.

History (HIS)

HIS102 3 CREDITS 3 PERIODS
History of Western Civilization 1789 to Present
Survey of origin and development of Western civilization and its institutions from French Revolution through the present. Prerequisites: None.

HIS103 3 CREDITS 3 PERIODS
United States History to 1870
The political, economic, and social development of United States from Colonial through Reconstruction period. Prerequisites: None.

HIS104 3 CREDITS 3 PERIODS
United States History 1870 to Present
The political, economic, and social development of United States from Reconstruction period up to present time. Prerequisites: None.

HIS106 3 CREDITS 3 PERIODS
Southwest History
Survey of Hispanic, Anglo, African-American and Native cultures of the peoples who have settled the American Southwest. Emphasis on cattle, mining, fur trade and transportation industries and role development of the region. Prerequisites: None.

HIS108 3 CREDITS 3 PERIODS
United States History 1945 to the Present
Survey of American history from 1945 to the present. Focuses on the political, social, economic and cultural history of the United States from the end of World War II to the present time. Includes domestic developments and foreign policy. Prerequisites: None.

HIS109 3 CREDITS 3 PERIODS
Mexican-American History and Culture
Examination of origins and development of Spanish-American and Mexican-American peoples and their contribution to culture, history and development of United States. Emphasis on Mexican-American War and its impact on educational, social, and economic conditions of the Mexican-Americans of the southwest. Prerequisites: None.

HIS110 3 CREDITS 3 PERIODS
World History to 1500
Survey of the economic, social, cultural, and political elements of world history from the beginning of human civilization to 1500. Prerequisites: None.

HIS111 3 CREDITS 3 PERIODS
World History 1500 to the Present
Survey of the economic, social, cultural, and political elements of world history from 1500 to the present. Prerequisites: None.

HIS201 3 CREDITS 3 PERIODS
History of Women in America
Introduction to women's history from the colonial period to the present. Deals chronologically with changes and developments which have influenced the lives of women. Prerequisites: None.

HIS242 3 CREDITS 3 PERIODS
Latin American Civilization in the Post-Colonial Period
A survey of the political, economic, and social forces which molded Latin American civilization in the period of the development of Republics. Prerequisites: None.

HIS243 3 CREDITS 3 PERIODS
World Religions
The development of various religions from the prehistoric to modern times. Political, economic, social and geographic relationships among world religions. Consideration of both Eastern and Western religions. Prerequisites: None.

HIS277 3 CREDITS 3 PERIODS
The Modern Middle East
Survey of the political and economic development of the Middle East since 1500. Emphasis on the decline of the Moslem empire, the resurgence of contemporary Pan-Arabian, the Palestinian-Israeli question and the impact of oil production on the region and the rest of the world. Prerequisites: None.
Humanities (HUM)

**HUM107** 3 CREDITS 3 PERIODS

**Humanities Through the Arts**
Introduction to humanities including film, drama, music, literature, painting, sculpture, and architecture. Prerequisites: None.

**HUM108** 3 CREDITS 3 PERIODS

**Contemporary Humanities**
An exploration of human expression in contemporary arts and sciences. Prerequisites: None.

**HUM120** 3 CREDITS 3 PERIODS

**Cultural Viewpoints in the Arts**
Introduction to the influence of culture and ethnicity on the artist, including factors such as race, religion, gender, class, sexual preference, age, and region. Lecture and discussion on various art forms, including literature, visual arts, music, dance, film, and theater. Prerequisites: None.

**HUM250** 3 CREDITS 3 PERIODS

**Ideas and Values in the Humanities**
An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the early civilizations to the Renaissance, including western and non-western cultures. Prerequisites: ENG101.

**HUM251** 3 CREDITS 3 PERIODS

**Ideas and Values in the Humanities**
An historical analysis of the interrelationships of art, architecture, literature, music, and philosophy from the Renaissance to modern period, including Western and Non-Western cultures. Prerequisites: ENG101.

Information Technology Security (ITS)

**ITS100** 1 CREDIT 2 PERIODS

**Information Security Awareness**
Computer and network security topics, including network communication. Includes security policy, implementation of basic security measures, the importance of backups and the value of protecting intellectual property. Real-life examples and practical projects to reinforce the need for computer security. Prerequisites: None.

**ITS110** 4 CREDITS 5 PERIODS

**Information Security Fundamentals**
Fundamental concepts of information technology security. Topics include authentication methods, access control, cryptography, Public Key Infrastructure (PKI), network attack and defense methods, hardening of operating systems and network devices, securing remote access and wireless technologies and securing infrastructures and topologies. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and Microsoft (MS) Windows and Linux Administration. Prerequisites: (CIS126DA or CIS126DL) and (CNT150 and MST150DA or MST150XP), or permission of instructor.

**ITS120** 3 CREDITS 3 PERIODS

**Legal, Ethical and Regulatory Issues**
Exploration of legal and ethical issues unique to information security. Analysis of professional ethical codes and their application to information security practitioners. Federal and state laws as they relate to information security. Prerequisites: ITS110 or permission of instructor.

**ITS130** 3 CREDITS 4 PERIODS

**Operating System Security**
In-depth examination of operating system security including Transmission Control Protocol/Data Encryption Standard (DES), Triple Data Encryption Standard (3DES), Advanced Encryption Standard (AES), Pretty Good Privacy (PGP), and other encryption technologies (TCP/IP), Internet Protocol Security (IPSec) and Cisco Internetwork Operating System (IOS), Microsoft Windows, Linux and Mac OS X Security. Procedures to defend networks against attacks and recovery from network disasters. Web server security. Emphasis
on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and MS Windows and Linux Administration. Prerequisites: ITS110 or permission of instructor.

**ITS140  3 CREDITS  4 PERIODS**

**Network Security**
Examination of techniques used to defend network security. Design and implementation of devices including firewalls and Intrusion Detection Systems (IDSs) and Virtual Private Networks (VPNs). Risk analysis and security policies methodologies. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and MS Windows and Linux Administration. Prerequisites: (ITS110 and ITS130) or permission of instructor.

**ITS150  3 CREDITS  4 PERIODS**

**Building Trusted Networks in the Enterprise**
Design of a trusted network to secure electronic transactions. Techniques to secure electronic transactions to include cryptography, digital signatures, digital certificates and strong authentication. Computer forensics techniques and legislative issues. Emphasis on hands-on labs in both the Windows and Linux environments. Builds on thorough understanding of Transmission Control Protocol/Internet Protocol (TCP/IP) and security concepts and MS Windows and Linux Administration. Prerequisites: ITS110, ITS130 and ITS140, or permission of instructor.

**ITS170  1 CREDIT  1 PERIOD**

**Information Security Policy Development**
Components required to plan, develop and write information security policies. Policy development processes and the relationship between security and policy directions. Emphasis on writing effective information security policies in a governmental or corporate setting. Prerequisites: None.

**ITS171  1 CREDIT  1 PERIOD**

**Information Security Risk Management**
Examination and assessment of risk management in an information technology environment. Identification and valuation of organizational assets. Risk identification to include types of threats and exposures to loss. Risk mitigation techniques, documentation methods and regulatory requirements. Prerequisites: ITS110.

**ITS172  1 CREDIT  2 PERIODS**

**Viruses and Other Malicious Software**
Spyware, adware, viruses, worms and trojans. Available tools for identifying and removing malicious software. Techniques for analyzing the behavior of malicious software. Methods of infection and prevention of infection. Prerequisites: None.

**ITS231  1 CREDIT  2 PERIODS**

**Router Hardening**
The role of routers in communication networks. Device specific threats and vulnerabilities. Strategies to harden routers to protect networks. Includes standards-based and proprietary protocols. Prerequisites: CNT150 or permission of the instructor.

**Japanese (JPN)**

**JPN101  5 CREDITS  6 PERIODS**

**Elementary Japanese I**
Basic grammar, pronunciation, and vocabulary of Japanese. Study of Japanese culture. Development of speaking, listening, reading and writing skills. Prerequisites: None.

**JPN102  5 CREDITS  6 PERIODS**

**Elementary Japanese II**
Continued study of basic grammar, pronunciation and vocabulary of Japanese. Study of the Japanese culture. Intensive practice in oral communication and development of reading and writing skills. Prerequisites: JPN101 or departmental approval.

**Journalism (JRN)**

**JRN201  3 CREDITS  5 PERIODS**

**News Writing**
Writing news for the print media. Composing at the computer keyboard. Associated Press editing style, writing skills, and organizational structure for news. Prerequisites: ENG101, ENG107, or equivalent.

**Management (MGT)**

**MGT101  3 CREDITS  3 PERIODS**

**Techniques of Supervision**
Overview of the foundations of supervision and how to get things done within an organization through other people. The functions of planning, organizing, staffing, motivating and controlling presented. Prerequisites: None.
MGT175 3 CREDITS 3 PERIODS
Business Organization and Management
Covers basic principles of managing quality and performance in organizations. Covers management functions: planning, organizing, leading, and controlling. Emphasizes continual improvement, ethics, and social responsibility. Prerequisites: None.

MGT229 3 CREDITS 3 PERIODS
Management and Leadership I
Covers management concepts and applications for business, industry, and government organizations. Prerequisites: None.

MGT251 3 CREDITS 3 PERIODS
Human Relations in Business
Analysis of motivation, leadership, communications, and other human factors. Cultural differences that may create conflict and affect morale individually and within organizations. Prerequisites: None. MGT101 or MGT175 or MGT229 suggested, but not required.

MGT253 3 CREDITS 3 PERIODS
Owning and Operating a Small Business
Starting, organizing, and operating a small business, including location, finance management processes, advertisement and promotion, credit, inventory control and ethics. Prerequisites: None.

MGT276 3 CREDITS 3 PERIODS
Personnel/Human Resources Management
Human resource planning, staffing, training, compensating, and appraising employees in labor management relationships. Prerequisites: None. MGT101, or MGT175, or MGT229 suggested but not required.

Marketing (MKT)

MKT268 3 CREDITS 3 PERIODS
Merchandising
Surveys structure and operation of retail organizations. Emphasizes merchandising to include price, location, time promotion and quantity. Prerequisites: None. MKT271 suggested but not required.

MKT271 3 CREDITS 3 PERIODS
Principles of Marketing
An analysis of the marketing process and environment with regard to the product, pricing, distribution, and communication in order to satisfy buyer needs. Prerequisites: None.

Mass Communications (MCO)

MCO120 3 CREDITS 3 PERIODS
Media and Society
Study of historical and contemporary roles of media and its pervasiveness in society as it related to politics, education and culture. Prerequisites: ENG101 or ENG107, or equivalent.

Mathematics (MAT)

MAT033AA 1 CREDIT 1 PERIOD
Whole Numbers
Basic arithmetic for adults. Focus on whole numbers. Prerequisites: Reading level from zero to fifth grade.

MAT033AB 1 CREDIT 1 PERIOD
Fractions
Basic arithmetic for adults. Emphasis on fractions. Prerequisites: Reading level from zero to fifth grade.

MAT033AC 1 CREDIT 1 PERIOD
Decimals
Basic arithmetic for adults. Includes calculating decimals, percents and proportions. Prerequisites: Reading level from zero to fifth grade.

MAT065 1 CREDIT 1 PERIOD
Graphing Calculator
Computations, graphing, matrices, and elementary programming using a graphing calculator. Prerequisites: None.

MAT081 4 CREDITS 4 PERIODS
Basic Arithmetic
Primary emphasis placed on fundamental operations with whole numbers, fractions, decimals, integers, and rational numbers; proportions, and percentages. Other topics include representations of data, geometric figures, and measurement. Prerequisites: None.

MAT082 3 CREDITS 3 PERIODS
Basic Arithmetic
Primary emphasis placed on fundamental operations with whole numbers, fractions, decimals, integers, and rational numbers; proportions, and percentages. Other topics include representations of data, geometric figures, and measurement. Prerequisites: None.
MAT083  5 CREDITS  5 PERIODS
Arithmetic Review Expanded
Additional review of basic arithmetic skills. Fundamental operations with whole numbers, common fractions, decimals, and percentages. Additional topics include math anxiety reduction techniques, study skills, and test-taking strategies. Prerequisites: None.

MAT089  1 CREDIT  1 PERIOD
Basic Mathematics for Nursing
Primary emphasis placed on fundamental operations with whole numbers, fractions, decimals, integers, rational numbers and percentages. Other topics include solving linear equations and unit analysis. Prerequisites: None.

MAT090  5 CREDITS  5 PERIODS
Developmental Algebra
Linear behavior; linear equations and inequalities in one and two variables; graphs; systems of equations in two variables; function notation, graphs, and data tables; operations on polynomials; properties of exponents; applications. Prerequisites: Grade of “C” or better in MAT082, or MAT102, or equivalent, or satisfactory score on District Placement exam. Course Note: May receive credit for only one of the following: MAT090, MAT091, MAT092, or MAT093.

MAT091  4 CREDITS  4 PERIODS
Introductory Algebra
Linear behavior; linear equations and inequalities in one and two variables; graphs; systems of equations in two variables; function notation, graphs, and data tables; operations on polynomials; properties of exponents; applications. Prerequisites: Grade of “C” or better in MAT082, or MAT102, or equivalent or satisfactory score on District placement exam. Course Note: May receive credit for only one of the following: MAT090, MAT091, MAT092, or MAT093.

MAT092  3 CREDITS  3 PERIODS
Introductory Algebra
Linear behavior; linear equations and inequalities in one and two variables; graphs; systems of equations in two variables; function notation, graphs, and data tables; operations on polynomials; properties of exponents; applications. Prerequisites: Grade of “C” or better in MAT082, or MAT102, or equivalent or satisfactory score on District placement exam. Course Note: May receive credit for only one of the following: MAT090, MAT091, MAT092, or MAT093.

MAT093  5 CREDITS  5 PERIODS
Introductory Algebra/Math Anxiety Reduction
Linear behavior; linear equations and inequalities in one and two variables; graphs; systems of equations in two variables; function notation, graphs, and data tables; operations on polynomials; properties of exponents; applications. This course will be supplemented by instruction in anxiety reducing techniques, math study skills, and test taking techniques. Prerequisites: Grade of “C” or better in MAT082, or MAT102, or equivalent or satisfactory score on District placement exam. Course Note: May receive credit for only one of the following: MAT090, MAT091, MAT092, or MAT093.

MAT102  3 CREDITS  3 PERIODS
Mathematical Concepts/Applications
A problem solving approach to mathematics as it applies to life and the world of work. Development, demonstration, and communication of mathematical concepts and formulas that relate to measurement, percentage, statistics, and geometry. Prerequisites: Grade of “C” or better in MAT082, or equivalent, or satisfactory score on District placement exam.

MAT120  5 CREDITS  5 PERIODS
Intermediate Algebra
Quadratic, rational, radical, exponential, and logarithmic functions and equations; graphs of quadratic, exponential, and logarithmic functions; equations quadratic in form; operations on rational expressions, radical expressions, and complex numbers; rational exponents; applications. Prerequisites: Grade of “C” or better in MAT090, MAT091, MAT092, MAT093, or equivalent, or a satisfactory score on the District placement exam. Course Note: May receive credit for only one of the following: MAT120, MAT121, or MAT122.

MAT121  4 CREDITS  4 PERIODS
Intermediate Algebra
Quadratic, rational, radical, exponential, and logarithmic functions and equations; graphs of quadratic, exponential, and logarithmic functions; equations quadratic in form; operations on rational expressions, radical expressions, and complex numbers; rational exponents; applications. Prerequisites: Grade of “C” or better in MAT090, MAT091, MAT092, MAT093, or equivalent, or a satisfactory score on the District placement exam. Course Note: May receive credit for only one of the following: MAT120, MAT121, or MAT122.
MAT122 3 CREDITS 3 PERIODS

Intermediate Algebra
Quadratic, rational, radical, exponential, and logarithmic functions and equations; graphs of quadratic, exponential, and logarithmic functions; equations quadratic in form; operations on rational expressions, radical expressions, and complex numbers; rational exponents; applications. Prerequisites: Grade of "B" or better in MAT090, MAT091, MAT092, MAT093, or equivalent, or a satisfactory score on the District placement exam. Course Note: May receive credit for only one of the following: MAT120, MAT121, or MAT122.

MAT140 5 CREDITS 5 PERIODS

College Mathematics
Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Prerequisites: Grade of "C" or better in MAT120, or MAT121, or MAT122 or equivalent, or satisfactory score on District placement exam. Course Note: Appropriate for the student whose major does not require college algebra or precalculus.

MAT141 4 CREDITS 4 PERIODS

College Mathematics
Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Prerequisites: Grade of "C" or better in MAT120, or MAT121, or MAT122 or equivalent, or satisfactory score on District placement exam. Course Note: Appropriate for the student whose major does not require college algebra or precalculus.

MAT142 3 CREDITS 3 PERIODS

College Mathematics
Working knowledge of college-level mathematics and its applications to real-life problems. Emphasis on understanding mathematical concepts and their applications. Topics include set theory, probability, statistics, finance, and geometry. Prerequisites: Grade of "C" or better in MAT120, or MAT121, or MAT122 or equivalent, or satisfactory score on District placement exam.

MAT150 5 CREDITS 5 PERIODS

College Algebra/Functions
Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, modeling and solving real world problems. Additional topics may include matrices, combinatorics, sequences and series, and conics. Prerequisites: Grades of "C" or better in MAT120, or MAT121, or MAT122 or equivalent, or satisfactory score on District placement exam. Course Note: May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187.

MAT151 4 CREDITS 4 PERIODS

College Algebra/Functions
Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, modeling and solving real world problems. Additional topics may include matrices, combinatorics, sequences and series, and conics. Prerequisites: Grade of "C" or better in MAT120, or MAT121, or MAT122, or equivalent, or satisfactory score on District placement exam. Course Note: May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187.

MAT152 3 CREDITS 3 PERIODS

College Algebra/Functions
Analysis and interpretation of the behavior and nature of functions including polynomial, rational, exponential, logarithmic, power, absolute value, and piecewise-defined functions; systems of equations, modeling and solving real world problems. Additional topics may include matrices, combinatorics, sequences and series, and conics. Prerequisites: Grade of "B" or better in MAT120, or MAT121, or MAT122, or equivalent, or satisfactory score on District placement exam. Course Note: May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187.

MAT156 3 CREDITS 3 PERIODS

Mathematics for Elementary Teachers I
Focuses on numbers and operations. Algebraic reasoning and problem solving integrated throughout the course. Prerequisites: Grade of "C" or better in MAT142 or MAT150 or MAT151 or MAT152 or equivalent, or satisfactory score on District placement exam.
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<tr>
<th>Course Code</th>
<th>Credits</th>
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<td>MAT157</td>
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<td>MAT220</td>
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**MAT157  Mathematics for Elementary Teachers II**
Focuses on measurement, geometry, probability and data analysis. Appropriate technologies, problem solving, reasoning, and proof are integrated throughout the course. Prerequisite: MAT156 or equivalent.

**MAT172  Finite Mathematics**
An introduction to the mathematics required for the study of social and behavioral sciences. Includes combinatorics, probability, descriptive statistics, matrix algebra, linear programming and the mathematics of finance. Includes applications of technology in problem-solving. Prerequisites: Grade of “C” or better in MAT150, or MAT151, or MAT152, or MAT187 or equivalent, or satisfactory score on District placement exam.

**MAT182  Plane Trigonometry**
A study of measures of angles, properties of graphs of trigonometric functions, fundamental identities, addition and half-angle formulas, inverse trigonometric functions, solutions of trigonometric equations, complex numbers and properties of triangle solution. May receive credit for only one of the following: MAT182 or MAT187. Prerequisites: Grade of “C” or better in MAT150, or MAT151, or MAT152, or equivalent, or concurrent registration in MAT150, or MAT151, MAT152, or satisfactory score on District placement exam.

**MAT187  Precalculus**
A precalculus course combining topics from college algebra and trigonometry. Preparation for analytic geometry and calculus. May receive credit for only one of the following: MAT150, MAT151, MAT152, or MAT187. Prerequisites: Grade of “B” or better in MAT120, MAT121, or MAT122, or equivalent, or satisfactory score on a placement test. Course Note: Strongly recommended that students have some knowledge of trigonometry.

**MAT212  Brief Calculus**
Introduction to the theory, techniques and applications of the differential and integral calculus of functions with problems related to business, life, and the social sciences. Prerequisites: Grade of “C” or better in MAT150, or MAT151, or MAT152, or MAT187 or equivalent, or satisfactory score on District placement exam.

**MAT213  Brief Calculus**
Introduction to the theory, techniques, and applications of the differential and integral calculus of functions with problems related to business, life, and the social sciences. Prerequisites: Grade of “C” or better in MAT150, or MAT151, or MAT152, or MAT187 or equivalent, or satisfactory score on District placement exam.

**MAT217  Mathematical Analysis for Business**
An introduction to the mathematics required for the study of business. Includes multivariable optimization, Lagrange multipliers, linear programming, linear algebra, probability, random variables, discrete and continuous distributions. Prerequisites: Grade of C or better in MAT212 or MAT213.

**MAT218  Mathematical Analysis for Business**
An introduction to the mathematics required for the study of business. Includes multivariable optimization, Lagrange multipliers, linear programming, linear algebra, probability, random variables, discrete and continuous distributions. Prerequisites: Grade of C or better in MAT212 or MAT213.

**MAT220  Analytic Geometry and Calculus I**
Topics from analytic geometry with special emphasis on inequalities and absolute value expressions, limits, continuity, the fundamental principles and formulae for differential and integral calculus along with their applications to geometry and mechanics, the mean value theorems and the fundamental theorem of calculus. May receive credit for only one of the following: MAT220 or MAT221. Prerequisites: Grade of “C” or better in (MAT150 or MAT151 or MAT152 and MAT182) or MAT187 or equivalent or satisfactory score on district placement exam.
MAT220 5 CREDITS 5 PERIODS
Calculus with Analytic Geometry I
Limits, continuity, differential and integral calculus of functions of one variable. Prerequisites: Grade of "C" or better in (MAT150 or MAT151 or MAT152 and MAT182) or MAT187 or equivalent or satisfactory score on district placement exam.
Course Notes: MAT220 students may receive credit for only one of the following: MAT220 or MAT221.

MAT221 4 CREDITS 4 PERIODS
Calculus with Analytic Geometry I
Real numbers, limits, continuity, differential and integral calculus of functions of one variable. May receive credit for only one of the following: MAT220 or MAT221. Prerequisites: Grade of "C" or better in (MAT150 or MAT151 or MAT152) and (MAT182 or MAT187 or equivalent), or satisfactory score on district placement exam.

MAT225 3 CREDITS 3 PERIODS
Elementary Linear Algebra
Introduction to matrices, systems of linear equations, determinants, vector spaces, linear transformations and eigenvalues. Emphasizes the development of computational skills. Prerequisites: Grade of "C" or better in MAT210 or MAT220, or MAT221, or equivalent.

MAT227 3 CREDITS 3 PERIODS
Discrete Mathematical Structures
Introduction to lattices, graphs, Boolean algebras, and groups. Emphasis on topics relevant to computer science. Prerequisites: Grade of "C" or better in CSC100 and (MAT220, or MAT221, or equivalent) or permission of instructor.

MAT230 3 CREDITS 3 PERIODS
Analytical Geometry and Calculus II
Includes working on the elementary transcendental functions, techniques of integration, vector functions, and infinite series. May receive credit for only one of the following: MAT230 or MAT231. Prerequisites: Grade of "C" or better in MAT220 or MAT221 or equivalent.

MAT231 4 CREDITS 4 PERIODS
Calculus with Analytic Geometry II
Techniques of integration for both proper and improper integrals with applications to the physical and social sciences, elements of analytic geometry, and the analysis of sequences and series. Prerequisites: Grade of "C" or better in MAT220 or MAT221 or equivalent. Course Notes: MAT230 students may receive credit for only one of the following: MAT230 or MAT231.

MAT240 5 CREDITS 5 PERIODS
Calculus with Analytic Geometry III
Multivariate calculus including vectors, vector-valued functions, partial differentiation, multiple integration, and an introduction to vector fields. Prerequisites: Grade of "C" or better in MAT230 or MAT231. Course Notes: MAT240 students may receive credit for only one of the following: MAT240 or MAT241.
MAT241  4 CREDITS  4 PERIODS
Calculus with Analytic Geometry III
Vector-valued functions of several variables, multiple integration, introduction to vector analysis.
Prerequisites: Grade of "C" or better in MAT230 or MAT231.

MAT241  4 CREDITS  4 PERIODS
Calculus with Analytic Geometry III
Multivariate calculus including vectors, vector-valued functions, partial differentiation, multiple integration and an introduction to vector fields.
Prerequisites: Grade of "C" or better in MAT230 or MAT231. Course Notes: MAT241 students may receive credit for only one of the following: MAT240 or MAT241.

MAT261  4 CREDITS  4 PERIODS
Differential Equations
Ordinary differential equations with applications including Laplace transforms with numerical methods. Prerequisites: Grade of "C" or better in MAT230, or MAT231, or equivalent.

MAT262  3 CREDITS  3 PERIODS
Differential Equations
Ordinary differential equations with applications including Laplace transforms with numerical methods. Prerequisites: Grade of "C" or better in MAT230, or MAT231, or equivalent.

MAT282AA  1 CREDIT  1 PERIOD
MAT282AB  2 CREDITS  2 PERIODS
MAT282AC  3 CREDITS  3 PERIODS
Volunteerism for Mathematics: A Service Learning Experience
Service learning field experience within private/public agencies, educational institutions, and citizen volunteer groups. Prerequisites: Permission of instructor. Course Note: May be repeated for a total of six (6) credit hours. Standard grading available according to procedures outlined in catalog.

Microsoft Technology (MST)
MST141  3 CREDITS  4 PERIODS
Supporting Microsoft Windows Desktop Operating Systems
Troubleshooting and repairing problems with Microsoft Windows desktop operating systems. Basic knowledge of system architecture and security as needed to provide skills required to support users. Preparation for Microsoft Certified Desktop Support Technician (MCDST) certification examination. Prerequisites: CIS102 and CIS105, or permission of instructor. Prerequisites or Corequisites: MST150XP.

MST142  3 CREDITS  4 PERIODS
Supporting Applications on Microsoft Windows Desktop Operating Systems
Troubleshooting and repairing end-user problems with applications running on current Windows desktop operating systems. Preparation for Microsoft Certified Desktop Support Technician (MCDST) certification examination. Prerequisites: CIS102 and CIS105, or permission of instructor. Prerequisites or Corequisites: MST150XP.

MST145  3 CREDITS  4 PERIODS
Microsoft Client System Administration
Knowledge and skills to install, configure, customize, optimize, maintain, and troubleshoot the Microsoft Windows client operating system in a Microsoft networking environment. Preparation for Microsoft certification examination. Prerequisites or Corequisites: MST140 or permission of instructor.

MST150  3 CREDITS  4 PERIODS
Microsoft Windows Professional
Knowledge and skills necessary to perform day-to-day administration tasks in a Microsoft Windows-based network. Preparation for Microsoft certification examination. Prerequisites: None. CIS190, or CNT140, or MST140 suggested but not required.

MST150DA  3 CREDITS  5 PERIODS
Microsoft Windows 2000 Professional
Knowledge and skills necessary to perform day-to-day administration tasks of Microsoft Windows 2000 Professional. Preparation for Microsoft certification examination. Prerequisites: None. CIS190, or CNT140, or MST140 suggested but not required.

MST150XP  3 CREDITS  4 PERIODS
Microsoft Windows XP Professional
Knowledge and skills necessary to perform day-to-day administration tasks of Microsoft Windows XP Professional. Preparation for Microsoft certification examination Prerequisites: None. CIS190, or CNT140, or MST140 suggested but not required.
MST152 4 CREDITS 5 PERIODS
Microsoft Windows Server
Knowledge and skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Windows Server. Preparation for Microsoft certification examination. Prerequisites or Corequisites: Any MST150 course or permission of instructor.

MST152DA 4 CREDITS 6 PERIODS
Microsoft Windows 2000 Server
Knowledge and skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Microsoft Windows 2000 Server. Preparation for Microsoft certification examination. Prerequisites or Corequisites: Any MST150 course or permission of instructor.

MST152DB 4 CREDITS 5 PERIODS
Microsoft Windows 2003 Server
Knowledge and skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Microsoft Windows 2003 Server. Preparation for Microsoft certification examination. Prerequisites or Corequisites: Any MST150 course or permission of instructor.

MST150VI 3 CREDITS 4 PERIODS
Microsoft Windows Vista Administration
Knowledge and skills necessary to perform day-to-day workstation administration tasks of Microsoft Windows Vista. Preparation for Microsoft certification examination. Prerequisites: None. CIS190, or CNT140, or MST140 suggested but not required.

MST155 3 CREDITS 4 PERIODS
Implementing Windows Network Infrastructure
Knowledge and skills to install, configure, maintain, and support a Microsoft Windows network infrastructure. Preparation for Microsoft certification examination. Prerequisites or Corequisites: Any MST152 course or permission of instructor.

MST157 3 CREDITS 4 PERIODS
Implementing Windows Directory Services
Knowledge and skills to install, configure, and administer Microsoft Windows Active Directory directory services. Preparation for Microsoft certification examination. Prerequisites: Any MST152 course or permission of instructor.

MST170 4 CREDITS 5 PERIODS
Visual Basic Desktop Application Development
Use of Visual Basic programming language to create database applications using Visual Data Access tools, ActiveX Controls, Component Objects, and Structured Query Language (SQL) Server database. Prerequisites: CIS159 or permission of instructor.

MST171 3 CREDITS 4 PERIODS
Microsoft FrontPage
Knowledge and skills to analyze, design, build, and implement enterprise Web sites using Microsoft FrontPage. Includes use of ActiveX components, databases, and FrontPage server extensions. Prerequisites: (CIS233BA or CIS233DA) and MST170, or permission of instructor.

MST172 4 CREDITS 5 PERIODS
Visual Basic .NET Web Application Development
Knowledge and skills to develop and implement Web-based applications using ASP.NET, Web forms, and the Microsoft .NET framework with Visual Basic. Preparation for Microsoft Certified Applications Developer (MCAD) certification examination. Prerequisites: (BPC/CIS133DA, or BPC/CIS133AA and BPC/CIS133BA and BPC/CIS133CA) and CIS259, or permission of instructor.

MST174 3 CREDITS 4 PERIODS
Microsoft Visual InterDev
Web site programming tasks to create enterprise-level Web sites that use Component Object Model (COM) components on both the client and the server. Preparation for Microsoft Certified Solutions Developer (MCSD) examination Prerequisites: (CIS233BA or CIS233DA) and MST170, or permission of instructor.

MST176 3 CREDITS 4 PERIODS
Visual Basic .NET XML Web Services Development
Knowledge and skills required to develop XML Web Services and Server components with Microsoft .NET Framework with Visual Basic. Preparation for the MCAD (Microsoft Certified Applications Developer) certification examination. Prerequisites: CIS259 or permission of the instructor.
MST232 3 CREDITS 4 PERIODS
Managing a Windows Network Environment
Knowledge and skills necessary to administer Windows network operating systems. Preparation for Microsoft certification examination.
Prerequisites: MST140, MST150, and MST152, or permission of instructor.

MST242 4 CREDITS 5 PERIODS
Microsoft Exchange Server
Knowledge and skills required to plan, implement, and administer Microsoft Exchange Server. Preparation for Microsoft certification examination.
Prerequisites: Any MST152 course or permission of instructor.

MST244 3 CREDITS 4 PERIODS
Microsoft SQL Server Administration
Knowledge and skills required to install, configure, and administer Microsoft SQL server. Preparation for Microsoft certification examination.
Prerequisites: Any MST152 course, or MST170, or permission of instructor.

MST246 2 CREDITS 3 PERIODS
Implementing Microsoft Internet Explorer
Strong foundation in the architecture and key features of Microsoft Internet Explorer. Set up, configure, use, and deploy Internet Explorer in a network environment, with particular emphasis on intranet use. Prerequisites: Any MST152 course or permission of instructor. Knowledge of HTML suggested but not required.

MST252 3 CREDITS 4 PERIODS
Microsoft Windows Network Upgrade
Evaluate differences between current version of Microsoft Windows network operating system and upgraded version. Intended for Microsoft network administrators seeking upgrade training.
Prerequisites: MST152 or permission of instructor.

MST254 3 CREDITS 4 PERIODS
Microsoft SQL Server Design and Implementation
Knowledge and skills required to design and implement databases using Microsoft SQL server. Preparation for Microsoft certification examination.
Prerequisites: CIS259, or any MST152 course, or permission of instructor.

MST255 3 CREDITS 4 PERIODS
Designing Windows Network Infrastructure
Knowledge and skills to create a networking services infrastructure design that supports network applications and the needs of an organization. Preparation for Microsoft certification examination.
Prerequisites or Corequisites: MST155 or permission of instructor.

MST259 3 CREDITS 4 PERIODS
Designing Windows Network Security
Knowledge and skills to analyze business requirements and processes to design a security solution for a Microsoft Windows network. Preparation for Microsoft certification examination.
Prerequisites or Corequisites: MST157 or permission of instructor.

MST270 3 CREDITS 4 PERIODS
Microsoft Solution Architectures
Knowledge and skills to analyze business requirements in a given scenario and define technical solution architectures to optimize business results using Microsoft development tools.
Prerequisites: (ACC230 or GBS151) and MST170, or permission of instructor.

MUC109 3 CREDITS 3 PERIODS
Music: Commercial/Business (MUC)
Music Business: Merchandising and the Law
Operation, scope, and career opportunities in the music business. Focuses on music in the marketplace, songwriting, publishing, copyright procedures, and business affairs, agents, artist management, and concert production. Prerequisites: None.
MUC110 3 CREDITS 3 PERIODS
Music Business: Recording and Mass Media
The operation, scope, and career opportunities in the music business. Focuses on the record industry; environmental music; uses of music in radio, telecommunications, and film; and career options. Prerequisites: None.

MUC111 3 CREDITS 5 PERIODS
Digital Audio Workstation I (DAW I)
Use of digital mixing and automation software in conjunction with editing and recording. Includes computer operation, troubleshooting, and file management. Prerequisites: MUC195 or MUC195AA.

MUC195 3 CREDITS 5 PERIODS
Studio Music Recording I
Basic principles of studio sound recording. Emphasis on musical acoustics, operation of recording equipment, studio setups, and multitrack recording. Includes studio session process and musical production decisions. Prerequisites: None.

MUC196 3 CREDITS 5 PERIODS
Studio Music Recording II
Emphasis on signal-processing equipment, mixing consoles, and advanced musical recording session procedures, production, and engineering. Includes mix-down and resultant master tape of a musical recording session. Prerequisites: MUC195 or MUC195AA.

MUC295AA 1 CREDIT 1 PERIOD
Self Promotion for Music
Career goal development. Includes self-presentation and communication skills, keeping files and records, and developing self-promotional materials. Prerequisites: None.

MUC297AB 2 CREDITS 2 PERIODS
Music Internship
Music Internship work experience in a business or industry eighty (80) hours of designated work per credit. A maximum of 12 credits allowed. Prerequisites: Departmental approval.

MHL140 3 CREDITS 3 PERIODS
Survey of Music History
Study of composers, compositions, styles, and periods in music history. Prerequisites: None.

MHL143 3 CREDITS 3 PERIODS
Music in World Cultures
Non-European musical traditions including the study of music in rituals, musical instruments and the impact of cultures on musical styles. Prerequisites: None.

MHL145 3 CREDITS 3 PERIODS
American Jazz and Popular Music
The study of cultural and social contributions to the evolution of American jazz and popular music from the mid-1800’s to present. Prerequisites: None.

MHL146 3 CREDITS 3 PERIODS
Survey of Broadway Musicals
Survey of Broadway musicals traced from their origins to the present viewed in their cultural, political, and socio-economic contexts. Emphasis on stylistic periods, composers, lyricists, directors, and choreographers. Prerequisites: None.

MHL153 3 CREDITS 3 PERIODS
Rock Music and Culture
History of Rock music and how cultural, social, political, and economic conditions have shaped its evolution. Prerequisites: None.

MHL155 3 CREDITS 3 PERIODS
Survey of American Music
History of the music of North America from the earliest American Indian music to the present. Introduction to the musical trends, composers, socioeconomic developments and trends, musical forms and styles that influence our modern American musical sense. Prerequisites: None.

MHL156 3 CREDITS 3 PERIODS
Music in Latin America and the Caribbean
To discuss the role of music in Latin and Caribbean cultures and the impact of these cultures on music. To present a historical survey to the evolution and development of musical styles from rumba to reggae. Among the topics, and to include: origins, gender, race, ethnicity, politics, elements of music, instruments, both sacred and secular music, and significant individuals influencing the evolution of many different genres of music in Latin America and Caribbean cultures. Prerequisites: None.

MHL241 3 CREDITS 3 PERIODS
Music History and Literature to 1750
In-depth study of music history from the primitive era through the Baroque period. Prerequisites: MTC155 and MTC156 or permission of instructor.
MHL242  3 CREDITS  3 PERIODS
Music History and Literature 1750 to Present
In-depth study of music history from the Classical period through the Contemporary period.
Prerequisites: MHL241 or permission of instructor.

Music: Performance (MUP)

MUP101  1 CREDIT  .6 PERIOD
MUP151  1 CREDIT  .6 PERIOD
MUP201  1 CREDIT  .6 PERIOD
MUP251  1 CREDIT  .6 PERIOD

Private Instruction
Private Instruction emphasizing developmental improvement of musicianship and technique from an entering skill level. Four course sequence required of all music majors meeting departmental requirements. Instruction provided on voice, piano, harpsichord, organ, guitar, trumpet, French horn, trombone, baritone horn, tuba, flute, oboe, clarinet, bassoon, saxophone, violin, viola, violoncello, contrabass, bass guitar, percussion, and harp. May be repeated for credit. Prerequisites: None.

MUP102  2 CREDITS  1.2 PERIODS
MUP152  2 CREDITS  1.2 PERIODS
MUP202  2 CREDITS  1.2 PERIODS
MUP252  2 CREDITS  1.2 PERIODS

Class Piano I
Development of beginning piano techniques and the fundamentals of music including basic hand position, music reading skills of melodic and harmonic material, major scales, transposition, and harmonizations including the I, IV, V7 chords. Prerequisites: None.

MUP133  2 CREDITS  3 PERIODS
Class Voice I
Introduction to the fundamentals of vocal production. Emphasis on breathing techniques, tone production and performances in class of solo vocal literature. Prerequisites: None.

MUP134  2 CREDITS  3 PERIODS
Class Voice II
Continuation of Class Voice I including the elements of stage presence and diction. Prerequisites: MUP133 or permission of instructor.

MUP150  1 CREDIT  3 PERIODS
Community Chorus
A mixed chorus with emphasis on college/community participation and preparation of a variety of choral literature for public performance. Auditions may be required. May be repeated for credit. Prerequisites: None.

MUP153  2 CREDITS  5 PERIODS
A Cappella Choir
A mixed choir designed to emphasize choral techniques and performance of all styles of choral literature. Public performances are scheduled during the year including a concert tour. Auditions may be required. May be repeated for credit. Prerequisites: None.

MUP154AA  1 CREDIT  3 PERIODS
Jazz Vocal Ensemble
Practical and performing experience in vocal jazz. Includes music from the 1920’s through the present. Prerequisites: Auditions required or permission of instructor. Course Note: May be repeated for up to three (3) credits.

MUP159  1 CREDIT  3 PERIODS
Community Orchestra
Emphasis on college/community participation and the preparation of orchestral literature for public performance. Auditions may be required. May be repeated for credit. Prerequisites: None.

MUP161  1 CREDIT  3 PERIODS
Community Band
Emphasis on college/community participation and the preparation of band literature for public performance. Auditions may be required. May be repeated for credit. Prerequisites: None.
MUP163 1 CREDIT 3 PERIODS
**Jazz Ensemble**
Practical and performance experience in various jazz styles. Open to all students on the basis of auditions. May be repeated for credit. Prerequisites: None.

MUP164 2 CREDITS 3 PERIODS
**Jazz Improvisation I**
Theoretical and performance skills in many styles of jazz improvisation. May be repeated for a total of six (6) credit hours. Prerequisites: None.

MUP181 1 CREDIT 2 PERIODS
**Chamber Music Ensembles**
Practical and performance experience in instrumental, vocal, and mixed ensembles. May be repeated for credit. Prerequisites: None.

MUP182 1 CREDIT 3 PERIODS
**Chamber Singers**
Practical and performance experience in various styles of vocal music. Open to all students on the basis of auditions. May be repeated for credit. Prerequisites: None.

MUP209 2 CREDITS 2 PERIODS
**Elements of Conducting**
Essentials of conducting techniques used in choral and instrumental ensembles including terminology, interpretation, and styles. Prerequisites: None.

MUP225 2 CREDITS 3 PERIODS
**Class Guitar I**
Emphasis on note-reading and folk-style harmonic accompaniment. Includes finger-style playing. Stresses development of efficient practice techniques and proper sitting and hand positions. Prerequisites: None.

MUP226 2 CREDITS 3 PERIODS
**Class Guitar II**
Note-reading range including second position and parts of higher positions. Classical, popular, Latin, and other styles of music. Theory including scales, keys, and chord construction. Technical exercises of both hands. Prerequisites: MUP225 or permission of instructor.

MUP227 2 CREDITS 3 PERIODS
**Class Guitar III**
Additional fingerboard positions. Ensemble techniques and performance. Prerequisites: MUP226 or permission of instructor.

MUP228 2 CREDITS 3 PERIODS
**Class Guitar IV**
Advanced fingerboard positions. Duet and trio performances. Advanced ensemble techniques. Prerequisites: MUP227 or permission of instructor.

MUP231 2 CREDITS 3 PERIODS
**Class Piano III**
Development of intermediate piano techniques including selected solo literature, transposition of harmonic patterns, and secondary dominants. Prerequisites: MUP132 or permission of instructor.

MUP232 2 CREDITS 3 PERIODS
**Class Piano IV**
Continuation of Piano III including modulation techniques, improvisation of piano accompaniments, advanced chromatic harmony, and sight reading of advanced literature. Prerequisites: MUP231 or permission of instructor.

MUP233 2 CREDITS 3 PERIODS
**Class Voice III**
Interpretive singing through a closer examination of coloring, tone production, dynamics, and tempo indications. Prerequisites: MUP134.

MUP234 2 CREDITS 3 PERIODS
**Class Voice IV**
Emphasis on the preparation of solo vocal literature for the purpose of evaluation and the integration of the music with the drama of the music. Prerequisites: MUP233 or permission of instructor.

MUP270 2 CREDITS 5 PERIODS
**Musical Theatre Workshop**
Workshop in the study and performance of Musical Theatre repertoire. Including audition techniques, talent evaluation criticism, rehearsal techniques, vocal acting styles, stage movement, and performance. May be repeated for credit. Prerequisites: None.

MTC100 2 CREDITS 3 PERIODS
**Fundamentals of Music**
Introduction to music notation and theory. Emphasis on fundamental concepts, including meter, rhythm, scales, keys, intervals and triads. Designed for the nonmusic major, but may be advised for music majors. Prerequisites: None.
MTC101 3 CREDITS 3 PERIODS
Introduction to Music Theory
Designed to develop written and aural skills necessary for advanced study of music theory and skills. Recommended for music majors. Prerequisites: None.

MTC103 2 CREDITS 2 PERIODS
Introduction to Aural Perception
An introduction to the aural skills necessary to hear relationships of intervals, rhythms, melody, and harmony in music. May be repeated for a total of four (4) credit hours. Prerequisites: None.

MTC105 3 CREDITS 3 PERIODS
Music Theory I
The chronological study of music theory including: harmony, melody, texture, structure and timbre through analysis, original compositions and basic exercises to demonstrate musical concepts. Prerequisites: MTC100, or MTC101, or permission of instructor. Corequisites: MTC106.

MTC106 1 CREDIT 2 PERIODS
Aural Perception I
The development of listening and performing skills through dictation, sight singing and keyboard harmony. Prerequisites: None. Corequisites: MTC105.

MTC155 3 CREDITS 3 PERIODS
Music Theory II
A continuation of Music Theory I with emphasis on harmony and part-writing procedures. Prerequisites: MTC105. Corequisites: MTC156.

MTC156 1 CREDIT 2 PERIODS
Aural Perception II
A continuation of Aural Perception I, including harmonic practices. Prerequisites: None. Corequisites: MTC155.

MTC205 3 CREDITS 3 PERIODS
Music Theory III
The study of chromatic harmony and melody, modulation techniques and expanded chords. The analysis of formal structure. Prerequisites: MTC155. Corequisites: MTC206.

MTC206 1 CREDIT 2 PERIODS
Aural Perception III
A development of listening and performing skills, including an introduction of chromatic harmonic techniques and concepts of style. Prerequisites: None. Corequisites: MTC205.

MTC240 3 CREDITS .6 PERIODS
Composition
Introduction to the basics of music composition, stressing techniques and procedures for developing original ideas. May be repeated for total of twelve (12) credit hours. Prerequisites: (MTC105 and MTC106, or equivalent), and permission of instructor.

MTC255 3 CREDITS 3 PERIODS
Music Theory IV
A continuation of Music Theory III, including 20th century theories and techniques. Prerequisites: MTC205. Corequisites: MTC256.

MTC256 1 CREDIT 2 PERIODS
Aural Perception IV
A continuation of Aural Perception III, including extended chords. Prerequisites: None. Corequisites: MTC255.

Nursing Continuing Education (NCE)

NCE214MI .5 CREDITS .5 PERIODS
Math and Medications for Intermediate Nursing Students
Focus on basic mathematical concepts to calculate metric- apothecary conversion, dosage problems, intravenous flow rates using the ratio/proportion and dimensional analysis methods. These calculations will focus application to acute care, long-term care, and pediatric specialty areas. Prerequisites: Current student in Nursing program or permission of Department or Division.

Nursing Science: Basic (NUR)

NUR104AB 1 CREDIT 1 PERIOD
Structured Nursing Review
Structured nursing tutorial assistance and nursing study skills to help students achieve success in their respective block of nursing courses. Nursing process and critical thinking application skills emphasized. Prerequisites: None. Corequisites: Concurrent enrollment in the Nursing program or permission of Department Chair. Course Note: Course offered as Credit (P) No credit (Z) basis. May be repeated for a total of six (6) credit hours.
COURSE DESCRIPTIONS

NUR151 10 CREDITS 20 PERIODS
Nursing Theory and Science I
Introduction to fundamentals of nursing theory and practice utilizing critical thinking based on the nursing process and principles of evidence based practice. Focus on meeting basic human needs within the wellness/illness continuum. Theoretical concepts related to holistic care of well, geriatric, and adult clients. Provides safe nursing care to clients with selected alterations in health. Introduction to professional nursing practice. Applies concepts of health promotion, disease/illness prevention. Provides care based upon integration of pathophysiology, nutrition, communication and physical, biological, and psycho-social sciences. Uses information technology in performing and evaluating client care. Prerequisites: Admission into the Nursing Program.

NUR171 8 CREDITS 16 PERIODS
Nursing Theory and Science II
Application of nursing theory and practice utilizing critical thinking based on the nursing process and evidence based practice. Holistic nursing concepts of health promotion, disease/illness prevention, and health restoration for adult and geriatric clients. Role development as the professional nurse member of the health care team. Participation in client teaching and discharge planning. Application of previous knowledge of physical, biologic, psycho-social sciences, and the cultural and spiritual aspects of nursing care. Application of nursing concepts in the development of plan of care to include pathophysiology, nutrition, pharmacology, and skills in communication. Uses information technology in planning, documenting, and evaluating client care. Prerequisites: NUR151 or permission of Nursing Department Chairperson.

NUR231 4 CREDITS 4 PERIODS
Nursing Process and Critical Thinking III
Nursing and critical thinking strategies. Emphasis on complex human needs within the wellness/illness continuum in a variety of acute care and community settings. Theoretical concepts related to holistic care of adults with selected acute and chronic alterations in health and psychiatric/mental health disorders. Introduction to role of the professional nurse as member of the health care team. Continuation of role development of the professional nurse. Integrates concepts of nutrition, communication, health promotion, and advanced pathophysiology. Application of previous knowledge of physical, biologic, social, and nursing sciences. Prerequisites: NUR151, NUR127, and (NUR128 or NUR129). Corequisites: NUR231 or permission of Nursing Department Chairperson.

NUR237 1 CREDIT 2 PERIODS
Pharmacology and Medication Administration III
Knowledge and skills to safely prepare and administer intravenous medications and solutions. Emphasizes management of clients receiving complex therapies such as blood and blood products, parenteral nutrition, and advanced pain management. Application of previous knowledge of physical, biological, and social sciences. Includes an overview of parenteral medications and therapies used in selected situations. Prerequisites: NUR121, NUR127, and (NUR128 or NUR129).

NUR238 4 CREDITS 12 PERIODS
Nursing Science III
Application of critical thinking skills through the nursing process to clients and families with acute alterations in health and psychiatric/mental health disorders. Provides for the development of clinical and cultural competency and the continued development of selected nursing skills and procedures within the nursing scope of practice. Holistic care of clients, families, and small groups in a variety of acute and community health care settings. Application of nursing concepts related to health education/promotion for clients, families, and small groups. Integrates concepts of nutrition, communication, health promotion, and advanced pathophysiology. Prerequisites: NUR121, NUR127, and NUR128. Corequisites: NUR231 or permission of Nursing Department Chairperson.

NUR241 4 CREDITS 4 PERIODS
Nursing Process and Critical Thinking IV
Nursing and critical thinking strategies for complex holistic needs of high-risk clients with multi-system health alterations. Includes perinatal, newborn, pediatric, and adult clients in acute care settings. Continuation of role development of the professional nurse. Integrates concepts of nutrition, communication, health promotion, and advanced pathophysiology. Application of previous knowledge of physical, biologic, social, and nursing sciences. Prerequisites: NUR231, NUR237, and (NUR238 or NUR239). Corequisites: NUR241 or permission of Nursing Department Chairperson.

NUR248 5 CREDITS 15 PERIODS
Nursing Science IV
Synthesis of nursing concepts. Provides nursing care for high-risk newborn, pediatric, perinatal, and adult clients with multi-system alterations in health. Emphasis on leadership and management
roles of the nurse. Includes a preceptorship experience to facilitate role transition from student to graduate nurse. Integrates concepts of nutrition, communication, health promotion, and advanced pathophysiology. Prerequisites: NUR231, NUR237, and NUR238. Corequisites: NUR241 or permission of Nursing Department Chairperson.

**NUR251  8 CREDITS  16 PERIODS**

**Nursing Theory and Science III**
Application of critical thinking strategies related to holistic care of the newborn, pediatric, and childbearing clients. Integration of concepts related to holistic care of adults and geriatric clients with selected acute and chronic alterations in health. Integration of professional nursing standards in role development. Utilization of previous knowledge of physical, biologic, psycho-social sciences, and the cultural, spiritual aspects of nursing care. Integration of concepts of nutrition, pharmacology, communication, health promotion, and pathophysiology into nursing care. Prerequisites: (BIO202, BIO205, and NUR171) or permission of Nursing Department Chairperson.

**NUR271  7 CREDITS  13 PERIODS**

**Nursing Theory and Science IV**
Integration of critical thinking strategies for complex holistic needs of high-risk clients with multi-system health alterations. Application of strategies related to holistic care of the client with psychiatric/mental health disorders. Introduction to community based care. Assimilation of professional role into practice. Evaluation of care based on the knowledge of physical, biologic, psycho-social sciences, and the cultural and spiritual beliefs of clients. Development of nurse leadership and management roles. Integration of concepts of nutrition, pharmacology, communication, health promotion, and pathophysiology into nursing care. Prerequisites: NUR251 or permission of Nursing Department Chairperson.

**NUR291  2 CREDITS  6 PERIODS**

**Nursing Clinical Capstone**
Synthesis of the nursing process to facilitate role transition from student to graduate nurse within a preceptorship experience. Development of nurse leadership and management roles. Prerequisites: NUR271 or permission of Nursing Department Chairperson.

**Office Automation Systems (OAS)**

**OAS108  3 CREDITS  3 PERIODS**

**Business English**
Comprehensive coverage of correct use of English grammar including spelling, punctuation, capitalization, and number style mechanics in a business context. Prerequisites: None.

**OAS135DK  2 CREDITS  2 PERIODS**

**Word: Level I**
Using Word word processing software to create and name files, edit text, format, and print a variety of documents. Prerequisites: The ability to use a keyboard at a minimum of 24 wpm or permission of instructor.

**Philosophy (PHI)**

**PHI101  3 CREDITS  3 PERIODS**

**Introduction to Philosophy**
General consideration of human nature and the nature of the universe. Knowledge, perception, freedom and determinism, and the existence of God. Prerequisites: None.

**PHI103  3 CREDITS  3 PERIODS**

**Introduction to Logic**
Informal logic, logical fallacies, elementary symbolic logic, analysis of argument forms, and construction of proofs for validity. Prerequisites: ENG101 or ENG107 or equivalent.

**PHI104  3 CREDITS  3 PERIODS**

**World Philosophy**
Examination of questions such as the meaning of life and death, social justice, appearance and reality, human nature, the identity of the self freedom and destiny, the ethical life, and the relationship of science and religion. Comparative analysis of diverse Eastern and Western viewpoints. Prerequisites: None.

**PHI105  3 CREDITS  3 PERIODS**

**Introduction to Ethics**
Major theories of conduct. Emphasis on normative ethics, theories of good and evil from Plato to the present. Prerequisites: None.
PHI214 3 CREDITS 3 PERIODS
Business Ethics
Philosophical consideration of moral problems arising in business practice, including corporate responsibility, government regulation, hiring practices, and advertising. Application to both the United States and other countries. Prerequisites: ENG101, or ENG107, or equivalent.

Physical Education (PED)
PEDI01 1 CREDIT 2 PERIODS
PEDI02 1 CREDIT 2 PERIODS
PEDE201 1 CREDIT 2 PERIODS
PEDE202 1 CREDIT 2 PERIODS

Physical Activities
Individual, dual, or team sports activities as listed in the schedule of classes. May be repeated for credit. Prerequisites: None.
PEDI103 .5 CREDITS 1 PERIOD
PEDI104 .5 CREDITS 1 PERIOD
PEDI203 .5 CREDITS 1 PERIOD
PEDI204 .5 CREDITS 1 PERIOD

Physical Activities
Individual, dual, or team sports activities as listed in the schedule of classes. May be repeated for credit. Prerequisites: None.
PEDI112 3 CREDITS 3 PERIODS

Professional Applications of Fitness Principles
Basic principles of fitness for the prospective fitness professional. Planning and teaching in a fitness program. Topics include exercise risks and safety, weight control, components of fitness, fitness assessment, and exercise programming. Prerequisites: None.
PEDI115 2 CREDITS 4 PERIODS

Lifetime Fitness
Fitness activity and wellness study to help develop a lifetime of regular exercise, stress management, and proper nutrition. Workout includes warm-up/stretch, selected endurance/strength exercises, and cool down/stretch. May be repeated for credit. Prerequisites: None.
PEDI117 2 CREDITS 4 PERIODS

Weight Training for Wellness
Weight training activity and wellness study to help develop a lifetime of regular exercise, stress management, and proper nutrition. Workout includes warm-up/stretch, selected endurance/strength exercises, and cool down/stretch. May be repeated for a maximum of eight (8) credits. Prerequisites: None.

PED120AF 2 CREDITS 4 PERIODS
Special Emphasis Activities: Weight Training
Intensive experience in weight training. May be repeated for a total of 8 credits. Prerequisites: None.
PEDI121 1 CREDIT 2 PERIODS

Physical Conditioning for Massage Therapists
Physical fitness necessary for current and prospective massage therapists. Includes physical fitness and workout techniques as related to performing massage therapy; individual conditioning strategies, and basic nutritional guidelines. Prerequisites: None.
PEDI125 3 CREDITS 3 PERIODS

Exercise Science
Principles of exercise science applied to teaching fitness/aerobics. Major factors related to the function of the human body. Emphasis on anatomy/physiology, exercise physiology, and biomechanics. Prerequisites: None.
PEDI144 3 CREDITS 5 PERIODS

Strategies in Diabetes Management
Introduction to strategies in diabetes mellitus management and prevention for individuals diagnosed with diabetes and their caretakers. Includes a physical activity component. Prerequisites: None.
PEDI145 3 CREDITS 3 PERIODS

Guidelines for Exercise Testing and Prescription
Follows the current ACSM guidelines for health appraisal, risk assessment, safety of exercise, exercise testing, and exercise prescription. Prerequisites: None.
PEDI200 3 CREDITS 3 PERIODS

Introduction to Exercise Science and Physical Education
Introductory course for students considering or just beginning a course of study in exercise science and physical education. Overview of each of the disciplines, sub-disciplines, and professions in the cross-discipline field of exercise science/physical education, including historical and philosophical foundations. Course emphasizes the study of physical activity. Prerequisites: None.
PED210JX  1 CREDIT    3 PERIODS
Movement Analysis: Golf
Practical application of biomechanical, physiological, psychological, and teaching/learning principles in the analysis of skill acquisition and performance. Prerequisites: None.

PED210TP  1 CREDIT    3 PERIODS
Movement Analysis: Soccer
Practical application of biomechanical, physiological, psychological, and teaching/learning principles in the analysis of skill acquisition and performance. Prerequisites: None.

PED210XP  1 CREDIT    3 PERIODS
Movement Analysis: Weight Training
Practical application of biomechanical, physiological, psychological, and teaching/learning principles in the analysis of skill acquisition and performance. Prerequisites: None.

PED212CR  2 CREDITS    3 PERIODS
Instructional Competency Laboratory:
Cardiorespiratory Exercises and Activities
Fundamental methods of instructing and leading fitness activities including cardiorespiratory exercises and activities. Core competencies identified by professional certification agencies. Prerequisites: None.

PED212FL  2 CREDITS    3 PERIODS
Instructional Competency Laboratory:
Flexibility and Mind-Body Exercises
Fundamental methods of instructing and leading fitness activities including flexibility activities. Core competencies identified by professional certification agencies. Prerequisites: None.

PED212SC  2 CREDITS    3 PERIODS
Instructional Competency Laboratory:
Muscular Strength and Conditioning
Fundamental methods of instructing and leading fitness activities including strength and conditioning activities. Core competencies identified by professional certification agencies. Prerequisites: None.

PED215  3 CREDITS    3 PERIODS
Fitness for Life
Lifetime health and skill-related components of fitness to achieve total wellness. Topics include health and skill- related components of fitness, guidelines for health and fitness assessment, exercise safety and precautions, nutrition, weight control, cardiovascular risk reduction, psychology of fitness and wellness, consumerism, and overall self-management of personal health and lifestyle habits to achieve the highest potential for well-being. Prerequisites: None.

PED281  3 CREDITS    3 PERIODS
Methods of Coaching
Comprehensive overview of the art and science of coaching, including development of coaching philosophy, techniques of sport pedagogy, practical application of sports skill teaching, sport physiology, nutrition, sport/team management and self management. Prerequisites: None. PED265 suggested but not required.

PED281BC  3 CREDITS    3 PERIODS
Baseball Methods of Coaching
Techniques, methods, and procedures of baseball coaching. May not be repeated for credits. Prerequisites: None.

PED281BO  3 CREDITS    3 PERIODS
Basketball Methods of Coaching
Techniques, methods, and procedures of basketball coaching. May not be repeated for credit. Prerequisites: None.

PED281GC  3 CREDITS    3 PERIODS
Golf Methods of Coaching
Techniques, methods, and procedures of coaching golf. May not be repeated for credit. Prerequisites: None.

PED281SC  3 CREDITS    3 PERIODS
Soccer Methods of Coaching
Techniques, methods, and procedures of soccer coaching. May be repeated for credits. Prerequisites: None.

PED281SI  3 CREDITS    3 PERIODS
Softball Methods of Coaching
Techniques, methods, and procedures of softball coaching. May not be repeated for credit. Prerequisites: None.

PED281VQ  3 CREDITS    3 PERIODS
Volleyball Methods of Coaching
Techniques, methods, and procedures of volleyball coaching. May not be repeated for credit. Prerequisites: None.
PED285  3 CREDITS  3 PERIODS
Exercise Program Design and Instruction
Business aspects of the fitness profession such as program administration, quality assurance, and effective communication skills for the professional personal trainer and/or strength and conditioning coach. Implementation of behavioral strategies, progression of program planning, and development of programs for populations with special physical/medical needs. Designing exercise programs in an internship setting. Prerequisites: PED145 or permission of instructor.

Physical Geography (GPH)
GPH111  4 CREDITS  6 PERIODS
Introduction to Physical Geography
Spatial and functional relationships among climates, landforms, soils, water, and plants. Prerequisites: None.

GPH212  3 CREDITS  3 PERIODS
Introduction to Meteorology I
Atmospheric processes and elements. General and local circulation, heat exchange and atmospheric moisture. Prerequisites: None.

GPH214  1 CREDIT  3 PERIODS
Introduction to Meteorology Laboratory I
Basic meteorological and climatological measurements. Prerequisites: None. Corequisites: GPH212.

Physical Science (PHS)
PHS110  4 CREDITS  6 PERIODS
Fundamentals of Physical Science
Survey of the principles of physics and chemistry. Prerequisites: Grade of “C” or better in MAT090, or MAT091, or MAT092, or MAT093, or equivalent, or satisfactory score on Math placement exam.

Physics (PHY)
PHY101  4 CREDITS  6 PERIODS
Introduction to Physics
A survey of physics emphasizing applications of physics to modern life. Prerequisites: Grade of “C” or better in MAT090, or MAT091, or MAT092, or MAT093, or equivalent, or satisfactory score on Math Placement exam.

PHY111  4 CREDITS  6 PERIODS
General Physics I
Includes motion, energy, and properties of matter. Prerequisites: Trigonometry or department consent. Course Note: Recommended for preprofessional and suggested for certain other majors.

PHY112  4 CREDITS  6 PERIODS
General Physics II
Includes electricity, electromagnetism, and modern physics. Prerequisites: PHY105 or PHY111.

PHY121  4 CREDITS  6 PERIODS
University Physics I: Mechanics
Kinematics, Newton’s laws, work, energy, momentum, conservation laws, dynamics of particles, solids, fluids, mechanical waves, and sound. Prerequisites: MAT220, or MAT221, or department consent. One year of High School physics or PHY111 and PHY112 suggested but not required.

PHY131  4 CREDITS  6 PERIODS
University Physics II: Electricity and Magnetism
Electric charge and current, electric and magnetic fields in vacuum and in materials, and induction. AC circuits, displacement current, and electromagnetic waves. Prerequisites: MAT230, or MAT231, or department consent, and PHY121. Corequisites: MAT241 or department consent.

PHY252  4 CREDITS  6 PERIODS
University Physics III: Thermodynamics, Optics, and Wave Phenomena
Heat, entropy, and laws of thermodynamics; wave propagation; geometrical and physical optics; introduction to special relativity. Prerequisites: PHY131.

Political Science (POS)
POS100  3 CREDITS  3 PERIODS
Introduction to Political Science
Introduction to the discipline of political science and its relation to other disciplines with emphasis on the major philosophies and institutions of government. Prerequisites: None.
POS110 3 CREDITS 3 PERIODS
American National Government
Study of the historical backgrounds, governing principles, and institutions, of the national government of the United States. Prerequisites: None.

POS120 3 CREDITS 3 PERIODS
World Politics
Introduction to the principles and issues relating to the study of international relations. Evaluation of the political, economic, national, and transnational rationale for international interactions. Prerequisites: None.

POS180 3 CREDITS 3 PERIODS
United Nations Studies
Historical origins, structural makeup, political and operational characteristics, and legal activities of the United Nations. Analysis of the overall institution's ongoing utility, productivity and creativity. Prerequisites: None.

POS220 3 CREDITS 3 PERIODS
U.S. and Arizona Constitution
Examination of the United States Constitution and the constitution and government of the State of Arizona. Prerequisites: None.

POS221 1 CREDIT 1 PERIOD
Arizona Constitution
Examination of the Constitution of the State of Arizona. Equivalent to the second part of POS220. May not enroll in POS220 and POS221 concurrently. Prerequisites: None.

POS222 2 CREDITS 2 PERIODS
U.S. Constitution
Examination of the United States Constitution. Equivalent to the first part of POS220. May not enroll in POS220 and POS222 concurrently. Prerequisites: None.

POS223 3 CREDITS 3 PERIODS
Civil Rights
The historic background and current status of major civil rights issues in the United States. Prerequisites: None.

Psychology (PSY)

PSY101 3 CREDITS 3 PERIODS
Introduction to Psychology
To acquaint the student with basic principles, methods and fields of psychology such as learning, memory, emotion, perception, physiological, developmental, intelligence, social and abnormal. Prerequisites: None.

PSY123 3 CREDITS 3 PERIODS
Psychology of Parenting
The demonstration and application of psychological principles to the development and guidance of children and adolescents. Prerequisites: None.

PSY132 3 CREDITS 3 PERIODS
Psychology and Culture
Presents current knowledge about human diversity in behavior and culture using examples from a variety of contexts and nations. Highlights topics in cross-cultural psychology, such as intergroup relations, ethnocentrism, gender, personality, emotion, language, communication, work and health. Emphasis on applications of behavioral and cognitive principles to enhance interactions in a multicultural world. Prerequisites: None.

PSY210 3 CREDITS 3 PERIODS
Educational Psychology
Scientific research and psychological principles as they apply to teaching and learning. The role of psychology in educational settings, human diversity, theories of learning, intelligence, memory, creativity, assessment, and factors influencing effective instruction and learning. Prerequisites: PSY101 with a grade of “C” or better or permission of instructor.

PSY215 3 CREDITS 3 PERIODS
Introduction to Sport Psychology
Application of the physiological, behavioral, social, cognitive, and humanistic perspectives in psychology to sport. Includes topics such as optimal performance, correlation, motivation, co-action effect, self-actualization, psycho-behavioral techniques, self-efficacy, and the general health benefits of sport participation. Prerequisites: PSY101 with a grade of “C” or better or permission of instructor.
PSY230  
**Introduction to Statistics**
An introduction to basic concepts in descriptive and inferential statistics, with emphasis upon application to psychology. Consideration given to the methods of data collection, sampling techniques, graphing of data, and the statistical evaluation of data collected through experimentation. Required of psychology majors. Prerequisites: PSY101 with a grade of "C" or better and MAT092 or equivalent, or permission of instructor.

PSY231  
**Laboratory for Statistics**
Applications of inferential and descriptive statistics to computers in the field of psychology. Prerequisites: None. Corequisites: PSY230.

PSY235  
**Psychology of Gender**
To assess historical and psychological perspectives on women and men and to evaluate contemporary viewpoints regarding the psychology of women and men. Prerequisites: PSY101 with a grade of "C" or better or permission of instructor.

PSY240  
**Developmental Psychology**
Human development from conception through adulthood. Includes: physical, cognitive, emotional and social capacities that develop at various ages. Recommended for students majoring in nursing, education, pre-med, and psychology. Prerequisites: PSY101 with a grade of "C" or better or permission of instructor.

PSY241  
**Understanding and Changing Behavior**
Theory and methods for observing, analyzing, and modifying behavior. Prerequisites: PSY101 with grade of "C" or better or permission of the instructor.

PSY242  
**Understanding and Changing Behavior Lab**
Designed to apply the principles of behavior modification. Application of behavior modification principles, techniques, and treatment(s) to modify self-behavior or the behavior of others. Exposure to the "hands-on" application of behavioral programming, including the identification, development, implementation, assessment, and modification of a behavioral program. Prerequisites: PSY101. Prerequisites or Corequisites: PSY241.

PSY243  
**The Psychology of Developmental Disabilities**
The interrelationships among the physical, intellectual, social, and psychological aspects of developmental disabilities (DD). Various service approaches, policies, and programs designed to foster an adequate adjustment for individuals with DD and their families. Values and beliefs relating to persons with developmental disabilities. Prerequisites: PSY101 or permission of instructor.

PSY244  
**Developmental Disabilities Internship**
Experience in working with persons with developmental disabilities and their families. 80 hours of designated work. Prerequisites: PSY101, PSY241, PSY242, and PSY243, and departmental approval.

PSY266  
**Abnormal Psychology**
Distinguishes between normal behavior and psychological disorders. Subjects may include stress disorders, problems with anxiety and depression, unusual and abnormal sexual behavior, schizophrenia and addictive behaviors. Causes and treatments of psychological problems and disorders are discussed. Prerequisites: PSY101 with a grade of "C" or better, or permission of instructor.

PSY270  
**Personal & Social Adjustment**
Surveys the basic mental health principles as they relate to coping with stress, interpersonal relationships, sex, marriage, and working. Emphasis on learning to become a more competent and effective person. Prerequisites: PSY101 with a grade of "C" or better or permission of the instructor.

PSY290AB  
**Research Methods**
Planning, execution, analysis, and written reporting of psychological research. Surveys the literature, procedures, and instruments in representative areas of psychological research. Prerequisites: ENG101, ENG107 or equivalent. Prerequisites or Corequisites: PSY230 (or equivalent) with a grade of "C" or better, or permission of instructor.

PSY290AC  
**Research Methods**
Planning, execution, analysis, and written reporting of psychological research. Surveys the literature, procedures, and instruments in representative areas of psychological research. Prerequisites: ENG101, ENG107 or equivalent. Prerequisites or Corequisites: PSY230 (or equivalent) with a grade of "C" or better, or permission of instructor.
areas of psychological research. Prerequisites: ENG101, ENG107 or equivalent. Prerequisites or Corequisites: PSY230 (or equivalent) with a grade of “C” or better, or permission of instructor.

Reading (RDG)

RDG010  3 CREDITS  3 PERIODS
Reading English as a Second Language I
Designed for students who are learning English as a second language. Provides students with skills needed to become proficient readers in English. Teaches sound symbol relationships of the English alphabet. Expands essential vocabulary for daily communication both in isolation and context. Includes development of reading comprehension skills. Prerequisites: Appropriate ESL placement test score.

RDG020  3 CREDITS  3 PERIODS
Reading English as a Second Language II
Designed for students who are learning English as a second language. Includes continued development of vocabulary and reading comprehension skills. Prerequisites: Appropriate ESL placement test score, or grade of “C” or better in RDG010, or permission of instructor.

RDG030  3 CREDITS  3 PERIODS
Reading English as a Second Language III
Designed for students who are learning English as a second language. Includes instruction for more advanced vocabulary and reading comprehension skills. Prerequisites: Appropriate ESL placement test score, or grade of “C” or better in RDG020, or permission of instructor.

RDG040  3 CREDITS  3 PERIODS
Reading English as a Second Language IV
Developed for students of English as a second language. Includes development of advanced vocabulary, comprehension skills, and culture awareness. Prerequisites: Appropriate ESL placement test score, or grade of “C” or better in RDG030, or permission of instructor.

RDG081  3 CREDITS  3 PERIODS
Reading Improvement
Designed to improve basic reading skills. Includes word recognition, prediction of contents of reading selections, and development of basic vocabulary. Emphasis on identifying main ideas and related details. Reviews following directions and the understanding of graphic materials. Prerequisites: Placement test scores, or permission of instructor.

RDG091  3 CREDITS  3 PERIODS
College Reading Skills I
Designed to improve basic reading and study skills, vocabulary and comprehension skills. Recommended to all students whose placement test scores indicate a need for reading instruction. Prerequisites: Reading placement test score (ASSET), or grade of “C” or better in RDG081, or permission of instructor.

Recreation (REC)

REC120  3 CREDITS  3 PERIODS
Leisure and the Quality of Life
Overview of the historical, psychological, social, and cultural aspects of play, leisure, and recreation and their role in contemporary society. Nature of play and leisure behavior in human development within different cultures and the contribution play, recreation, and leisure make to the quality of life for individuals in today’s society. Prerequisites: None.

REC138  1 CREDIT  2 PERIODS
Clubfitting/Repair
Basic principles of golf club design. Includes personal fitting of golf clubs to customer needs as well as repair. Prerequisites: None.

REC150AA  1 CREDIT  2 PERIODS
Outdoor Living Skills Field Experience
Practical application of camping and outdoor skills including camping, equipment selection and use, cooking, fire building, camp programs, backpacking, and safety. Prerequisites: None. Course Note: Course may be repeated for a total of four (4) credits.

REC150AB  3 CREDITS  3 PERIODS
Outdoor Adventure Skills
Camping and outdoor skills including types of camping, equipment selection and use, cooking and fire building, camp programs, backpacking, and safety. Prerequisites: None.

REC250  3 CREDITS  3 PERIODS
Recreation Leadership
An examination of roles and methods of leadership in leisure services settings. Overview of theories and models of leadership, group dynamics, participant motivation, communication, and face-to-face leadership. Exploration of leadership contexts, including coaching and officiating sports, leading
Religious Studies (REL)

REL205 3 CREDITS 3 PERIODS
Religion and the Modern World
Introduction to the nature and role of religious beliefs and practices in shaping the lives of individuals and societies, with particular attention to the modern world. Prerequisites: ENG101, or ENG107, or equivalent.

REL243 3 CREDITS 3 PERIODS
World Religions
The development of various religions from the prehistoric to modern times. Political, economic, social and geographic relationships among world religions. Consideration of both Eastern and Western religions. Prerequisites: None.

REL270 3 CREDITS 3 PERIODS
Introduction to Christianity
The nature and content of the Christian tradition developed over time, with overview of the New Testament, major historical trends and figures, major Christian ideas and practices, and survey of denominations. Prerequisites: None.

REL290 3 CREDITS 3 PERIODS
Women and Religion
The role of women in several organized religions and/or religious sects, including a study of myth and symbols as they are used to establish, maintain, and enforce sex-roles within specific religions. Prerequisites: None.

Sign Language (SLG)

SLG101 4 CREDITS 4 PERIODS
American Sign Language I

SLG102 4 CREDITS 4 PERIODS
American Sign Language II
Continued development of knowledge and language skills for communicating with deaf people who sign. Includes numbers, fingerspelling, and culture. Emphasis on enhancement of receptive sign skills and continued development of expressive sign skills. Application of rudimentary, syntactical, and grammatical structure stressed with continued development of sign vocabulary. Prerequisites: SLG101, with a grade of "C" or better, or permission of department/division.

SLG103 1 CREDIT 1 PERIOD
Introduction to Deafness
History and development of American Sign Language (A.S.L.) and English codes. Overview of education for Deaf and Hard of Hearing children. Legal rights and common adaptive devices used by Deaf and Hard of Hearing individuals. Prerequisites: None.

SLG110 2 CREDITS 2 PERIODS
Fingerspelling I
Introduction to basic fingerspelling techniques. Concentration on receptive and expressive skills including manual alphabet production and numbers. Focus on methods, theory, and applications. Prerequisites: SLG101, or permission of department/division.

SLG120 2 CREDITS 2 PERIODS
Fingerspelling II
Continued skill development including speed, dexterity, clarity, and loan signs. Advanced use of numbers, prefixes, suffixes, and polysyllabic words. Prerequisites: SLG102, SLG110 with a grade of "C" or better, or permission of department/division.

SLG201 4 CREDITS 4 PERIODS
American Sign Language III
Linguistics of American Sign Language (A.S.L.) including non-manual behaviors and signing English idioms with conceptual accuracy. Emphasis on practical application of A.S.L. skills, expanded vocabulary, and cross-cultural communication. Prerequisites: SLG102, with a grade of "C" or better, or permission of department/division. Suggested but not required: (ENG101 or ENG107) and, (CRE101 or CRE111 or exemption by score on the reading placement test (ASSET)).
American Sign Language IV
Advanced American Sign Language skills including continued vocabulary. Emphasis on conversational techniques in a cross-cultural framework.
Continued work on conceptual accurate signing of English idioms and words with multiple meanings.
Prerequisites: SLG103 and SLG201 with a grade of “C” or better, or permission of department/division. Suggested but not required: ENG101, SLG200, and CRE101 or CRE111 or exemption by score on the reading placement test (ASSET).

Financial and Tax Management for Small Business
An overview of accounting and record-keeping for the successful management of a small business. Develops an understanding of the accounting cycle and preparation of financial statements. Includes section on tax consequences and the choice of legal entity choice based on taxation. Prerequisites: None.

Society and Business (SBU)
The study and scientific inquiry of issues and demands placed on business enterprise by owners, customers, government, employees and society. Included are social, ethical and public issues and analysis of the social impact of business responses. Prerequisites: None.

Introduction to Sociology
Fundamental concepts of social organization, culture, socialization, social institutions and social change. Prerequisites: None.

Racial & Ethnic Minorities
Contemporary/Historical racial and ethnic intergroup relations emphasizing cultural origins, developments, and problems of minority groups in the United States. Prerequisites: None.
SPA118  3 CREDITS  3 PERIODS
Health Care Spanish II
Basic conversational Spanish for health care personnel or students. Emphasis on basic sentence structure, pronunciation, and vocabulary used in health care settings. Prerequisites: SPA117 or (SPA117AA and SPA117AB and SPA117AC), or permission of department.

SPA201  4 CREDITS  4 PERIODS
Intermediate Spanish I
Continued study of essential Spanish grammar and Spanish-speaking cultures. Continued practice and development of reading, writing, and speaking skills in Spanish. Emphasis on fluency and accuracy in spoken Spanish. Prerequisites: SPA102, or SPA111, or permission of department.

SPA202  4 CREDITS  4 PERIODS
Intermediate Spanish II
Review of grammar, continued development of Spanish language skills with continued study of the Spanish-speaking cultures. Prerequisites: SPA201 or departmental approval.

SPA225  3 CREDITS  3 PERIODS
Intermediate Spanish Conversation I
Continued development of skills in conversational Spanish. A review of the major grammatical and pronunciation problems. Prerequisites: SPA116, or SPA102 or departmental approval.

SPA226  3 CREDITS  3 PERIODS
Intermediate Spanish Conversation II
Continued development of skills in conversational Spanish with a review of grammatical problems. Prerequisites: SPA225, two years Spanish or the equivalent or departmental approval.

SPA235  3 CREDITS  3 PERIODS
Advanced Spanish Conversation I
Continued development of skills in conversational fluency. Class conducted completely in Spanish. Prerequisites: SPA226 or equivalent or departmental approval.

SPA236  3 CREDITS  3 PERIODS
Advanced Spanish Conversation II
Further development of skills in conversational fluency. Grammar presented only to clarify student errors. Prerequisites: SPA235, or equivalent, or departmental approval.

SPA265  3 CREDITS  3 PERIODS
Advanced Spanish I
Introduction and study of Spanish and Spanish-American literature. Selected readings from most Spanish-speaking countries. All discussions, oral reports, and written assignments are in Spanish. Prerequisites: SPA202 or departmental approval.
SPA266 3 CREDITS 3 PERIODS
Advanced Spanish II
Further study of Spanish and Spanish-American literature. Reading selections from most Spanish-speaking countries. All oral reports, discussions, and written reports in Spanish. Graduated level of difficulty from the literature studied in SPA265. Prerequisites: SPA265 or departmental approval.

Telecommunications (TCM)

TCM108 3 CREDITS 5 PERIODS
Video Production
Video production technology including Electronic News Gathering (ENG) & Electronic Field Production (EFP) styles and equipment usage. Corporate, cable, and broadcast applications. Basic production techniques in scripting; single camera film style shooting; lighting, audio recording; and editing; post-production techniques, production personnel and their roles, budgeting and copyright issues. Prerequisites: None.

TCM111 3 CREDITS 3 PERIODS
Screenwriting I
Provides an introduction to screenwriting for feature films. Prerequisites: None.

Theater (THE)

THE111 3 CREDITS 3 PERIODS
Introduction to Theatre
A survey of theatre, including basic elements and principles of production, styles, and/or historical perspectives of theatre, dramatic literature, and criticism. Prerequisites: None.

THE118 3 CREDITS 3 PERIODS
Playwriting
Practice and study of theories and techniques of writing for the stage; creating characters, dialogue, and plot for monodramas, scenes, and plays. Prerequisites: None.

THE206 3 CREDITS 3 PERIODS
Introduction to Television Arts
History and development of electronic media and its impact on popular arts. Prerequisites: None.

THE115 3 CREDITS 4 PERIODS
Theatre Makeup
Purposes, materials, and techniques of theatrical makeup. Prerequisites: None.

THE220 3 CREDITS 3 PERIODS
Modern Drama
Analysis of dramatic literature studied within political, historical, and cultural contexts and examined from the perspective of the playwright’s structure and style. Prerequisites: ENG101 or ENG107 or equivalent.

THE260 3 CREDITS 3 PERIODS
Film Analysis
Understanding and enjoyment of film and its correlation to literature, art, music, and other disciplines. Prerequisites: None.

Theater Performance/Production (THP)

THP112 3 CREDITS 4 PERIODS
Acting I
Fundamental techniques and terminology of acting through physical and vocal expression, improvisation, and monologue and scene work. Emphasis on characterization. Prerequisites: None.

THP201AA 1 CREDIT 2 PERIODS
Theatre Production I
Designed to give college credit to the cast and technical production crews of college theatre productions. May be repeated for up to a maximum of four (4) credits. Prerequisites: None.

THP201AB 2 CREDITS 4 PERIODS
Theatre Production II
Designed to give college credit to the cast and technical production crews of college theatre productions. May be repeated for up to a maximum of four (4) credits. Prerequisites: None.

THE210 3 CREDITS 3 PERIODS
Contemporary Cinema
A study of contemporary films, directors and critics with emphasis on evaluating film as an art form. Prerequisites: None.
THP212 3 CREDITS 4 PERIODS
Acting II
Fundamental techniques of acting through script analysis, rehearsal, and performance. Prerequisites: THP112 or departmental approval.

THP213 3 CREDITS 5 PERIODS
Introduction to Technical Theatre
Procedures of technical theatre production and demonstration. Topics include design and construction of scenery; lighting and properties. Prerequisites: None.

THP216 3 CREDITS 4 PERIODS
Beginning Stage Lighting
Basic theories and methods of stage lighting for all production types. Emphasis on technical/theoretical facts, artistic/design concept development, and "teamwork" structure of theatre. Examines stage lighting optics, instrument selection and application, color theory, circuiting and control systems, and basic design. Prerequisites: THP213 or permission of instructor.

THP241 3 CREDITS 3 PERIODS
Performance of Literature
The study, analysis, and preparation for performance of prose, poetry, and dramatic literature. Preparation of material for public audiences. Prerequisites: ENG101 or ENG107 or equivalent.

Wellness Education (WED)

WED100 2 CREDIT 2 PERIODS
Personal Wellness
Overview of wellness and its relationship to personal health. Understanding of personal wellness through lifestyle assessments. Introduction to wellness and health-related topics including fitness, relationships, nutrition, self care, abusive behaviors, mind/body connection, and other current issues in health. Prerequisites: None.

WED121 1 CREDIT 2 PERIODS
Physical Conditioning for Massage Therapists
Physical fitness necessary for current and prospective massage therapists. Includes physical fitness and workout techniques as related to performing massage therapy; individual conditioning strategies, and basic nutritional guidelines. Prerequisites: None.

WED144 3 CREDITS 5 PERIODS
Strategies in Diabetes Management
Introduction to strategies in diabetes mellitus management and prevention for individuals diagnosed with diabetes and their caretakers. Includes a physical activity component. Prerequisites: None.

WED145 3 CREDITS 3 PERIODS
Spirituality and Aging
Exploration of the spiritual dimensions of aging; relationship of major life tasks and transitions to spirituality; exploration of conscious aging, including a literary analysis; reflective and contemplative tools used in conscious aging; interrelationships between wisdom, ritual, and spirituality; and development of a new vision of aging. Prerequisites: None.

WED151 3 CREDITS 3 PERIODS
Introduction to Alternative Medicine
Definition of health; exploration of mind-body-spirit connection in health; various therapeutic modalities; identification of strengths and limitations of alternative therapies. Also includes development of ability to critically review written material in the alternative therapy area. Prerequisites: None.

WED156 1 CREDIT 1 PERIOD
Humor and Play
Physiological, psychological, emotional, and intellectual effects of humor and play; suggestions for planning periods of play and incorporating it into one's life. Prerequisites: None.

WED162 1 CREDIT 1 PERIOD
Meditation and Wellness
Physiology of meditation and its effects on physical and mental health; scholastic abilities and interpersonal relationships; differentiation between meditation and other relaxation techniques. Prerequisites: None.
**WED170  1 CREDIT  1 PERIOD**

**Principles of Homeopathy**

Origins of homeopathy; key concepts; perceptions of disease; schools of homeopathy; scientific studies; preparation of remedies; case taking. Prerequisites: None.

**WED172  1 CREDIT  1 PERIOD**

**Overview of Herbal Remedies**

History and evolution of herbs for healing applications. Preparation, usage, and effects of certain herbs used for healing purposes. Basic literature review skills in the area of herbal medicine. Prerequisites: None.

**WED176  1 CREDIT  1 PERIOD**

**Flower Essences**

Healing properties of Bach flower remedies; Bach’s development of remedies and his philosophy of healing; use and preparation of a variety of flower essences. Prerequisites: None.

**WED182  2 CREDITS  2 PERIODS**

**Health Conditions and Popular Herbs**

In-depth look at some of today’s most popular herbs and their relationship to specific health conditions. Emphasis on research skills in relation to popular herbs. Includes the effects, uses, and application strategies of herbs. Prerequisites: None. WED172 suggested but not required.

**WED210  2 CREDITS  3 PERIODS**

**Sports Massage**

Purpose, benefits, and contraindications of sports massage; principles of sports physiology; massage techniques, applications, and procedures; treatment of injuries. Prerequisites: WED165 and WED230, or permission of Program Director.

**WED215  2 CREDITS  5 PERIODS**

**Self-Care for Health Care Providers**

Emphasis on mind-body methods for personal wellness through integration of physical, emotional, social, and spiritual dimensions of being. Development of a personal practice to achieve and sustain a balanced program to support personal health and well being. Prerequisites: None.

**WED218  1 CREDIT  1 PERIOD**

**Aromatherapy**

Physiology of aromatherapy; methods of use; preparation of oils; uses in sports, beauty care, massage, child care, health care, at work, and in the home. Prerequisites: None.

**WED230  6 CREDITS  9 PERIODS**

**Therapeutic Massage Practices I**

Principles of professionalism, ethics, and legalities. Includes use of terminology related to massage therapy. Applications, indications, and contraindications of the nine strokes of Swedish massage. Study of the human osseous and muscular structure. Emphasis on normal movement patterns, origins, insertions, and functions of the muscular system. Prerequisites: (BIO160 and WED165) or permission of Program Director.

**WED231  6 CREDITS  9 PERIODS**

**Therapeutic Massage Practices II**

Refined application of the nine strokes of Swedish massage and contraindications to avoid. Application of advanced principles and techniques of trigger point therapy, muscle energy technique, stretching, hydrotherapy protocols, hot and cold applications, reflexology, and corporate massage. Study of the human osseous and muscular structure. Emphasis on normal movement patterns and the origin, insertion, and function of the muscular system. Prerequisites: WED230.

**WED232  6 CREDITS  10 PERIODS**

**Therapeutic Massage Practices III**

Refinement and integration of technical skills, psychosocial competencies, and role identity. Exploration of techniques to assess and facilitate range of motion and function; purpose, benefits, indications, and contraindications of therapeutic massage for specific neuro-musculoskeletal disorders/injury and special populations. Application of massage techniques with therapists pre- and post-client evaluations of the client. Adaptation of massage techniques for special populations. Prerequisites: WED231. Corequisite: WED250, or permission of Program Director.

**WED250  3 CREDITS  6 PERIODS**

**Clinical Practicum**

Application of fundamental massage techniques. Prerequisites: WED231. Corequisites: WED232, and permission of Program Director.

**WED262  2 CREDITS  3 PERIODS**

**Acupressure/Shiatsu I**

Overview of the principles of Traditional Chinese Medicine and the Meridian System; history, purpose, benefits, indications, and contraindications of Acupressure/Shiatsu. Therapeutic techniques and applications of Acupressure/Shiatsu; pre and post evaluations of intervention procedures. Prerequisites: WED250, and permission of instructor.
WED264 2 CREDITS 3 PERIODS

Acupressure/Shiatsu II
Therapeutic techniques and applications for Anma massage used to disperse heat and stagnant “Ki;” hands-on techniques to balance Kyo and Jitsu energy; meridian rebalancing stretches and visualizations for release of acute/chronic muscle tension. Prerequisites: WED262, or permission of instructor.

WED297AA 1 CREDIT 1 PERIOD
WED297AB 2 CREDITS 2 PERIODS
WED297AC 3 CREDITS 3 PERIODS

Special Topics: Therapeutic Massage
Explores a special topic related to therapeutic massage. Topics vary and include concepts relevant to those pursuing careers in therapeutic massage. Prerequisites: None.

WED281 3 CREDITS 3 PERIODS

Intrinsic Coach™ Development
Development of intrinsic thinking skills, enabling intrinsic strategizing, and building on intrinsic resources to create a link between information about wellness and information enacted through healthy behavior change. Emphasis is on application of Intrinsic Coaching™ methodology. Prerequisites: None. Course Note: Course is designed for health and wellness professionals. Under the terms and conditions specified in the licensing agreement with Totally Coached, Inc., and the Maricopa Community College District, only those persons licensed and approved by Totally Coached, Inc., are qualified to teach Intrinsic Coach™ courses or other Totally Coached, Inc., courses. These facilitators must be identified within the terms of the agreement between Totally Coached, Inc., and the Maricopa Community College District.

Writing Across Curriculum (WAC)

WAC101 3 CREDITS 3 PERIODS

Writing Across the Curriculum
Emphasis on the elements of sentence and paragraph structure, the four stages of the writing process for personal-based and expository. Extensive journal entries, editing and revision of written assignments. Prepare and write multi-paragraph essays. Assigned readings, participation in extensive workshops and groupwork. Prerequisites: Appropriate English placement test score, or permission of instructor.

Information Regarding Special Courses Not Listed in the College Catalog

Cooperative Education (courses numbered 296)
Work-college experiences that involve the combined efforts of educators and employers to accomplish an outcome related to the career objectives of the students. Prerequisites: Permission of Program Director or instructor. Corequisites: Must be concurrently enrolled in at least one class related to job/co-op subject area; must maintain an enrollment ratio of two (2) hours of credit in other courses for every one (1) hour of Cooperative Education credit (excluding radio and television); a maximum of sixteen (16) hours of Cooperative Education credit is allowable in a college program.

Special Projects (courses numbered 298)
Organized and tailored around the interests and needs of the individual student. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. Professional-type facilities and equipment are made available for student use. Allows the best aspects of independent study and individualized learning to be combined to maximize student development. Prerequisites: Permission of Program Director or instructor.

Women's Studies (WST)

WST100 3 CREDITS 3 PERIODS
Introduction to critical issues in women's studies. Prerequisites: None.

WST290 3 CREDITS 3 PERIODS
The role of women in several organized religions and/or religious sects, including a study of myth and symbols as they are used to establish, maintain, and enforce sex-roles within specific religions. Prerequisites: None.